

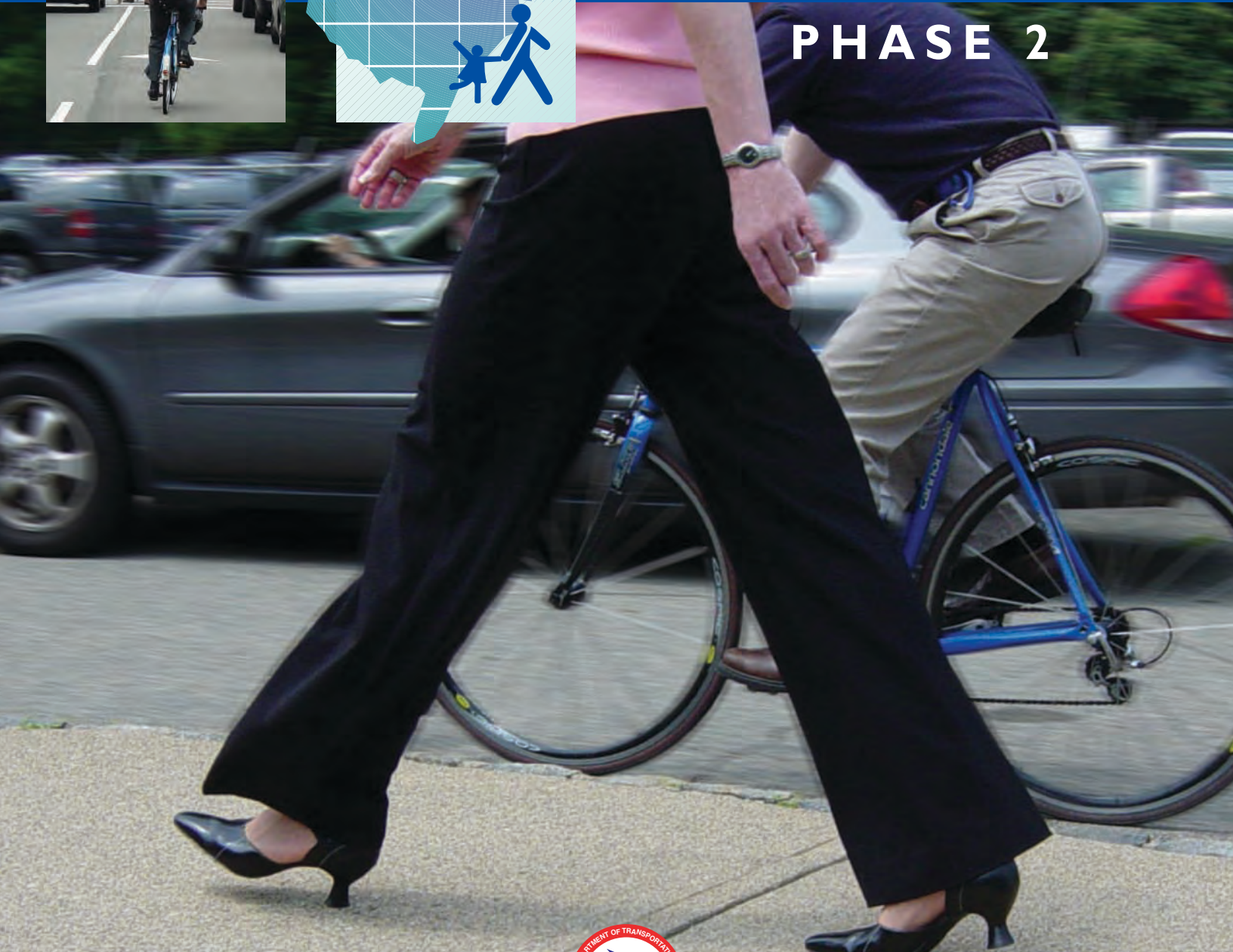


NJ

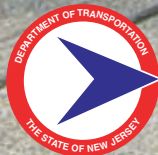
Statewide Bicycle & Pedestrian

MASTER PLAN

PHASE 2



Governor
James E. McGreevey



njdot.nj.gov

Commissioner
Jack Lettiere



Table of Contents



Prefaceiii
Acknowledgementsiv

Chapter 1

Introduction1

Chapter 2

What future do we want

Envisioning New Jersey4

Chapter 3

What we need to do

Key Action Plan Recommendations5

- Planning and Facility Implementation
- Education, Enforcement, Encouragement
- Data Collection and Tracking

Chapter 4

Where we are now

Current Conditions and Needs7

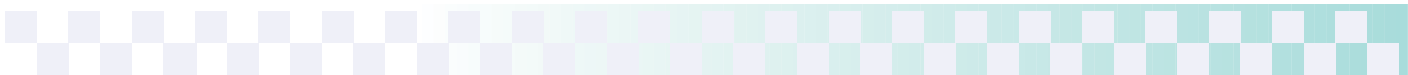
- Facilities
- Community Design
- Acceptance/Legitimacy
- Confidence/Security

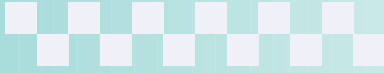
Chapter 5

What kind of changes are necessary

Goals, Objectives and Performance Measures11

- Goal 1 – Build the Infrastructure
- Goal 2 – Improve Access
- Goal 3 – Update Policies, Ordinances and Procedures
- Goal 4 – Educate and Enforce
- Goal 5 – Foster a Pro-Bicycling and Walking Ethic





Chapter 6

Implementing the Plan	17
Roles and Responsibilities	17

Who needs to participate

Primary Participants and Providers of Facilities
 Other Responsible Supporting Entities

Implementation Strategies	29
--	----

What actions will make things change

Legislative Strategies
 Policy Strategies
 Funding Strategies
 Administrative Strategies
 Communication Strategies

Chapter 7

What tools will help guide our efforts

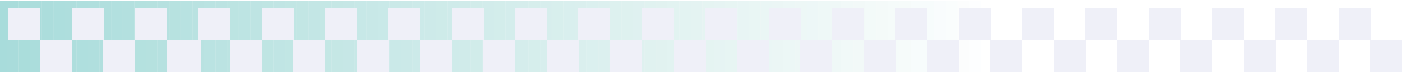
Facility Priorities	31
Data Collection	
Modeling	
Analysis and Development of Priorities	

List of Figures

- Figure 1: New Jersey Bicycle Facilities**
- Figure 2: Bicycle Tools and Models**
- Figure 3: Priority Bicycle Links Map**
- Figure 4: Pedestrian Tools and Models**
- Figure 5: Priority Pedestrian Corridors Map**

Appendices

- Appendix 1: List of Support Documents**
- Appendix 2: Bicycle and Pedestrian Trip Attractors and Data Sources Table**
- Appendix 3: List of Acronyms**
- Appendix 4: Glossary of Terms**
- Appendix 5: Local Bike/Ped Planning Assistance Studies**



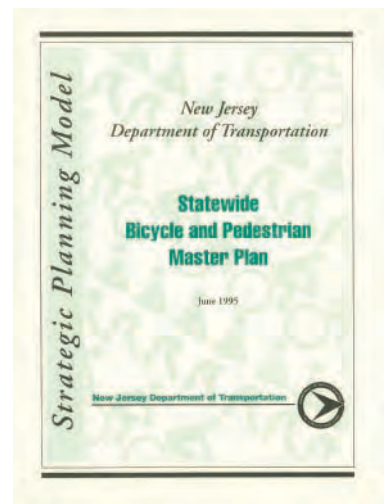
Preface

This update of the New Jersey Bicycle and Pedestrian Master Plan, Phase 2, presents a vision and action plan for improving the bicycling and walking environment throughout the state. The updated Plan restates the original goals, objectives, roles, responsibilities and recommendations of the 1995 Master Plan in today's context and in relationship to the many significant accomplishments of the last eight years towards a more bicycle and pedestrian friendly New Jersey.

This Plan serves as part of a federally-mandated planning process to include bicycle and pedestrian accommodation in long-range transportation plans. It is also intended to fulfill the policies of the New Jersey Department of Transportation (NJDOT) and the State's Metropolitan Planning Organizations (MPOs) regarding bicycle and pedestrian concerns.

The updated Plan was developed by NJDOT in partnership with New Jersey's three regional MPOs: the North Jersey Transportation Planning Authority (NJTPA), the Delaware Valley Regional Planning Commission (DVRPC), and the South Jersey Transportation Planning Organization (SJTPO). Other agencies, organizations and citizens provided input on the goals, objectives and implementation strategies throughout the planning process, in recognition that all have a role to play in creating a state where citizens and visitors can choose to bicycle and walk for transportation and recreation.

This Plan is one of a series of documents that were developed as part of the overall Phase 2 planning effort. Other Phase 2 documents include:



<p>Technical Memorandum Task 1:</p> <ul style="list-style-type: none"> Literature Survey Bicycle/Pedestrian Demand and Suitability Estimation Modeling Selection 	<p>Technical Memorandum Task 2:</p> <ul style="list-style-type: none"> Data Inventory Bicycle/Pedestrian Demand and Suitability Modeling Calculations 	<p>Technical Memorandum, Tasks 3, 4, 5:</p> <ul style="list-style-type: none"> Analysis and Identification of Priority Bicycle Corridors Analysis and Identification of Priority Pedestrian Corridors Finalized Bicycle and Pedestrian Priorities
--	---	---

New Jersey remains committed to improving our quality of life by making bicycling and walking an important part of our comprehensive transportation system.

James E. McGreevey Governor, State of New Jersey
Jack Lettiere Commissioner of Transportation

Acknowledgements

The Bicycle and Pedestrian Master Plan was initiated by NJDOT and conducted in partnership with other governmental and non-profit organizations. It has been a collaborative effort receiving input and direction from New Jersey's three MPOs: North Jersey Transportation Planning Authority (NJTPA); Delaware Valley Regional Planning Commission (DVRPC) and the South Jersey Transportation Planning Organization (SJTPO). Together they formed a Project Management Team that guided and reviewed all Plan elements.

A Technical Advisory Committee met at critical intervals to provide technical assistance to the consultant team and to serve as liaison to their respective agencies. Many other organizations and individuals also contributed through the public participation elements of the planning process.

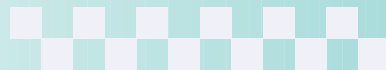
In addition, numerous individuals at NJDOT, although not on the Project Management Team, assisted with various elements of the Plan. They include the NJDOT Bureau of Systems Development and Analysis under Manager Robert Miller. In addition, NJDOT Local Aid District Managers Joseph Jagniatowski, Albert Maiocchi, Robert Werkmeister and Steven Moy and their staffs were most helpful in providing Local Aid project data for use in the Bicycle Facilities Inventory.



