9.0 APPENDICES

APPENDIX A  STEERING ADVISORY COMMITTEE MEMBERS
APPENDIX B  PROBLEM STATEMENTS
APPENDIX C  TRANSIT-SUPPORTIVE DESIGN GUIDELINES
APPENDIX A – STEERING ADVISORY COMMITTEE MEMBERS
Steering Advisory Committee

Somerset County
Freeholder Peter S. Palmer
Robert Bzik
Walter Lane
Kenneth Wedeen
Joseph A. Fishinger

Hunterdon County
Freeholder Matt Holt
Sue Dziamara
Kenneth Bogen
Kyle Zenlea
Thomas Matthews

Raritan Borough
Mayor Joann Liptak
Council President Joe Licht
David Maski
Stan Schreck

Bridgewater Township
Robert Bogart
Scarlett Doyle
Chip Mills

Branchburg
James Melitski
Linda Weber

Raritan Township
Fred Coppola
Jaime Sunyak

Readington
Mayor Julia C. Allen
Committeeman Gerard J. Shamey

Flemington
Mayor Robert Hauck
Councilwoman Erica Edwards
Todd Cook
Jeff Doshna
Mark Legato
NJDOT
Gary Leach

NJ Transit
Mike Viscardi

NJTPA
Hamou Meghdir

Ridewise
Donna Allison

HART Commuter Information Services
Tara Shepherd
APPENDIX B – PROBLEM STATEMENTS
The following information is to be completed by the Bureau of Capital Program Development:

DB Number _____________________________________________________
Legislative District________________________________________________
Congressional District______________________________________________
CIS Text and CIS No.______________________________________________
Program Category_________________________________________________
Information contained on this form has been verified by___________________

LOCATION

Route (if applicable): Route 202

Mileposts (if applicable): 11.9 – 23.9

Structure number (if applicable):

Limits: Church Street/Voorhees Corner Road in Raritan Township and First Avenue in Raritan Borough

County(s): Somerset, Hunterdon

Municipality(s): Raritan Township, Readington Township, Branchburg Township, Bridgewater Township, Raritan Borough

DESCRIPTION OF PROBLEM

Check those items that best describe the problem:

Existing Highway

__X__ Capacity problem
__X__ Operational problem
__  __ Physical condition problem
__  __ Safety problem
__  __ Other (specify)
**Existing Bridge**

- Capacity problem
- Physical condition problem
- Safety problem

**Corridor/area Capacity Problem**

- Need for corridor study
- Possible highway on new alignment
- Possible new transit line
- Need for park and ride development

**Describe the problem:**

There is effectively no coordination between the signalized intersections along the Route 202 Corridor. The signals operate on multiple cycle lengths and time periods. These conditions contribute to long queues, poor levels of service and delay at traffic signals along the Corridor. It is recommended that the traffic signal systems along the Corridor be coordinated using communications between controllers to move through traffic more efficiently. This can easily be implemented by developing a signal optimization model that would provide signal offsets between adjacent intersections based on desired travel speed. Signal bandwidth along Route 202 should be maximized and a fully responsive signal system should be installed. This is a short term and easily implementable improvement that can be implemented by the New Jersey Department of Transportation with coordination with local and County traffic engineers.

**If an outside group actively supports this problem, please identify:**

The recommendation described here emerged from the public involvement process that informed the Route 202 Corridor Assessment and Multi-modal Mobility Plan study. The study was guided by a Steering Committee consisting of:

- **Counties:** Somerset County, Hunterdon County;
- **Municipalities:** Flemington Borough, Raritan Township, Readington Township; Branchburg Township, Bridgewater Township, Raritan Borough
- **State Agencies:** New Jersey Department of Transportation, New Jersey Transit, North Jersey Transportation Planning Authority;
- **Other Organizations:** Ridewise, HART Commuter Information Services

Other comments (if any) by initiator:

Initiator:

Division:

Date of Initiation:

Signature__________________________________________________________

Concurrence by Division Director (Signature)_____________________________
Date of Concurrence_________________________________________________

The following information is to be completed by the Bureau of Capital Program Development:

Date Received by Capital Program Development____________________________

Date presented to Capital Program Committee____________________________

Disposition

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________________________________________________________________________
New Jersey Department of Transportation

Transportation Problem Statement
Roadway Improvements

The following information is to be completed by the Bureau of Capital Program Development:

DB Number _____________________________________________________
Legislative District________________________________________________
Congressional District______________________________________________
CIS Text and CIS No.______________________________________________
Program Category_________________________________________________
Information contained on this form has been verified by___________________

LOCATION

Route (if applicable): Route 202
Mileposts (if applicable): 11.9 – 23.9
Structure number (if applicable):
Limits: Church Street/Voorhees Corner Road in Raritan Township and First Avenue in Raritan Borough
County(s): Somerset, Hunterdon
Municipality(s): Raritan Township, Readington Township, Branchburg Township, Bridgewater Township, Raritan Borough

