



CIRCULATION PLAN ELEMENT

Town of Newton, Sussex County



December 2009



Harold E. Pellow & Associates, Inc. • 17 Plains Road • Augusta • New Jersey • 07826

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The original of this report was signed and sealed in accordance with N.J.S.A. 45:14A-12.

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INTRODUCTION

Purpose

Covering just 3.1 square miles, with 8,244 residents, Newton is the County Seat and the State Designated Regional Center for Sussex County. Newton is a historic town, with a town square, historic main street district and many tight knit, walkable neighborhoods. With much of the Town already built-out, addressing circulation is less about constructing new roads and accesses, and more about making the most of the systems already in place. As such Newton's overarching goal for this Circulation Element is to "reconnect the community" by bringing people, goods and services, jobs and neighborhoods together with a transportation network that provides the groundwork for a vibrant community. This means creating, supporting and/or improving access to multiple modes of transportation and enhancing the mobility of those modes, which support center-based development and redevelopment and enhance the sense of place in the Town.

Relation to Other Planning Documents

The foundation for this Circulation Element dates back to fall 2005 when the Town of Newton conducted a visioning process with A. Nelessen Associates. The result was the creation and adoption of the Urban Design Plan, which lays out a vision for the development and redevelopment of the Town. Based on recommendations from the Urban Design Plan, Newton began to study several areas within the Town for designation as areas in need of redevelopment. Overall, the Town has declared several areas in need of

redevelopment including: a 12.8 acre site on Paterson Avenue, a 13 acre site on Hicks Avenue, a 5.64 acre site at 56 Sparta Avenue and a 5.4 acre site on Mason Avenue. The Town has adopted redevelopment plans for the Paterson Avenue Site, the Hicks Avenue site and the 56 Sparta Avenue site.

In order to further implement the Urban Design Plan, the Town completed a Master Plan Update in August 2008. The Master Plan Land Use Element divides the Town into Transect Zones, establishing the basis for the application of a form-based code throughout the Town. The Master Plan Update included a basic Circulation Element; however the Plan recommended a complete update of the Circulation Element in order to address the eventual development of the several redevelopment areas as well as the proposed zoning revisions and incorporation of a form-based code.

In January 2008, the Town petitioned the State Planning Commission for Plan Endorsement. The State Planning Commission entered into a Memorandum of Understanding (MOU) with the Town on February 27, 2009. The MOU included an Action Plan for the Town to address in order to achieve consistency with the State Plan and Plan Endorsement. This Circulation Element was funded by a grant from the Office of Smart Growth and was included on the Town of Newton's Action Plan. Newton is expecting to achieve Plan Endorsement in 2011.

Circulation Goals & Objectives

Goal 1: To encourage the location and design of transportation routes which will promote the free flow of traffic while discouraging location of such facilities and routes which result in congestion or blight.

Goal 1 Objectives:

- 1.a. Establish street typologies based on Transect Zoning to encourage appropriate utilization of the rights of ways.
- 1.b. Evaluate methods for improving utilization of the existing roadways through a variety of options including one way streets, traffic calming, encouraging alternate modes of transportation, increasing efficiency of intersections and increasing capacity.
- 1.c. Identify dangerous intersections and roadways and evaluate options for improving safety.
- 1.d. Identify high congestion areas and evaluate methods for alleviating congestion.
- 1.e. Propose streetscape improvements in appropriate locations in the Town.
- 1.f. Identify opportunities to improve the pedestrian and public realm adjacent to streets including addition of landscaping, street trees, street furniture and public art.

Goal 2: Develop and improve the coordinated street system which enables the safe and efficient movement of people and goods providing for the separation, to the maximum extent possible, of local and through traffic.

Goal 2 Objectives:

- 2.a. Identify an appropriate street hierarchy and propose design options to identify methods for separating through and local traffic.
- 2.b. Develop “safety by design” techniques to improve actual and perceived safety for pedestrians.
- 2.c. Explore options for creating truck routes through the Town.

Circulation Goals & Objectives

Goal 3: Encourage use of alternate transportation modes (e.g. pedestrian, bicycles, local transit, rail) to lessen dependence on the automobile for local trips in Town, thereby minimizing in-town congestion and air pollution.

Goal 3 Objectives:

- 3.a. Identify locations for bicycle paths throughout the Town.
- 3.b. Identify locations where sidewalks are missing and/or inadequate and need to be improved.
- 3.c. Identify options for improving transit in the Town.
- 3.d. Evaluate options for providing access to rail service from the Town.
- 3.e. Identify opportunities to provide trail connections and off-street pedestrian connections in the Town.
- 3.f. Identify appropriate street tree species and establish planting guidelines and potential locations to plant additional street trees.

Goal 4: Incorporate off-street parking into new infill buildings as rear parking decks, located mid-block behind buildings, developable surface lots must be screened from the street with liner buildings and may be accessed by service lanes.

Goal 4 Objectives:

- 4.a. Identify locations for parking decks.
- 4.b. Establish design options for parking decks and liner buildings.
- 4.c. Develop recommendations for screening and landscaping of parking areas.

Goal 5: Support the development of rail service connecting to the Town of Newton or within reasonable proximity of the Town with transit connections.

Goal 5 Objectives:

- 5.a. Explore options for connecting rail service to the Town and methods for connecting transit to any proposed rail locations in Sussex County.

PUBLIC INVOLVEMENT

Introduction

In order to get input on the Circulation Plan as it was developed, two methods for gaining input were developed. The first was to form a subcommittee of various boards in the Town to review the plan as it was being developed and provide feedback. The second was to hold public involvement sessions to gather input and ideas from the residents of the Town.

Public Involvement Session

Two Public Involvement Sessions were utilized in developing this plan. One was held on September 17, 2009 from 6 pm to 9 pm in the Town Hall and the other was held on Saturday, November 14, 2009 from 9 am to 11 am. The sessions were advertised in the local newspaper, on the Town's website and the Town Council, committee and board members were invited to attend. Main Street Newton was also invited and sent notices out to their members and affiliates. The New Jersey Herald published an article on the front page of the local section of the newspaper the week of the September 17, 2009 meeting to inform people what would be discussed and encourage attendance at the meeting.

The first session was broken into three sections to provide multiple opportunities to gather input. The first hour of the meeting was an informal meet and greet. Meeting attendees were encouraged to walk around the room and provide input at a variety of stations covering traffic congestion, alternative transportation and getting through downtown. The second portion of the session was a presentation of the plan, its purpose and goals and the purpose of the meeting with the public. This was followed by breakout sessions with participants breaking into three groups with the following topics:

- Stuck in Traffic: congestion, accidents and speeding;
- Leave Your Car Behind: walking, biking and mass transit; and
- Around Town: parking, wayfinding and streetscapes.

The breakout sessions gave participants about 30 minutes to discuss the various topics and write down their comments regarding the issues, potential challenges related to the issue and opportunities for improvement. Following the breakout sessions, one person from each group reported on the discussions to the entire group. Following the breakout sessions, individuals were invited to make any comments they felt had not been covered yet or that they felt were important with respect to the plan. Public comments were taken for about 30 minutes. Finally, participants were informed about the process of plan adoption and how they could stay involved in the process.

The second session followed a slightly different format than the first. First, the same presentation covering the purpose, goals and concepts behind the Circulation Plan was presented. Following, the comments received from the first meeting were reviewed and the public was invited to offer additional comments, questions and concerns in the three topic areas utilized for the prior meeting. The following tables present the comments from both sessions.

Results of the Public Information Sessions

Leave Your Car Behind: Walking, Biking and Mass Transit

Table 1.1: Walking, Biking and Mass Transit Issues Challenges and Opportunities

Issues	Challenges	Opportunities
Rail trail needs to be improved	Development along the right of way Adjacent property owners blocking ROW	Utilize easements in place Apply for grants to improve the trail Provide signage and lighting to encourage use.
Start a "Share the Road" campaign	Bike lanes may be difficult to construct Some cyclists prefer a "shared " road over bike lanes Enforcement of rules on the road for cyclists and motorists	Signs to inform motorist of cyclists Expand shoulder in some locations Add bike paths where feasible Consider safe bike routes to schools
Bus Service in the Town	Need to expand service beyond seniors	Special buses during holidays and between the college and downtown to encourage shopping
On Demand Van Service	May be expensive	County has a service that should be expanded
Encourage people to park on the fringe of downtown	People want to park in front of the location they are going to	Provide shuttles to shopping areas from lots on the edge of downtown
Speeding on major roads makes walking/biking difficult	Speeding is a chronic problem on busy roadways	Traffic Calming Enforcement
Bike racks would encourage cycling	Safety is an issue; must be in good locations	Not too expensive; could be installed easily
Some people did not like the idea of rail service to the Town or Sidewalks in the Town	Concern was over cost and some who use the road instead of the sidewalks	Look for grants for mass transit and partner with the County Encourage use of the sidewalks by improving them

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Issues	Challenges	Opportunities
Sidewalks need to be improved in several locations	Cost/Space	Route 206 from Town Center to Shop Rite From the College to Town Center On the east side of Gardner Ave. On Sussex Street
Light rail service on major transportation corridors would be nice	Cost/Space	Bus Rapid Transit may be an option particularly between Town and proposed train station in Andover
Wheel Chairs and scooter use road for travel	Sidewalks may not be accessible and convenient	Bike lanes may provide another location for travel
Lighting and safety for pedestrians	Cost is an issue	Alleys in the Town Center need to be well lit –This may be a perception issue as well
Education and enforcement of walking/biking rules	Needs coordinated effort Stepped up enforcement	Provide signage for bikes/pedestrians and cars
Shuttles from College to Town	Students don't want to lose spots at the college once they park	Provide a regular shuttle from Spring Street to College
Safe routes to school – schools need to be educating students about walking to school	Need coordination between Town and School district	Encouraging and promoting walking to school could reduce traffic and congestion on roadways
Shade trees are needed in certain areas to make walking more comfortable and inviting	Need to coordinate with property owners and other agencies if trees are in ROW	Along Rt. 206 between Clinton and Weis needs shade trees to improve walking comfort and appeal.
Day laborers and loitering at a bus stop on Spring Street creates a disincentive to pedestrians in the area and cause safety perception problems	Need a new location for day laborers to congregate; may need a new location for the County bus stop	Town could bring stakeholders together to find a new location for day laborers and possibly the bus stop

Stuck in Traffic: Congestion, Accidents and Speeding

Table 1.2: Public Comments on Congestion, Accidents and Speeding

Comments on Congestion	Comments on Accidents	Comments on Speeds
Sparta Ave. congestion is different and worse prior to normal peak hours	Truck traffic on Spring St. causes safety concerns	Trinity/Union needs signal/ has dangerous speeds
Possible timing issue with signal at Diller Ave. and Sparta Ave.	Not stopping at cross walks in Town is a problem	Trinity St. speeds are high – need for traffic calming
Trinity/206/Mill St. left turn movements block through traffic	Need for signal at Trinity and Moran	Ryerson Ave. by School has speed problems
Potential detours to move Sparta Ave. traffic to other roads	Incorrect use of center turn lane causes safety problems	Liberty St. and Division St. are used for cut-through
One way traffic on Spring St. – possible one way to Moran St., gain parking, gain more neighborhood feel	Diller/Stuart/Lower Spring St. – people are not stopping at stop sign	Diller Avenue speeds are high
206 traffic from Trinity north should change to four lanes	CR 616 by Cemetery – speeds have caused several accidents	Diller Ave./Lower Spring St. intersection should be reconfigured
206 NB at post office is only one lane – two lanes would move traffic faster	Sight distance at 206/Lawnwood looking south is not good	Main St. southbound out of Town between Ryerson and Liberty has speed problems
Timing of signals should be aligned	Halsted/Madison intersection sight distance is poor	Route 94 going south from the hospital there are speeding problems
Traffic progress around the square is a problem	Sight distance at exit for theatre parking lot is not good	
206/Woodside light should be changed to a full signal	Need to compare perception of safety issues with actual accident data	
Problems with signal timing at Woodside Ave. and Diller Ave.	Sight distance blocking intersections needs to be addressed, i.e. Orchard St. & Sparta Ave.	
Use coordinated “ITS” traffic timing systems to time traffic lights on Rt. 206 between Newton and Hampton		
Blocking the box is a problem at some intersections		

Around Town: Parking, Wayfinding and Streetscapes

Table 1.3: Parking Wayfinding and Streetscapes Issues, Challenges & Opportunities

Issues	Challenges	Opportunities
Parking sign consistency and uniformity	Costs to replace signs	Make green areas, i.e. dividers, islands, to locate signs in and beautify parking areas
Direction signage as you enter Town and directories to shopping and offices	Keeping them current/well-maintained	Ease of movement through community and familiarity
Walkway/Alleyways: wayfinding to and from and condition	Lighting and safety	Allows easy and attractive access to Spring Street and makes parking more attractive.
Pocket Parks	Design/Cost/Maintenance	Making roof-tops into pocket parks, i.e. on a parking deck roof-top
Overnight Parking	Overnight parking is currently not available in many parts of the downtown	Could attract a higher socio-economic class of tenants for downtown apartments
Archways over Spring Street	Cost	Place Shopping District Archway signs over both ends of Spring St. to generate interest and make the area unique
Signage Improvements	Cost, Restrictions in Historic District	Beautification and uniformity and a perception of a quality community.
Lack of parking	Cost/Space	Consolidate underutilized private parking for public parking; Build parking decks
Seniors have a hard time walking on grades to businesses on Spring. St.	Limited ability to change grades and distance to parking	Reserve some spaces along Spring St. as courtesy spaces for seniors
Merchants and employees using on street parking	Difficult to regulate	Put meters on Spring St. and structure parking in lots to discourage use by employees/shop owners
Safety concerns traveling between parking and Spring St. at night	Cost	Lighting should be improved
Encourage quality traffic through the downtown; i.e. separate truck traffic	Finding an appropriate truck route; enforcement	Providing more pass-by traffic to support businesses
Loitering along Spring Street makes it unpleasant for shoppers along the street	Cannot outlaw loitering	Need to develop creative ways to keep pedestrian area pleasant for shoppers
Loading zones are available for parking at night but are not used	Need to educate public that they can park there after 6 pm	Creates additional parking opportunities for night time patrons
People do not know where parking is and existing meter system is inconvenient	Need to make parking more appealing because it is not visible from street	A coordinated wayfinding system and new meter system for parking could improve the use of lots

EXISTING CONDITIONS

Introduction

This section will provide the base data on the existing conditions of the transportation network in the Town of Newton. This will include the existing land uses, roadways, their classifications, road width, number of lanes and location of sidewalks. This section will also provide raw data for select intersections within the Town, including level of service. Following, locations planned or existing streetscape projects will be provided along with accident data and areas of congestion. The existing locations of trails, pedestrian access points, parking and other items will also be identified.

Road Classifications

There are approximately 29 miles of roadway in the Town of Newton which can be categorized into four major classifications as

follows: Principal Arterial, Minor Arterial, Collector, and Local. The following roadways are highlighted in this Plan Element:

Table 2.1: Streets by Classification

Street Name	Classification
US 206	Urban Principal Arterial
NJ 94	Urban Minor Arterial
Sparta Ave./CR 616	Urban Minor Arterial
Spring Street	Urban Minor Arterial
East Clinton Street	Urban Collector
Hicks Ave./CR 663	Urban Collector
Merriam Ave.	Urban Collector
Mill Street	Urban Collector
Moran Street	Urban Collector
Newton-Swartswood Rd.	Urban Collector
Trinity Street	Urban Collector
Union Place	Urban Collector

Street Name	Classification
West End Ave./CR 519	Urban Collector
Woodside Ave./CR 621	Urban Collector
Clinton Street	Urban Local
Madison Street	Urban Local
Paterson Ave.	Urban Local
Academy Street	Local
Adams Street	Local
Ashford Street	Local
Babbit Road	Local
Barrett Ave.	Local
Barry Lane	Local
Birch Drive	Local

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Street Name	Classification
Buckingham Court	Local
Carriage Lane	Local
Cassidy Road	Local
Cedar Street	Local
Center Street	Local
Cherry Street	Local
Church Street	Local
Clarkson Place	Local
Clive Street	Local
Condit Street	Local
Diller Ave	Local
Division Street	Local
Dogwood Drive	Local
Donald Ave.	Local
Douma Drive	Local
Dump Road	Local
Dunn Place	Local
East Stuart Street	Local
Elm Street	Local
Emmons Ave.	Local
Fairview Ave.	Local
Ferndale Ave.	Local
Foster Street	Local
Franklin Street	Local
Gardner Ave.	Local
Grand Ave.	Local
Halsted Street	Local
Hamilton Street	Local
Hampton Street	Local

Street Name	Classification
Harrison Street	Local
Hillside Ave.	Local
Hillside Terrace	Local
Howard Street	Local
Jefferson Street	Local
Jersey Place	Local
Jimland Terrace	Local
Kelsey Ave.	Local
Kory Road	Local
Lake Ave.	Local
Lawnwood Ave.	Local
Layne Place	Local
Liberty Street	Local
Lincoln Place	Local
Linmor Ave.	Local
Linwood Annex	Local
Linwood Ave.	Local
Maple Ave.	Local
Mason Ave.	Local
Mount View Street	Local
North Park Drive	Local
Nelson Street	Local
New Hampshire Street	Local
Oak Street	Local
Orchard Street	Local
Palmer Street	Local
Park Ave	Local
Paterson Place	Local
Pine Street	Local

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Street Name	Classification
Plainfield Ave.	Local
Plotts Road	Local
Prospect Street	Local
Ridgeview Road	Local
Ridgewood Ave	Local
Robin Place	Local
Ryerson Ave.	Local
South Park Drive	Local
Shady lane	Local
Slatehill Road	Local
Smith Street	Local
Stratford Lane	Local
Stuart Street	Local

Street Name	Classification
Summit Ave.	Local
Sussex Street	Local
Thompson Street	Local
Townsend Street	Local
Trenton Place	Local
Valley View Court	Local
West Nelson Place	Local
Walker Street	Local
Washington Street	Local
Williams Street	Local
Winsor Drive	Local
Woodridge Court	Local
York Road	Local

Principal Arterial Roads

Approximately 8.3 percent of the roadways in Newton, or 2.42 miles, are classified as a Principal Arterial Road.

1. **United States Route 206**

US Route 206, also known as Water Street, Main Street, and part of Woodside Avenue, crosses 12,771 linear feet (2.42 miles) in the municipality. Portions of US Route 206 had a 2004 traffic count of 21,501 vehicles.

Minor Arterial Roads

Approximately 8.5 percent, or 2.47 miles, of the roads in Newton are Minor Arterial Roads, including the following:

1. **New Jersey State Route 94**

New Jersey State Route 94 is also identified by NJDOT as W.W. II 94th Infantry Division Highway, but is better known as High Street in Newton. High Street covers approximately 5,709 linear feet (1.08 miles) within the municipality and is not signalized within Newton. Portions of High Street had a 2005 traffic count of 13,811 vehicles.

2. **County Route 616 - Sparta Avenue**

Sparta Avenue, also known as Sussex County Route 616, crosses approximately 4,886 linear feet (0.92 miles) in Town. Sparta Avenue is signalized at its intersection with Woodside and Diller Avenues. Portions of Sparta Avenue had a 2004 traffic count of 20,000 vehicles per day.

3. **Spring Street**

Spring Street covers approximately 2,467 linear feet (0.47 miles) in the Town and is signalized at its intersection with Union Place and Madison Street.

Urban Collector Roads

About 19.4 percent, or 5.64 miles, of the roads in Newton are classified as Urban Collector Roads, including the following:

1. **County Route 519 – West End Avenue**

West End Avenue, also known as Sussex County Route 519, covers approximately 4,180 linear feet (0.79 miles) within the municipality. West End Avenue is not signalized.

2. **County Route 621 – Woodside Avenue**

Woodside Avenue, also known as Sussex County Route 621, covers approximately 2,604 linear feet (0.49 miles) within the municipality. Woodside Avenue is signalized with a standard traffic signal at its intersection with Sparta Avenue and with a flashing light at its intersection with Main Street/206. Portions of Woodside Avenue had a 2005 traffic count of 3,131 vehicles.

3. **County Route 622 – Newton-Swartswood Road**

Newton-Swartswood Road is also identified as Sussex County Route 622 and covers approximately 2,602 linear feet (0.49 miles) within the municipality. Newton-Swartswood Road is signalized at its intersection with Mill Street. Portions of Newton-Swartswood Road had a 2003 traffic count of 3,142 vehicles.