NJDOT Tour Guides for Cyclists



Rahway



Project Management Team (PMT)

Andrew Swords, NJDOT
 Robert Miller, NJDOT
 Sheree Davis, NJDOT
 Judi Parrish, NJDOT
 Elise Bremer-Nei, NJDOT
 Lois Goldman, NJTPA
 Ron Tindall, NJTPA
 John Madera, DVRPC
 Michael Reeves, SJTPO
 Tim Chelius, SJTPO

Technical Advisory Committee

PMT members and representatives from the following agencies:
 Bicycle Touring Club of North Jersey
 Central Jersey Bicycle Club
 South Jersey Wheelmen
 Trenton Cycling Revolution
 NJ Future
 NJ Conservation Foundation
 East Coast Greenway Alliance
 NJ State Assoc. of County Engineers
 NJ County Planners Assoc.
 Cross County Connection
 Alan M. Voorhees Transportation Center
 Monmouth County Planning Board
 Morris County DOT
 Hunterdon County Planning Board
 Cumberland County Dept. of Planning & Development
 NJ Office of Smart Growth
 NJ TRANSIT
 NJDEP

Consultant Team

The RBA Group
in association with
 Urbitran Associates
 Bikeways Engineering
 El Taller Colaborativo
 Steve Spindler Cartography

Other Contributors and Participants

New Jersey Pedestrian Task Force (PTF)
 New Jersey Bicycle Advisory Council (BAC)
 Robert Wood Johnson Foundation
 Association of New Jersey Environmental Commissions (ANJEC)
 New Jersey Chapter American Planning Association
 Keep Middlesex Moving (KMM)
 New Jersey Department of Health
 New Jersey Department of Law and Public Safety

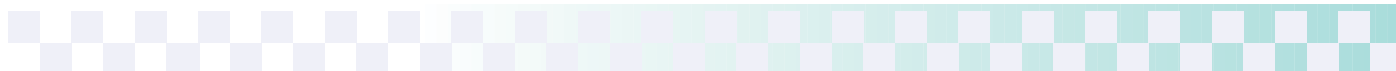
Funding Credits

This project was financed by the NJDOT, the NJTPA, the U.S. Department of Transportation, the Federal Transit Administration and the Federal Highway Administration. NJIT is the host agency for the NJTPA.

The State of New Jersey and the U.S. government assume no liability for the contents of this plan or its use thereof.



Morristown



Introduction

The original Statewide Bicycle and Pedestrian Master Plan prepared by The New Jersey Department of Transportation and published in 1995 is a comprehensive policy plan that addresses a wide variety of bicycle and pedestrian issues. The Plan presents a vision of New Jersey as a place where people can choose to safely and conveniently bicycle and walk as alternatives to automotive use. However, problematic conditions and unaddressed needs effectively prevent a bicycle and pedestrian friendly environment; the Plan lays out the issues and recommends a wide range of actions that can be taken to move closer to the ideal expressed in the vision, with significant increases in bicycle and pedestrian modes for transportation and recreation. These recommendations, along with the roles and responsibilities of government, nonprofit organizations and citizens, encompass the 4 “Es”: Engineering, Education, Enforcement and Encouragement. The Plan also suggests the wide range of benefits that would accrue if the vision were achieved, from society-wide benefits such as the reduction of traffic congestion, to personal benefits from increased choices of transportation modes.

The Plan was intended to serve - and has served - as a framework for action for achieving the vision. In the eight years since the publication, the Plan has been used by the Department of Transportation (NJDOT), along with other organizations responsible for the transportation infrastructure, as the blueprint for developing and implementing measures that improve conditions for bicycling and walking, and for supporting and encouraging the efforts of others to do likewise. Since the publication of the Master Plan, the Department has updated its policies to strongly state that bicycling and walking are “important and necessary elements of comprehensive solutions to transportation problems and needs.” NJDOT continues as a leader in planning and implementing bicycle and pedestrian improvements.

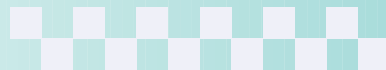
Newark



Newark



Interest in addressing bicycle and pedestrian needs has continued unabated. In fact, it has increased dramatically. The many accomplishments and initiatives that have been implemented since the publication of the original Plan have resulted in an encouraging climate for future bicycle and pedestrian investment in New Jersey. Available funding programs are consistently and significantly oversubscribed. Many counties and municipalities have developed bicycle and pedestrian plans, are building new facilities and are making improvements to the transportation infrastructure. Over the past few years it became evident that, as a result of increased interest in developing bicycle and pedestrian accommodations,



new implementation strategies are needed. These strategies should prioritize and target resources for appropriate bicycle and pedestrian improvements to achieve the greatest results and benefits. The New Jersey Statewide Bicycle/Pedestrian Master Plan Phase 2 addresses that need.

The primary goal of the New Jersey Statewide Bicycle and Pedestrian Master Plan Phase 2 is to provide clear guidance on the most efficient and effective use of federal, state and local resources to implement bicycle and pedestrian initiatives. To achieve this, preparation of the Phase 2 Plan included the development of analytical tools that can be used by Department of Transportation, Metropolitan Planning Organizations (MPOs), and county and municipal government to guide improvements for bicycles and pedestrians. These tools are described in the companion Technical Memoranda that were developed as part of the Phase 2 Plan.

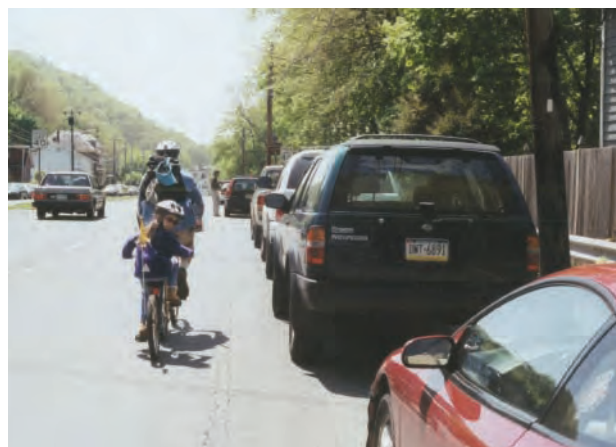
In addition, Phase 2 of the Master Plan included the development of this update to the 1995 Plan, revisiting the vision, goals and objectives and recasting the Plan to reflect past accomplishments and new directions in bicycle and pedestrian accommodation. This updated Plan also references the new analytical tools for resource allocation.



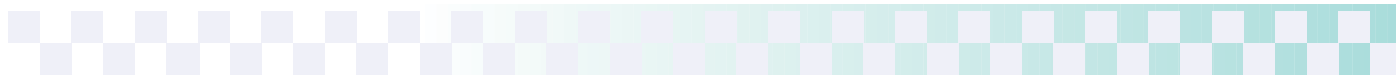
The Phase 2 Master Plan builds on the original by taking into account:

- The activities and successes that have occurred since the publication of the 1995 Plan,
- The changing context for bicycle and pedestrian planning that has evolved since the publication of the 1995 Plan,
- The vastly increased significance of pedestrian concerns that has occurred since the publication of the 1995 Plan, and
- The work done in connection with the Statewide Bicycle and Pedestrian Master Plan Phase 2.

Overall, the vision, goals, objectives, and recommendations of the original Plan remain as valid today as in 1995. The updated Plan incorporates many of the issues, ideas and recommendations of the original, as well as adding new elements and recommendations pertinent to New Jersey today. The Phase 2 Master Plan will continue to guide the decisions of the organizations responsible for our transportation infrastructure, and to support New Jersey's momentum towards a bicycle and pedestrian friendly environment.



Lambertville



Milestones and Successes

As the timeline below illustrates, the level of interest and activity in bicycle and pedestrian issues has grown significantly since the publication of the original Master Plan in 1995. These accomplishments and initiatives have resulted in an encouraging climate for future bicycle and pedestrian investment in New Jersey.

NJDOT and the MPOs are proactively funding and supporting bicycle and pedestrian plans and building facilities into the transportation infrastructure. The result is that bicycling and walking are elevated in importance as part of the solution for transportation, health and quality of life issues.



Envisioning New Jersey



The vision statement paints a portrait of New Jersey in the ideal future. It describes the desired outcome from implementing the full range of bicycle and pedestrian recommendations and improvements in each and every community.

This vision of New Jersey reflects recent trends in programs designed to improve our quality of life, elevating the importance of bicycle and pedestrian modes. Planning initiatives such as Livable Communities, Sustainable Transportation and Safe Routes to School, and the focus on bicycling and walking as elements of active living and healthy life styles, generate wider support for implementing bicycle and pedestrian improvements. These trends also indicate a growing awareness of the unintended consequences of a transportation infrastructure that emphasizes the use of motor vehicles at the expense of other modes, diminishing the quality of life in our communities. This vision for New Jersey expresses both the conditions and the benefits of greater choice in transportation modes.

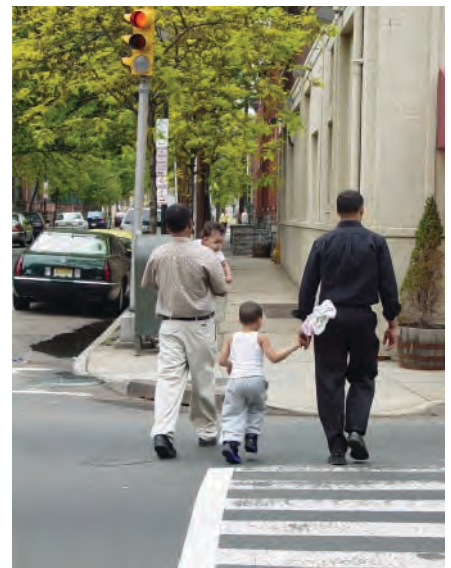


New Jersey is a state where people choose to walk and bicycle.



Blairstown

Residents and visitors are able to conveniently walk and bicycle with confidence and a sense of security in every community.

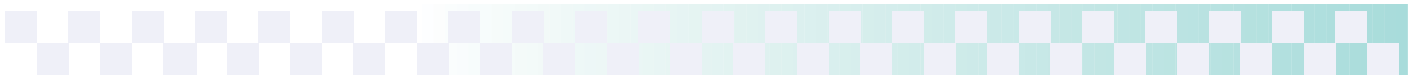


Newark

Both activities are a routine part of the transportation and recreation systems and support active, healthy life styles.



Glen Rock



Key Action Plan Recommendations

The following are key recommendations for actions to achieve the Plan's vision and goals. They include many recommendations from the original 1995 Plan and new recommendations that emerged as part of the public participation and interagency collaboration process for the Master Plan Update. Agencies with lead responsibility are noted in parentheses.