DESCRIPTION OF PROBLEM

Check those items that best describe the problem:

Existing Highway
__X__ Capacity problem
__X__ Operational problem
__ ___Physical condition problem
__X__ Safety problem
__ ___Other (specify)
**Existing Bridge**
- Capacity problem
- Physical condition problem
- Safety problem

**Corridor/area Capacity Problem**
- Need for corridor study
- Possible highway on new alignment
- Possible new transit line
- Need for park and ride development

**Describe the problem:**

The Route 202 Corridor experiences extensive delays for both mainline Route 202 traffic and cross streets. Future traffic growth will only exacerbate these conditions. In response to these operational deficiencies, a series of improvement concepts were developed during the [Route 202 Corridor Assessment and Multi-Modal Mobility Plan](#) to provide an initial vision of potential improvements to improve intersection operations throughout the corridor. These concepts pursue the long term goal of the New Jersey Department of Transportation (NJDOT) to eliminate unsignalized median breaks along the corridor and provide for consistent left-turn treatments throughout the corridor via jughandles. Descriptions of the proposed improvements by intersection are below. Figures depicting the proposed improvements are located in Section 4 of the [Route 202 Corridor Assessment and Multi-Modal Mobility Plan](#). It should be noted that during the public outreach process, there were numerous comments regarding the potential grade separation at major intersections such as First Avenue, Old York Road (CR 637) and Church Street/Voorhees Corner Road.

- **Route 202 and Greenwood Place, Raritan Borough, Hunterdon County:** In conjunction with the goal to eliminate the unsignalized median breaks along the corridor, the intersection of Route 202 & Greenwood Place would need to be converted to a right-in, right-out operation, with left turns in and out accomplished via jughandle facilities located at the adjacent signalized intersections.

- **Route 202 and Dory Dilts Road / River Road, Raritan Borough, Hunterdon County:** To improve intersection operations in the short term and reduce the potential for southbound rear end crashes, the southbound Route 202 left turn slot should be extended at the intersection of Route 202 and Dory Dilts / River Road. Also, to improve Level of Service operations at the intersection, the eastbound approach should be widened to provide a dedicated left turn lane and dedicated through lane. Medium and Long Term improvements at this intersection include the realignment of the adjacent Barley Sheaf Road intersection to Dory Dilts Road to eliminate the conflict points associated with having a right-in, right-out intersection in close proximity to the traffic signal. Also, in the long term, a
Route 202 Mobility Plan

Southbound nearside jughandle should be constructed to eliminate the southbound left turn lane.

- **Route 202 and Railroad Avenue, Readington Township, Hunterdon County:** In conjunction with the goal to eliminate the unsignalized median breaks along the corridor, the southbound left turn at the intersection of Route 202 & Railroad Avenue would need to be eliminated and traffic redirected to Dory Dilts Road to execute a U-turn. This closure will need to be coordinated with the construction of the southbound jughandle at Dory Dilts Road to ensure access to Railroad Avenue is maintained.

- **Route 202 and Summer Road, Readington Township, Hunterdon County:** In the short term, the left/U-turn storage should be extended for both the northbound and southbound approaches at the intersection of Route 202 and Summer Road to reduce the potential for rear end crashes from vehicles queuing in the through lanes waiting to make turn movements. In the long term, elimination of the left turn lanes on Route 202 in favor of jughandles could be accomplished by constructing a southbound farside jughandle and a northbound nearside jughandle.

- **Route 202 and Old York Road, Branchburg Township, Somerset County:** Due to the high propensity of right angle crashes at this intersection, signalization of the intersection is recommended in conjunction with the construction of a series of farside jug handles to accommodate left turn movements.

- **Route 202 and Holland Brook Road, Branchburg Township, Somerset County:** In conjunction with the goal to eliminate the unsignalized median breaks along the corridor, the intersection of Route 202 and Holland Brook Road should be further evaluated for either conversion to right-in, right-out intersections or signalization in conjunction with the construction of a series of nearside jughandles if it is determined that U-turn facilities are still required at the intersection.

- **Route 202 and West County Drive (CR 646), Branchburg Township, Somerset County:** In the short term, the southbound left turn slot at the intersection of Route 202 and West County Drive should be extended to minimize the potential for rear end crashes since the left turn slot typically queues into the left through lane. Long term improvements to this intersection should include the construction of a series of jughandles to accommodate turning movements in conjunction with the completion of West County Drive west of Route 202 to Old York Road.

- **Route 202 and Old York Road (CR 637), Branchburg Township, Somerset County:** In the short term, the Route 202 left/U-turn lanes at the intersection of Route 202 and Old York Road should be extended to minimize the potential for rear end crashes since the left/U-turn lanes routinely block the through lanes. In the long term, the intersection should be reconfigured to simplify the signal operation by creating a series of two-way jughandles to accommodate left-turn
Route 202 Mobility Plan

movements on both Route 202 and Old York Road, allowing the signal to operate as a two-phase operation.