4. County Route 663 – Hicks Avenue
Hicks Avenue, also known as Sussex County Route 663, covers approximately 5,229 linear feet (0.99 miles) within the municipality. Hicks Avenue is not signalized within the Town.
5. East Clinton Street
East Clinton Street covers approximately 1,242 linear feet (0.29 miles) within the municipality. East Clinton Street is signalized at its intersection with U.S. Route 206.
6. Merriam Avenue
Merriam Avenue covers approximately 3,310 linear feet (0.63 miles) within the municipality. Merriam Avenue is not signalized.
7. County Route 519 - Mill Street
Mill Street, also known as Sussex County Route 519, covers approximately 4,746 linear feet (0.90 miles) within the municipality. Mill Street is signalized at its intersections with U.S. Route 206, Newton-Swartswood Road, and North Park Drive.
8. Moran Street
Moran Street covers approximately 1,603 linear feet (0.30 miles) within the municipality. Moran Street is not signalized but is an important connector street between Trinity Street and East Clinton Street.
9. Trinity Street
Trinity Street covers approximately 2,960 linear feet (0.56 miles) within the municipality. Trinity Street is signalized

with a flashing light at its intersection with Union Place and a standard traffic light at its intersection with U.S. Route 206.

10. Union Place

Union Place covers approximately 1,044 linear feet (0.20 miles) within the municipality. Union Place is signalized at its intersection with Springs Street and with a flashing light at its intersection with Trinity Street.

Urban Local

About 4.4 percent, or 1.26 miles, of the roads in Newton are classified as Urban Local Roads, including the following:

1. Clinton Street

Clinton Street covers approximately 1,555 linear feet (0.29 miles) within the municipality. Clinton Street is signalized at its intersection with U.S. Route 206.

2. Madison Street

Madison Street covers approximately 2,706 linear feet (0.51 miles) within the municipality. Madison Street is signalized at its intersection with Spring Street.

3. Paterson Avenue

Paterson Avenue covers approximately 2,406 linear feet (0.46 miles) within the municipality. Paterson Avenue is not signalized.

Local Roads

The remaining 17.24 miles (59.4 percent) of the 29.03 miles of roadway in Newton are classified as Local Roads.

Road Dimensions

Table 2.2 below includes information from a Road Master, Curb and Sidewalk Capital Improvement Plan prepared by Harold E. Pellow & Assoc. dated, December 17, 1985. Road data that was not available from this report was collected by our office.

Table 2.2: Street ROW and Width

Street Name	R.O.W. Width	Pavement Width
US 206	66 - 80	30 - 60
NJ 94	66 - 80	30 - 60
Sparta Ave./CR 616	66	30
Spring Street	66	36
East Clinton Street	45	30
Hicks Ave./CR 663	50	30
Merriam Ave.	50	30
Mill Street	66	30 - 43
Moran Street	45	26
Newton-Swartswood	50 & Varies	Varies
Trinity Street	60	31.5
Union Place	48	26
West End Ave./519	41.25	30
Woodside Ave./621	50	30
Clinton Street	45	30
Madison Street	40	22
Paterson Ave.	50	26.5-36
Academy Street	25	16
Adams Street	30	17
Ashford Street	45	26
Babbit Court	50	30
Barrett Ave.	40	26
Barry Lane	50	25
Birch Drive	50	30
Buckingham Court	50	30
Carriage Lane	50	28

Street Name	R.O.W. Width	Pavement Width
Cassidy Place	20	18
Cedar Street	Varies	20
Center Street	40	20
Cherry Street	30	19
Church Street	50	30
Clarkson Street	30	14.5
Clive Place	50	29.5
Condit Street	50	29
Diller Ave	66	26
Division Street	28	19
Dogwood Drive	50	30
Donald Ave.	50	30
Douma Drive	50	30
Douma Court	50	30
Dunn Place	33	20
East Stuart Street	25	18-26
Elm Street	50	30
Emmons Ave.	50	29
Fairview Ave.	50	28
Ferndale Ave.	40	30
Foster Street	50	28
Franklin Street	50	28
Gardner Ave.	50	25 & 30
Grand Ave.	30	24
Halsted Street	50	27
Hamilton Street	33	20.5

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Street Name	R.O.W. Width	Pavement Width
Hampton Street	33	24
Harrison Street	45	25
Hillside Ave.	50	29
Hillside Terrace	40 & 46	29
Howard Street	45	16
Jefferson Street	30	17
Jersey Place	50	30
Jimland Terrace	40	30
Kelsey Ave.	20	22
Kory Road	50	30
Lake Ave.	40 & 50	30
Lawnwood Ave.	50	30
Layne Place	50	30
Liberty Street	40	24.5
Lincoln Place	33	24
Linmor Ave.	50	30
Linwood Annex	14	14
Linwood Ave.	50	20
Maple Ave.	40	22
Mason Ave.	50	30
Mount View Street	45	25-32
North Park Drive	50 & 66	44
Nelson Street	50	30
New Hampshire St.	33	22
Oak Street	45	12-17
Orchard Street	50	28-33
Palmer Street	33	30
Park Ave	40 & 50	30
Paterson Place	50	31.5

Street Name	R.O.W. Width	Pavement Width
Pine Street	50	30
Plainfield Ave.	50	30
Plotts Road	66	44
Prospect Street	40	24
Ridgeview Road	50	30
Ridgewood Ave	40	25
Robin Place	50	30
Ryerson Ave.	50	29
South Park Drive	50 & 66	28 - 44
Shady Lane	33	20
Slatehill Road	33	16.5
Smith Street	40	28
Stratford Lane	50	30
Stuart Street	33	26
Summit Ave.	25 & 30	23
Sussex Court	50	28
Sussex Street	50	30
Thompson Street	50	29
Townsend Street	40	24.5
Trenton Place	50	30
Valley View Court	50	30
West Nelson Place	40 & 50	30
Walker Street	30	19
Washington Street	33	17
Williams Street	50	27
Winsor Drive	50	30
Woodridge Court	50	30
York Road	50	30

Sidewalks

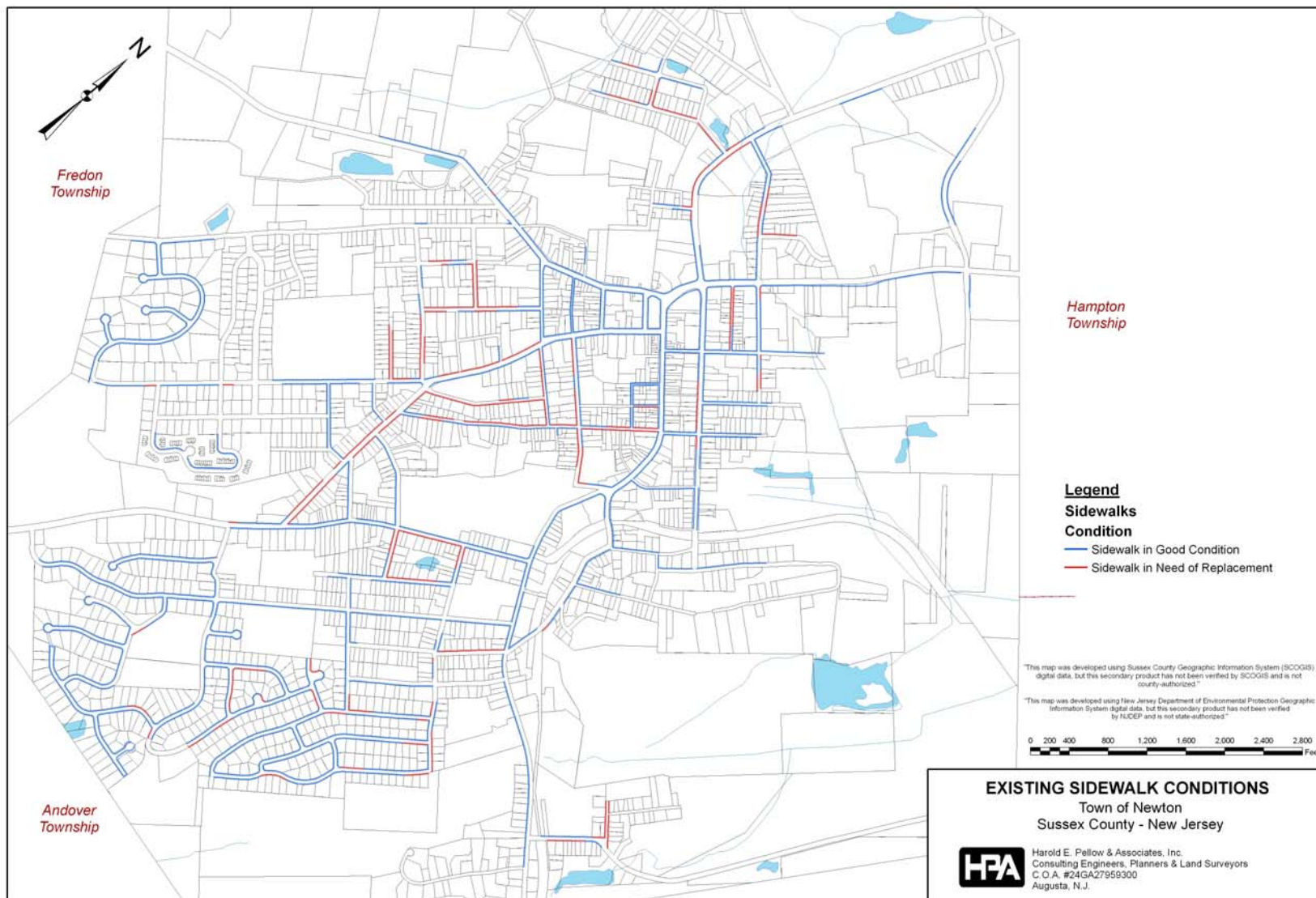
The location and condition of sidewalks in the Town were recorded by our office in March of this year. Several areas throughout the Town were identified as being in need of sidewalks or sidewalk repair. Sidewalk repair has recently become a priority in the Town. Two year ago, the Town passed an ordinance to require sidewalks to be constructed in front of all developments in the commercial districts within the Town. To continue this effort, sidewalk

construction and re-construction should be prioritized and incorporated into the Town's Capital Improvement Plan in a systematic fashion in the same way that streets are resurfaced and repaired. The map on the following page shows the locations of all of the sidewalks in the Town and their condition. The sidewalks in blue were found to be acceptable while the sidewalks in red are in need of repair.



Examples of Problem Sidewalks in Newton

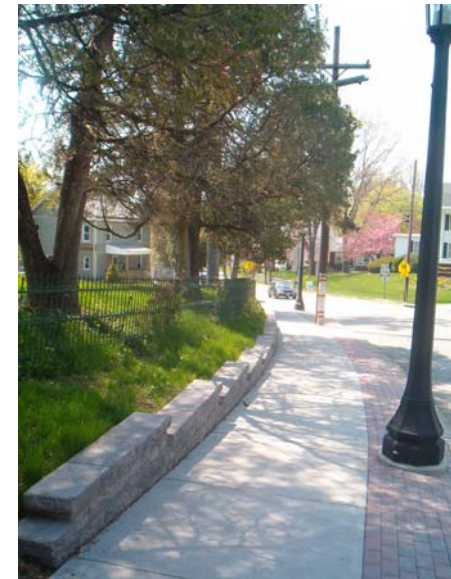
Town of Newton CIRCULATION PLAN ELEMENT



Streetscape Projects

Newton has been conducting streetscape projects in the central business district over the last 14 years. The projects have included streetscapes along Woodside Avenue, Main Street, Water Street and Spring Street. Recently, stamped pavement crosswalks have been added in several locations throughout the Town as part of a Safe Routes to School Grant. Crosswalks in other areas of the Town also need to be enhanced to improve pedestrian safety and beautify the Town, particularly along Spring Street in the central business district.

Additional streetscape projects should continue throughout other areas of Town, particularly those that are either in the proposed T-4, T-5 or T-6 zones as those incorporate the Town Core, Town Core Support Area and the Neighborhood Centers. Streets in these areas should have a heightened level visibility.



Examples of Newton streetscape and crosswalk projects

Traffic Data

Traffic data was collected in April 2009 at key intersections for peak morning and evening hours. The data will assist in identifying problem locations and planning for future improvements that will alleviate congestion in the main sections of the Town. Traffic counts were conducted for the following intersections to establish current and future traffic conditions:

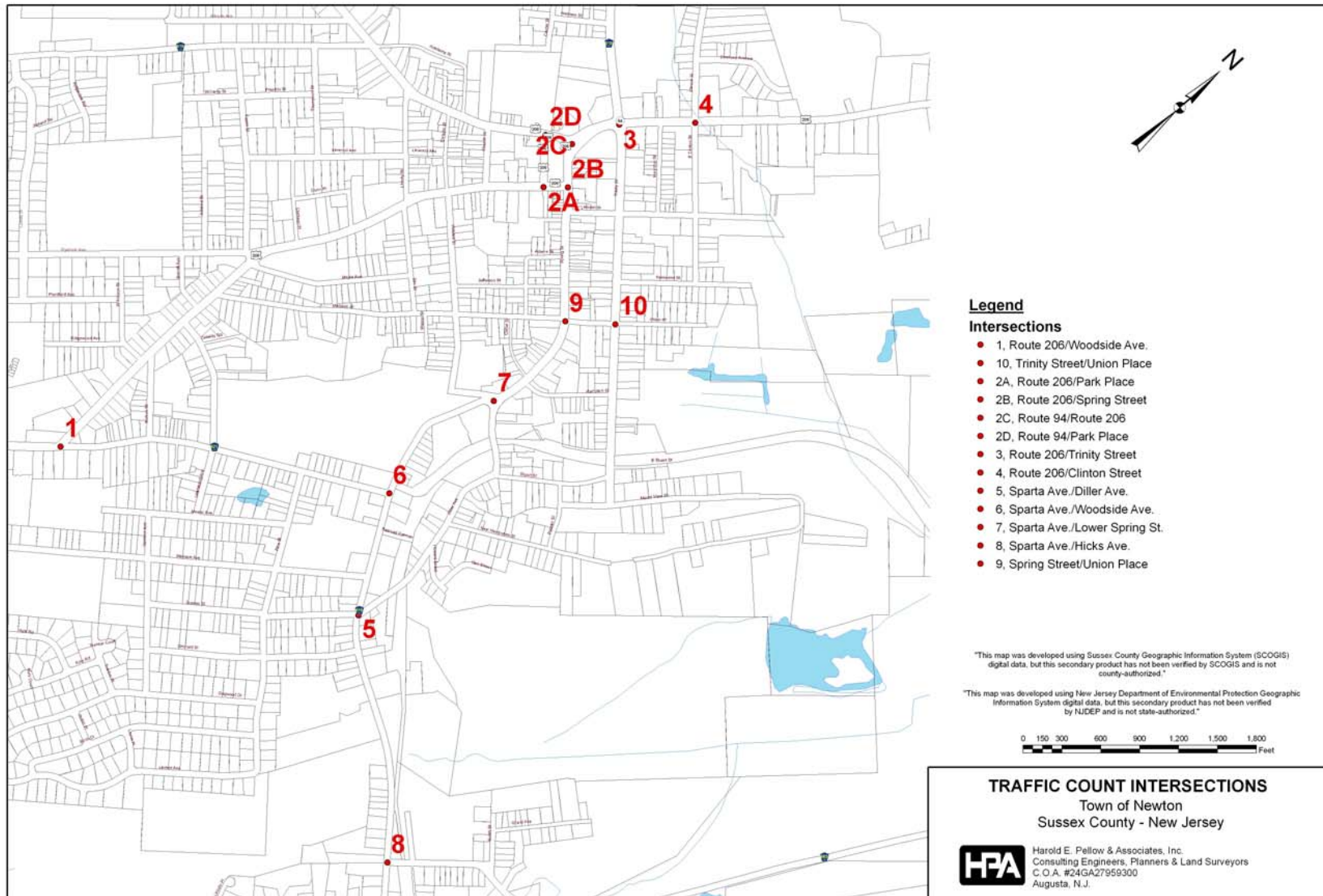
1. 206/Woodside
2. 206/94/Spring Street (all 4 locations)
3. 206/Trinity Street
4. 206/Clinton Street
5. Sparta Ave./Diller Ave.
6. Sparta Ave./Woodside Ave.
7. Sparta Ave./Lower Spring St.
8. Sparta Ave./Hicks Ave.
9. Spring St./Union Place/Madison St. Intersection
10. Trinity St./Union Place Intersection

Areas of Congestion

NJDOT's Congestion Management System ranks State and some County roadways with respect to their level of service and overall degree of congestion as low, medium and high. The section of US Route 206 in Newton from milepost 107.90 to 109.25 is ranked as a high congestion area and is considered a bottleneck area. The level of service from milepost 109.0 to 109.25 is classified as "F", the lowest possible ranking, where traffic speeds are severely reduced and frequent stopping and delays occur.

While not specifically ranked, the area around the Town Square has a high level of congestion because of traffic backing up from the US Route 206 congestion area and up around the Town Square. Much of this congestion is linked to traffic patterns in Hampton Township along US Route 206 where there is a shopping center, Wal-Mart and Lowe's Home Improvement Store.

Town of Newton CIRCULATION PLAN ELEMENT



Accident Data

Table 2.3 provides the number of accidents on roadways within the Town, arranged from most accidents to least. The greatest number of accidents occur along US Route 206, followed by Sparta Avenue, then NJ Route 94. The greatest number of accidents also corresponds with the most highly traveled roadways (see traffic count data under Street Classifications above).

Table 2.3: 2008 Accident Location Data

Location	Accidents	
	Number	Percent
US Route 206/Water Street	55	18.39%
Sparta Avenue	42	14.05%
US Route 206/Main Street	27	9.03%
Trinity Street	24	8.03%
Mill Street	24	8.03%
High Street	22	7.36%
Spring Street	17	5.69%
Woodside Avenue	16	5.35%
North Park Drive	10	3.34%
Park Place	8	2.68%
Newton-Swartswood Road	7	2.34%
Moran Street	6	2.00%
Madison Street	4	1.34%
Halsted Street	4	1.34%
Accident Locations with Less than 1% of total	29	9.69%
Total	299	100.00%

Trails

The abandoned Erie-Lackawanna Railroad right-of-way traverses the Town of Newton. A portion of this line, the Sussex Branch, was converted into a 9-mile rail trail, a portion of which is located in the Town. The Town of Newton owns the abandoned sections of railroad right-of-way, many sections of which traverse areas proposed as areas in need of redevelopment. Future use of the right-of-way shall maintain a pedestrian and bike right-of-way to allow for travel along the historic train route. The 2008 Master Plan proposes development of the right-of-way as a rail trail where it crosses open space and a pedestrian/bike path where it crosses developed land. The portion of the right-of-way which travels through areas designated in need of redevelopment should include provisions to allow equestrian access across the redevelopment areas, connecting both ends of the rail trail. Appropriate parking for horse trailers will be necessary.

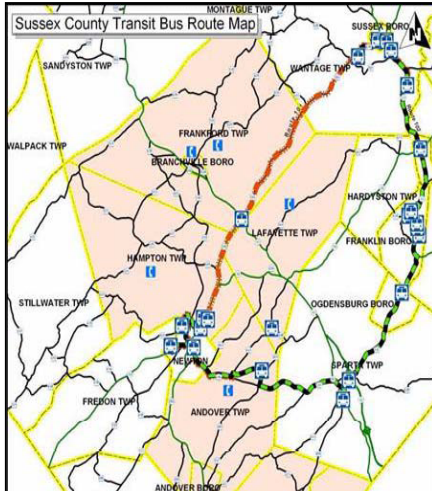
Footpaths should also be considered to increase pedestrian connectivity. Where parking areas are adjacent on separate lots, the areas should be connected with pedestrian walkways to encourage share parking and access throughout the Town. Footpaths should also be considered through the Town's parks, particularly Memory Park to provide recreation and pedestrian access to parts of the park that are difficult to access by foot currently. Walking and jogging paths could increase the pedestrian experience in the Town, encouraging and supporting walking as a mode of transportation as well as an opportunity to exercise and recreate in the Town.



Sections of the abandoned Erie-Lackawanna Right of Way in Newton

Mass Transit

Existing Transit Services



Sussex County Transit provides four County-wide bus routes, which include routes from Newton to Hampton Township, Lafayette Township, Sussex Borough, Wantage Township, Hardyston Township, Franklin Borough, Ogdensburg Borough and Sparta Township. The bus service is available Monday through Friday from 5:30 a.m. to 6:30 p.m.

Sussex County also provides Para Transit for seniors and persons with disabilities. This service is a free on-demand service which runs Monday through Friday from 5:00 a.m. to 6:30 p.m. Door-to-door service is available in-County for a variety of local errands including: nutritional needs, medical appointments, shopping, hairdresser, bank, community services, education/training and employment needs. Out-of-County service is available for non-emergency medical appointments including: dialysis, therapy, radiation/chemo treatments, mental health appointments, specialized hospital visits and Veteran's facilities.

The Town of Newton provides a Senior Shuttle Bus service Tuesday through Friday from 9 a.m. to 4 p.m. and Saturdays from 8 a.m. to 1 p.m. for senior residents who are 62 years and older to locations within the Town limits.