Planning & Facility Implementation

Taking the following actions will result in coordinated planning and a transportation infrastructure that supports bicycling and walking:

- Regularly update statewide and regional bicycle and pedestrian plans (NJDOT, MPOs).
- Develop local bicycle and pedestrian plans (counties, municipalities).
- Develop bicycle and pedestrian improvements as independent projects and as integral features of other transportation projects (NJDOT, NJ TRANSIT, counties, municipalities).
- Continue and expand funding and technical assistance for bike/ped planning and implementation (NJDOT).
- Expand programs that support or embody bike/ped modes and quality of life concerns – Safe Routes to School, Context Sensitive Design, Transit Villages, Smart Growth, New Jersey Main Streets, Greenways and Trails (NJDOT, NJ TRANSIT, Departments of Community Affairs, Environmental Protection, Health & Senior Services, Education, Law & Public Safety and others).
- Establish strategies for using utility, transit and other linear corridors for bicycle and pedestrian facilities (NJDOT).
- Adopt state-of-the-practice design standards for bike/ped and traffic calming facilities (NJDOT).
- Revise the Municipal Land Use Law to require circulation elements with bike/ped sections (NJ Legislature).
- Reassess and revise municipal site plan standards to address bike/ped needs (DCA, municipalities).
- Include bicycle and pedestrian considerations in development codes, including parking requirements for bicycles (municipalities).
- Establish policies, procedures and incentives to incorporate bike/ped improvements into state, county and local maintenance and resurfacing programs (NJDOT, counties, municipalities).
- Review and update NJDOT's Procedures Manual for consistency with bike/ped policy (NJDOT).
- Implement internal project review processes to ensure that bike/ped needs are addressed in all projects (NJDOT, MPOs, counties, municipalities).
- Establish policies to include walkways and bikeways in bridge construction and rehabilitation projects (NJDOT, MPOs, Authorities and Commissions).

The Key Action Plan Recommendations are presented in three general categories, which are in the order of priority assigned by the public who participated in an informal voting exercise at three public meetings. The recommendations within each category, however, are not presented in priority order as they cover a broad range of activities that are to be conducted by many different organizations.

Education & Encouragement

Taking the following actions will help to educate the public, to encourage more consistent enforcement of regulations that contribute to a safe bicycling and walking environment and to create a pro-bicycling and walking ethic:

- Initiate a media campaign emphasizing bike/ped benefits as central to quality of life concerns (NJDOT, DCA, Departments of Education and Health).
- Regularly conduct media campaigns to educate the public about bicycle, pedestrian and motorist rights and mutual responsibilities within public rights of way (NJDOT, NJDL&PS).
- Maintain a comprehensive web resource for bike/ped planning and implementation in New Jersey (NJDOT).

Data Collection, Tracking & Analysis

Acting on the following recommendations will improve the collection of data that supports and guides decisions to improve bicycle and walking facilities, as well as providing a means of measuring progress:

- Set and track bicycling and walking usage goals in the State; assign tracking responsibility (NJDOT).
- Choose and track performance measures for achievement of goals and objectives of the Master Plan Update. (NJDOT).
- Routinely track bike/ped injuries and fatalities as a guide for implementing improvements (NJDOT with other agencies)
- Commit to addressing the priority locations identified through the Master Plan Update, adjusting focus as needed (NJDOT, MPOs, counties, municipalities).
- Refine new analysis techniques developed for the Master Plan Update and routinely reassess priorities (NJDOT, MPOs).
- Expand the bicycle compatibility analysis to include all collector and arterial roads in New Jersey (NJDOT, MPOs, counties, municipalities).
- Routinely update the bicycle facility inventory (NJDOT with counties, municipalities).
- Inventory pedestrian facilities and sidewalks; add data to maps routinely used by NJDOT and others planning improvements in the state. (NJDOT, counties, municipalities).

Current Conditions and Needs

Existing conditions and needs continue to form the basis for the Master Plan's vision statement, goals and recommendations. They reflect the concerns of citizens from the public and private sectors who represent both users and providers of New Jersey's transportation system.

The outreach effort and discussions with the Technical Advisory Committee carried out as part of the Statewide Bicycle and Pedestrian Master Plan Phase 2 confirm that the many of needs and conditions identified in the 1995 Plan continue to exist. They are the needs for:

- Leadership from the state,
- Coordinated planning efforts at the state level,
- Better integration of bicycle/pedestrian concerns in the transportation planning and design process,
- Adequate funding, and
- Public education on bicycle and pedestrian rights and responsibilities for everyone (drivers, bicyclists, pedestrians, transportation professionals).

The following four areas of concern continue to represent the most critical bicycle and pedestrian issues for New Jersey, based on the input from planning participants and the public.

Facilities

Facilities issues reflect concerns that are related to mobility and access. Pedestrians and cyclists need safe, convenient, efficient, compact, accessible and inviting facilities and environments for walking and bicycling. Pedestrian and bicycle trips for transportation purposes require support facilities and amenities, as well as well-planned routes and linkages between origins and destinations. Increasing numbers of people are also walking and bicycling for recreational and fitness purposes. Facilities that support these purposes, such as trails, greenways, open space and off-route amenities, are also needed.

Specific facility-related needs identified by outreach participants include:

- Better accommodations for non-motorized users on existing and planned roadways: wider lanes, paved shoulders, safe storm grates, bike lanes, bridge access, bicycle sensitive loop detectors.
- Sidewalks without gaps and adequately wide pedestrian-activated traffic signals, adequate timing for slower pedestrians and marked crosswalks.
- Separate facilities and rights-of-way for bicyclists and pedestrians such as rail-trails or connector paths.



Burlington County

- Facilities to separate pedestrians from motor vehicle traffic that assure parity between users and separation of incompatible uses.
- Generally applicable design standards for bicycle and pedestrian facilities and accommodations.
- Facilities at destinations including employment centers and public buildings: bicycle racks and lockers, showers, restrooms, benches and shelters.
- Reduction of automobile impacts through traffic calming and other speed reduction techniques and parking restrictions.
- Encouragement of social interaction through pedestrian friendly design and interesting streetscapes.
- Independent mobility for children.



Blairstown



Newark

Community Design

Community Design issues reflect concerns that are primarily related to land use and linkages. Bicycle and pedestrian trips for transportation purposes are characterized by shorter trip distances and direct routes or linkages between origins and destinations.

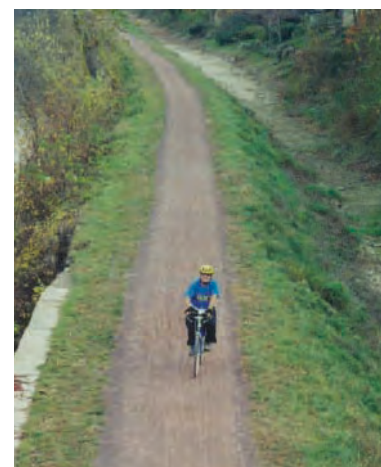
Land use patterns have a critical impact on bicycle and pedestrian circulation. Current development trends in New Jersey, such as suburban sprawl and decentralization, result in inconvenient linkages between residential areas and shopping and employment centers and create disincentives for bicycling and walking.

Opportunities to provide accessible, safe, convenient and inviting environments for walking and bicycling should include adoption of effective land use planning and design standards.

The New Jersey State Development and Redevelopment Plan (SDRP), Smart Growth, and Transit Village initiatives promote such practices.

Specific community-related needs identified by outreach participants include:

- Land use design standards that facilitate bicycling and walking.
- Linkages (delineated by appropriate rights-of-way and infrastructure) connecting origins and destinations - transit, commercial, schools and work places - and providing “short-cuts” for non-motorized mobility.
- Better access and the integration of bicyclists, pedestrians and mobility-disadvantaged with transit.
- Continuous and accessible trail systems, grade-separated where needed; preservation and utilization of railroad corridors where available.



D & R Canal Tow Path

Current Conditions and Needs



Newark

Acceptance/Legitimacy

Acceptance/Legitimacy issues relate specifically to the public's perception and/or image of bicycling and walking. Typically, bicycle and pedestrian modes have not been viewed as legitimate means of transportation and have not been adequately recognized by either the public, including drivers of motor vehicles, or local, state and regional officials. Bicyclists and pedestrians need supportive government and policies that provide for routine inclusion of bicycling and walking in planning, design, budgeting and funding efforts for state and local projects and programs. Both recreational and transportation needs should be recognized and integrated into existing systems.



Hoboken (source: NJTPA)



Specific needs identified by outreach participants include the following:

- Pro-active roles for state and local government and the development of community consensus to create more favorable conditions for bicyclists and pedestrians.
- Resolution of perceived liability issues, arising from attempts to accommodate bicyclists and pedestrians, including possible legislative measures.
- State and regional initiatives, including a statewide plan and policies that mandate accommodation of bicyclists and pedestrians in transportation planning; bicycle/ pedestrian program staffing at all levels of government; and recognition of local efforts.
- Intergovernmental cooperation and planning to assure contiguous and continuous bicycle routes and connected sidewalks.
- Zoning that encourages appropriate density of development and mixed use, in combination with the preservation of open space.
- Model ordinances that encourage bicycling and walking by providing adequate facilities and that require access to adjacent development.
- Incorporation of bicycle and pedestrian accommodations into a circulation element as part of community master-planning efforts.
- Adequate funding and standards for maintenance of bicycle and pedestrian facilities.
- Roadway maintenance, especially of edges, shoulders, bike lane and sidewalks.
- Greater awareness of the legitimacy and importance of pedestrians and bicyclists by transportation agencies and the public.

Confidence/Security

Confidence/Security issues relate to training and education of bicyclists, pedestrians and motorists, and to the enforcement of existing laws and regulations. Different types of uses need different kinds of facilities, training and programs to bicycle and walk safely, efficiently and with confidence. Needs vary for each user type. For example, children, older adults, recreational bicyclists and walkers, commuters, etc., each have different skill levels, experience, and perceptions of risks. An understanding of these varying types of users and their needs is necessary to provide resources, programs, and facilities to accommodate everyone.

Bicycle and pedestrian accidents and injuries, hazardous traffic conditions, lack of enforcement of traffic laws, poor maintenance of walkways and bicycle routes, insufficient lighting and security along facilities and lack of bicycle/pedestrian training programs have been cited as problems that contribute to confidence- and security-related needs.

Needs relating to confidence and security include the following:

- Educational programs for motorists, bicyclists and pedestrians, targeted to both adults and to children.
- Education of government officials, planning and engineering professionals, planning boards, school boards, educators and police.
- Inclusion of more information and questions about bicyclists and pedestrians in driver's education and testing.
- Increased enforcement of traffic laws to regulate bicyclists, pedestrians and motorists, and to increase the legitimacy of non-motorized traffic.
- Information: useful, visible signage; safety brochures; media campaigns; public education; maps; rules of the road.
- Safety from crime and traffic conflicts.
- Lighting of facilities for safety.



Goals, Objectives & Performance Measures



Goal statements define what needs to be achieved in order to reach the Vision. Objectives specify accomplishments needed to achieve each goal. The accomplishments that have been achieved since the publication of the 1995 Plan show progress towards the goals; however, the Goals of the 1995 Plan have yet to be fully realized. In large measure, and with a few relatively minor modifications, the Goals and Objectives remain valid today.