- **Route 202 and Robbins Road, Branchburg Township, Somerset County:** In the short term, the Route 202 left/U-turn lanes at the intersection of Route 202 and Robbins Road should be extended to minimize the potential for rear end crashes since vehicles waiting to make a U-turn movement block the through lanes. In conjunction with jughandle improvements at the adjacent intersections, the intersection should be evaluated for conversion to right-in, right-out controls in the long term. While signalization is still a potential option, it was not recommended due to the acquisition of developed properties that would be required to accommodate jughandles.

- **Route 202 and River Road, Branchburg Township, Somerset County:** In conjunction with the goal to eliminate median left turns along the corridor, the intersection of Route 202 and River Road is recommended to be reconstructed to the north in an area where property acquisitions for the necessary jughandles would not require takings of developed properties. One potential concept is to utilize the existing park and ride lot to accommodate a farside jughandle, although a satisfactory alternative park and ride site would need to be found. Southbound U-turn movements would be accomplished using the existing River Road intersection and a connector road between Route 202 and River Road.

- **Route 202 and Milltown Road, Bridgewater Township, Somerset County:** To increase the operational efficiency of the jughandle system at the intersection of Route 202 and Milltown Road, the intersections of the jughandle system with Milltown Road should be relocated farther away from the Route 202 and Milltown Road signal. For southbound traffic, the existing nearside jughandle would remain for right-turn movements only, and the southbound left-turn movement would be accomplished via a farside jughandle. The northbound nearside jughandle would be relocated farther away from the intersection to improve operations as well.

- **Route 202 and Bridgewater Town Center Drive, Bridgewater Township, Somerset County:** In the short term, the Town Center Drive egress should be restriped to provide a dedicated left turn lane, shared left/right turn land and a dedicated right-turn lane at the intersection of Route 202 and Town Center Drive. In the medium term, to improve operations at the Route 202 and Town Center Drive intersection, a right-turn-in driveway should be constructed north of the signalized intersection and a right-turn-out driveway constructed south of the signal, thus reducing the number of vehicles required to utilize the signal to enter/exit the property. In the long term, a northbound nearside jughandle should be constructed to allow the elimination of the northbound Route 202 left-turn lanes.

- **Route 202 and the Ortho-McNeil Driveway, Raritan Township, Somerset County:** In the immediate term, the timing at the intersection of Route 202 and the Ortho-
McNeil Driveway should be reviewed to insure coordination with the traffic signals on either side of the intersection.

- Route 202 and First Avenue (CR 567), Raritan Township, Somerset County: As a short-term improvement, a flashing “Red Signal Ahead” sign should be considered for northbound Route 202 in advance of the First Avenue intersection, to better inform drivers of the approaching traffic signal, given the vertical crest on Route 202 northbound in advance of the First Avenue intersection. As a medium- to long-term improvement, to simplify the operation of the traffic signal operation at the intersection of Route 202 and First Avenue, the left-turn movements at First Avenue should be eliminated by relocating and reconfiguring the existing jughandles to accommodate two-way flow. The southbound jughandle would be relocated farther away from the traffic signal to accommodate additional storage. In conjunction with this improvement, widening Route 202 to three through lanes in each direction is recommended to provide additional through capacity on Route 202.

**If an outside group actively supports this problem, please identify:**
The recommendation described here emerged from the public involvement process that informed the Route 202 Corridor Assessment and Multi-modal Mobility Plan study. The study was guided by a Steering Committee consisting of:

- **Counties:** Somerset County, Hunterdon County;
- **Municipalities:** Flemington Borough, Raritan Township, Readington Township; Branchburg Township, Bridgewater Township, Raritan Borough
- **State Agencies:** New Jersey Department of Transportation, New Jersey Transit, North Jersey Transportation Planning Authority;
- **Other Organizations:** Ridewise, HART Commuter Information Services

Other comments (if any) by initiator:

Initiator:

Division:

Date of Initiation:
Signature__________________________________________________________

Concurrence by Division Director (Signature)__________________________________________________________

Date of Concurrence__________________________________________________________

The following information is to be completed by the Bureau of Capital Program Development:

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New Jersey Department of Transportation

Transportation Problem Statement
Transit Service Enhancements

The following information is to be completed by the Bureau of Capital Program Development:

DB Number _____________________________________________________

Legislative District______________________________________________
Congressional District____________________________________________
CIS Text and CIS No.____________________________________________
Program Category_______________________________________________

Information contained on this form has been verified by_________________

LOCATION

Route (if applicable): Route 202 corridor

Mileposts (if applicable):

Structure number (if applicable):

Limits:

County(s): Somerset, Hunterdon

Municipality(s): Flemington Borough, Raritan Township, Readington Township, Branchburg Township, Bridgewater Township, Raritan Borough

DESCRIPTION OF PROBLEM

Check those items that best describe the problem:

Existing Highway
X Capacity problem
__ Operational problem
__ Physical condition problem
__ Safety problem
__ Other (specify) Poor transit connectivity

Existing Bridge
Describe the problem:

The Route 202 Corridor currently has limited modal choices resulting in the increased use of single occupant vehicles. This has aggravated traffic congestion and delays. The *Route 202 Corridor Assessment and Multi-Mobility Plan* recommends the following transit related improvements to help move commuters from single occupant vehicles to mass transit.