Park and Ride

The Town currently has one Park and Ride Facility located behind the Shop-Rite on South Park Drive. Lakeland Bus provides service at Newton's Park and Ride to New York City via Route 206 and Interstate 80. The bus makes stops at Rockaway Mall, Dover Transit Station, Denville and Parsippany. Lakeland Bus also provides daily bus service to Atlantic City from Newton's Park and Ride Facility. The 2008 Master Plan Update recommends moving the park and ride to a planned parking facility on Trinity Street behind the County Administration Building. This will help bring people into the central business district and promote use of the retail shops and services there.

Parking

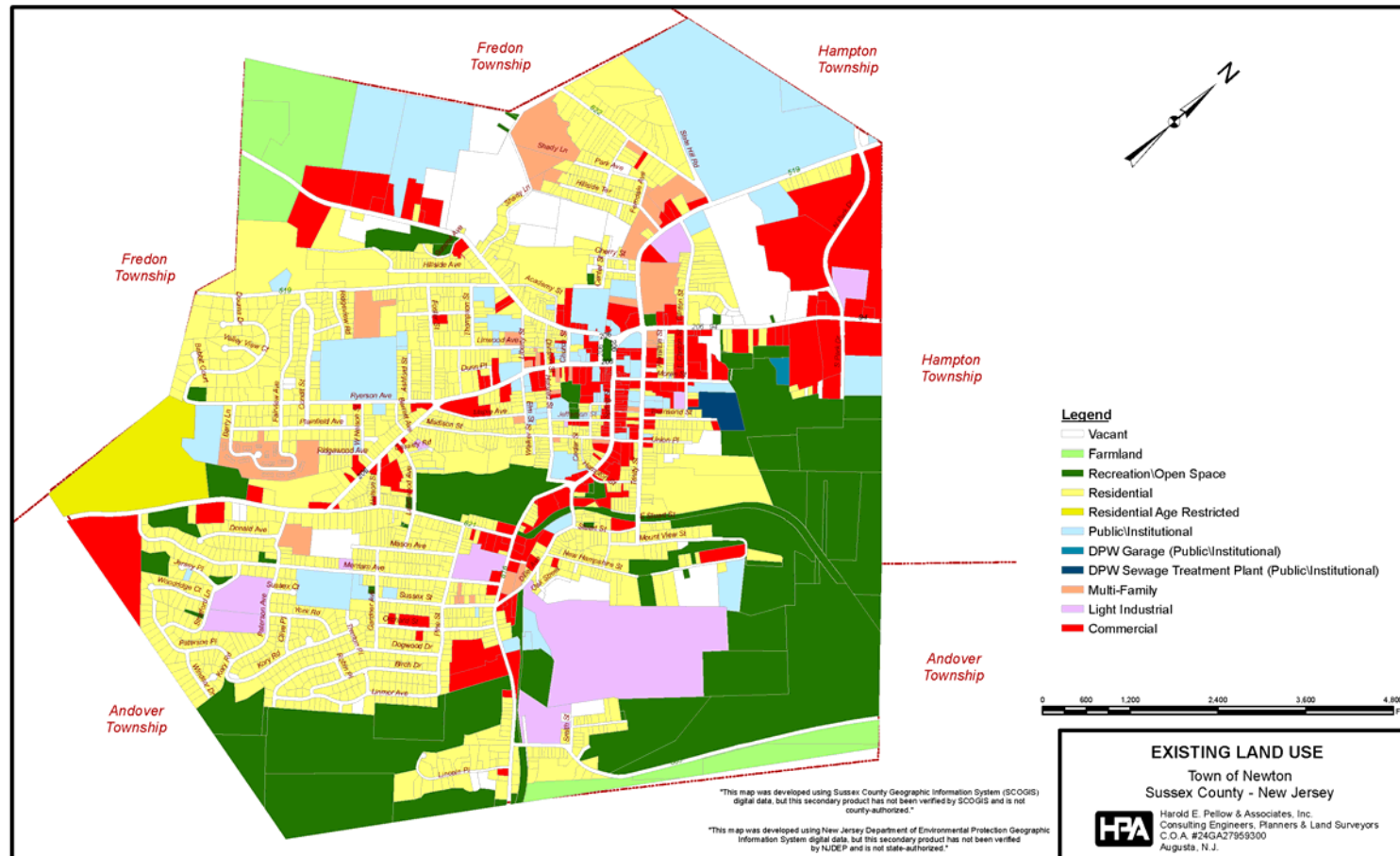
In 2000, a Parking Study was performed by Wiley Engineering to identify parking shortages, potential locations for parking decks, and future parking recommendations. The study looked at the seven public parking lots in this area along with on-street metered parking which all together totaled 404 parking spaces. These locations include the following lots: Main Street Plaza, Central Plaza, Adams Street Plaza, The Shelby's Lot, the Movie Theater Lot, and Eastern Plaza Lot. The study identified two parking lots that were at or above the recommended capacity of 90%; Main Street Plaza (across from McGuire Chevrolet) and Central Plaza (across from the Municipal building). The study also showed that the on-street spaces on Moran Street, Spring Street, and Park Place were at peak occupancy rates that exceed what is recommended.

The study concluded that there are areas within the Town where demand exceeds existing supply. The study identified the Cochran Building parking lot as the most practical choice for parking garage development because of its size, traffic accessibility, and proximity to anticipated future parking demand. Some other recommendations from the Parking Study include shifting parking from on-street meters to off-street lots, restriping the existing lots to maximize the number of spaces each one has, and adding "wayfinding" signage that would clearly direct visitors to off-street parking areas.

Existing Land Uses

Existing land uses in the Town impact traffic circulation in the Town and set the stage for future development and transportation improvements. The following map shows current land uses in the Town:

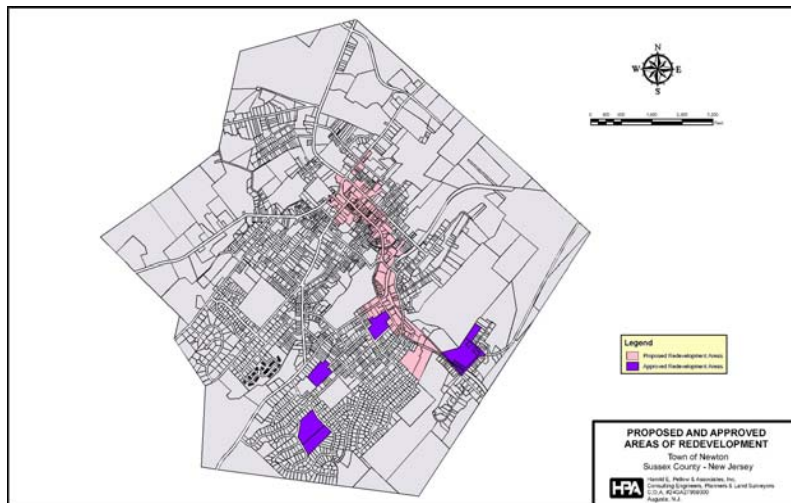
Town of Newton CIRCULATION PLAN ELEMENT



Redevelopment Areas

Newton has identified approximately 116 acres of land, or about 6 percent of the land in the Town, as having the potential to be an area in need of redevelopment. The Town is currently studying this area in phases. The Town Council has designated approximately 37 acres as being areas in need of redevelopment. The four areas designated thus far include: 5.64 acres at 56 Sparta Avenue; 5.39 acres on Mason Avenue; 12.8 acres on Paterson Avenue; and a portion of a 13 acre area on Hicks Avenue. The Town Council has approved redevelopment plans for Paterson Avenue, Hicks Avenue and 56 Sparta Avenue. The Town has also designated an area in need of rehabilitation, which covers 1,009 acres or approximately 51 percent of the Town.

The bulk of the area being considered for redevelopment is located along Spring Street, Trinity Street and Sparta Avenue, also referred to as the spine of the Town. This spine runs along the major roadways through the Town and comprises a major portion of the Central Business District. This area is the main focus of the Town of Newton Urban Design Vision Plan. The Vision Plan proposed specific uses and densities within the areas that are being considered for redevelopment including: high density residential dwelling units, live/work units, and mixed use buildings with commercial on the first floor and residential units on the upper floors. The Vision Plan also identifies design concepts, themes and methods for upgrading existing structures.



PROPOSED LAND USES

Introduction

The land use pattern in Newton is changing and circulation in the Town needs to be adapted to meet the new demand under an evolving scenario of more mixed-use and compact neighborhoods. The Town has proposed Transect Zones and a form-based code to encourage a mix of uses and create more compact and pedestrian friendly neighborhoods. The compact nature encourages alternate modes of transportation and therefore, multi-modal streets become necessary. The impacts of proposed land uses on the circulation in the Town are reviewed below.

Land Use Plan – Transect Zones

The 2008 Master Plan proposed the use of Transect Zones throughout the Town as a method for defining the form and density of development in the Town rather than use of traditional land use districts. Transect Zones establish a graduated level of density from the dense center core of the Town to the preserved and natural areas at the edges of Town. Smaller pedestrian friendly neighborhood centers are provided within five minute walking circles of residential and mixed-use neighborhoods. The Transect Zones establish a basis for utilizing the SmartCode model form-

based ordinance within the Town, which would regulate development primarily based on its form, location and interaction with other buildings in the community. The desired result of Transect Zoning is to promote compact communities that offer vibrant urban places focused toward the pedestrian rather than the automobile.

With the implementation of Transect Zones and form-based codes, the Town needs to re-evaluate circulation to orient it more toward the pedestrian, improve the sense of place in the mixed-use neighborhood cores and establish and support an identity for the Town Core. The Transect Zones promote traditional neighborhood development and uses will naturally be more compact and mixed in nature. The streets will need to be multi-modal, to support not only the automobile, but also pedestrians, bicyclists and transit services. The streets will also need to be adapted to create a pleasant experience for the users as well as establish a sense of place for neighborhoods. Streetscaping, pedestrian amenities, landscaping and street trees all become more significant under the proposed scenario. Additionally, parking must be more flexible, unobtrusive and utilized to the maximum extent possible. This requires new methods for calculating how parking can be shared amongst uses.

The illustration¹ below shows how zones along the Transect increase in intensity of use and compact form as they get closer to the Town Core or Town Center. The Special Districts are uses which are unique and may not necessarily fit with the surrounding Transect, i.e. the County College or an Industrial Area.



The Town of Newton Transects: T-1 through T-6 and Special Districts 1-9

¹ Illustration Credit: Duany Plater-Zyberk & Co.

Town of Newton Transect Zones

T-1 – Natural Areas: The T-1 Transect Zone covers the majority of wetlands, water and wetland buffers and lands which are already preserved from development including parks and cemeteries. Uses permitted in the T-1 Transect include parks and recreation uses for active parks, eco-parks and nature preserves for passive recreation including walking trails and bike paths.

T-2 – Rural Reserved Areas: The T-2 Transect Zone covers large tracts of land that are undeveloped, farmlands, former quarries, etc., which are located in the outskirts of Town and should be reserved from intensive development and kept as areas which are open and rural in nature.

T-3 – Neighborhood Residential: The T-3 Transect Zone covers the majority of the single family residential areas that span out from the downtown and neighborhood center areas and permitted uses generally include single family residential, live/work units and accessory apartments.

T-4 – Neighborhood Services: The T-4 Transect Zone covers smaller mixed use neighborhood centers and supports larger neighborhood centers that provide local services to neighborhoods. T-4 uses are generally mixed-use buildings with retail and/or offices on the first floor and offices and/or apartments on the upper floors.

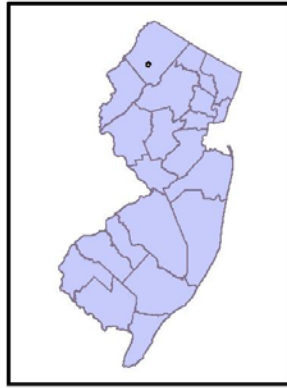
T-5 – Town Core Support Area/ Neighborhood Cores: The T-5 Transect Zone covers the area surrounding the Town Core that provides the majority of the housing and employment that directly supports the Town Core. The T-5 Transect also provides for Neighborhood Cores to serve some of the neighborhoods which are closer to the Town Core area. The permitted uses in the T-5 Transect generally include mixed-use, hotels, offices and multi-family buildings.

T-6 – Town Core: The T-6 Transect is a higher density, mixed and multiple use downtown area. This area provides for the majority of retail and commercial uses within the Town and should be identified as the Central Business District within the Town. This area has residential and office uses over the commercial uses to support day and evening uses in the downtown.

Special Districts 1-9: There are nine special districts in the Town that cover areas where uses are specific to a particular area and don't fit in the other transects. These uses include the hospital, college, highway commercial along NJSH Route 206, the inclusionary zone along NJSH Route 94, light industrial uses, schools, assisted living facilities and utilities.

The map on the following page shows the Transect Zoning for the Town.

Town of Newton CIRCULATION PLAN ELEMENT



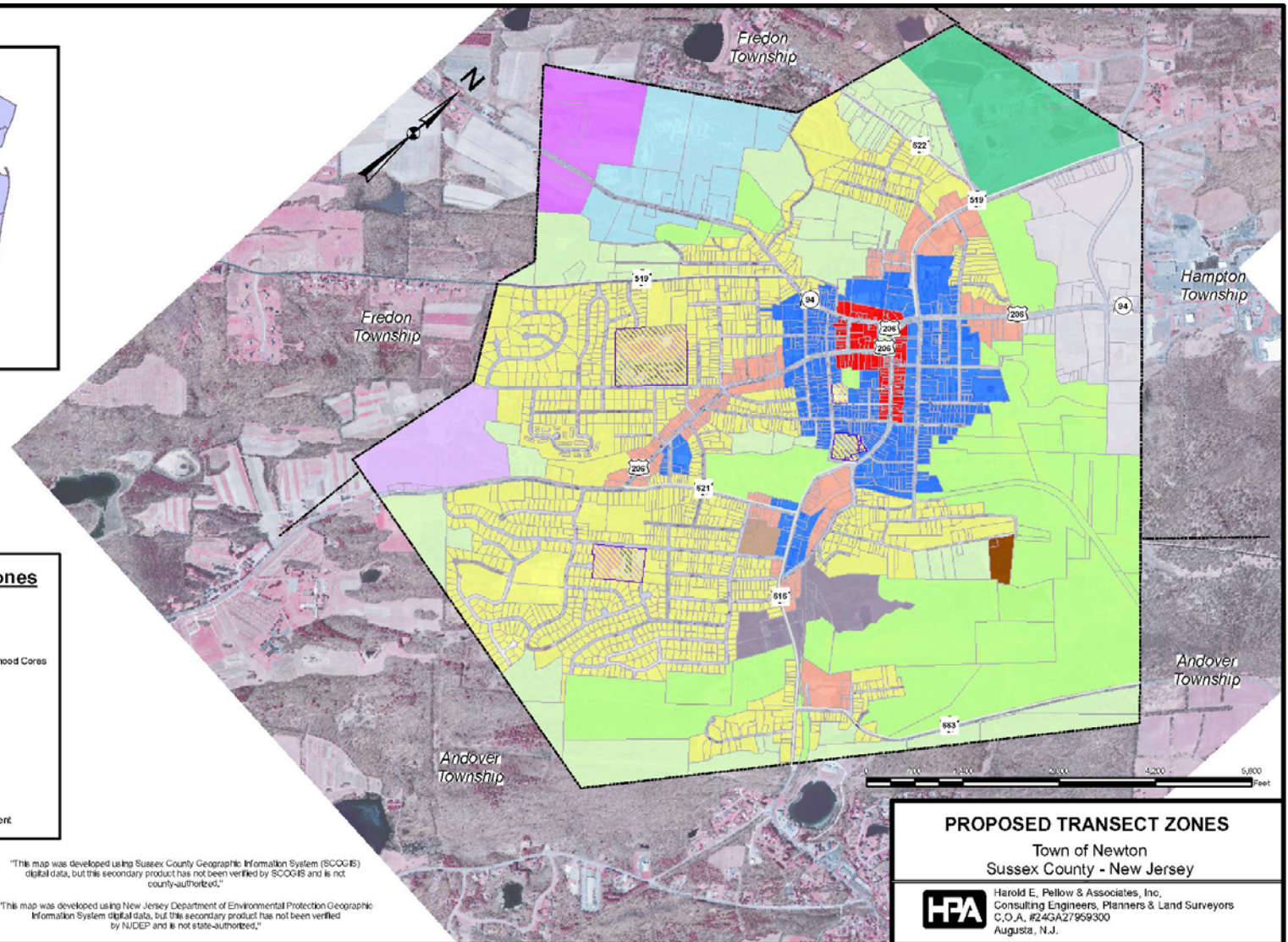
KEY MAP

Proposed Transect Zones

- T-1 - Natural Areas
- T-2 - Rural Reserved Areas
- T-3 - Neighborhood Residential
- T-4 - Neighborhood Services
- T-5 - Town Core Support Area / Neighborhood Cores
- T-6 - Town Core
- SD-1 - Hospital District
- SD-2 - College District
- SD-3 - Retail - Manufacturing District
- SD-4 - Industrial - Manufacturing District
- SD-5 - Office - Manufacturing District
- SD-6 - Schools District
- SD-7 - Senior Community District
- SD-8 - Power Substation District
- SD-9 - Planned Neighborhood Development

"This map was developed using Sussex County Geographic Information System (SCGIS) digital data, but this secondary product has not been verified by SCGIS and is not county-authorized."

"This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized."



PROPOSED TRANSECT ZONES

Town of Newton
Sussex County - New Jersey



Harold E. Pellow & Associates, Inc.
Consulting Engineers, Planners & Land Surveyors
C.O.A. #24GA27959300
Augusta, N.J.

Redevelopment Areas and Redevelopment Plans

The Hicks Avenue Redevelopment Plan covers 13.65 acres along the northeastern corner of the intersection of Hicks Avenue and Sparta Avenue. The proposal includes 80 townhouse units and one 19,760 square foot mixed-use retail building with apartments and/or office spaces on the second floor and one 9,800 square foot multi-family building.

Hicks Avenue Redevelopment Plan Axonometric View from Sparta Avenue



Image provided by A. Nelessen Associates

The Paterson Avenue Redevelopment Plan covers 12.57 acres that lie between Paterson Avenue, Jersey Place and Stratford Lane. The Plan includes 64 single family structures with some duplexes allowed for affordable housing.

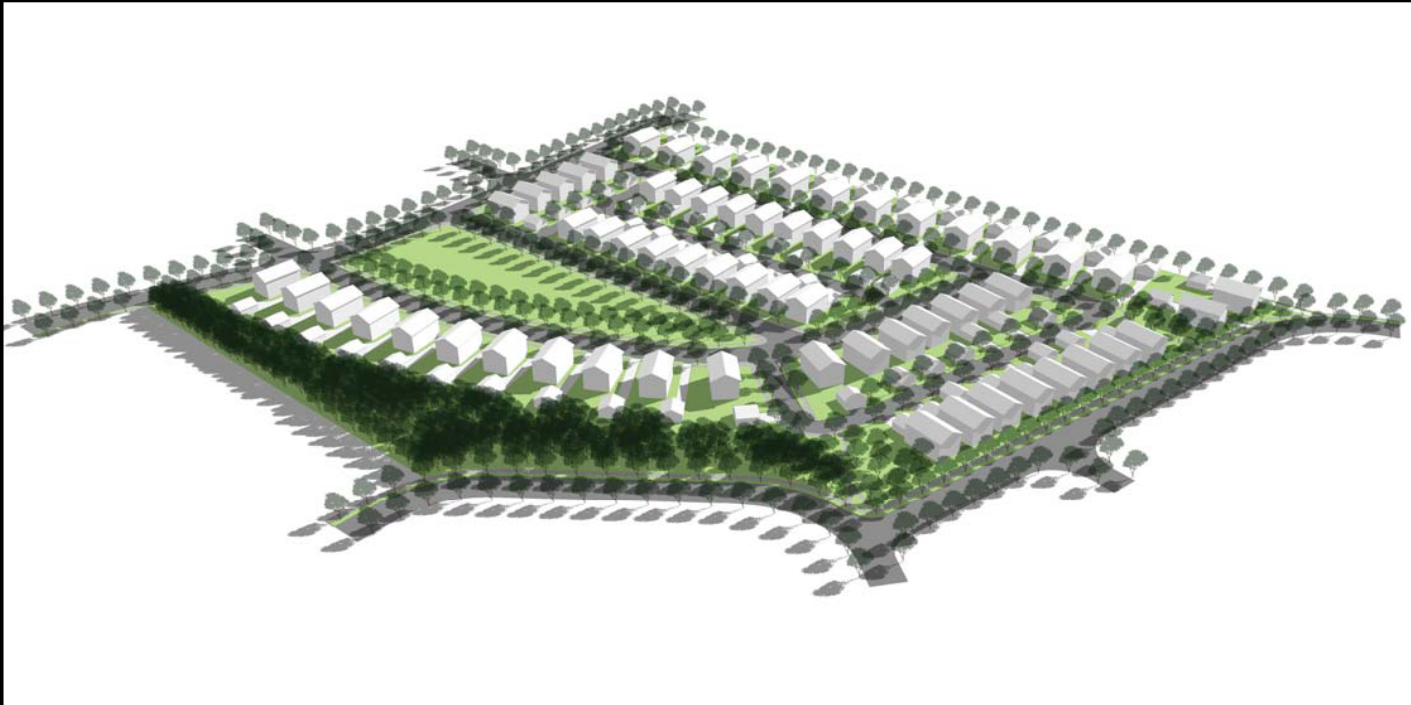


Image provided by A. Nelessen Associates

The Sparta Avenue Redevelopment Plan covers 5.63 acres located at 56 Sparta Avenue. The Plan permits light industrial, research and development and office uses with some provisions for mixed-use retail in combination with the other permitted uses. The area is expected to be an employment center with up to 500 jobs located on the site at full build-out.