Measuring success toward the achievement of a goal is necessary to establish program priorities and allocate resources. Performance can be measured in terms of quantity, quality, timeliness and cost. Critical success factors are necessary or desirable conditions for achieving the performance measures.

The following five Goals are presented with related Objectives, Performance Measures and Critical Success Factors:



Princeton



Convent Station



Hoboken (source: NJDOT)



Newark

Goal 1 – Build the Infrastructure

Create a bicycle and pedestrian infrastructure by planning, designing, constructing and managing transportation and recreation facilities that will accommodate and encourage use by bicyclists and pedestrians and be responsive to their needs.

Objectives:

- Design all roadway improvements under the assumption that they will be used by bicyclists and pedestrians.
- Develop or revise policy statements to recognize the importance of bicycling and walking and the need to integrate these modes into the transportation and recreation systems.
- Establish capital program funding for improvements to existing facilities and to implement new facilities.
- Support and sustain the existing planning and scoping procedure that ensures full consideration of bicycling and walking modes for all projects in the planning and project development process.
- Develop bicycle and pedestrian plans to ensure integrated and continuous networks of accessible facilities and to maximize bicycle and pedestrian mobility within the transportation system.
- Involve the bicycling and walking community at the earliest stages of planning and implementation of improvements to transportation and recreation facilities to ensure full consideration of the needs of bicyclists and pedestrians.
- Adopt standard guidelines developed by NJDOT to ensure consistent application of design throughout the state.
- Design and manage bicycle and pedestrian facilities to maximize personal security of the users.
- Adopt maintenance and management procedures to ensure continuous and efficient use by bicyclists and pedestrians.
- Train key design and transportation professionals in the proper application of planning and design guidelines and standards.
- Develop bicycle and pedestrian plans at the county and municipal level.

Proposed Performance Measures:

- *Percent of transportation improvement projects that have been reviewed for consideration of bicycle and pedestrian facilities.*
- *Percent of highways that are bicycle and pedestrian compatible as defined in NJDOT Roadway Design Manual (pending adoption).*
- *Percent of or total amounts of capital and/or resources devoted to managing the accommodations of bicycling and walking.*
- *Percent of built projects that have incorporated appropriate pedestrian and bicycle accommodations.*

Critical Success Factors:

- *Presence of a supportive policy and a procedure for the consideration of bicycling and walking in all transportation improvement projects.*
- *Presence of staff or assignment of accountability to manage review procedure.*
- *Presence of standard guidelines for bicycle and pedestrian facilities.*
- *Presence of a plan to encourage bicycling and walking.*

Goals, Objectives & Performance Measures

2 Goal 2 – Improve Access

Make community destinations, transit facilities and recreation facilities accessible and convenient for use by all types and skill levels of bicyclists and pedestrians.

Objectives:

- Provide a support system of ancillary facilities and information such as bicycle parking, changing rooms and showers, maps, etc., that will serve the needs of bicyclists and pedestrians at destinations.
- Integrate bicycle and pedestrian facility planning, design and maintenance skills into the training and education of all practicing transportation and design professionals.
- Promote “traffic calming” on appropriate roads to reduce traffic speeds and increase the use of streets by bicyclists and pedestrians.
- Enhance opportunities for land use linkages that increase the efficiency of the transportation system.
- Develop a planning process and implement a program of identifying and designating facilities to encourage use by bicyclists and pedestrians.

Proposed Performance Measures:

- *Percent of transit and recreation facilities that have bicycle parking and/or are bicycle and pedestrian accessible.*
- *Percent of government buildings that have secure bicycle parking available.*
- *Total number or linear miles of designated bicycle/pedestrian facilities.*

Critical Success Factors:

- *Presence of local plans that include development of bicycle and pedestrian facilities that link trip attractors and walking.*
- *Presence of guidelines for planning and designing bicycle and pedestrian accessible facilities.*
- *Presence of review procedures for considering bicycling and walking in site plans and land use planning.*



New Brunswick



Monmouth University

3 – Update Policies, Ordinances and Procedures

Reform land use planning policies, ordinances and procedures to maximize opportunities for walking and bicycling.

Note: Although fulfillment of this Goal requires major action by parties outside the transportation agencies, it remains an essential requirement for the achievement of the Vision.

Objectives:

- Adopt policies and ordinances that promote mixed-use development at densities that allow and encourage bicycling and walking as the preferred choice of transportation mode to destinations or to transit facilities.
- Adopt and/or amend site review procedures and design guidelines to assure convenient pedestrian and bicyclist access to public and private buildings.
- Promote the adoption of programs, including parking strategies, that encourage and support bicycling and walking as commute options.
- Develop policies for use of state-owned abandoned rail corridors as trails or interim trails.



New Brunswick



Hudson Bergen Light Rail (source: NJTPA)



Proposed Performance Measures:

- *Percent of site plans that are reviewed for bicycle and pedestrian accessibility.*
- *Percent of major destinations that are bicycle and pedestrian accessible.*

Critical Success Factors:

- *Presence of a supportive policy for bicycling and walking in the community.*
- *Presence of ordinances that promote mixed-use development at densities that will result in shorter trips and encourage bicycling and walking.*



D & R Canal Tow Path

Goals, Objectives & Performance Measures

Goal 4 – Educate and Enforce

Develop and implement education and enforcement programs that will result in reduction of crashes and a greater sense of security and confidence for bicyclists and pedestrians.

Proposed Performance Measures:

- *Percent of students receiving bicycle and/or pedestrian skill training or education.*
- *Safety program expenditures devoted to bicycle and pedestrian safety education and awareness.*
- *Percent of law enforcement officials that have received bicycle and pedestrian safety education and enforcement training.*
- *Number of jurisdictions with police on bikes programs.*

Critical Success Factors:

- *Access to bicycle and pedestrian education programs.*
- *Presence of training programs for law enforcement officials and safety program managers.*
- *Staff assigned for implementing safety education and training activities.*

Objectives:

- Conduct walking and bicycling skill training for children as part of the school curriculum.
- Develop and conduct continuing public information and awareness campaigns targeted towards all roadway users, with the intent of modifying behavior and attitudes to create acceptance and tolerance of shared use of public rights of way by all modes.
- Provide training for law enforcement officials in the conduct of safety education and enforcement programs for bicyclists and pedestrians.
- Provide education programs to companies promoting walking and bicycling to work.
- Promote and provide support for “Police on Bikes” programs.
- Educate planning and enforcement officials in the importance of traffic calming as a safety countermeasure.
- Educate planning and enforcement officials about bicycling and walking issues and concerns.

Seaside Heights



Leonia



Maplewood

5 Goal 5 – Foster a Pro-Bicycling and Walking Ethic

Increase bicycling and walking by fostering a pro-bicycling and pro-walking ethic in individuals, private sector organizations and all levels of government.

Objectives:

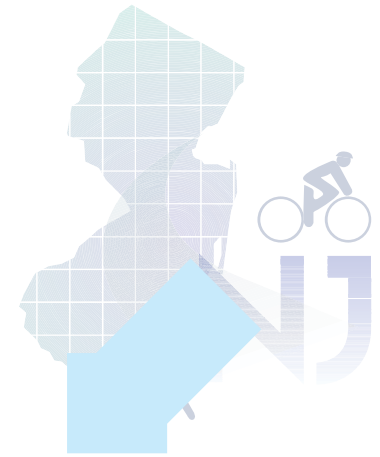
- Establish local citizens' advisory groups to advocate policies, programs and facility improvements that will enhance and promote bicycle and walking.
- Develop and implement voluntary Employee Commute Options programs that encourage and support bicycling and walking.
- Develop a means of ensuring public participation in the development and implementation of plans and policies that impact pedestrians and bicyclists.
- Depict bicycling and walking as everyday activities in all state publications, public activities and media campaigns related to transportation and recreation issues.
- Develop and conduct public awareness campaigns promoting bicycling and walking and emphasizing the virtues of bicycling and walking as a means of solving community problems, improving personal health and wellness and enhancing the quality of life.



Bull's Island State Park



Dover



Proposed Performance Measures:

- *Number of bicycle and pedestrian groups or citizen advisory bodies that advocate bicycling and walking.*
- *Level of funding spent on media or advertising that promotes bicycling and walking.*

Critical Success Factors:

- *Presence of a supportive policy for bicycling and walking in the community.*
- *Presence of an active advocacy organization.*
- *Available funding to be spent on media or advertising which promotes bicycling and walking.*

Implementing the Plan

Implementing the Plan involves the identification of strategies and the assignment of responsibilities for implementing them. Implementation strategies are programs and actions that are necessary to generate change to accomplish objectives, achieve goals and fulfill the vision. They relate to programmatic, funding, staffing, policy, legislative and procedural issues that will effect change. A wide variety of participants (state agencies, counties, municipalities, developers, individuals, etc.) need to be involved in implementing these strategies.

Roles and Responsibilities

Creating a supportive environment for bicycling and walking in New Jersey cannot be accomplished by NJDOT alone. A comprehensive effort on the part of all levels of government, private sector organizations and individuals continues to be necessary to create conditions that fully support walking and bicycling. The level of participation and/or level of effort required for each agency vary. Some are principal or primary participants who provide facilities and resources directly. Others have supporting roles and are involved and cooperate through more indirect participation. Effective implementation of the Master Plan requires participation by both principal and supporting entities.

The following matrix lists agencies and organizations that are recommended as principal and supporting participants for implementation of the plan and suggests roles and responsibilities for each. Roles and responsibilities generally relate to the management and provision of facilities, funding, implementation of programs/policy and technical planning, design and engineering expertise. Specific implementation strategies and recommended actions are also presented in sections that follow. As shown in the matrix, principal participants include the New Jersey Department of Transportation, New Jersey Transit, regional and local government agencies and the authorities and commissions responsible for transportation facilities throughout the state. Generally, these entities provide and manage transportation facilities or play significant roles in determining how resources are allocated.

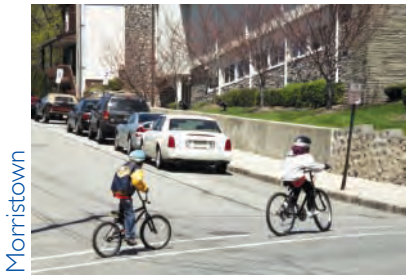
The type of involvement and participation of these organizations is determined by jurisdictional and location-related factors. For example, it is within the jurisdiction of NJDOT to construct, manage, maintain and operate bicycle and pedestrian facilities on state highways, either as independent projects or as incidental features of roadway and bridge improvement projects.

Since the majority of roadways (and many recreational trails) in New Jersey are under local or county jurisdictions, NJDOT is limited in its authority to implement bicycle and pedestrian improvements. However, NJDOT's state-wide perspective, technical resources, funding authority and programs provide the Department with the ability to provide leadership and assistance to others. County and local road departments, parking authorities, parks and recreation commissions, maintenance departments, planners, engineers, enforcement officers and others are guided by the policies, programs and procedures of NJDOT.