1. Rail System Improvements

The Raritan Valley Line (RVL) provides commuter rail service limited service between Raritan/Somerville and High Bridge and requires many commuters to drive to Raritan/Somerville stations; increasing traffic along Route 202. Additionally, there is limited transit connectivity between the two counties. Hence, an expansion of passenger rail service is an opportunity to increase transit ridership and reduce vehicular congestion on Route 202.

- **Expansion of service on the NJ Transit Raritan Valley Line:** An increase in service between Raritan and High Bridge with additional service at the four Hunterdon stations, coupled with a network of flexible feeder routes and/or local collector services.

- **The potential for the dual use of the existing Norfolk Southern Lehigh Valley Line for both freight and passenger service:** Norfolk Southern (NS), CSX and Conrail have freight line facilities in and around the Route 202 Corridor. The Norfolk Southern Lehigh Valley freight rail splits off from the Conrail/Raritan Valley line in the area of Bound Brook, travels south and west through the Hillsborough Township, and continues southwest past Flemington and into southeastern Pennsylvania. This rail line presents a tremendous opportunity to be used as a shared resource for both freight and passenger service. The NS Lehigh Valley line has a connection to the Black River and Western Railroad spur, which passes through Flemington and then branches off at this location. The Black River and Western Rail line travels through Liberty Village next to the Flemington shopping outlet mall. The use of both of these sections of track for passenger rail service and the development of several new rail stations could provide a very attractive option to commuters traveling the Route 202 corridor via automobile.
Potential trains stations could be located in the Borough of Flemington as well as in Hillsborough Township, Three Bridges and the Borough of Manville.

2. Bus system improvements

In addition to rail transit improvements, additional bus service could improve travel conditions on Route 202. These improvements include:

- A feeder bus service linking existing and new transit services between the Borough of Flemington and the Borough of Somerville (could use the LINK system in Hunterdon County). Implementation of bus rapid transit service along the Route 202 corridor.

- Feeder buses connecting the four Hunterdon RVL stations without crossing the Route 202 Corridor.

- Local bus service using the municipal and county roadway networks in the area with limited bus stops along Route 202, and connecting local service to the Raritan Valley Line. Two local service options are to provide a fixed-route bi-county service between Clinton Township and Bridgewater Township (Bridgewater Commons Mall) by way of Somerville Borough and a fixed-route bi-county service between Lambertville City and Somerville by way of East Amwell and Hillsborough Townships with stops in Flemington Borough.

- Long-term recommendation for expanding LINK services in Hunterdon County to connect with a potential railroad station at Liberty Village. Additional service could connect to and from the Clinton Township / Annandale area.

- Long-term recommendation to implement bus connections to and from the southern districts in Somerset County to the recommended new rail stations.

3. Park and Ride Lots Improvements

Park and Rides in the area are already operating at their maximum capacity. In the northern end of the study corridor, there are multiple locations where large commercial and private parking facilities exist and could be utilized as potential park and rides facilities. Some of these locations include the Somerville Circle Shopping Center, Somerset Shopping Center, Bridgewater Commons Mall, and the Bridgewater Town Center. Some of the private companies along this route are Johnson & Johnson, Ortho Chemical Diagnostics, Ortho McNeil Pharmaceuticals, ITS (all part of Johnson & Johnson Industries), Thermo-Fisher Scientific and NES Development. At the southern end of the corridor, there is 3M, Liberty Village and the Flemington Business Center close to Voorhees Corner. There may be shared partnerships where private entities may be willing to share a percentage of available parking spaces to boost commuter parking.
Where land use permits, the possibility of increasing capacity of existing park and ride lots should be explored. Potential locations for new park and ride lots are shown in Section 5 or the Route 202 Corridor Assessment and Multi-Mobility Plan.

4. Travel Demand Management Strategies:

In addition to the current programs and initiatives underway by the local TMA’s, additional efforts focused on the Route 202 corridor could help relieve congestion. The creation of a dedicated incentive and subsidy program (by HART and RideWise) targeted for only employers and employees working or living in the Route 202 corridor should be explored.