Image provided by A. Nelessen Associates

Population Projections

Population increases in the Town over the next 20 years will have an impact on land use and circulation in the Town. The Town has proposed an increase in density through application of Transect Zones and redevelopment. This increase in density will allow the Town to accommodate projected population increases over the next 20 years and beyond. From a circulation perspective, the Town must plan to accommodate an increase in the use of the Town's roads and support alternative methods for transporting people to increase the capacity of the existing system.

Table 3.1 NJ Metropolitan Planning Organization 20 Year Populations Projections

County	Town	2000	2005	2010	2015	2020	2025	2030
Sussex	Newton Town	8,240	8,540	8,840	9,120	9,400	9,580	9,720

The Town population was 8,240 in 2000 at the time of the last US Census. The New Jersey Metropolitan Planning Organization (NJMPO) projects that the Town's population will reach 8,840 by 2010. Over the next 20 years, the population is projected to grow to 9,720 people, or by about 10 percent. The Sussex County Strategic Growth Plan conducted a build-out study for Newton by calculating the potential number of units that could be constructed under current zoning. The County's projection showed a unit increase that would bring the total population in the Town to 9,439. The build-out under current zoning would therefore not provide sufficient units to accommodate the NJMPO's 2030 population projection for the Town. With the implementation of Transect Zoning and redevelopment, the Town's population could grow to between 11,638 and 12,833 people. As a result, the Town's proposed zoning and redevelopment allow for 20 percent more development than is needed to accommodate the NJMPO's 20 year population projections.

CIRCULATION PLAN

Introduction

The Town of Newton's circulation system is the result of hundreds of years of development taking place incrementally with roads beginning initially to serve horse and buggies and pedestrians and moving later into primarily focusing on the automobile. The resulting system has deficiencies, in some cases is out-moded and in many cases doesn't provide the Town with a positive amenity. The focus for this Plan is to create a system that provides a positive experience for multiple modes of transportation in the Town. The focus will not always be on improving speeds of travel, but on the quality of the travel experience for pedestrians, bicyclists, mass transit and automobiles. In Newton, that also means providing increased access to alternative modes of transportation. The Circulation Plan analyzes existing deficiencies in the Town's transportation system and provides recommendations for improvement based on a series of elements important to creating great streets. The Circulation Plan then examines land use issues in the Town and identifies methods for improving transportation based on proposed land use changes due to redevelopment, rezoning and general growth.

Circulation Analysis

The Circulation Analysis focuses on several key elements of the Town's transportation system in order to determine what opportunities exist in order to improve existing deficiencies. The analysis reviews the Town's circulation system with respect to connectivity, multi-modal streets, legibility, safety by design and streetscape and landscaping in order to provide a framework for improving on Newton's existing system.

Connectivity

Newton is largely built-out and due to the fact that most of the streets were constructed prior to the 1950s, the Town has pretty good connectivity. The Town has very few cul-de-sacs, save a few newer subdivisions on the outer edges of Town, and therefore, most streets are set up in some sort of grid pattern or modified grid to suit the topography.

The largely developed nature of the Town means that there will be very few new streets. For what new streets are created, this plan recommends an emphasis on increasing connectivity where possible. Improving connectivity in the Town would create more direct connections between destinations and shorten travel time, which has a host of benefits, including increasing the chance of someone walking or biking to their destination. Emergency services can also shorten response time when connectivity is enhanced in a community. Greater connectivity also increases diversity of travel routes, alleviating congestion on collectors and arterials. Where connectivity for automobiles is not possible, creating connections for pedestrians and bicyclists can also enhance circulation. While connectivity has many benefits, traffic calming is also important in managing traffic that diverts to non-collector streets. Traffic

calming is discussed later in this section of the plan along with other methods for creating appropriate design for streets.

In order to increase connectivity in the Town, the Town should adopt a connectivity ordinance which requires new developments to look at methods for increasing connectivity, either through the roads they are building and/or through providing pedestrian and bicycle connections. The ordinance should include the following elements:

1. Establish maximum block lengths based on the proposed transect zones.
2. Discourage cul-de-sacs.
3. Encourage alleys and alternative access to buildings and parking areas.
4. Promote pedestrian and bicycle connectivity across sites where streets are limited.
5. Promote pedestrian connections between parking areas on separate lots.
6. Promote the construction of the proposed bike path system in the Town.

Complete Streets



Complete streets, also known as multi-modal streets, are designed to accommodate multiple users including: cars, pedestrians, cyclists, scooters, and mass transit. In order to accommodate these multiple users, each street must be designed for maximum efficiency to allow the space for each mode to function. While traditionally streets have been designed to accommodate the car as a primary user and all other users as secondary or tertiary, multi-modal streets give equal weight to all of the users with a special focus on the pedestrian environment. In order to better define how complete streets can be created in the Town, the baseline needs for each use must be established in order to evaluate how streets must be designed to accommodate each use.

Travel and Parking Lane Widths

Travel lanes for cars vary depending on the function of the roadway. These are typically broken down into local streets, collectors, arterials (major and minor) and highways. For this plan, design standards are being applied based on the Transect Zone designation for the area. These standards will need to be applied flexibly employing Context Sensitive Design (see page 44) because Transect Zones will vary along certain roadways. Travel lanes should typically be 10-12 feet wide. In residential areas, the travel lane can be as narrow as 8 feet. Parking lanes should be a minimum of 6 feet wide for parallel parking along residential streets and 8 feet wide for

parallel parking in commercial and industrial areas. Turning lanes should be provided in commercial areas and on high traffic streets with multiple access points. The minimum width of a turn lane at an intersection is 9 feet wide and optimally 10-12 feet wide depending on the level of truck traffic in the area.

Bicycle Lane Widths

A minimum operating space of 4 feet is required for any facility designed for use by bicyclists. Where there is a mix of traffic, i.e. car and bus, with bicycle traffic, a minimum width of 5 feet is recommended. Where bicycles utilize shoulders of a road, the minimum width should be 4 feet. Where a shared bicycle/traffic lane is provided on a curbed road (with no shoulder) the minimum lane width should be 14 feet. Where bicycles share off-street two directional paths, the minimum width should be 10 feet.

Sidewalk Widths

The minimum clear width for a sidewalk is 4 feet, not including any attached curb according to ADA standards. Where sidewalks are constructed at 4 feet in width, areas of 5 feet in width should be provided at regular intervals to allow two wheelchairs to pass each other or turn around. A width of 4 ½ to 5 feet is optimal to allow ADA accommodations as well as to allow two people walking together to pass by another person. In the T-4, T-5 and T-6 Transects, it makes sense to have wider width sidewalks in order to accommodate multiple functions in the pedestrian realm and also to buffer pedestrian traffic from busier streets. Where a planting strip is provided along a sidewalk, a minimum width of 6-8 feet is recommended. Where the sidewalks are flush with the curb, a

sidewalk width of 8-10 feet is recommended. In commercial areas, the minimum width of 8 feet is desirable to allow sufficient width for street furniture, street lights, traffic signs and pedestrians.

Sidewalk Buffers

Buffers should be provided between sidewalks and busy traffic streets where there are no on-street parking spaces or bike lanes. The optimal buffer or planting strip is 6 feet but can vary from 2-4 feet for local or collector streets and up to 6 feet for arterials or major streets. Where on-street parking or bike lanes are proposed buffers can be reduced or eliminated.

Mass Transit Connections

The main mode of mass transit now and for the foreseeable future in Newton is buses, whether bus service includes on-demand transit or traditional bus routes, the primary point of service for buses will be to utilize transit stops or bus pullouts to pick-up passengers. A bus loading zone is typically 80 to 160 feet in length and can be a simple sign and designated stop at the curb or it could include a pullout area, or a shoulder for the bus to stop. Bus stops can also include other facilities such as shelters, benches, signage and other facilities. To limit mid-block crossing by pedestrians, bus stops should be located at or near an intersection. In order to be accessible, bus stops must include an 8-foot by 5-foot landing pad. A continuous 8-foot wide sidewalk that runs the length of the bus from the front doors to the rear doors is optimal. Where a bus stop is located on a road without sidewalks, the shoulder of the road should meet the above standards. Bus shelters are encouraged at high traffic bus stops. Bus shelters must have a minimum clear floor area of 2.5 feet by 4 feet with the entire perimeter of the shelter connected to the surrounding sidewalks.

Creating the Complete Street

Once we've established the minimum design standards necessary to serve each mode on a complete street, we must begin to compile the components to develop a set of design options or standards. Because of right of way limitations in the Town, various components will have to remain flexible in order to achieve the goals of the street being designed. For instance, bike lanes will be proposed for some streets going through the Town to create specific travel routes for bikes. Those streets will require bike lanes or shared lanes. For streets with bike lanes, on-street parking may not be possible or may be limited to one side of the road. Likewise, buffers may not be possible, but also won't be as necessary as the bike path provides a buffer from the sidewalk. The buffers themselves are also flexible and are not as necessary where parking is adjacent to the sidewalk. The number of lanes for nearly all of the roads in Newton will either be a total of two lanes: two travel lanes in each direction; or three lanes, one travel lane in each direction and one turn lane. The only exception is NJSH Route 206, which has four lanes for a short stretch. For these reasons, this plan recommends Context Sensitive Design, which is discussed on page 44. This type of design is flexible and analyzes the specific situation within which each road is being designed and applies the standards in a flexible manner to meet the goals for the design of the road keeping in mind the location, environment and other constraints. The minimum design standards below are a guide and are intended to be applied within a Context Sensitive Design process.

Table 3.2: Minimum Design Standards for Complete Streets

Street Type by Transect	Travel Lanes/Turning Lanes	Parking Lanes*	Bike Lanes (where applicable**)	Sidewalks/Buffers
Local Street (T-3)	8-10 ft. / no turn lanes	6-8 ft. on one or both sides	4 ft. (shared on street)	4-5 ft. / 2-4 ft. buffer
Collector (T-3)	10 ft. / no turn lane	7-8 ft. on one or both sides	5 ft. designated on street lanes	4-5 ft. / 2-4 ft. buffer
Collector (T-4 to T-6)	10-11 ft./ 9 ft. turn lanes	8 ft. on one or both sides	5 ft. designated on street lanes	6-8 ft. / 2-4 ft.
Arterial (T-1 to T-3)	10-12 ft. / no turn lane	7-8 ft. on one or both sides	5 ft. designated on street lanes	4-5 ft. / 2-6 ft.
Arterial / Highway (T-4 to T-6)	10-12 ft. / 9 ft. turn lane	8 ft. on one or both sides	5 ft. designated on street lanes	8-10 ft. / 2-6 ft.

*On streets where bike lanes are proposed; parking lanes should be removed or reduced and buffers can be reduced or eliminated in order to moderate total widths.

**Proposed bike lane locations are proposed in the Bike Path Section of the report. Not all streets will have bike lanes.

Legibility

Wayfinding

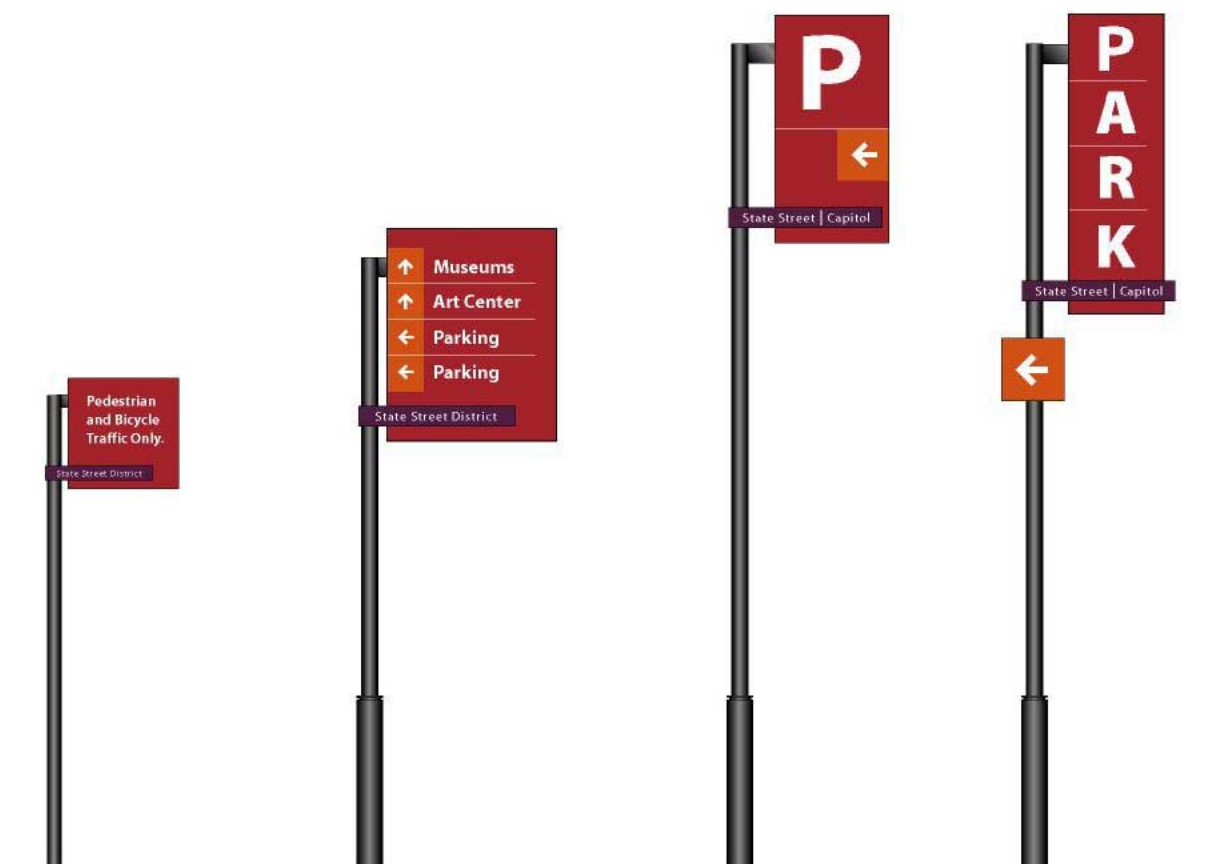


Wayfinding is an important aspect of circulation in the Town, particularly in the Central Business District. Throughout the Town, wayfinding signage can lead drivers, pedestrians and cyclists to their destinations more efficiently. Wayfinding can assist through traffic and truck traffic to the appropriate routes through Town. The proper signage can direct customers to businesses on Spring Street, highlight historic sites, assist drivers in finding parking and lead pedestrians to the quickest connections. Mass transit can also be emphasized with wayfinding signage so that those looking for bus stops, park and rides and other mass transit facilities will be able to locate them easily and safely. Once at the stop, informative signage can assist them in utilizing the services available. Signage assisting drivers in finding municipal and pay parking lots should be provided along Spring Street and along alleyways that lead to parking between the buildings on Spring Street. Bicycle route guide signs may be provided to

inform bicyclists of bicycle route direction changes and to confirm distance, direction, and destination. Pedestrian wayfinding signage is intended to direct pedestrians over short distances of ½ mile or less. This signage should include maps and educational information as well as directional wayfinding functions and should highlight important buildings, streets, parks and transit facilities.

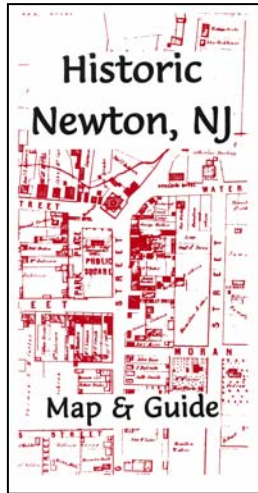
Currently, wayfinding signage is very limited in the Town, with the exception of highway directional signage. The Town has utilized special street signs for the Town's Historic District, which allows people to identify when they are inside of the District boundaries. This plan recommends the development of a complete wayfinding system in the Town which would direct people to the central business district, important public places/buildings, and parks. Kiosks and information boards should also be included at key locations in the downtown which would assist pedestrians in wayfinding around the Town and utilizing the transportation system. Kiosks located in front of the County Administration Building and/or the County Courthouse could direct potential shoppers to Spring Street. Additionally, archway signage would be beneficial over Spring Street at its intersection with Main Street and over alleyways pointing people to parking areas. One specific wayfinding need is recommended below which addresses the historic district.





Sample Wayfinding Sign Scheme

Historic Walking Tour



The Town of Newton Historic Preservation Advisory Commission prepared a map and guide to Newton's Historic District in 2008. The brochure includes a map designating 33 historic places in the Town with correlating descriptions adjacent to each numbered location. The map is meant to be used as a self-guided walking tour of the Town's Historic District. The next step in implementing this walking tour should be to provide signage at each of the 33 locations on the map, describing the locations. This would provide an added visual for those engaging in the walking tour and serve as an educational piece for those traveling through Newton who might read the signs. The signage should include a map and prompt the reader to the next nearest location so that the walking tour could effectively be taken without the brochure. A map of the entire tour at an informational kiosk would also be helpful in explaining the tour and promoting it to passersby.



Three stops on the Historic Walking Tour: 1 Main Street, 156-160 Spring Street, and the County Courthouse.

Gateways



Gateways provide an important function in establishing a sense of place and transition from one place to another. Gateways can be used at municipal boundaries but also in establishing neighborhoods, central business districts, historic districts, university districts and other areas that have a common bond and can be identified as a block. The Town utilizes unique street signs to mark streets within the historic district that sets it apart from the rest of the Town. Gateways to establish entry into the Town would be beneficial in establishing a unique and special identity for Newton. Beyond the typical “welcome” sign, the roadways can create a gateway by having unique landscaping surrounding them, streetscapes, archways or public art or other unique methods of representing the Town. An archway sign at major entry points to the central business district would also be helpful in establishing a unique identity for the downtown.

Truck Routes



Several major arterials converge on the Town of Newton including NJSH Route 206, NJSH Route 94, and County Routes 519, 621, 616, 663, and 622. This means that there is regional traffic traveling through Newton that may benefit from the establishment of a truck route as a method to move regional traffic through the Town and focus local traffic to local streets. Truck routes must be clearly marked and convenient for the user in order to work. They should also be strictly enforced by local law enforcement.

Safety by Design

Context Sensitive and Flexible Design Solutions

Context-Sensitive Design (CSD) and flexible design involve less rigid application of design standards to road and highway projects. CSD implies tailoring designs to adjacent land uses with sensitivity to community values. Flexible design focuses on maximizing utilizing the flexibility inherent in the design process and in current national guidelines and state standards. Application of both CSD and flexible standards allow the design engineer to propose a roadway that meets multiple goals for circulation including multi-modal use and beautification, within the context of surrounding land uses. For Newton, design should be tailored to the Transect Zone that the road is crossing as well as existing and proposed land uses in the area. Neighborhood context is also important in creating a street that enhances the sense of place in the community. In the following section, street cross-sections will be provided that provide a jumping off point for context sensitive design or roadways within Newton. Also, later in this section, recommended design speeds based on Transect Zones are provided.

Items to consider when using CSD and/or flexible design solutions are as follows:

- Context Sensitivity – considerations include land uses, users, environmental issues, goals of the community, location and intensity of use.
- Geometric Flexibility – allowing width of the roadway, travel lanes, right-of-way, sidewalks, etc. to flex depending on traffic needs, multi-modal accommodations, existing and proposed land uses and other considerations.
- Performance Flexibility – allowing flexibility of the posted speed on the roadway can accommodate the varying widths and uses of the road depending on location.
- Institutional Collaboration – State, County and local officials will need to work together to create appropriate designs for roadways within the Town depending on the entity with jurisdiction over the project.
- Public Outreach and Response – for high volume roadways it is very important to gather public input on the needs of the community with respect to the project. Their input should be incorporated wherever possible and practical.
- Modal Balance – in order to address the needs of multiple modes of transportation, other modes may have to be addressed creatively in to achieve a balance.