New Jersey Statewide Bicycle and Pedestrian Plan

Recommended Roles and Responsibilities for Implementation of Bicycle/Pedestrian Programs and Facilities

	Operations and Maintenance	Construction	Planning	Funding	Regulatory/Legislative	Land Use/ Policy	Design/ Engineering	Leadership	Advisory	Enforcement/Safety	Education/Training	Promotion/Advocacy
PRINCIPAL PARTICIPANTS												
NJ Dept. of Transportation	●	●	●	●	●	●	●	●	●	●	●	●
NJ TRANSIT	●	●	●	●	●	●	●	●	●	●	●	●
MPOs			●	●	●	●	●	●	●	●	●	●
Counties	●	●	●	●	●	●	●	●	●	●	●	●
Authorities & Commissions	●	●	●	●	●	●	●	●	●	●	●	●
Municipalities	●	●	●	●	●	●	●	●	●	●	●	●
SUPPORTING ENTITIES												
Governor & Legislature				●	●	●		●	●			
NJ Dept. Law & Public Safety				●	●	●		●	●	●	●	●
NJ Dept. Community Affairs		●	●	●	●	●	●	●	●		●	●
NJ Commerce & Economic Growth Commission			●	●	●	●		●	●			
NJ Dept. Environ. Protection	●	●	●	●	●	●	●	●	●	●		●
NJ Dept. of Health			●	●	●	●	●	●	●		●	●
NJ Dept. Education			●	●	●	●	●	●	●	●	●	●
Transportation Mgmt. Associations	●	●	●	●				●	●		●	●
Professional Organizations			●	●			●	●	●		●	
Special Interest Groups									●			●
Employers	●	●	●	●					●		●	●
Builders/Developers	●	●	●	●			●		●			●
Private Business	●	●	●	●					●			●
Individuals			●	●				●	●			●



Morristown



Bedminster

Implementing the Plan

Similarly, for program-related issues, NJDOT is limited in its authority to administer safety, educational, enforcement, recreational and promotional bicycle and pedestrian projects. NJDOT provides guidance to the appropriate agencies responsible for such activities. Other state agencies such as the New Jersey Department of Law and Public Safety, New Jersey Department of Community Affairs, New Jersey Department of Environmental Protection and others listed in the matrix would, in turn, advise others at county and local levels and serve in supporting roles.

The major roles and responsibilities are as follows:

Primary Participants and Providers of Facilities

New Jersey Department of Transportation

Provide leadership for all levels of government in bicycle and pedestrian planning, design, technical assistance and funding.

Coordinate efforts of other state agencies.

Manage bicycle and pedestrian facility programs for state highways.

Administer state and federal funding for bicycle and pedestrian projects, on all roadways regardless of jurisdiction.

Provide technical expertise and training to regional, county and local governments.

Coordinate the involvement of the bicycle and pedestrian community representatives in the fulfillment of the Goals and Objectives of this plan.

NJ TRANSIT

Develop plans for transit station areas that emphasize and support bicycling and walking.

Administer programs for bicycle carriage programs on trains and buses.

Provide secure bicycle parking facilities at station areas.

Encourage municipalities and developers to construct pedestrian and bicycle linkages to transit facilities.

Promote walking and bicycling as access modes to transit.



Metropolitan Planning Organizations

North Jersey Transportation Planning Authority (NJTPA),
Delaware Valley Regional Planning Commission (DVRPC),
South Jersey Transportation Planning Organization (SJTPO).

Develop regional long-range bicycle and pedestrian plans and incorporate bicycling and walking considerations into regional long-range transportation plans.

Provide supportive task- and technical-studies funding to sub-regions for bicycle and pedestrian plans and studies.

Incorporate bicycling and walking projects in Transportation Improvement Programs (TIP).

Encourage counties to develop bicycle/pedestrian plans.

Develop TIP project selection criteria that include bicycle and pedestrian projects.

Provide local scoping/local-lead funding for bicycle and pedestrian projects.

Counties

Adopt/amend comprehensive plans that address walking and bicycling issues.

Prepare bicycle/pedestrian plans and suitability maps.

Accommodate bicyclists and pedestrians in all county roadway projects, and initiate independent bicycle and pedestrian projects.

Authorities and Commissions

NJ Turnpike Authority,
NJ Highway Authority,
NJ Expressway Authority,
Port Authorities,
Bridge Commissions,
Palisades Interstate Park Commission,
Hackensack Meadowlands Development Commission,
Pinelands Commission and others.

Accommodate bicyclists and pedestrians on major bridge facilities.

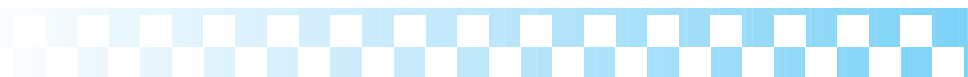
Adopt/amend plans and programs to facilitate walking and bicycling.

Support/develop projects that facilitate bicycle and pedestrian access across major toll roads and rivers.

Municipalities

Develop local programs to address walking and bicycling.

Initiate independent bicycle projects.





Implementing the Plan

Municipalities (cont.)

Adopt bicycle and pedestrian friendly land use regulations, including bicycle parking requirements.

Prepare and implement bicycle and pedestrian circulation elements.

Adopt/amend comprehensive plans to address walking and bicycling issues.

Incorporate bicycle and pedestrian considerations in all public, school, recreation and transportation facilities.

Support/implement walk and bike to school programs.

Support local enforcement to improve safety for bicyclists and pedestrians.

Implement “police on bikes” program.

Other Responsible Supporting Entities

The Governor’s Office and Legislature of the State of New Jersey

Provide leadership, vision and policy for implementation of the bicycle and pedestrian plan.

New Jersey Department of Law and Public Safety

Promote and undertake bicycle and pedestrian safety and enforcement programs.

Administer Federal highway safety funds.

New Jersey Department of Community Affairs Office of Smart Growth

Incorporate bicycle and pedestrian guidelines in model site plan and subdivision regulations.

Promote bicycle and pedestrian-friendly land use and development patterns.

Promote walkable and bikeable communities as part of downtown revitalization through the “Main Street New Jersey” program.





New Jersey Commerce and Economic Growth Commission

Office of Travel and Tourism

Promote bicycling and walking events and activities.

New Jersey Department of Environmental Protection

Promote state trails program and use of abandoned rail corridors.

Develop bicycle and pedestrian access plans to state parks and forests.

New Jersey Department of Health

Participate in “Safe Routes to School” programs.

Provide information on the benefits of active and healthy lifestyles, and promote non-motorized modes of transportation as important elements of an active life.

New Jersey Department of Education

Incorporate walking and bicycling issues in school curriculum.

Promote/support “Safe Routes to School” programs.

Include bicycle and pedestrian issues in school facility planning and regulations.

Transportation Management Associations

TMA's

Include work program elements that facilitate bicycling and walking.

Professional Organizations

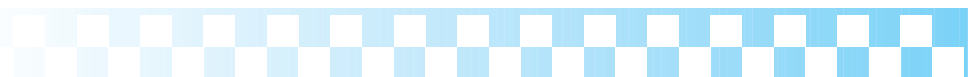
ASCE, ITE, APA, ASLA, AIA, and others.

Foster education and professional development in the field of bicycle and pedestrian facility planning and design.

Special Interest Groups

Advocate walking and bicycling for transportation and recreation.

Advocate projects and programs to improve bicycle and pedestrian access and safety.



Implementing the Plan

Employers

Sponsor bicycling and walking programs and events.

Advocate health and fitness benefits of walking and bicycling for employees.

Provide bicycle parking facilities for employees.

Include bicycling and walking in employee commute options plans.

Provide bicycle and pedestrian linkages to surrounding neighborhoods.

Builders and Developers

Participate in implementation of local and regional bicycle and pedestrian plans.

Provide bicycle and pedestrian linkages to surrounding neighborhoods.

Provide bicycle parking and other ancillary facilities for bicyclists and pedestrians.

Private Business

Retail and Service Industry

Provide bicycle and pedestrian linkages to surrounding neighborhoods.

Provide bicycle parking and other ancillary facilities for bicyclists and pedestrians.

Individuals

Make walking and bicycling a routine part of life.

Implementation Strategies

Legislative Strategies

Leadership for the implementation of this Plan should be provided by the highest levels of government.

NJ State Legislature:

Adopt a resolution in support of the vision, and encourage all state agencies and other entities to participate, to promulgate policy, etc.

Amend the Municipal Land Use Law to support bicycling and walking by requiring master plans to include a circulation element with specific reference to bicycle and pedestrian modes, and by requiring that site plans for new developments incorporate adequate bicycle and pedestrian facilities.

Review and revise Title 39 (NJ Motor Vehicles Statutes) to clarify operating requirements for bicyclists, pedestrians and motorists.
Pass legislation with requirements for implementing bicycle and pedestrian projects and provide adequate resources for bicycle and pedestrian projects.

Counties and Municipalities:

Adopt ordinances or resolutions that support bicycling and walking (zoning and land use, design standards, parking, maintenance).

Policy Strategies

Policies and procedures should be established which will result in changes that are necessary to achieve goals.

New Jersey Department of Transportation:

Adopt Roadway Design Manual sections on pedestrian, bicycle, and traffic calming facilities.

Revise, update and assess progress in implementing this Plan on a regular schedule to coincide with the updating of the Department's Long Range Transportation Plan.

Continue to convene advisory groups consisting of citizen and agency representatives to provide guidance and input on matters related to the implementation of this Plan.



Implementing the Plan

New Jersey Department of Transportation: (cont.)

Adopt policies that allow for acquisition, development and operation of abandoned rail corridors for interim and permanent trail use. Develop procedures for considering trail and abandoned railroad crossings in the high-way design process.

New Jersey Department of Community Affairs:

Promote bicycle and pedestrian-friendly land use and development patterns advanced in the State Development and Redevelopment Plan.

NJ TRANSIT:

Adopt policies that provide for bicycle and pedestrian-friendly transit service and facilities.

New Jersey Department of Environmental Protection:

Provide continued support for designation and development of multi-use trails and other recreational facilities for bicyclists and pedestrians; include policy recommendations in the State Comprehensive Outdoor Recreation Plan (SCORP) and The New Jersey Trails Plan.

Counties and Municipalities:

Adopt policies, procedures and guidelines requiring that roadway projects be designed to accommodate shared use and to ensure safety for pedestrians, bicyclists and motorists. NJDOT policies, procedures and guidelines can serve as a model.

Authorities and Commissions:

Adopt guidelines, procedures and policies requiring that roadway projects be designed to address the needs of and ensure safety for pedestrians and bicyclists.

Establish policies to include walkways and bikeways in all bridge construction or rehabilitation projects.

Municipalities:

Promote bicycling and walking policies in all elements of the municipal Master Plan (circulation, land use, recreation, etc.) and other municipal programs.