The use of TDM strategies as part of the local land development process. This can be done through ordinance revisions that require transit-friendly design and the provision of bicycle and pedestrian facilities and amenities as part of the site development process; passage of voluntary or mandatory trip reduction ordinances; and negotiating travel demand management agreements with developers and/or property owners.

If an outside group actively supports this problem, please identify:

The recommendation described here emerged from the public involvement process that informed the Route 202 Corridor Assessment and Multi-modal Mobility Plan study. The study was guided by a Steering Committee consisting of:

- **Counties:** Somerset County, Hunterdon County;
- **Municipalities:** Flemington Borough, Raritan Township, Readington Township; Branchburg Township, Bridgewater Township, Raritan Borough
- **State Agencies:** New Jersey Department of Transportation, New Jersey Transit, North Jersey Transportation Planning Authority;
- **Other Organizations:** Ridewise, HART Commuter Information Services

Other comments (if any) by initiator:

Initiator:

Division:

Date of Initiation:
Signature______________________________

Concurrence by Division Director (Signature)______________________________

Date of Concurrence______________________________

The following information is to be completed by the Bureau of Capital Program Development:
Route 202 Mobility Plan

Date Received by Capital Program Development__________________________

Date presented to Capital Program Committee___________________________

Disposition
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Transportation Problem Statement
Intelligent Transportation Systems (ITS)

LOCATION

Route (if applicable): Route 202
Mileposts (if applicable): 11.9 – 23.9
Structure number (if applicable):
Limits: Church Street/Voorhees Corner Road in Raritan Township and First Avenue in Raritan Borough
County(s): Somerset, Hunterdon
Municipality(s): Raritan Township, Readington Township, Branchburg Township, Bridgewater Township, Raritan Borough

DESCRIPTION OF PROBLEM

Check those items that best describe the problem:

Existing Highway
___X__ Capacity problem
___ Operational problem
___ Physical condition problem
___ Safety problem
___ Other (specify)
Route 202 Mobility Plan

Existing Bridge
- Capacity problem
- Physical condition problem
- Safety problem

Corridor/area Capacity Problem
- Need for corridor study
- Possible highway on new alignment
- Possible new transit line
- Need for park and ride development

Describe the problem:

There are currently no Intelligent Transportation System (ITS) measures installed within the Route 202 Corridor. A number of ITS measures are proposed for the study corridor as detailed in the Route 202 Corridor Assessment and Multi-modal Mobility Plan. These measures include the following:

- Use of advanced driver information signs, such as the Variable Message Signs (VMS) north of the Somerville Circle and south of Flemington Circle to advise motorists of the real-time travel conditions along Route 202. This information can be used by the motorists to seek alternative routes such as Routes 31, 206, 28, 22, I-78, and I-287.

- An Incident Management Task Force should be created for the Route 202 Corridor. Working with NJDOT’s Traffic Operation Center and the various local first responders (police, fire, EMS) the Counties should develop an Incident Management Plan for the corridor in order to minimize delays created by various incidents that disrupt travel along this critical roadway.

- Cameras should be installed at critical locations that experience delays and safety concerns along the corridor to facilitate incident management for NJDOT and local police. Currently, there is only one such camera at the Somerville Circle.

- Additional, “Red Signal Ahead” signs can be provided where stopping sight distance is limited for motorists including the Route 202 northbound approach to First Avenue. These signs will have communication with adjacent intersections and provide adequate time for motorists to stop at the red light.

If an outside group actively supports this problem, please identify:

The recommendation described here emerged from the public involvement process that informed the Route 202 Corridor Mobility Plan study. The study was guided by a Steering Committee consisting of:

- Counties: Somerset County, Hunterdon County;
Route 202 Mobility Plan

- **Municipalities**: Flemington Borough, Raritan Township, Readington Township; Branchburg Township, Bridgewater Township, Raritan Borough
- **State Agencies**: New Jersey Department of Transportation, New Jersey Transit, North Jersey Transportation Planning Authority;
- **Other Organizations**: Ridewise, HART Commuter Information Services

Other comments (if any) by initiator:

Initiator:

Division:

Date of Initiation:
Signature________________________________________________________
Concurrence by Division Director (Signature)__________________________

Date of Concurrence______________________________________________

The following information is to be completed by the Bureau of Capital Program Development:

Date Received by Capital Program Development_______________________
Date presented to Capital Program Committee________________________

Disposition
________________________________________________________________________
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APPENDIX C – TRANSIT-SUPPORTIVE DESIGN GUIDELINES
Route 202
Transit-Supportive Design Guidelines

Prepared for:
Somerset and Hunterdon Counties, New Jersey

Prepared by:
The Louis Berger Group Inc.