Traffic Calming Techniques



Center Medians and roundabouts can be used as traffic calming elements, ways to integrate landscaping into a roadway, and to delineate bike and pedestrian circulation. Center medians can be the width of only a few feet for planting or wide enough for trees, benches, and paths. Locating center medians in the Town poses some challenges because of the limited rights of way. For an area with compact development, such as Newton, limited use of medians is recommended because they can disrupt turning movements. Smaller medians can be effective if properly placed to allow sufficient turning movements. Small island-type medians can provide a safe haven for pedestrians crossing wider streets.

Traffic congestion and motor vehicle crashes are widespread problems, especially in densely developed areas. Roundabouts, used in place of stop signs and traffic signals, are a type of circular intersection that can significantly improve traffic flow and safety. Studies have shown that where roundabouts have been installed, motor vehicle crashes have declined by about 40 percent, and accidents involving injuries have been reduced by about 80 percent. Crash reductions are accompanied by significant improvements in traffic flow, resulting in a reduction of vehicle delays, fuel consumption, and air pollution. For these reasons, traffic engineers are increasingly recommending the use of modern roundabouts. Modern roundabouts have an improved design over traditional traffic circles.

Other traffic calming techniques include speed humps or tables, neck downs or curb extensions, chicanes, narrowing travel lanes, textured pavement or rumble strips, tight corner turning radii and diverters. Speed tables are flat-topped versions of speeds humps. They are particularly useful because they can double as raised crosswalks, providing for a safer pedestrian crossing and slowing traffic at the same time. Chicanes are modified versions of curb extensions which create curves in an otherwise straight road, forcing traffic to slow while managing the curves. Narrowing travel lanes causes drivers to slow as their level of comfort decreases because of proximity to curbs, parked cars, etc. Textured pavement or rumble strips can be effective in slowing traffic due to the noise and motion generated in the vehicle from driving too fast. Tight corner radii force traffic to slow around corners in order to manage the turning movement.

A curb extension is an extension of the curb out into the street to create a larger sidewalk area or an area for plantings. Curb extensions are most commonly placed at intersections but can also be placed anywhere along a street where space is available. A curb extension utilizes the wasted space at the end of a row of parallel parking that is most often striped and converts it into a usable space for pedestrians. The curb extensions have a traffic calming effect by narrowing the roadway as well as assisting pedestrian crossings by narrowing the crossing distance and increasing sight distance beyond parked cars. Areas such as Spring Street, Main Street, Trinity Street, and proposed Redevelopment areas would benefit the most from the addition of curb extensions.

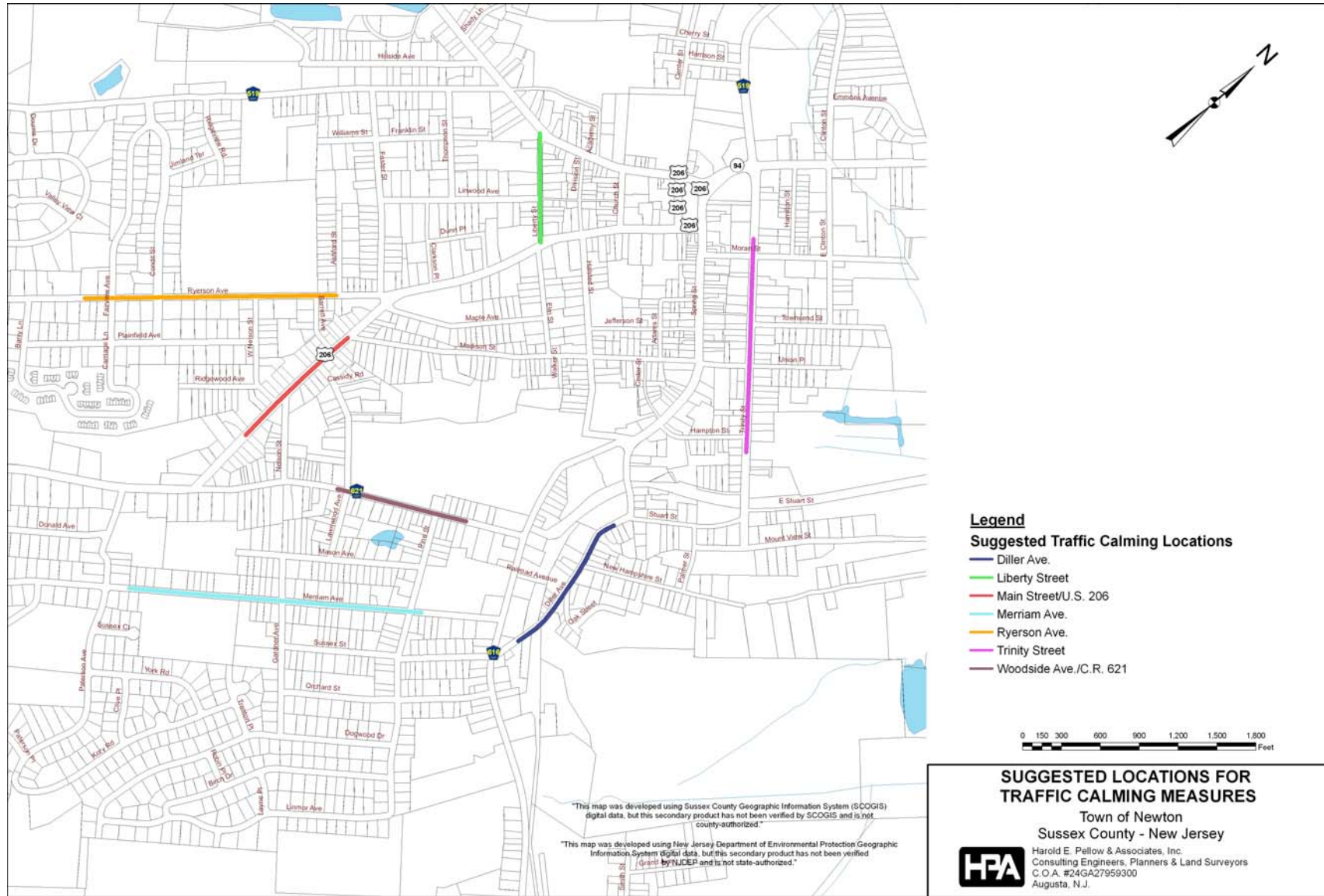


Existing crosswalk on Spring St. at Adams St.



Crosswalk with landscaped curb extension.

Town of Newton CIRCULATION PLAN ELEMENT



Posted Speeds by Transect Zone

Posted speeds for roadways within the Town establish an important baseline for how quickly traffic will move through an area and how pedestrian and bike friendly the road will be. In order to create safe interactions between modes of transit, the speed of vehicles must often be slowed to a level where drivers have sufficient reaction time to avoid collisions with bicyclists, buses and pedestrians. Table 3.3 below includes recommended posted speeds by transect in order to create a safe and efficient flow of traffic based on the potential land uses in the area. Design speeds for each road section should take into account the proposed posted speeds.

Table 3.3: Recommended Posted Speeds by Transect Zone

Transect Zone	Recommended Posted Speed
T-1 Natural Areas/ T-2 Rural Reserved Areas	45-50 mph
T-3 Neighborhood Residential	25-35 mph
T-4 Neighborhood Services	25-30 mph
T-5 Town Core Support Area/ Neighborhood Cores	25-30mph
T-6 Town Core	25 mph
SD-1 Hospital District	35 mph
SD-2 College District	35 mph
SD-3 Retail/Manufacturing	35 mph
SD-4 Industrial Manufacturing	30-40 mph
SD-5 Office/Manufacturing	30-40 mph
SD-6 Schools District	25 mph
SD-7 Senior Community District	25 mph
SD-8 Power Substation District	25 – 35 mph
SD-9 Planned Neighborhood Development District	25 mph

Streetscape and Landscaping

Street Trees



Street trees are an important amenity for all communities. Street trees provide, needed shade for pedestrians, help control urban air quality, offsets the heat island effect that is caused by large amounts of pavement, and give character to a street. Street trees are therefore an important piece of the architecture of a street. Unfortunately street trees also pose many challenges because of maintenance and care needed to keep the tree in good condition and also maintain the street and sidewalks around the trees. This makes planting the right tree in the right place a very important piece of creating a street tree canopy in the Town. Newton has a Shade Tree commission that promotes the planting of trees throughout the Town.

There are other options available that may provide increased opportunities for planting street trees. The Arbor Day Foundation's Tree City USA program can provide a solid foundation for the promotion of tree planting and preservation within the Town. Implementing tree planting, replacement and protection ordinances can also support the creation of an urban tree canopy in the Town. Other innovative programs can be explored such as creating a tree bank. A tree bank could be utilized as a relief mechanism for developers that cannot provide landscaping on their site due to site constraints. Funding to provide the required number of trees elsewhere in the community could be placed in the tree bank to be allocated by the Town's Shade Tree Commission.

Table 3.4 below includes a list of street trees recommended for use in our area. This chart lists the basic species but cultivars can be used that resemble the shape, size, and general characteristics of the species.

Table 3.4: Recommended Street Trees

Botanical Name	Common Name
Acer rubrum	Red Maple
Celtis occidentalis	Common HackBerry
Cercis Canadensis	Eastern Redbud
Fraxinus Americana	White Ash
Ginko Biloba	Gingko
Gleditsia triacanthos	Thornless Common Honeylocust
Liriodendron tulipifera	Tulip Tree
Magnolia grandiflora	Southern Magnolia
Quercus rubra	Red Oak
Zelkova serrata	Zelkova




There are many areas around the Town where overhead utility lines would inhibit typical street trees from reaching their potential size. The result of planting street trees under lines is trees that are pruned creating unsightly tree canopies. However, this should not inhibit the use of trees under utility lines. Table 3.5 below includes trees are recommended for use under utility lines:


Table 3.5: Recommended Trees For Planting Under Utility Lines

Botanical Name	Common Name	Height
Acer ginnala	Amur Maple	15-20 ft.
Amelanchier spp.	Serviceberry	15-25 ft.
Cercis canadensis	Eastern Redbud	20-25 ft.
Cornus florida	Flowering Dogwood	20-25 ft.
Cornus kousa	Kousa Dogwood	20-25 ft.
Magnolia Stellata	Star Magnolia	10-20ft.

Another way to determine the appropriate street or yard tree is to determine the tree type by shape. There are five common tree shapes shown below: Oval, Ball, Pyramid, Umbrella, and Vase. Table 3.6 below identifies which tree shape is appropriate for each Transect Zone.

Table 3.6: Tree Shapes and Their Recommended Transect Zone

	T1	T2	T3	T4	T5	T6	Specific Trees
Oval 	*	*	*	*	*	*	European Hornbeam – <i>Carpinus betulus</i> Tulip Tree – <i>Liriodendron tulipifera</i> Sugar Maple – <i>Acer saccharum</i> Red Maple – <i>Acer rubrum</i>
Ball 	*	*	*	*	*	*	American Hornbeam – <i>Carpinus caroliniana</i> White Oak – <i>Quercus alba</i> Red Oak – <i>Quercus rubra</i> London Planetree – <i>Platanus acerifolia</i> Common Hackberry – <i>Celtis occidentalis</i> White Ash – <i>Fraxinus americana</i>
Pyramid 	*	*	*	*			Pin Oak – <i>Quercus palustris</i> ‘Greenspire’ Littleleaf Linden – <i>Tilia cordata</i> American Holly – <i>Ilex opaca</i>

	T1	T2	T3	T4	T5	T6	Specific Trees
Umbrella 	*	*	*	*			Redbud – Cercis Canadensis Crabapple – Malus spp. Japanese Maple – Acer palmatum
Vase 	*	*	*	*			Boxelder – Acer negundo Chinese Elm – Ulmus parvifolia Hawthorn – Crataegus spp. Zelkova – Zelkova serrata Honeylocust – Gleditsia triacanthos

Landscaping Opportunities



Newton is largely built-out and comprised of many small pre-existing developed lots. As parts of Town are rehabilitated and redeveloped or streets are re-built or streetscaped, opportunities will become available to increase the amount and quality of

landscaping in the Town. In recognition that sites are limited in size and capacity and streets are largely built and also limited in width, landscaping opportunities must be creative and opportunistic. Following is a list of options for creating landscaping opportunities within parking areas and along streets.

Parking Area Islands, Center Medians and Roundabouts

Parking area islands, center medians and roundabouts provide opportunities to incorporate landscaping in places otherwise completely void of plantings and break up large areas of pavement. Trees and shrubs in these areas create shade to keep cars and asphalt cooler, minimize the “heat island” effect which is caused by the absorption of heat by large areas of asphalt, and make the area aesthetically pleasing. In the Town of Newton’s Ordinance there are requirements for a minimum number of trees per set number of parking spaces and required landscaping. It is important that these ordinances are strictly adhered to or even elaborated on to provide

the desired effect of the ordinance. Where center medians or roundabouts are proposed, landscaping should be maximized.

Parking Area Screening

As areas of Newton are redeveloped parking lot screening should be incorporated into each design. Screening will create visual buffering for pedestrians, separation of commercial and residential uses, and will shield adjacent areas from nuisances such as noise and headlights. Screening should provide a year-round buffer by containing a mixture of evergreen and deciduous plants and provide screening at a minimum of 4 feet high to block the headlights of cars. Developing more specific landscape standards will ensure that new developments will provide appropriate screening landscaping.



Planters, Hanging Baskets, and Flower Boxes

In areas where space and soil needed for planting is limited or even nonexistent there are still options for greening areas through the use of planters, hanging baskets, and flower boxes. In areas such as Spring Street where sidewalk space is minimal these forms of landscaping can provide color and enhance the experience for pedestrians. Planters can be used as a cost effective way to create the same effect as a bump out without the disturbance of construction. The Town can expand its current use of hanging baskets beyond Spring Street into other areas. These planting elements can be used throughout the Town and standards can be created for each street typology.

The main issue for utilizing planters, hanging baskets and flower boxes is that they are maintenance intensive. Because the plants are located in a minimal amount of soil, consistent watering is needed. Likewise, plants weeding, trimming and replanting is often necessary to keep planters looking at their best. Planters can be an attractive nuisance for vandals who wish to pull out or otherwise destroy the plantings. Even with their drawbacks, planters, hanging baskets and flower boxes are highly recommended to beautify streets within Newton particularly in the T-5 and T-6 districts.

Some options to assist with maintenance issues are as follows:

1. Create a sponsor program for planters and flower boxes. Local clubs, schools, or organizations can sponsor a planter or flower box and keep it beautiful all season.
2. Establish an irrigation system that can water on a timer.
3. Hire someone to maintain planters and flower boxes in the central business district to ensure constant attention.
4. Use plant species that are low maintenance and require less water.
5. Hold a flower box/planter competition for businesses and advertise for the public to view them and vote on them. This will provide an extra incentive to business owners to keep them looking well-maintained.

Public Art and Street Furniture

Streets can be greatly enhanced by adding unique and interesting items to a streetscape, public area or courtyard adjacent to a street. Many municipalities have created a percent for public art program that requires a specific percentage of the municipality's capital improvement budget to be spent on providing public art in public places, parks and along public streets. Public art can be functional

and take the form of unique street furniture or simply enhance and beautify a space by adding a sculpture, fountain or mural to a blank wall. Art that is unique to the history or circumstances of the municipality and/or produced by a local or regional artist can have an even greater impact.



Samples of Public Art and Street Furniture in Other Cities

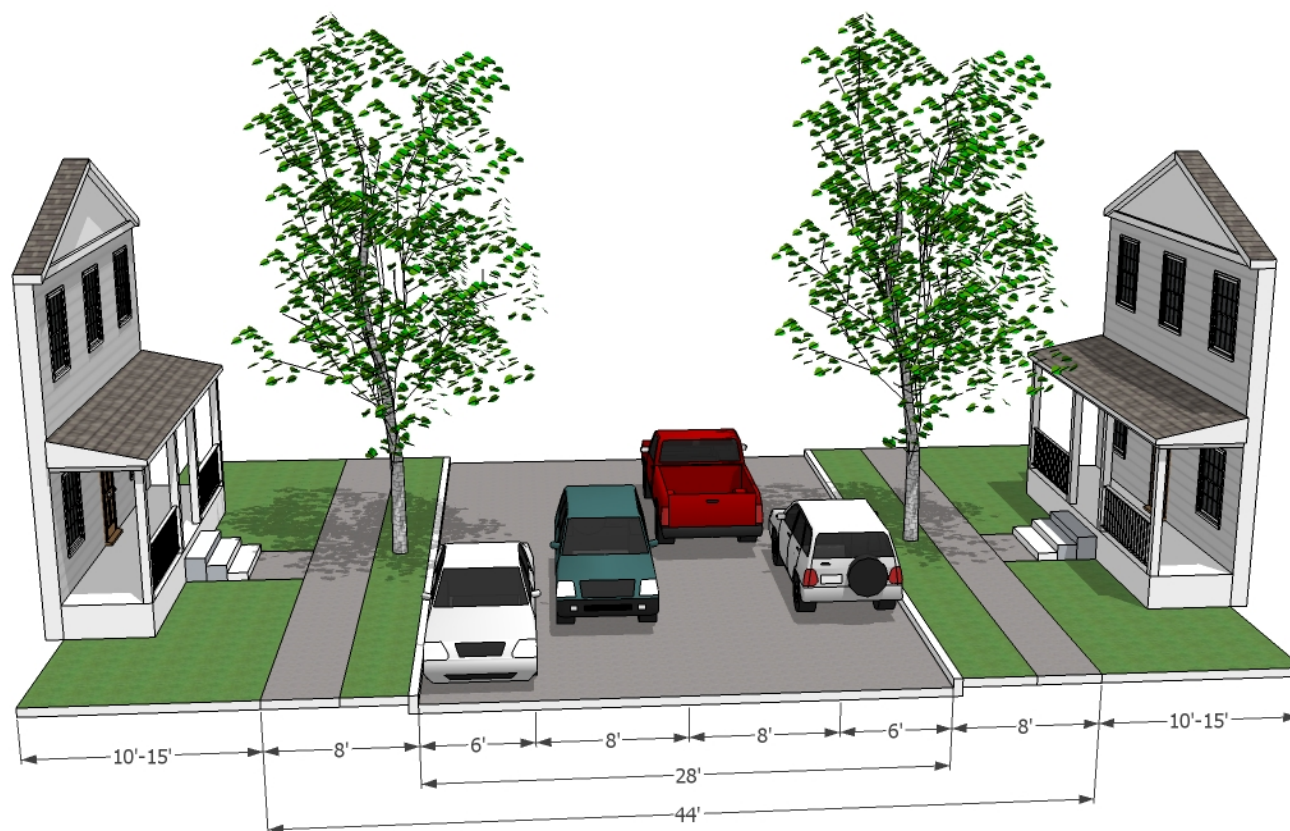
Land Use and Traffic Analysis

This section identifies a variety of methods of utilizing land use, zoning and development as vehicles for improving circulation. The first section provides street typologies based on Transect Zones, which will establish appropriate street types based on development patterns. The second section analyzes traffic generation from the proposed redevelopment zones and identifies improvements necessary to mitigate the impacts. Mass transit options are also identified based on location and need so that transit service can be expanded to become a more viable option in Town. Finally, a parking plan is proposed to address parking requirements based on Transect Zone, identify methods to optimize parking spaces for maximum use and proposing areas where public parking can be increased.