Include bicycle and pedestrian considerations in development codes, including bicycle parking requirements

Funding Strategies

Because the success of the implementation of the Master Plan relies heavily on efforts by regional and local governments, funding sources must be available.

New Jersey Department of Transportation:

Expand programs that provide funding for local independent bicycle and pedestrian facility projects. The program should provide incentives for local communities to enact proactive policies and procedures for the incorporation of bicycle and pedestrian accommodations in transportation-related projects. Funding should be available to support program activities, incidental and independent bicycle and pedestrian projects, and projects to eliminate hazards or barriers to bicyclists and pedestrians.

Within the constraints of Federal/State laws and regulations, make use of the entire range of available transportation funds for bicycle and pedestrian projects and programs.

New Jersey Department of Law and Public Safety:

Make use of NHTSA (Section 402) funds for bicycle and pedestrian program activities that deal with safety and enforcement.

New Jersey Department of Environmental Protection:

Pursue additional funding sources for trails to augment existing National Recreational Trails and Green Acres funding.

NJ Commerce and Economic Growth Commission

Office of Travel and Tourism

Provide grants in support of bicycle and walking tours and events.

Metropolitan Planning Organizations:

Revise TIP project selection criteria to promote bicycle and pedestrian projects.

Provide funding for project development (local scoping/local lead) and planning studies.

Ensure that an adequate percentage of transportation funding is used for bicycle and pedestrian transportation facilities.



Implementing the Plan

Counties: Routinely fund bicycle and pedestrian improvements and incorporate incidental bicycle and pedestrian improvements into roadway projects.

Municipalities: Dedicate funds for independent bicycle and pedestrian projects and establish funding sources for bicycle/pedestrian improvements related to roadway projects (land use/recreation fees, general funds, etc.).

Administrative Strategies

Organizations should institute staffing and procedural changes in order to assure a continuing process.

New Jersey Department of Transportation:

Expand staffing for bicycle and pedestrian program activities. The bicycle and pedestrian unit will promote bicycling and walking, arrange for implementation of the Bicycle and Pedestrian Master Plan Phase 2 and provide follow-up advocacy, both internal and external.

Continue to review transportation projects to ensure that bicycle and pedestrian needs are appropriately addressed; develop bicycle and pedestrian facility databases; review studies and proposals by other units and agencies to assure consideration of bicycle and pedestrian concerns; initiate independent projects; provide technical assistance to other units, agencies and entities (citizens, government, media, etc.) as the principal NJDOT contact for bicycling and walking and other activities associated with advancing the needs of bicyclists and pedestrians.

Undertake studies to determine the amount of travel by bicycling and walking for all trip purposes. This will enable the Department to refine target usage goals and track progress towards their achievement.

Revise/update procedures to ensure consideration of bicycling and walking in all projects.

New Jersey Department of Law and Public Safety:

Designate a representative to work full-time on the development of bicycling and walking safety, education, registration and enforcement programs.



New Jersey Department of Environmental Protection:

Develop streamlined procedures for stream encroachment and wetland permits for bicycle and pedestrian trails and facilities, including sidewalks and shoulders of existing roadways; revise rules to permit appropriately designed shared use paths to traverse wetland and wetland transition areas.

NJ TRANSIT:

Expand the Transit Village program and other programs that facilitate bicycle/pedestrian access to transit.

Metropolitan Planning Organizations:

Assign a staff person to coordinate all bicycle and pedestrian related issues.

Develop regional bicycle and pedestrian plans.

Counties:

Identify a bicycle and pedestrian representative who would coordinate and develop walking and bicycling programs and projects.

Initiate a procedure to review all highway maintenance, reconstruction and capacity enhancement projects to ensure bicycle and pedestrian compatible design, and to retrofit bike lanes and sidewalks as art of the project where feasible.

Local Municipalities:

Establish bicycle and pedestrian advisory groups, appoint bicycle and pedestrian coordinators and/or include bicycle and pedestrian representatives on local commissions and boards as part of requirement for state funding of projects.

Professional Development Strategies

Accommodating bicycling and walking in the transportation and recreation systems requires a new discipline of thought and the application of standards and guidelines.

New Jersey Department of Transportation:

Prepare an ongoing professional development series for the Department's professional staff and other transportation professionals, such as municipal planners, engineers, highway superintendents, park and recreation planners, and other state agency staff, that provides a thorough understanding of state-of-the-art bicycle and pedestrian transportation planning and design.





Implementing the Plan

Professional Organizations:

Encourage institutions offering degrees in engineering and transportation planning to address the needs and capabilities of bicyclists and pedestrians in instruction programs.

Provide continuing education programs to members in the area of bicycle and pedestrian planning and design.

New Jersey Department of Law and Public Safety:

Provide training and bicycle/ pedestrian oriented enforcement program information to municipal law enforcement personnel (Police on Bikes, etc.).

Counties:

Require county engineers, planners, enforcement officers, maintenance personnel, and other employees to complete training programs related to bicycling and walking.

Local Municipalities:

Encourage planning and zoning board members, police officers, administrators and other municipal decision-makers to attend seminars, etc., on bicycling and walking.

Communication Strategies

Acceptance of bicycling and walking as legitimate modes in the transportation and recreation systems requires knowledge and understanding on the part of all users. A comprehensive approach to achieving the vision will require extensive communication between the various agencies and levels of government and the users of the transportation and recreation systems.

New Jersey Department of Transportation:

Develop a communication network and communication plan for NJDOT personnel, transportation professionals, MPOs, counties and municipalities to increase their awareness of NJDOT bicycle and pedestrian policies, procedures and guidelines.

Develop bicycle and pedestrian educational and training materials and curricula in cooperation with NJLPS and the NJ Department of Education for all types of bicyclists and pedestrians and motorists.

Develop and implement media programs to improve bicycle and pedestrian safety and highlight the benefits of bicycling and walking.

Develop a statewide bicycle map and continue to update and distribute bicycle tour and information literature.

**NJ Commerce &
Economic Growth
Commission**

Office of Travel and Tourism

Prepare and distribute promotional and informational materials on bicycling events and activities.

**New Jersey Department
of Law and Public Safety:**

In publications and other media, encourage accurate descriptions and depictions of correct bicycle and walking behaviors.

Special Interest Groups:

Establish organizational networks for distribution of bicycle and pedestrian information.



Facility Priorities

Developing the Tools

All analysis and results were done in a Geographic Information Systems (GIS) environment, allowing valuable information to be displayed in lists or shown on maps.

What is Demand Forecasting?

In the context of bicycle and pedestrian planning, demand forecasting is a process by which we identify what areas or corridors are most likely to carry bicycle or pedestrian trips. This is done by evaluating census population and employment data to estimate the potential level of bicycle and pedestrian trip making that could occur in a given area.

What is Suitability Forecasting?

Suitability forecasting is a process by which we quantify how comfortable a bicyclist or pedestrian would be traveling along or across a given facility. The bicycle compatibility model assesses the comfort level of a bicyclist along each roadway segment.

Why Do We Use Models to Estimate Demand and Suitability?

By definition, bicycle and pedestrian trips are local in nature. To identify priority needs throughout the state, large volumes of local information must be organized and evaluated. Models with standards and thresholds lend themselves to quickly identifying conditions that present themselves as less (or better than) ideal. Most models are based on simple mathematical calculations and contain generally accepted design and other standards.

Where Do We Get the Data?

Data is collected from state agencies like NJDOT, New Jersey Department of Environmental Protection (NJDEP), New Jersey Office of Smart Growth, Metropolitan Planning Organizations (MPOs), New Jersey TRANSIT, and many others. Counties and other interested parties also contributed valuable data and insights during the planning process.

As noted previously, the provision of safe and inviting bicycle accommodations is a necessary condition for achieving the Vision. The provision of these facilities should be based on a rational planning process that utilizes appropriate data and effective analytical tools to identify priority locations for such improvements. The majority of the Phase 2 planning process was devoted to the collection of appropriate data and the development and utilization of flexible analytical tools that were utilized to develop initial priorities on a statewide basis. This data and these tools can be refined and used by others to examine needs and establish priorities at the local level. Detailed information on these tools is available in the support documents listed in Appendix 1.

Data Collection

A significant data collection effort was carried out in order to identify:

- known existing, programmed and proposed bicycle facilities, on- and off- road (*See Figure 1*)
- the location of major trip attractors throughout New Jersey for bicycling and walking trips (*See Appendix 2*)

Modeling

The Bicycle Demand Model (BDM) was utilized to provide a measure of the total daily bicycle trip demand by Census Tract. (*See Figure 2*)

The Bicycle Compatibility Index (BCI) Model was used to compute bicycle compatibility on a link level using the New Jersey Congestion Management System (CMS) as the base network. (*See Figure 2*)

The Pedestrian Compatibility Index (PCI) was used to calculate the suitability of making capital investments at the census tract level (a measure of demand). (*See Figure 4*)

A new model, the Barrier analysis, was devised to measure the extent to which links in the CMS system were “crossable” or the extent to which links were a barrier to pedestrian travel (a measure of suitability). (*See Figure 4*)

Analysis and Development of Priorities

Utilizing the output from the modeling effort, priorities for potential capital investments were generated. Separate lists were made for bicycle priorities and pedestrian priorities. Bicycle Priority is a function of trip demand at the census tract level and CMS link bicycle suitability. Pedestrian Priority is a

function of demand at the tract level and “crossability”. CMS links were assigned a “low”, “medium” or “high” priority for both the bicycle and pedestrian analyses. (See Figures 3 and 5)

Other analyses used to identify priorities included:

- An examination of the bicycle facilities inventory to identify obvious gaps or deficiencies in both on-road and off-road facilities or networks.
- An analysis of the proximity of CMS links (*i.e. within bicycling distance*) to selected bicycle trip attractors.
- An analysis of the proximity of CMS links (*i.e. within walking distance*) to selected pedestrian trip attractors.



Additional lists of priorities for capital investment decisions were generated from these analyses.

An “overall” priority, based on a numerical score, was established for each CMS link in terms of both bicycling and pedestrian needs. The link priority scores that were generated took into account the results of previous analyses involving suitability, demand, use and proximity to selected attractors.

These priority lists and the tools that were used to generate them are available and are intended to be used as a basis for the identification of priority opportunities for capital improvements that will benefit bicycling and walking in New Jersey. It is intended that the data and analysis tools developed as part of preparation of this plan will be made available to appropriate transportation agencies so that they can be used in the context of their own bicycle and pedestrian planning activities to refine the analysis based on local needs and public input.