2009
<table>
<thead>
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<th>Section</th>
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<tr>
<td>1. Introduction</td>
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The Route 202 study corridor contains many elements for building vibrant commercial areas that combine the convenience of conventional ‘strip’ developments with employment centers and transportation options. While each town has its own character, there is potential to create a unified corridor that embodies the transit-friendly and smart growth principles being advocated for within Somerset and Hunterdon Counties. Careful planning is required to ensure that Route 202 realizes its potential as an attractive environment for people to shop, work, and live near no matter what their choice of transportation to and from the corridor. Currently, the majority of commercial development along the corridor has evolved into a sprawling development pattern that primarily serves automobiles. This form of ‘strip’ development, which is seen across the country, lacks sensitivity to both movement and interaction at the human scale and the character and aesthetic quality of the community.

Today’s residents and consumers are realizing that the physical configuration, mixture and density, and appearance of land development impact the quality and function of a transportation system. Residents, consumers, and workers are currently experiencing severe congestion in the Route 202 study corridor and demand a more balanced transportation system that provides opportunities for an easier commute or a more enjoyable trip to the store.

In order to provide a more distinct and appealing atmosphere within existing commercial areas and improve mobility for all modes of travel, municipalities along the corridor must encourage a more balanced approach to development that promotes a high quality living environment while continuing to accommodate all transportation users. Design guidelines can provide the standards necessary to implement change throughout all six municipalities along the corridor. These guidelines have the potential to reduce vehicle trips, improve safety, decrease travel times, in addition to enhancing the study area’s attractiveness.

This handbook provides guidelines and standards to ensure that Route 202’s commercial development is tailored to community and regional transportation needs. This process involves incremental steps that address each area of the development process and all modes of travel. The design handbook is divided into 7 sections which contain specific objectives and design guidelines. In approving any application for development along the Corridor, the Municipal Planning Boards must be satisfied that the stated objectives for each section are achieved.

The Route 202 Transit-Supportive Design Guidelines Handbook is intended to be used by property owners, designers, elected officials, and community members in considering new commercial development and land use planning along the Route 202 corridor. This design manual represents a first step in ensuring improved built outcomes, and renewing an attractive, community and multi-modal focused commercial environment.

1. Building Location & Orientation
2. Traffic
3. Parking
4. Transit Facilities
5. Sidewalks
6. Crosswalks
7. Bicycle Access

The Route 202 Vision Statement: To provide a balanced multimodal transportation system that includes rail and bus transit, improved roadway, bicycle and pedestrian facilities and associated systems and travel demand management services. This system will provide reliable mobility choices to all of its users; residents and visitors of all ages, incomes and physical abilities, as well as businesses that provide services and produce or sell goods. Users will find it easy to access and it will permit efficient local and state wide connections for people and freight.
**INTRODUCTION**

Between Flemington Borough and Raritan Borough, Route 202 passes through six different municipalities, each with their own land use ordinance and zoning guidelines. There is a significant amount of variation between the type of development that has occurred between and within each of the municipalities ranging from preserved agricultural land to big-box retail. Through concentrated and well-designed commercial development, Route 202 has the potential to become a cohesive corridor that meets the needs of residents, consumers and workers while accommodating the significant variations in land use and densities between the six municipalities.

The 7 sections within the *Route 202 Transit-Supportive Design Guidelines Handbook* are meant to affect development along the entire study corridor, but are specifically focused on addressing commercial development. Through concentrating commercial development, the design guidelines combined with open space preservation measures can direct growth and redevelopment to reduce vehicular congestion and increase mobility and accessibility while increasing safety along the corridor.

Commercial development in Branchburg Township contrasts with preserved agricultural land in Readington Township highlighting the different land uses along the study corridor.

The quantity and distribution of commercially zoned land within the study municipalities should be reexamined with a focus on promoting in-fill, mixed-use, and higher intensities within key locations. Restructuring existing commercial areas into nodes of higher density development along key intersections will help reduce vehicle trips, improve traffic, increase pedestrian activity, utilize public facilities and infrastructure more efficiently, and create more vibrant community centers. These nodes of higher-density development can be interspersed with existing land uses, future low-intensity land uses, and open space.

From west to east the existing commercial nodes along the study corridor are at the intersection of Church Street where a large shopping complex with many national retailers including Kohl’s exists, River Avenue where Readington Township’s limited commercial activity is currently concentrated, River Road which has existing commercial development and is in close proximity to the Branchburg Township’s Park and Ride facility, Bridgewater Towne Center where there is a high density of national retailers, and at First Avenue which is in close proximity to downtown Raritan Borough and the Raritan Borough Train Station.

Development within the existing nodes can be promoted through public investment, fast track approval, transfer of development rights, business improvement districts, and other development incentives.
Route 202’s design has the potential to create a cohesive corridor with a more balanced transportation system. To this end the guiding principles of the corridor are reflective of alternative approaches to land development which promote a more sustainable and balanced transportation system.