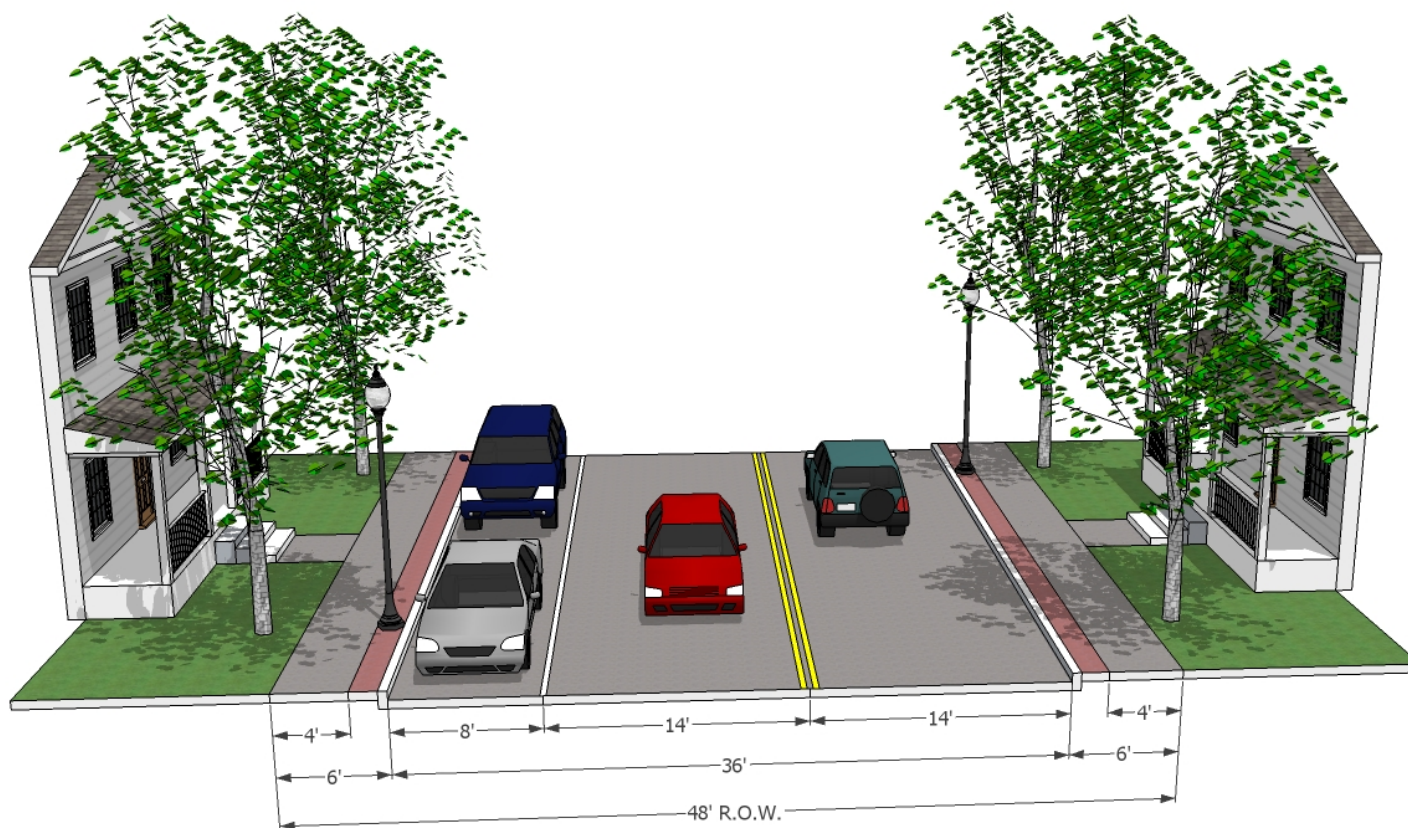
Street Typologies

The following cross sections show examples of various street typologies according to the Transect Zone they should be located in. The sections show a variety of ways to accommodate uses by cars, cyclists and pedestrians in each Transect Zone. Some sections show specific streets in Newton. The street typologies are not meant to be rigid design standards but rather flexible examples of how the various principles of minimum street standards can be applied through context sensitive design. Actual roadway widths will vary depending on available right-of-way width, environmental constraints, encroachments and other issues. The most important aspect of the typologies is to provide a visual representation of how streets can be designed to be complete streets within the Town and accommodate multiple users. The typologies also show how streets should vary depending on their location along the transect. The design of the streets should be ultimately centered on providing a positive pedestrian experience and allowing for a variety of modes as appropriate. Bicycle lanes are shown on optional street typologies because bicycle lanes are not proposed for all streets.

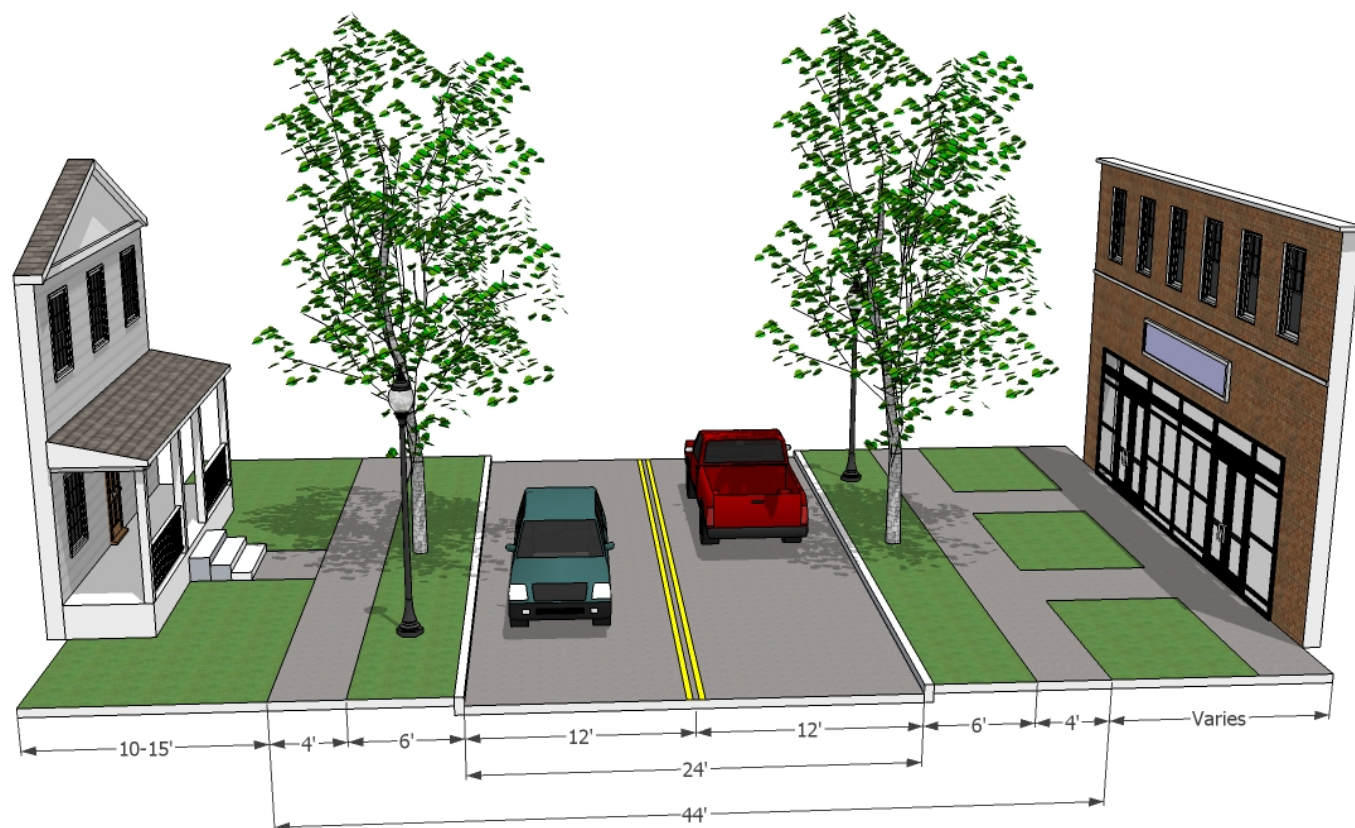
Unique streetscapes should be developed for distinct neighborhoods to create a unique identity and increase the sense of place for each neighborhood. Street lights, signage and color and texture of pavers could all be coordinated into unique combinations for each neighborhood. Obvious neighborhoods or districts include the redevelopment areas, each of the special districts and the historic district. There may be other neighborhoods or districts that have some sort of historic identity that can be tapped into to create the streetscape for the area. Neighborhood centers could also be highlighted as distinct districts to enhance the sense of place.



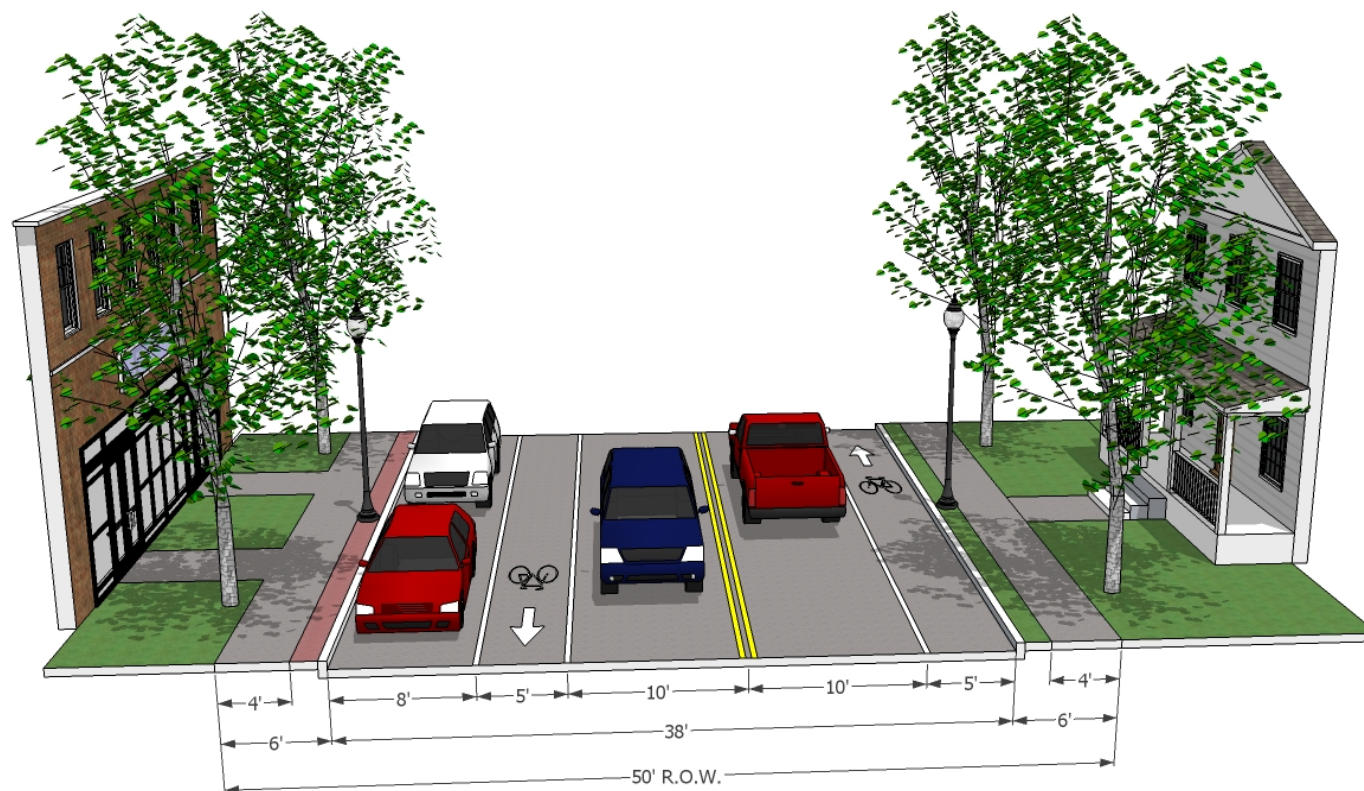
T-3 Residential Street with Parking on Both Sides



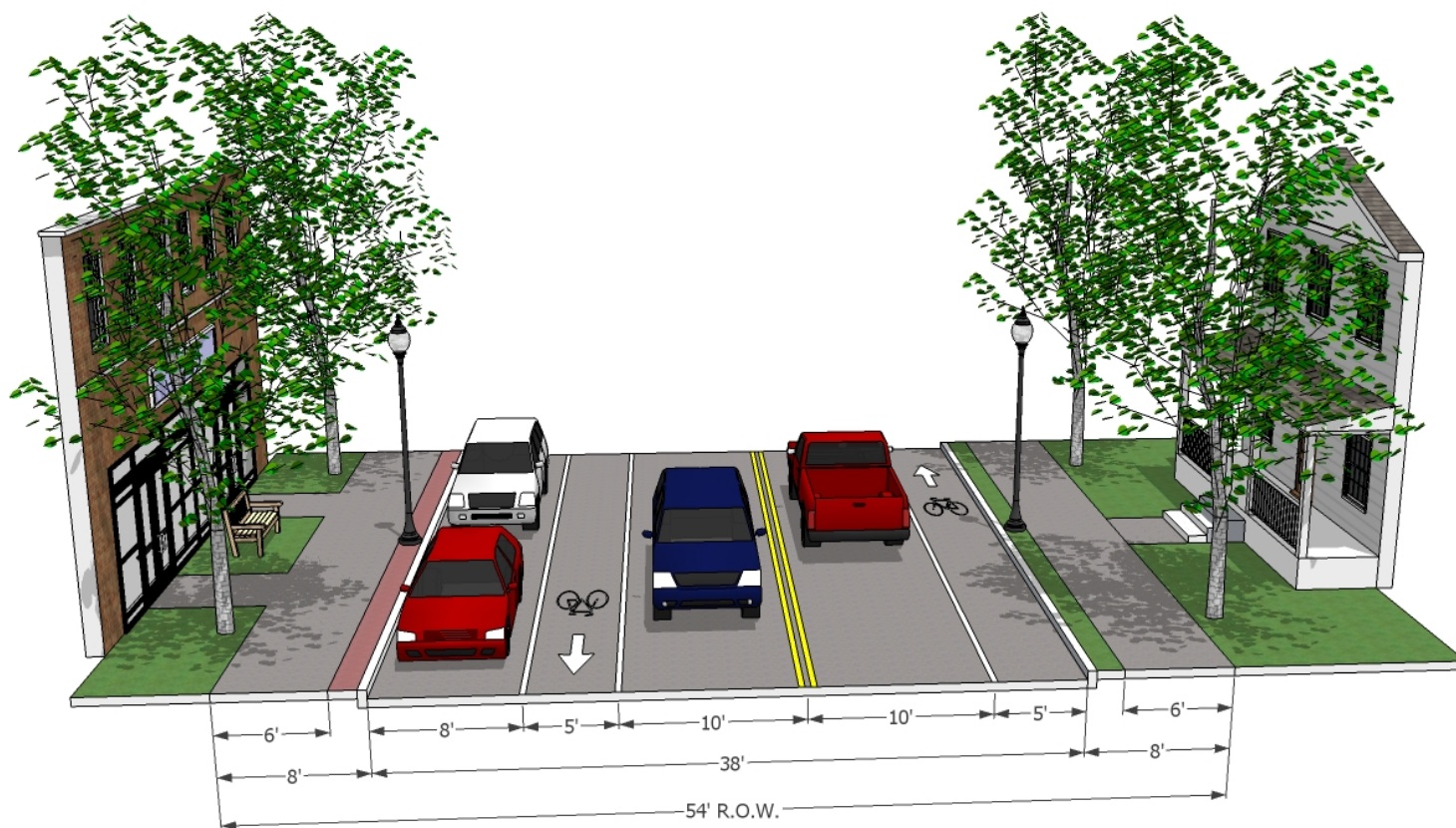
T-3 Neighborhood Street with Parking on One Side and Shared Bike and Travel Lanes



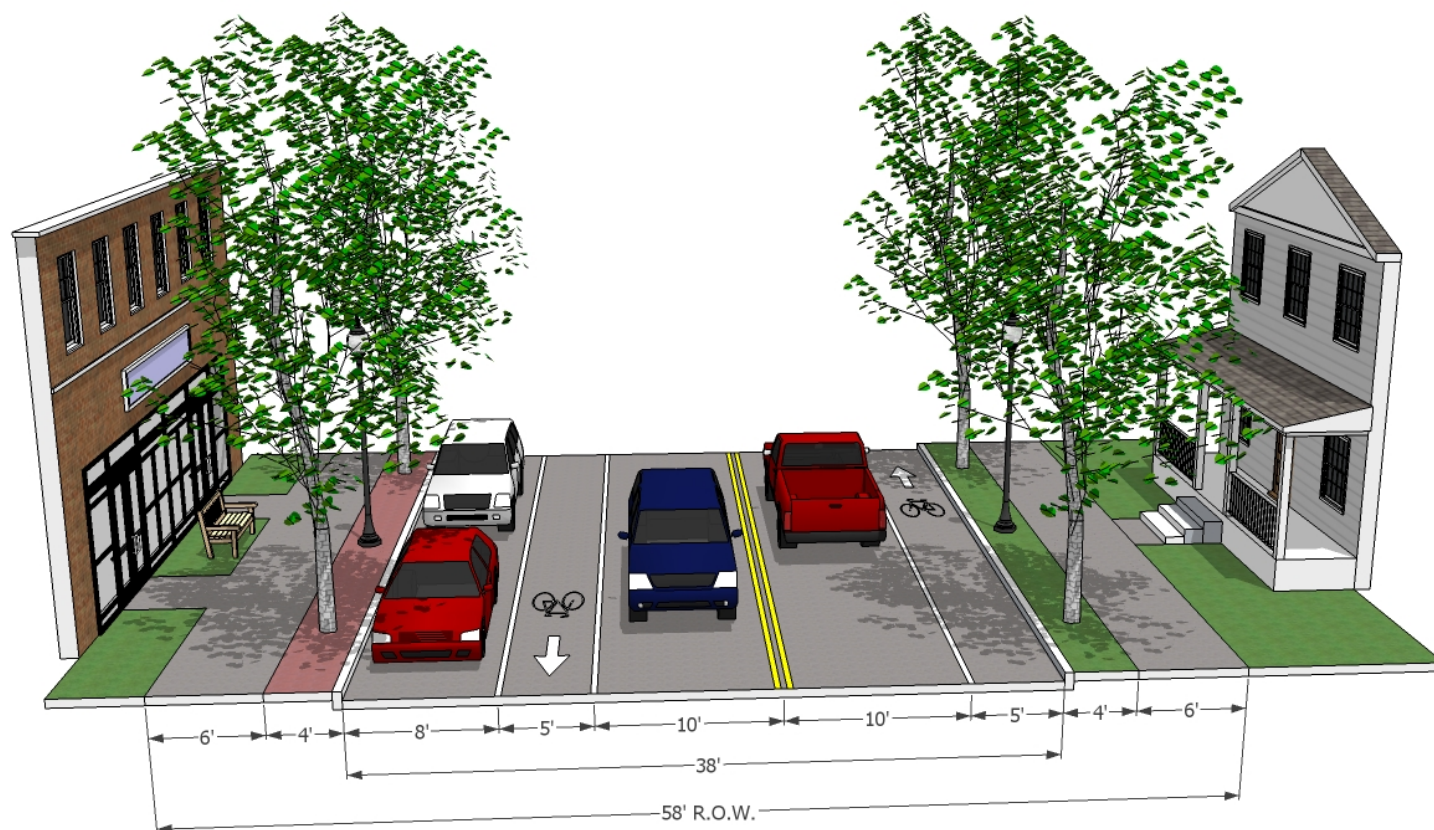
T-4 Neighborhood Commercial Street with Park Strip in Front of Commercial



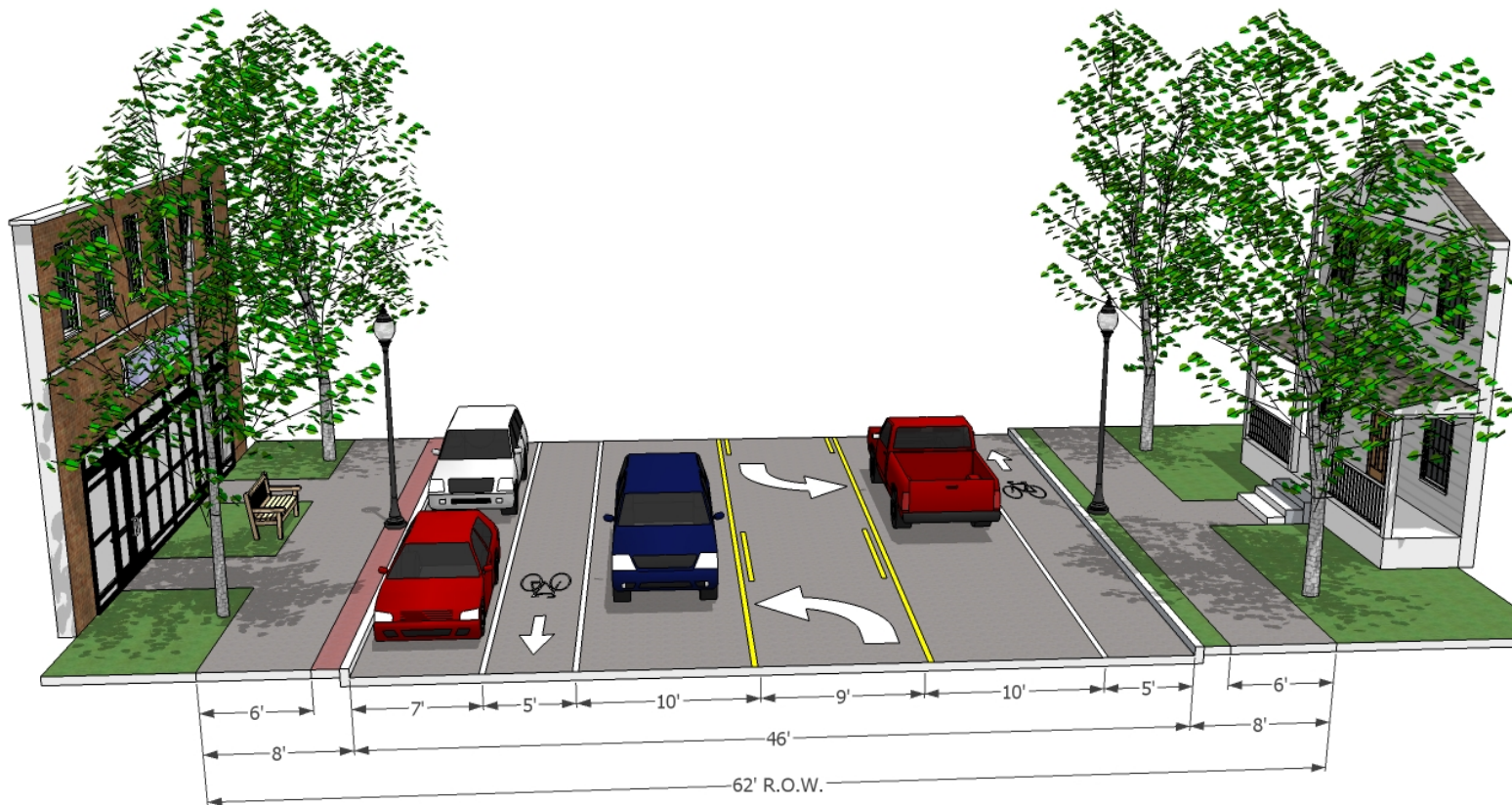
T-4 and T-5 Neighborhood Commercial Street with Parking on One Side, Bike Lanes, and 6' Sidewalk Areas



T-4 and T-5 Neighborhood Commercial Street with Park Strip in Front of Commercial, Bike Lanes, and 8' Sidewalk Areas



T-4 and T-5 Neighborhood Commercial Street with Park Strip in Front of Commercial, Bike Lanes, and a 10' Sidewalk Areas



T-4 and T-5 Neighborhood Commercial Street with Parking on One Side, a Center Turning Lane, Bike Lanes, and 8' Sidewalk Areas



Rear Alleys Are Encouraged in the T-4 through T-6 Zones



T-5 Commercial Street with Parking on Both Sides of the Street



T-6 Town Core Cross Section with Parking on One Side of the Street

Redevelopment Areas

Three redevelopment areas within the Town have had redevelopment plans adopted by the Planning Board, including the Hicks Avenue Redevelopment Area, the Paterson Avenue Redevelopment Area and the Sparta Avenue Redevelopment Area. With the redevelopment of these areas, it is important for the Town to analyze and plan for the increase in traffic in these areas that will result from the redevelopment of the sites. This section provides projected traffic data for the three areas.