Newark



Scotch Plains



Newark

Facility Priorities

Examples of Bicycle Facility Types

On Road



Bike Lane - A portion of the roadway designated by striping, signing and pavement markings that defines space for bicyclists

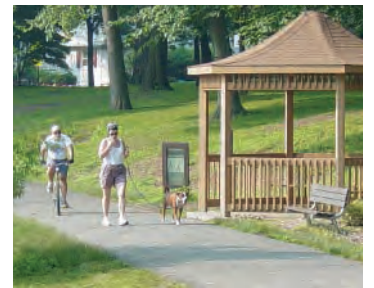


Bike Route - A bikeway designated by directional and informational markers



Shared Road - A roadway open to both bicycle and motor vehicle travel with wide curb lanes or paved shoulders

Off Road



Shared Use Path - A path physically separated from the roadway shared by pedestrians, bicyclists and other non-motorized users

Figure 1: New Jersey Bicycle Facilities



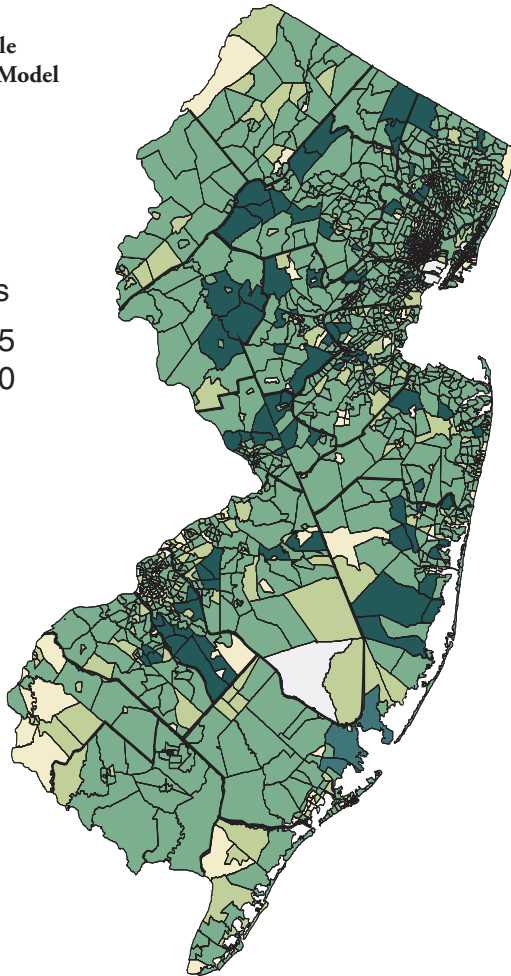
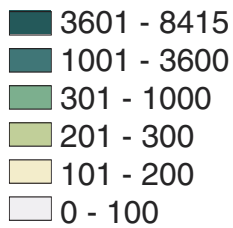
Figure 2: Bicycle Tools and Models