During the Hunterdon County Growth Management Plan’s visioning phase, the County conducted internet surveys which documented residents’ preferences for various design styles, including highway corridor design. The below left image depicts typical highway retail development with no pedestrian access, poor landscaping, and cluttered signage. This image received a low rating (1.4 out of 4). An image at bottom right received a high rating (3.4 out of 4) for its tree-lined median, pedestrian access, and incorporation of transit stops. It should be noted that trees planted in the median are not permissible for Route 202.

In contrast to the existing form of development which has followed the type of “strip” development that community members find unattractive, the Route 202 Somerset and Hunterdon County design guidelines aim towards a more desirable type of highway that incorporates transit, access management, and improved aesthetics.

Undesirable versus desirable highway development. (Hunterdon County Growth Management Plan)

Illustrative images on the following page demonstrate the type of drastic transformation that can occur within commercial developments. These images depict increases in commercial density, safety improvements within parking lots, access management, pedestrian amenities, and improved building aesthetics. A combination of such elements is possible for Route 202.

In the sections that follow, specific objectives and guidelines are provided to guide the municipalities of Flemington Borough, Raritan Township, Readington Township, Branchburg Township, Bridgewater Township, and Raritan Borough in taking control of Route 202’s development and making improvements to mobility, accessibility, and safety through design changes, infrastructure improvements, and regional land use planning.
INTRODUCTION

Illustrative infill development transforms a declining strip shopping mall into a lively center of activity. Street-fronting shops replace a sea of parked cars, and landscaping, and pedestrian and bicycle amenities further encourage walkability and street activity. (Urban Advantage)

Strip shopping malls can be redeveloped into walkable, mixed-use activity centers through implementing planning and design concepts and strategies presented in the guidelines. The sidewalks in the commercial center should be connected to a network of paths and sidewalks providing access to and from surrounding uses. (Urban Advantage)
BUILDING LOCATION AND ORIENTATION

Objectives:
- Include multi-modal access planning in initial site plan;
- Make pedestrian activity a central theme for development;
- Create a townscape with identity, character, and livelihood;
- Develop an appropriate sense of enclosure; and
- Use design techniques that promote vitality, safety, and efficiency.

Guidelines:
1. Building Location
   - Buildings should be sited to maximize street frontage and parking areas should be positioned away from street.
   - Using a building setback ratio of 1:3 for building height to right of way width can achieve a visual enclosure of the streetscape. This ratio ensures that pedestrians are never farther away from the street edge than three times the height of the adjacent buildings.
   - Use existing street-fronting parking lots for redevelopment.

2. Building Orientation
   - Buildings should front all streets with an entrance and attractive facade.
   - Major roof ridges must be either parallel or perpendicular to the street.

   Building sites can be made more compact and pedestrian-oriented by locating the parking to the side or rear of the building. (Dutchess County, NY Department of Planning and Development)

Avoid buildings set back from the street behind large expanses of parking.
- Buildings do not address the street.
- Difficult to access buildings from the street.
- Parking dominates the landscape.

Buildings that are oriented towards the street add enclosure and character to the townscape.
- Parking in the rear of the building.
- Multi-story.
- Inviting entrance at the street.
- Small set-back from street.
**Objectives:**
- Decrease automobile congestion;
- Continue to provide mobility for corridor residents and workers;
- Continue to provide mobility for regional travelers and through traffic; and
- Decrease vehicle and pedestrian/vehicle conflicts.

**Guidelines:**

- Limit the number of access points from the street. Sharing entrance drives and parking lots with internal service roads based on the block system should be pursued wherever possible.
- Raise and vegetate central medians on streets and designate left turn only lanes.
- Provide temporary stub drives to connect to future development in adjacent parcels with shared access ways.

Currently there are frequent and unmarked access points along the corridor from side streets, stores, offices, and private residences. As drivers travel in and out and between these entryways they contribute to congestion and pose safety risks.

The following images demonstrate how improved access and traffic management can be part of a commercial area’s transformation. This progression of images depicts the use of vegetation as a buffer on both the median and sidewalks, reduced roadway conflicts between turning motor vehicles and bicyclists, and the creation of shared entryways. The picture is completed by street-focused development and the creation of a continuous pedestrian network.
**Objectives:**
- Decrease visual dominance of parking areas;
- Decrease amount of land devoted to parking; and
- Define pedestrian ways.

**Guidelines:**
- Design parking areas to the rear of buildings or in certain cases to the side.
- Divide parking lot rows with landscaping strips and tree islands.
- Clearly define pedestrian pathways.
- Parking facilities should accommodate a range of daily uses including designated employee parking, patron parking, errand parking of 15 to 20 minute maximum, service vehicle parking, and bicycle storage.
- All development shall conform to maximum parking ratios outlined in the Urban Land Institute’s parking standards (see bibliography).
- Parking provisions may be phased in line with staged developments.
- Encourage internal circulation between parking lots.
- Incorporate shared parking where two or more land uses with different parking demand requirements share parking spaces.