Hicks Avenue Redevelopment Area

The Hicks Avenue Redevelopment Plan covers 13.65 acres along the northeastern corner of the intersection of Hicks Avenue and Sparta Avenue. The proposal includes 80 townhouse units and one 19,760 square foot mixed-use retail building with apartments and/or office spaces on the second floor and one 9,800 square foot multi-family building. The traffic generated by this redevelopment area needs to be taken into account for future upgrades to the roads and intersections surrounding this redevelopment area. The following trips are expected to be generated by the Hicks Avenue Redevelopment Area based on the Institute of Transportation Engineers Trip Generation Manual, 8th Edition:

Table 4.1: Average Daily Trips Generated by Hicks Avenue Redevelopment Area

Development Type	Weekday Trips	Saturday Trips	Sunday Trips
Residential Townhouses (80 units)	5.81 trips x 80 units = 465	5.67 trips x 80 units = 454	4.84 trips x 80 units = 387
Residential Apartments (13 units)	6.65 trips x 13 units = 86	6.39 trips X 13 units = 83	5.86 trips x 13 units = 76
Retail Space (9,880 square feet)	44.32 trips x 9.88 = 438	42.04 trips x 9.88= 415	20.43 trips x 9.88 = 202
Office Space (9,880 square feet)	11.01 trips x 9.88= 109	2.37 trips x 9.88= 23	0.98 trips x 9.88 = 10
Total Trips	1,098 trips per weekday	975 Saturday trips	675 Sunday Trips

Daily trips calculated break down into 50 percent of the trips entering the site and 50 percent of the trips exiting the site. Therefore on weekdays, the average daily trips will be 549 trips entering the site and 549 trips exiting the site. On Saturday, there will be approximately 488 trips entering the site and 488 trips exiting the site. Sundays will have the fewest trips generated with approximately 337 trips entering the site and 337 trips exiting the site.

Table 4.2: Weekday Morning & Afternoon Peak Hour Trips Generated by Hicks Avenue Redevelopment Area

Development Type	Weekday Morning Peak Hour Trips	Directional Distribution	Weekday Afternoon Peak Hour Trips	Directional Distribution
Residential Townhouses (80 units)	0.44 trips x 80 units = 35 trips	6 entering 29 exiting	0.52 trips x 80 units = 42 trips	27 entering 15 exiting
Residential Apartments (13 units)	0.55 trips x 13 units = 7 trips	2 entering 5 exiting	0.67 trips x 13 units = 9 trips	5 entering 4 exiting
Retail Space (9,880 square feet)	6.84 trips x 9.88 = 68 trips	33 entering 35 exiting	5.02 trips x 13 units = 65 trips	36 entering 29 exiting
Office Space (9,880 square feet)	1.55 trips x 9.88 = 15 trips	13 entering 2 exiting	1.49 trips x 9.88 = 15 trips	3 entering 12 exiting
Total Trips	125 a.m. peak hour trips	54 trips entering 71 trips exiting	131 p.m. peak hour trips	71 trips entering 60 trips exiting

Weekday morning peak hours will experience approximately 125 trips per hour. In the mornings, approximately 43 percent of the trips will be entering the site and the other 57 percent will be exiting the site.

Weekday afternoon peak hours will generate approximately 131 trips per hour. In the afternoons, approximately 54 percent of the traffic will be entering the site and the remaining 46 percent will be exiting the site.

Paterson Avenue Redevelopment Area

The Paterson Avenue Redevelopment Plan covers 12.57 acres that lie between Paterson Avenue, Jersey Place and Stratford Lane. The Plan includes 64 single family structures with 20 percent of the total number of units as duplexes allowed for affordable housing. This would create approximately 7 duplexes with a total of 14 units in them. The total number of residential units for the development is 71. For traffic generation purposes, the calculations will be based on 57 single family dwelling units and 14 townhouse/condo type units.

The following trips are expected to be generated by the Paterson Avenue Redevelopment Area based on the Institute of Transportation Engineers Trip Generation Manual, 8th Edition:

Table 4.3: Average Daily Trips Generated by Paterson Avenue Redevelopment Area

Development Type	Weekday Trips	Saturday Trips	Sunday Trips
Detached Single Family Residential	9.57 trips x 57 units = 545 trips	10.08 trips x 57 units = 575 trips	8.77 trips x 57 units = 500 trips
Residential Townhouses (14 units)	5.81 trips x 14 units = 81 trips	5.67 trips x 14 units = 79 trips	4.84 trips x 14 units = 68 trips
Total Trips	626 trips per weekday	654 Saturday trips	568 Sunday Trips

Daily trips calculated break down into 50 percent of the trips entering the site and 50 percent of the trips exiting the site. Therefore on weekdays, the average daily trips will be 313 trips entering the site and 313 trips exiting the site. On Saturday, there will be approximately 327 trips entering the site and 327 trips exiting the site. Sundays will have the lowest volume with approximately 284 trips entering the site and 284 trips exiting the site.

Table 4.4: Weekday Morning & Afternoon Peak Hour Trips Generated by Paterson Avenue Redevelopment Area

Development Type	Weekday Morning Peak Hour Trips	Directional Distribution	Weekday Afternoon Peak Hour Trips	Directional Distribution
Detached Single Family	0.77 trips x 57 units = 44 trips	11 trips entering 33 trips exiting	1.02 trips x 57 units = 58 trips	38 trips entering 20 trips exiting
Residential Townhouses (14 units)	0.44 trips x 14 units = 6 trips	1 trip entering 5 trips exiting	0.52 trips x 14 units = 7 trips	5 trips entering 2 trips exiting
Total Trips	50 a.m. peak hour trips	12 trips entering 38 trips exiting	65 p.m. peak hour trips	43 trips entering 22 trips exiting

Weekday morning peak hours will experience approximately 50 trips per hour. In the mornings, 76 percent of the traffic will be leaving the site. Weekday afternoon peak hours will generate approximately 65 trips per hour. In the afternoons, 66 percent of the traffic will be returning to the site.

Sparta Avenue Redevelopment Area

The Sparta Avenue Redevelopment Area is located at 56 Sparta Avenue, Block 1104, Lot 21 and adjacent rights of way for Sparta Avenue, Merriam Avenue and Pine Street, consisting of approximately 5.63 acres. A Redevelopment Plan for the area was adopted by the Town Council in March 2009. The area is slated for a research and development center which includes office space, warehousing and light industrial development. The area is expected to be developed in phases with approximately 150 employees on the site in the initial phase and up to 500 employees in the final phase. For the purposes of estimating traffic impacts from the area, this report will analyze the maximum number of employees expected at the site in order to provide for long range planning to accommodate traffic increases in this section of Town.

Table 4.5: Average Daily Trips Generated by Sparta Avenue Redevelopment Area

Development Type	Weekday Trips	Saturday Trips	Sunday Trips
Research and Development Facility	2.77 trips x 500 employees = 1,385 trips	0.57 trips x 500 employees = 285 trips	0.33 trips x 500 employees = 165 trips
Total Trips	1,385 trips per weekday	285 Saturday trips	165 Sunday Trips

Table 4.6: Weekday Morning & Afternoon Peak Hour Trips Generated by Sparta Avenue Redevelopment Area

Development Type	Weekday Morning Peak Hour Trips	Directional Distribution	Weekday Afternoon Peak Hour Trips	Directional Distribution
Research and Development Facility	0.43 trips x 500 employees = 215 trips	185 trips entering 30 trips exiting	0.41 trips x 500 employees = 205 trips	20 trips entering 185 trips exiting
Total Trips	215 a.m. peak hour trips	185 trips entering 30 trips exiting	205 p.m. peak hour trips	20 trips entering 185 trips exiting

The majority of trips to the site will be generated during the weekdays, with 86 percent of the traffic entering the site in the morning peak hours and 90 percent of the traffic exiting the site during afternoon peak hours.

Intersection and Traffic Analysis

Traffic flow through the Town of Newton has a significant impact on the residents of the Town, the commercial businesses in the downtown area and commuters that travel through the Town each day. Traffic delays occurring during peak travel times negatively affect the quality of life for Town residents and increase driving times for those traveling through the Town or traveling to businesses within the Town. Areas of known traffic problems or areas that could possibly be negatively impacted by future redevelopment of sections of the Town need to be reviewed to determine potential mitigation measures that will address the problems while still promoting the quality of life of the residents within the Town and protect the commercial businesses in the downtown section of Town.

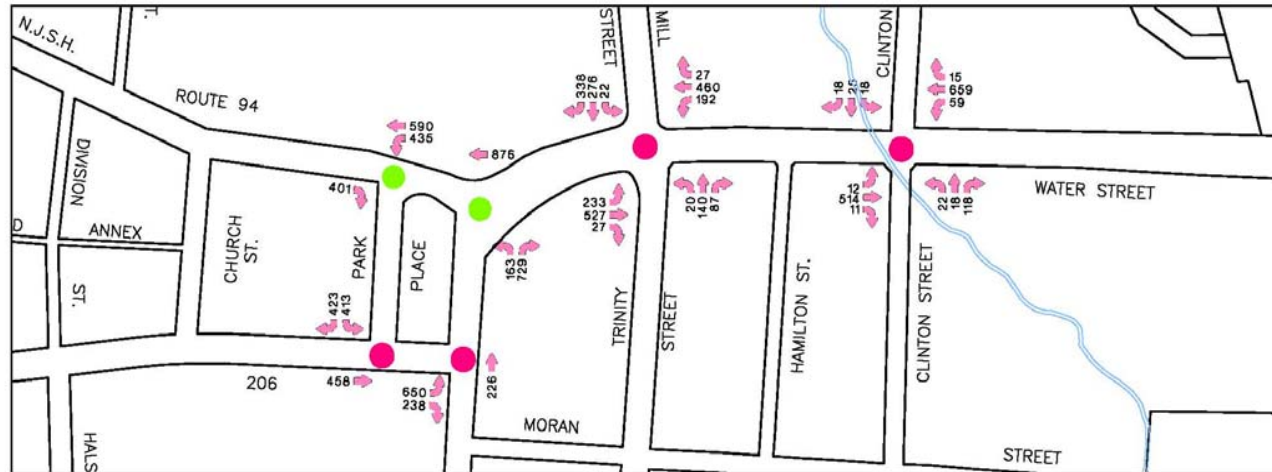
Under existing conditions, traffic volumes in the Town of Newton are causing traffic related problems during peak evening and Saturday travel times. An increase in these volumes due to the planned redevelopment of portions of the Town will only worsen traffic conditions within the Town if mitigation measures are not implemented. Potential mitigation measures would include construction of intersection improvements, upgrading/modernizing traffic signals, and installing traffic calming devices. With the major roadways entering and crossing the Town of Newton being under the jurisdiction of the County of Sussex or the New Jersey Department of Transportation, coordination with these agencies will be essential if any mitigation measures are implemented to improve the overall traffic flow in the Town.

Key locations within the Town which warrant improvements due to existing and projected traffic volumes include:

1. Town Square – US Route 206/ NJSH Route 94/ Spring Street
2. US Route 206 – Trinity Street to North Park Drive
3. CR 616 (aka Newton Sparta Road or Sparta Avenue)
4. Trinity Street - Moran Street Intersection and Union Place Intersection

Town Square – US Route 206/ N.J.S.H. Route 94/ Spring Street

The Town Square serves as the intersection of three of the major roadways that travel through the Town of Newton. These roadways include US Route 206, NJSH Route 94, and Spring Street. Route 94 and Route 206 enter the square via the southwest and southeast quadrants, respectively. Spring Street enters the square from the northeast quadrant. A combined US Route 206 and NJSH Route 94 roadway enters in the northwest quadrant. Vehicles entering the square from the northwest (US Route 206/NJSH Route 94) and southwest (NJSH Route 94) enter via yield control intersections. Vehicles entering the square from the southeast (US Route 206) and Northeast (Spring Street) enter through signalized intersections. During off peak hours and morning peak hours, traffic around the square runs fairly smoothly. In peak evening hours and Saturday midday hours, however, the square becomes congested and operates at a poor level of service. Current traffic volumes in the vicinity of the Town Square are shown as follows:



Existing AM Traffic Volumes



Existing PM Traffic Volumes

Through the collection of traffic data and observing congested traffic conditions, it was determined that improvements are warranted for the roadways that intersect within the Town Square to allow vehicles to enter and travel through the heart of the Town with greater ease. Recommended improvements and action items for the Town Square section of the Town include the following:

1. Begin an open dialogue with the New Jersey Department of Transportation to discuss the traffic conditions that exist today and the projected traffic that is anticipated for the Town of Newton.
2. Analyze signal timing for the Route 206/Park Place and Route 206/Spring Street intersections.
3. Request that the New Jersey Department of Transportation upgrade the traffic signal hardware to include up to date traffic image detection devices. These devices would detect vehicles at the intersection and allow for a continuously changing timing cycle. This will allow for a more efficient use of green time and minimize delays in the Town Square.

US Route 206 from Trinity Street to North Park Drive

As is the case for the Town Square, US Route 206 leaving the center of the Town and traveling north operates fairly smoothly during off peak hours and morning peak hours. Peak evening hours and Saturday midday hours, however, are times when US Route 206 operates at a poor level of service and becomes very congested between the intersection with Trinity Street and the intersection with North Park Drive near the northern end of Town. Current traffic volumes for US Route 206 in this area are shown on page 72..

While the traffic volumes on US Route 206 are high and are ultimately the main reason for congestion, limitations in the configurations of the main intersections help to worsen traffic congestion in this area. An example of this is at the US Route 206/Trinity Street/Mill Street intersection. At this intersection Trinity Street and Mill Street lack dedicated left turn lanes. The lack of left turn lanes results in vehicles being delayed behind other vehicles waiting to make a left turn onto US Route 206. At this same intersection, US Route 206 enters from the south with two lanes of traffic and then tapers down to one lane between Trinity Street and Clinton Street. This merging of vehicles in such a small area results in vehicles queuing and backing up through the intersection.

Another example is at the intersection of US Route 206 and Clinton Street. As stated above, US Route 206 tapers down to one lane in the northbound direction just prior to the Clinton Street intersection. While the presence of one lane in each direction for US Route 206 northbound traffic is a concern, delays for vehicles leaving Clinton Street is also a concern. Clinton Street is used by the traveling public to reach commercial and office buildings located along Clinton Street. Clinton Street is also used by travelers wishing to bypass the intersection of US Route 206 and Trinity Street where no right turns are permitted on red from Trinity Street. A lack of a right turn lane from Clinton Street when

combined with the high turning movements onto Route 206 results in considerable delays along Clinton Street and has a negative impact on the commercial businesses in this section of Town.

With the traffic conditions that exist in this area and are projected for the future, improvements are warranted for Route 206 north of the Town Square. Recommended improvements and action items include the following:

1. Begin open dialogue with the New Jersey Department of Transportation to discuss the traffic conditions that exist today and the projected traffic that is anticipated for the Town of Newton.
2. Analyze signal timing for US Route 206 at the intersections with Trinity Street/Mill Street, Clinton Street, and North Park Drive.
3. Request that the New Jersey Department of Transportation upgrade the traffic signal hardware to include up to date traffic image detection devices. These devices would detect vehicles at the intersection and allow for a continuously changing timing cycle. This will allow for a more efficient use of green time and minimize delays in the Town Square.
4. Pursue potential modifications to US Route 206 that would extend the two lanes in the northbound direction to a point north of the US Route 206 intersection with Clinton Street.
5. Pursue potential dedicated left turn lanes at the intersection of US Route 206 and Trinity Street.
6. Pursue a potential dedicated right turn lane along Clinton Street at the intersection of US Route 206 and Clinton Street.
7. Pursue a potential dedicated left turn signal at the intersection of US Route 206 and North Park Drive.
8. Pursue a speed study on North Park Drive to identify if the posted speed should be reduced.

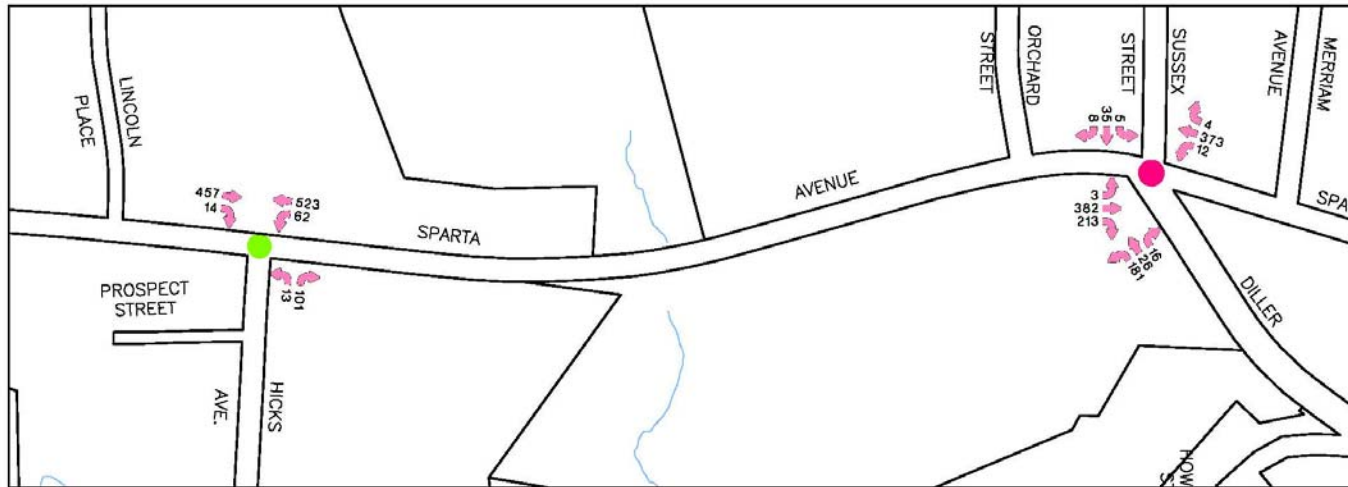
Sussex County Route 616 (also known as Sparta Avenue or Newton-Sparta Road)

Sussex County Route 616 (Sparta Avenue) is a minor arterial highway that is one of the most highly used roadways within Sussex County. It is the major connection between the Town of Newton and the Township of Sparta and travels through three municipalities: the Town of Newton, the Township of Andover, and the Township of Sparta. It also serves as a connection between U.S. Route 206 and N.J. State Route 15 which are two major arterial highways located within Sussex County. At the eastern edge of Town, approximately 20,000 vehicles per day utilize Sparta Avenue. The vehicle traffic then splits at the Diller Avenue intersection with approximately 40 percent of the vehicle traffic utilizing Diller Avenue to bypass the downtown area of Town.