BICYCLE

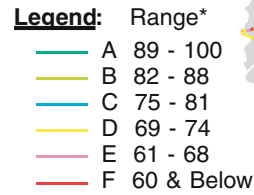


Bicycle Demand Model

Daily Bike Trips

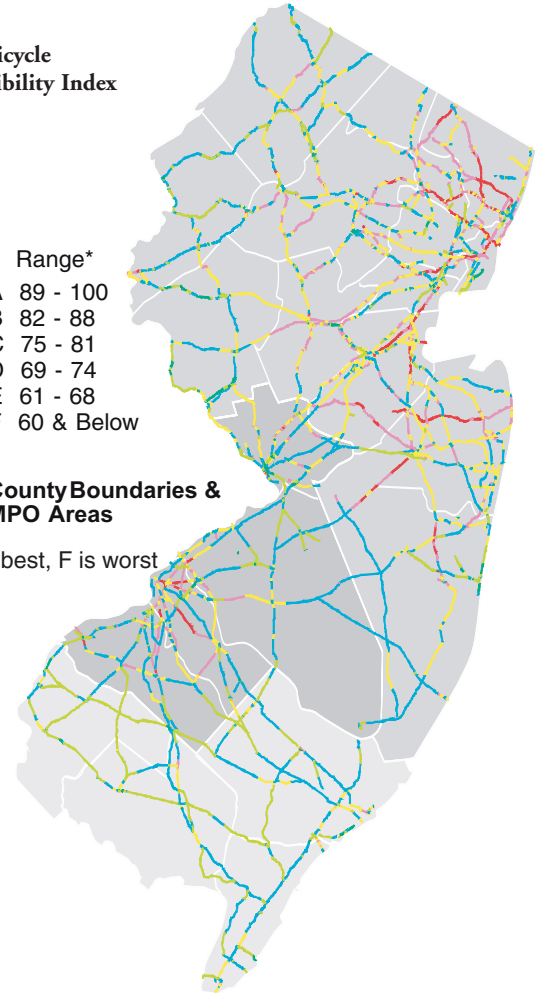


Bicycle Compatibility Index



County Boundaries & MPO Areas

*A score is best, F is worst



Demand + Suitability = Priority



Figure 3: Priority Bicycle Links Map

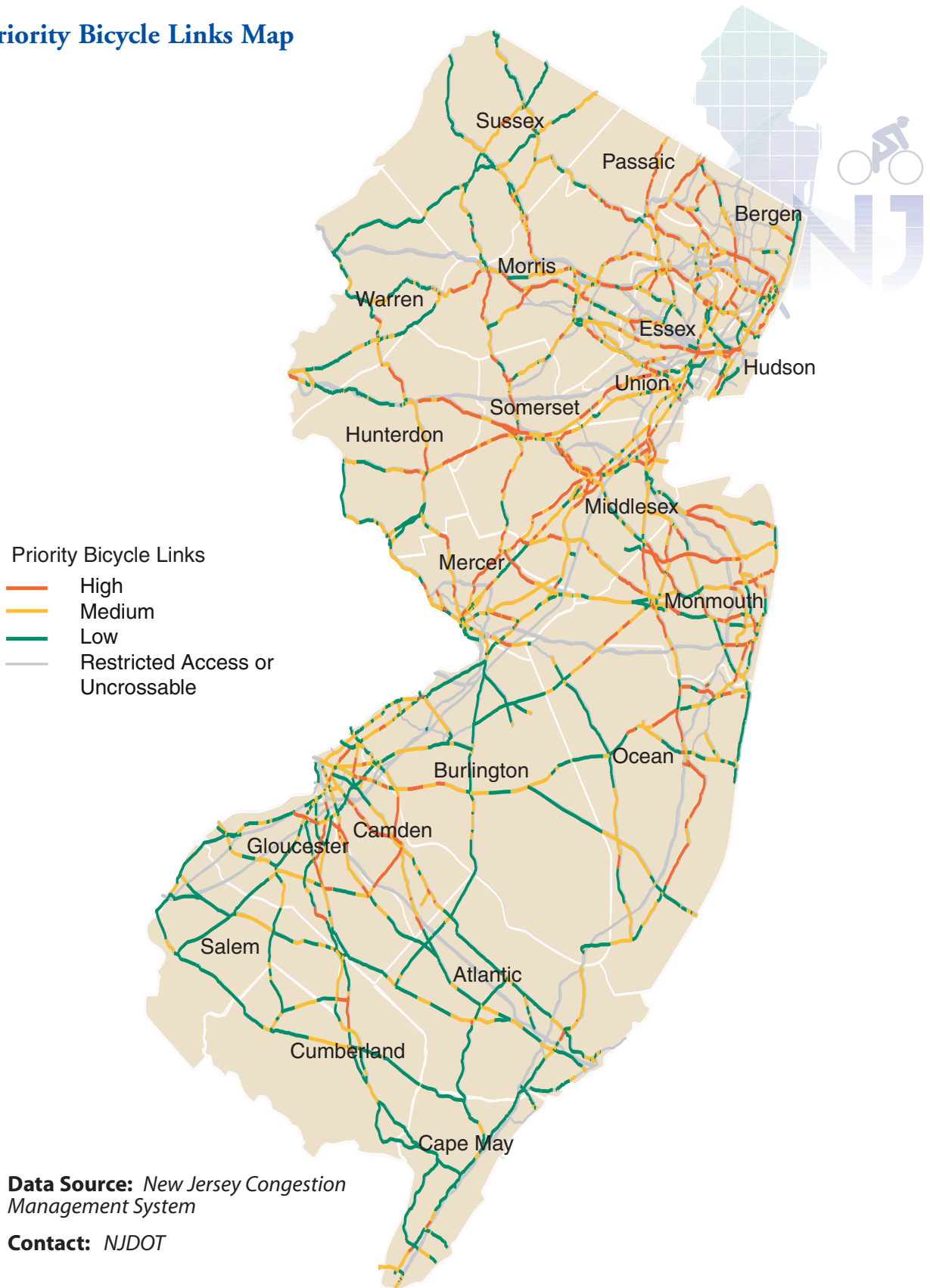


Figure 4: Pedestrian Tools and Models

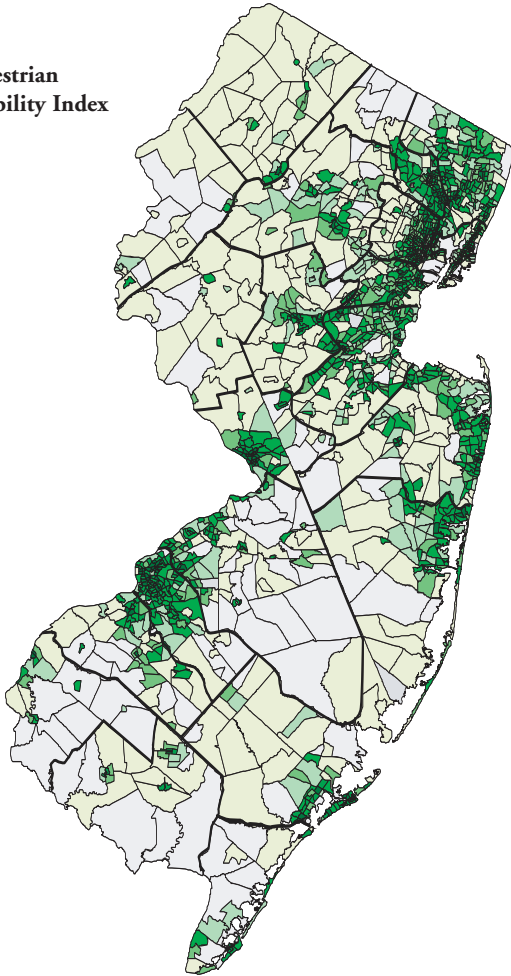
PEDESTRIAN



Pedestrian
Compatibility Index

Pedestrian
Compatibility

- Very High
- High
- Average
- Moderate
- Low
- Very Low

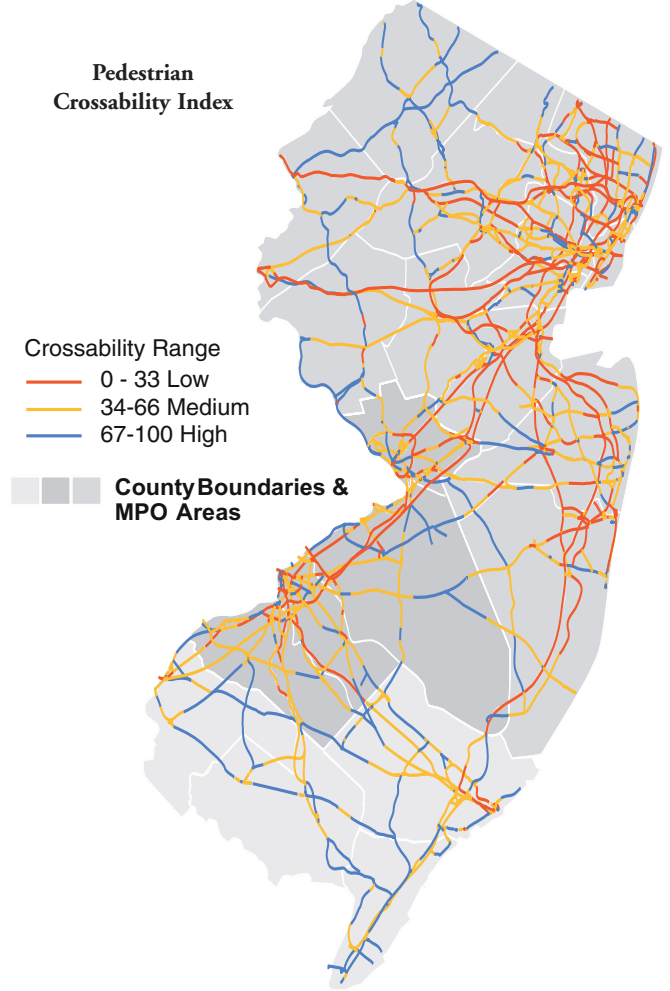


Pedestrian
Crossability Index

Crossability Range

- 0 - 33 Low
- 34-66 Medium
- 67-100 High

County Boundaries &
MPO Areas



Demand + Suitability = Priority

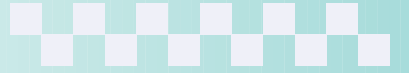


Figure 5: Priority Pedestrian Corridors Map



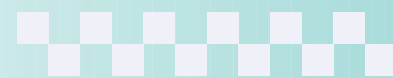
Appendix 1: List of Support Documents

New Jersey Bicycle and Pedestrian Master Plan, 1995

NJDOT Statewide Bicycle/Pedestrian Master Plan Phase 2

- **Project Overview** of Statewide Bicycle/Pedestrian Master Plan Phase 2 Activities
- **Technical Memorandum Task 1:**
Literature Survey and Bicycle and Pedestrian Demand and Suitability Estimation Modeling
- **Technical Memorandum Task 2:**
Data Inventory and Utilization in Bicycle/Pedestrian Demand and Suitability Modeling
- **Technical Memorandum, Tasks 3, 4, 5:**
Analysis and Identification of Priority Bicycle Corridors
Analysis and Identification of Priority Pedestrian Corridors
Finalized Bicycle and Pedestrian Priorities





Appendix 2: Bicycle and Pedestrian Trip Attractors and Data Sources Table

Table 1 NJ Statewide Bicycle & Pedestrian Master Plan Trip Attractor Data Sources

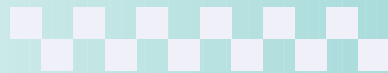
Bike/Ped Master Plan Data Inputs	Source	Year(s)	Original Format	Data Contents	Contact URL
Designated Centers (per NJ State Dev. & Redev.)	NJ Office of Smart Growth	2000 updated	Arc View//MapInfo	Designated Centers as of 2000	www.njstateplan.com/gis
State and County Parks	NJ Office of State Planning	2000 updated	Arc View//MapInfo	State & County Park/Locations	www.njstateplan.com/gis
Municipal Parks	NJDEP Land use files	N/A	Arc View//MapInfo	Municipal Park/Locations	www.state.nj.us/dep/gis
College and Universities	NJ DEP of Higher Education	2000	Excel	College or University Name, Addresses & Enrollment	www.state.nj.us/highereducation
Public and Parochial Schools	NJ Dept. of Education	2000	Excel	School Name, Addresses & Enrollment	www.state.nj.us/education
Public Vocational Schools	NJ Dept. of Education	2000	Excel	School Name, Addresses & Enrollment	www.state.nj.us/education
Non-public Vocational Schools	NJ Dept. of Education	2000	Excel	School Name, Addresses & Enrollment	www.state.nj.us/education
Transit Rail Stations	NJ Transit	2000	MapInfo	Station Locations & Ridership #s	
Abandoned Rail Lines	Rails to Trails	N/A	MapInfo	Locations of Tracks	http://www.railtrails.org/PA
Active Rail Lines	NJ Transit	2001-2002	ArcView	Locations of Tracks	
Park and Ride	NJDOT	N/A	Excel	Location of Facilities	
Bus Routes	NJ Transit	N/A	MapInfo	Location of Route, Route # & Local vs. Express	
Bus Terminals	NJ Transit	2001	Excel	Location of the Main NJ Transit Bus Terminals	http://www.njtransit.com/
Recreational Destinations (Shore/Public Beaches)	NJDEP Land Use Files	1986-1999	ArcView/MapInfo	Locations of Shore Areas	www.state.nj.us/dep/gis
Recreational Destinations (Historical/Museums/Amusement)	NJ Tourism	2001	Excel	Name & Address of Museums, Historical Sites, Shore Amusements, etc.	http://nj.gov/travel/
Commercial Districts	NJDEP Land Use Files	1986-1999	ArcView/MapInfo	Larger Commercial Sites	www.state.nj.us/dep/gis
NJ Libraries	NJ Tourism	N/A	Excel	Locations of Most Public Libraries	http://nj.gov/travel/
Abbot School Districts ^a	NJSCC	2003	Text	List of Municipalities	www.njsc.com/general/overview.asp
Renaissance School Zones ^b	Governor's Office Press Release	2003	Text	List of Municipalities	www.state.nj.us/cgi-bin/governor/ninewslne
Transit Villages ^c	NJDOT	2003	Text	List of Locations	http://www.state.nj.us/transportation/community/village/faq.shtm
Main Street Communities ^d	NJDCA	2003	Text	List of Municipal Contacts	http://www.state.nj.us/dca/dhcr/mstowns.htm

- a. Abbott Districts – A series of 30 needier urban school districts, in New Jersey for which the State is required by Supreme Court decision (Abbott v. Burke) to provide certain infrastructure improvements.
- b. Renaissance Schools – Schools within Renaissance Zones identified by the Governor's Office that are targeted for existing public, private and non-profit funding and, act as catalysts for redevelopment and investment in neighborhoods surrounding the school.
- c. Transit Villages – A program in which local communities partner with NJ Transit, NJDOT and other agencies to create development and investment centered around passenger rail stations. Communities selected for inclusion in the program are given priority consideration for a variety of state funding programs.
- d. Main Street Communities – Communities selected for inclusion in DCA's Main Street New Jersey program. These communities receive technical assistance and training to revitalize historic downtowns, improving the economy, appearance and image of their central business districts through the organization of local citizens and resources.

Appendix 3: List of Acronyms

AIA:	American Institute of Architects
APA:	American Planning Association
ASCE:	American Society of Civil Engineers
ASLA:	American Society of Landscape Architects
BDM:	Bicycle Demand Model
BCI:	Bicycle Compatibility Index
CMS:	Congestion Management System
DOT:	Department of Transportation
DVRPC:	Delaware Valley Regional Planning Commission
ITE:	Institute of Transportation Engineers
MPO:	Metropolitan Planning Organization
NHTSA:	National Highway Traffic Safety Administration (part of DOT)
NJDEP:	New Jersey Department of Environmental Protection
NJDLPs:	New Jersey Department of Law and Public Safety
NJDOT:	New Jersey Department of Transportation
NJTPA:	North Jersey Transportation Planning Authority
PCI:	Pedestrian Compatibility Index
PMT:	Project Management Team
SDRP:	State Development and Redevelopment Plan
SIP:	State Implementation Plan (under Clean Air Act Amendments)
SJTPO:	South Jersey Transportation Planning Organization
STIP:	State Transportation Improvement Program
STP:	Surface Transportation Program (part of Federal Transportation Legislation, TEA21)
STPP:	Surface Transportation Policy Project
TAC:	Technical Advisory Committee
TIP:	Transportation Improvement Plan
TMA:	Transportation Management Association
VTC:	Voorhees Transportation Center





Appendix 4: Glossary of Terms

CMS – The U.S. Department of Transportation (U.S. DOT) requires large metropolitan areas (200,000 population or more) and states to develop Congestion Management Systems which monitor traffic congestion and make new and existing transportation facilities more effective through the use of travel demand management and operational management strategies. The CMS requirement strengthens the link between the Clean Air Act Amendments and TEA21.

FHWA – Federal Highway Administration is the agency of U.S. DOT with jurisdiction over highways.

FTA – Federal Transit Administration is the agency of U.S. DOT administration with jurisdiction over transit. Formerly the Urban Mass Transit Administration.

Performance Measures – are means of measuring the success of the achievement of a goal, and can be measured in terms of quantity, quality, timeliness and cost.

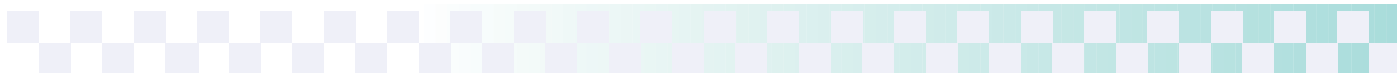
Target Usage Goals – illustrate existing patterns and attitudes and the potential for bicycling and walking for transportation and recreation. They focus on areas where change is measurable and can be implemented in the short term.

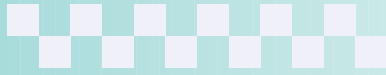
TIP – Transportation Improvement Program is a three-year transportation investment strategy, required at the metropolitan level, which addresses the goals of the long range plans and lists priority projects and activities for the region.

Morristown



TDM – Transportation Demand Management, a method to reduce traffic congestion by means other than roadway improvements, such as transit, staggered work hours, telecommuting, etc.





Appendix 5: Local Bike/Ped Planning Assistance Studies

- | | |
|-------------------------------|----------------|
| Audubon | Summit |
| Blairstown | Trenton |
| Boonton | Voorhees |
| Delaware River Heritage Trail | Wanaque |
| Evesham | Westfield |
| Fair Lawn | West Windsor |
| Haddonfield | Wildwood Crest |
| Jersey City | |
| Kingston | |
| Lambertville | |
| Leonia | |
| Manasquan | |
| Medford | |
| Mendham | |
| Montclair | |
| Morris County | |
| New Brunswick | |
| Oaklyn | |
| Ocean City | |
| Oxford | |
| Pine Hill | |
| Plainfield | |
| Roselle | |
| Rutherford | |
| Somerdale | |
| South Orange | |
| Stratford | |