An asphalt desert, this parking lot in Flemington Borough puddles with water and does not consider pedestrian movements.
- Aesthetically unattractive.
- Pedestrian movement not defined.

Landscaped medians serve multiple purposes such as pedestrian refuge, shade, buffering, and attractive scenery.
- Defined pedestrian pathway with landscaping.
- Aesthetically pleasing.

Through the use of updated parking standards, parking lots can be reduced in size and incorporate trees and smaller stores along the street front. (Dutchess County, NY Department of Planning and Development)
**Objectives:**
- Make transit facilities safe and attractive;
- Encourage multi-modal connectivity; and
- Anticipate and provide for transit demand growth.

**Guidelines:**
- Make facilities easily recognizable and attractive by including:
  - Benches
  - Signage
  - Trash receptacles
  - Shelters
  - Natural landscaping
- Integrate bicycle racks into vehicle parking areas.
- Within sites provide internal walkway systems that feature landscaping and weather protection at entrances.
- Respond to demand increases with parking capacity increases at Park and Ride facilities by practicing context sensitive solutions.
- Allow transit supportive plazas to be substituted for up to 10% of required parking spaces.

Transit stop is safe and comfortable. Transit is prioritized within the streetscape. *(Urban Advantage)*
- Transit shelter with bench.
- Curb extension / bump-outs.

Plainfield Station sign is attractive and promotes community identity. *(Transit Oriented Development: For Small Communities)*

Branchburg Township’s Park & Ride sign is generic.

Branchburg Township Park & Ride bus shelter placement forces riders to cross in front of the bus.
SIDEWALKS

Objectives:
- Promote walking as a viable alternative to driving;
- Create new pedestrian linkages between developments; and
- Better accommodate pedestrian access and safety within existing infrastructure.

Guidelines:

- Require pedestrian circulation plans in new developments that show connections to the larger pedestrian system and provide pedestrian facilities within parking areas and direct pedestrian connections into the site.
- Connect adjacent commercial developments with interior sidewalks.
- Locate sidewalks at least 4 feet back from curb, where adequate ROW is available, and use vegetation buffers to screen walkways.
- Allow room for street trees and snow storage, and prevent side slopes at driveways.

A lack of sidewalks forces pedestrians to walk along the road's shoulder. (Design Inside the Box)

Wide sidewalks within commercial developments create an environment for shopping, strolling, or sitting. (Linking Land Use & Transportation: NJ's Experience)

Trees and other foliage can provide screening for pedestrian pathways and contribute to storm water management. (Veterans Parkway Design Guidelines)

A separated sidewalk allows for direct and safe pedestrian access to offices. (Design Standards for Pedestrian Circulation)

A rare section of sidewalk at a shopping plaza in Branchburg Township is well intentioned but underutilized because it lacks connections to other walkways and shopping areas and does not have an accessible curb ramp.
**CROSSWALKS**

**Objectives:**
- Promote walking and bicycling as a viable alternative to driving; and
- Better accommodate pedestrian and bicyclist safety within existing infrastructure.

**Guidelines:**
- Crosswalks should be 10 feet wide whenever possible (and a minimum of six feet in order to comply with Manual on Uniform Traffic Control Devices Section 7C.03).
- Crosswalks should be well lit, boldly marked with bar stripes or textured surface.
- Include pedestrian refuges in congested areas.
- At crosswalks, create bulb outs or curb extensions to shorten distance and increase visibility.
- Meet ADA accessibility standards.

Exemplary crosswalk design on a busy corridor. *(Context Sensitive Solutions)*
- Mid-walk refuges
- Signage
- Stripping

Pedestrian signals ought to be combined with marked crosswalks.

Pedestrian linkages at Bridgewater Commons. *(Somerset County Regional Center Vision Initiative)*

Infrequent crosswalks cause mid-block crossing issues and potential conflicts as seen here in Readington Township.
**Bicycle Access**

**Objectives:**
- Promote bicycling as a viable alternative to driving;
- Better accommodate bicyclist safety within existing infrastructure; and
- Develop a bicycle network within new and existing development.

**Guidelines:**
- Preserve shoulder for bike lane use.
- Require new developments to provide bicycle parking and circulation which connects to community bicycle and pedestrian network.
- Implement signage to promote public awareness of road sharing.
- Use bike-safe grates in all roadway construction or improvements.
- Provide bicycle parking that is in proximity to building entrances for convenience and security.

Bicycle parking should be located at convenient and secure locations. *(Design Standards for Pedestrian Circulation)*

Roadway construction/improvements should include bike-safe grates. *(Flickr)*

Bicycle lane markings approved by the Manual on Uniform Traffic Control Devices (MUTCD) can be used to designate bicycle lanes. In the absence of or in conjunction with dedicated lanes, MUTCD approved signs can remind drivers to share the road.

Wide shoulders create a network for bicycle circulation.
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2009

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