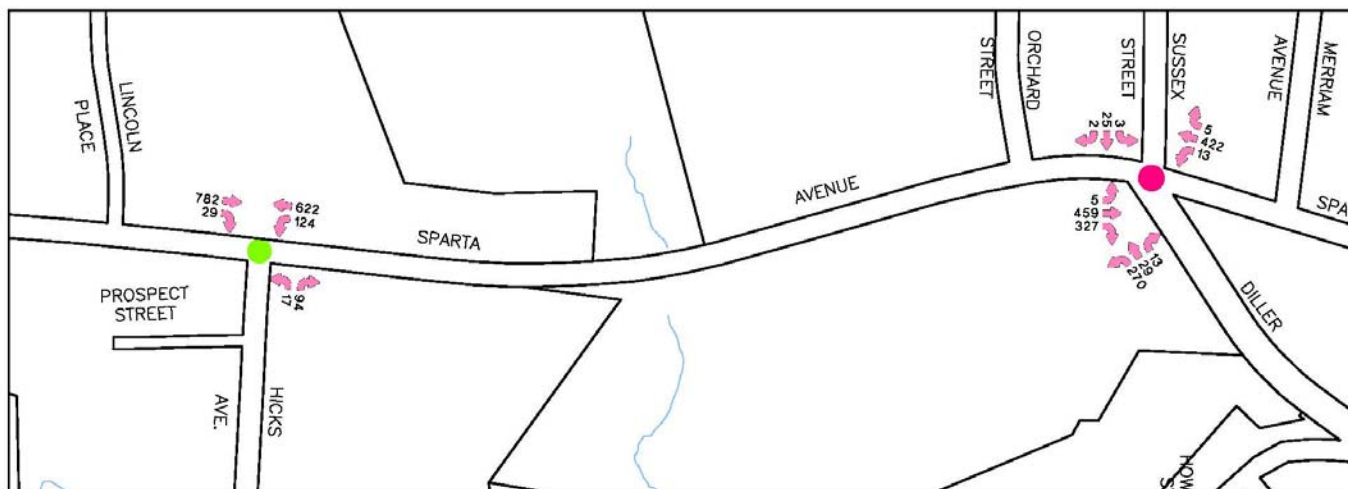
Currently Sparta Avenue has a number of safety and operations deficiencies and is being studied by the County of Sussex for potential improvements. The improvements being contemplated by the County to address high accident rates, traffic congestion, and pedestrian safety include the construction of roadway geometric improvements and the upgrading of the major intersections. The roadway geometric improvements being implemented are for the section east of Diller Avenue where horizontal and vertical deficiencies exist today. The intersection improvements include the signalization of the Hicks Avenue intersection, the construction of dedicated turning lanes at Diller Avenue and Woodside Avenue, and the modernization of traffic signals.

While the County of Sussex is proposing operations and safety improvements to Sparta Avenue, the Town of Newton is also considering redevelopment of properties that lie adjacent to Sparta Avenue or in close proximity. Any improvements made to Sparta Avenue should be designed with the Town's future plans in mind and serve to promote the neighborhood center that is being planned for this section of Town. The redevelopment areas along Patterson Avenue, Hicks Avenue and Merriam Avenue all are in close proximity to Sparta Avenue. Improvements that should be considered due to the redevelopment of these areas should include intersection improvements to Hicks Avenue, Merriam Avenue and Diller Avenue. Other improvements should include provisions for pedestrian sidewalks, crosswalks, traffic calming, lighting, and parking.

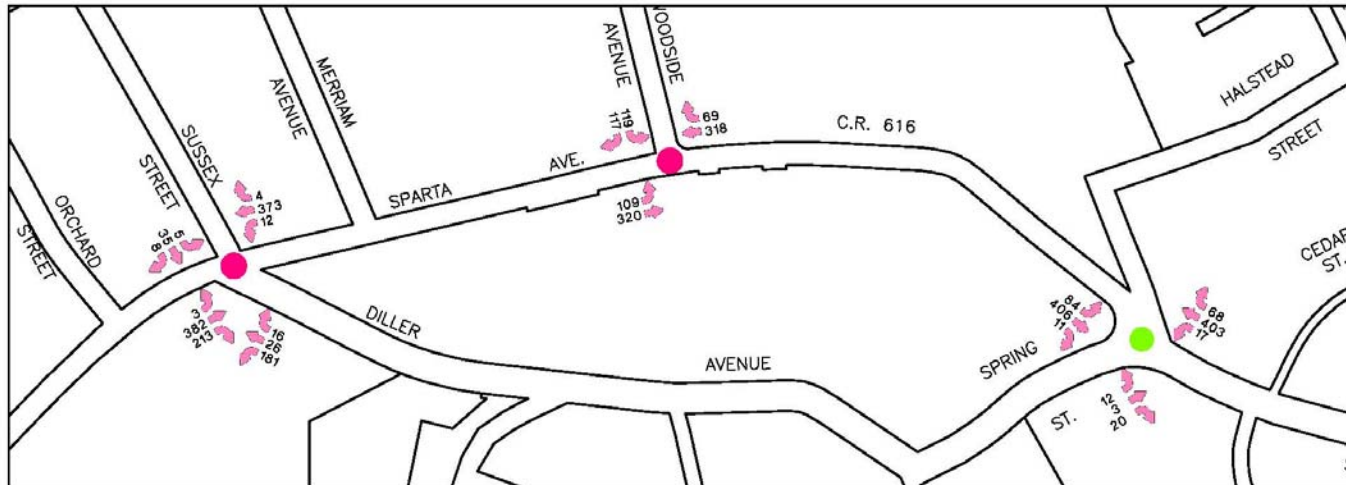
Current and projected traffic volumes for Sparta Avenue between Hicks Avenue and Woodside Avenue are as follows:



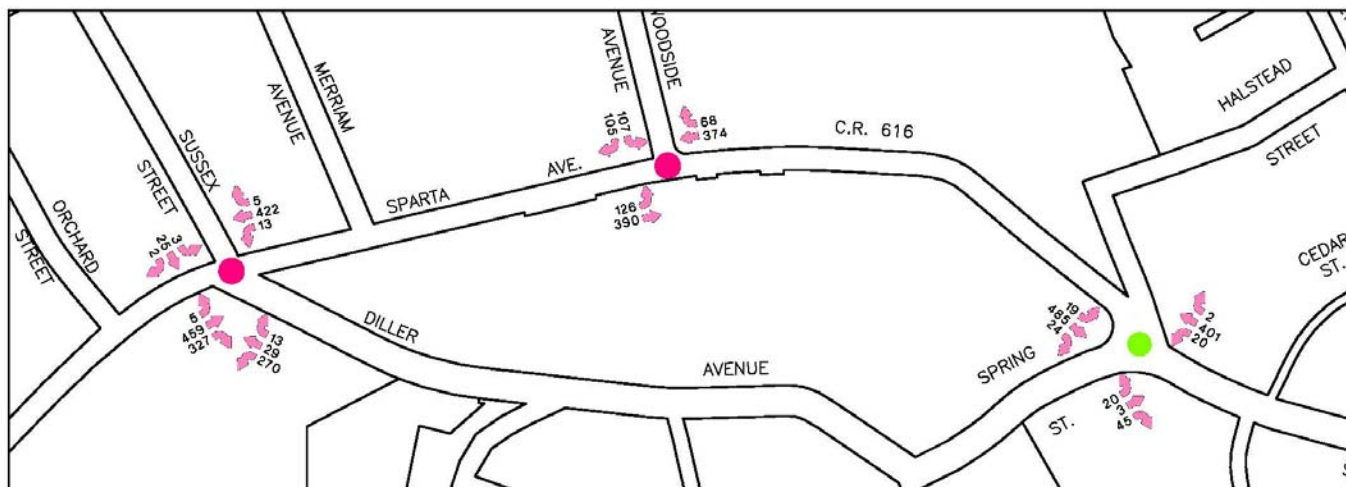
Existing AM Traffic Volumes



Existing PM Traffic Volumes



Existing AM Traffic Volumes



Existing PM Traffic Volumes

With the traffic conditions that exist in this area and are projected for the future, in combination with the redevelopment plans for this section of Town, improvements are warranted for Sparta Avenue. Recommended improvements and action items include the following:

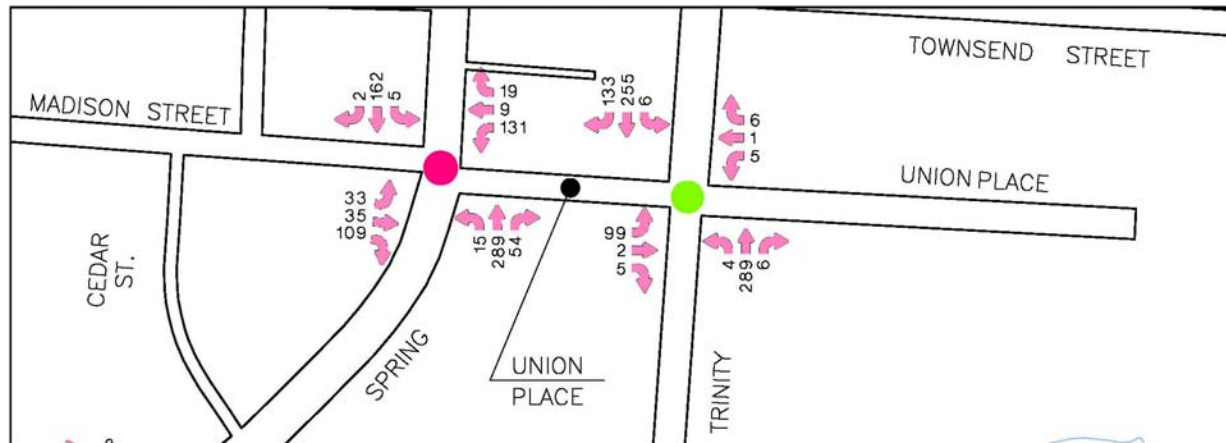
1. Continue dialogue with the County of Sussex to ensure operations and safety improvement include provisions to promote the neighborhood center and redevelopment planned for this section of Town.
2. Pursue improvements to the intersection of Sparta Avenue and Hicks Avenue. Potential improvements could include the full signalization of the intersection, the construction of turning lanes on all three legs of the intersection, and the construction of pedestrian sidewalks and lighting.
3. Pursue improvements to the intersection of Sparta Avenue and Diller Avenue. Potential improvements could include the construction of dedicated left and right turn lanes, modernization of traffic signals, and the construction of pedestrian sidewalks and lighting.
4. Pursue improvements to the intersection of Sparta Avenue and Merriam Avenue. Potential improvements could include construction of a dedicated right turn lane along Merriam Avenue and the construction of pedestrian sidewalks, lighting and traffic calming devices along Sparta Avenue.
5. Pursue improvements to the intersection of Sparta Avenue and Woodside Avenue. Potential improvements could include construction of dedicated left turn lanes, modernization of traffic signals, and the construction of pedestrian crosswalks.
6. Support the upgrading of traffic signals and request that the County of Sussex utilize up to date traffic image detection devices. These devices would detect vehicles at the intersection and allow for a continuously changing timing cycle. This will allow for a more efficient use of green time and minimize delays in the Town Square.

Trinity Street – Union Place to US Route 206

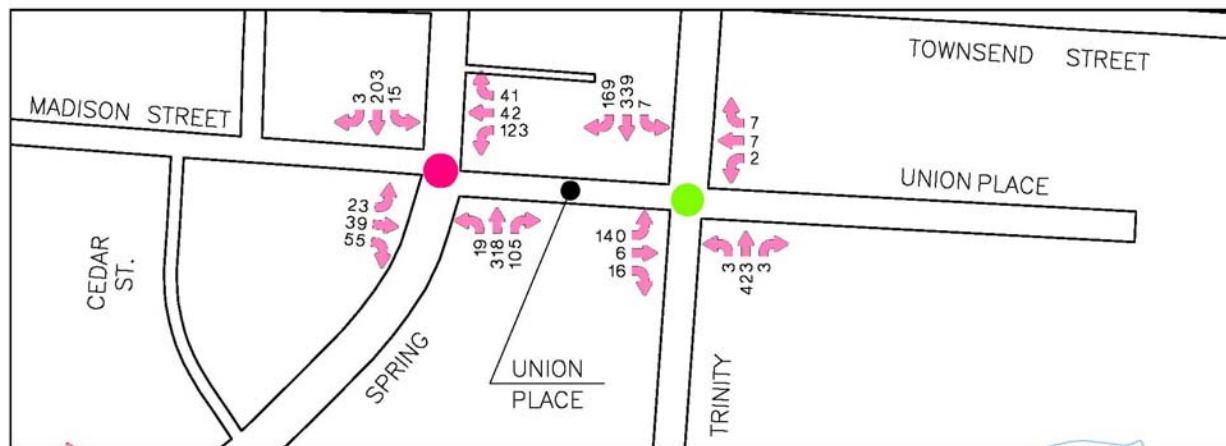
Trinity Street is heavily utilized roadway in the Town which is used each day by vehicles traveling to the various Town, County and State agency buildings located in the County Seat, by vehicles traveling toward the downtown area along Spring Street, and vehicles which are utilizing Trinity Street as a bypass between Newton-Sparta Road and US Route 206. The heavy traffic volumes combined with high vehicle speeds has resulted in difficulties for vehicles turning from Union Place and Moran Street as well as the various parking lots located along Trinity Street.

With the traffic conditions that exist along Trinity Street and are projected for the future, improvements are warranted to Trinity Street to allow for better turning movements and slow vehicle traffic. Recommended improvements and action items include the following:

1. Pursue the installation of traffic calming devices to slow the flow of traffic along Trinity Street. The devices could include speed tables or humps, chokers and/or textured pavement crosswalks.
2. Consider a full traffic signal at the intersection of Trinity Street and Union Place and the intersection of Trinity Street and Moran Street.



Existing AM Traffic Volumes



Existing PM Traffic Volumes

Mass Transit Options

Sussex County Skylands Ride is the primary transit provider in the County and in Newton. Lakeland Bus Service provides commuter bus service to employment centers between Newton and New York City. Rail service is also proposed to be extended to Andover Township, which may increase Newton's options for access to rail service inside of the County. Despite these regional providers, the need focused on in this plan is local service. The current services are limited and would need to be expanded in order to promote viable options to utilize transit on a regular basis.

Expansion of Existing County Bus Service

The County Skylands Ride Bus service currently makes four runs in the County daily between the hours of 5 a.m. and 7 p.m. The bus makes two large loop runs covering separate parts of the County. The bus is available to anyone for a fee of \$0.50 traveling one way. Currently the County Bus picks up 950 riders per day in Newton and drops off 750 riders per day. Buses are often at maximum capacity providing service to Sussex County College in the Town.

In order to improve the County Bus service in Newton, two components need to be addressed: frequency of service and number of stops. A loop route within the Town of Newton specifically could address both of those needs. A proposed route is shown on the transit route on the following page, however this could and should be adjusted based on further study of need.

The County is starting a shuttle service between Newton and the Mount Arlington Train Station. This shuttle is expected to be re-

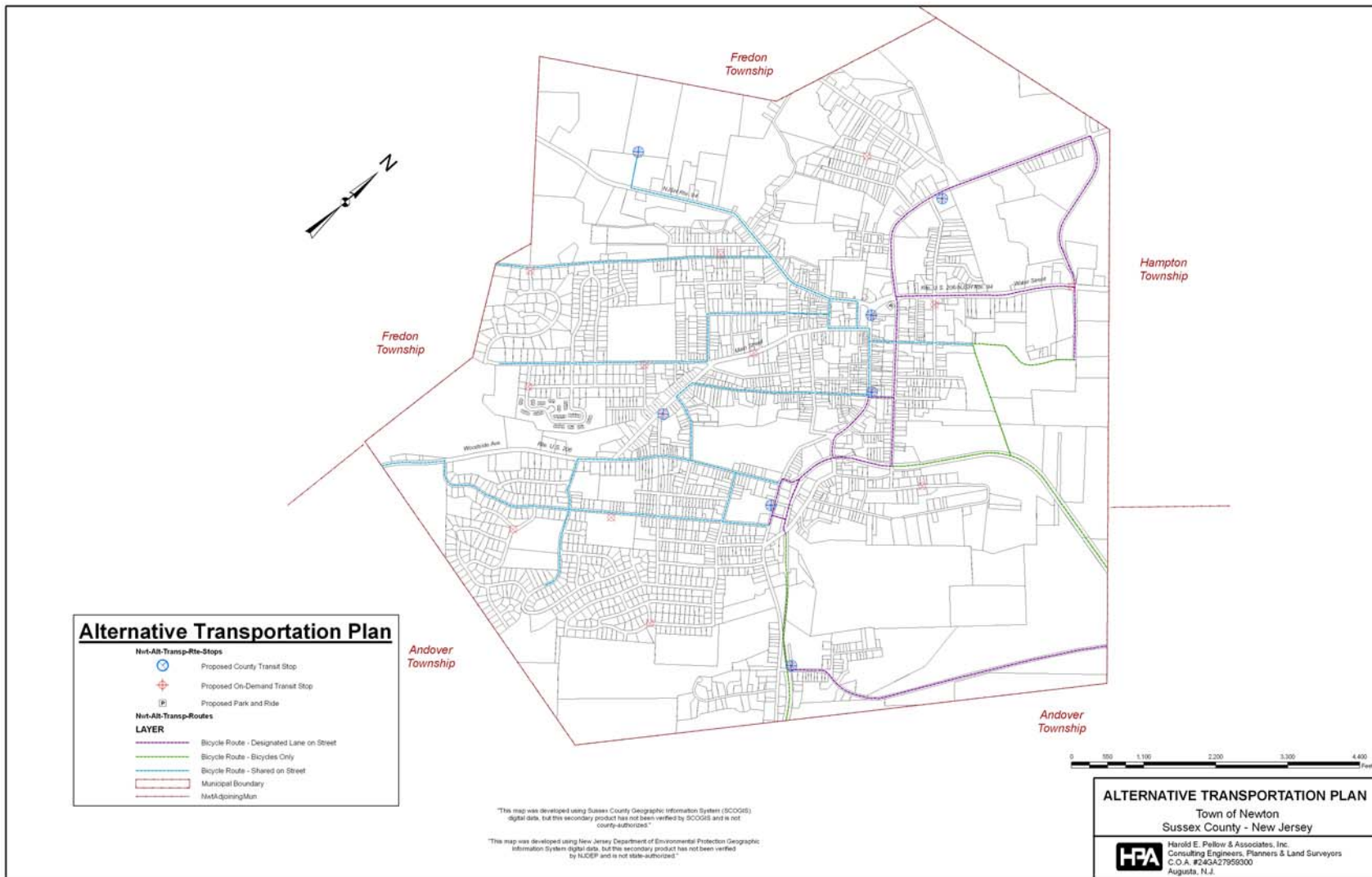
routed to the Andover Train Station when it goes into service. This new service will provide a direct link between the Town of Newton and rail service.

On-Demand Transit

In order to augment the regional County Bus service an on-demand transit system is proposed that could serve multiple communities including Newton. This system would employ current technology utilized by parcel delivery services to provide bus drivers with the most efficient routes for picking up and dropping off riders as they call in and order a transportation route. The On-Demand Transit System includes designated stops, which are numbered and located within 5 minutes walking distance from most locations in Town. The Alternative Transportation map shows proposed On-Demand Transit stop locations. The County already uses RouteMatch Software to provide the Para-Transit program for Senior Bussing. This program would expand the service.

The County offers on demand services for seniors, disabled persons, veterans and low-income persons on a daily basis between the hours of 6 a.m. and 6 p.m. The service provides in-county trips to doctor's offices, shopping and appointments, etc. Service to Morris County is provided for doctor's visits only. The Town discussed the possibility of expanding the existing on demand service in Newton or perhaps building on the model to provide a similar service for the general public within Newton and possibly adjacent communities. The County expressed interest in such a program pending available funding sources.

Town of Newton CIRCULATION PLAN ELEMENT



Parking Plan

This Parking Plan provides to methods for addressing parking issues. The first method is to address parking standards and managing demand on existing parking. The second is to analyze locations in the Town for providing additional on and off-street parking. Utilizing both strategies will provide for the right of amount of parking, which is utilized with best possible efficiency.

Minimum Parking Requirements

Parking needs vary based on uses and location, access to transit and other modes of transportation. This plan proposes flexible parking standards based on the Transect that the use is in, as well as other factors including shared parking possibilities, size of use and access to municipal parking lots. Parking in the Town Core needs to be addressed creatively to provide for maximum flexibility in an area where parking is a challenge.

Where development is proposed within Transects 5 and 6 that cannot provide parking on site, the Town should consider establishing a fee in lieu of parking program. The fee in lieu would allow the development's parking requirement to be waived, in exchange for funding to the municipality to assist in constructing a parking garage.

Parking requirements should be based on use and Transect Zones as follows:

Table 4.7: Parking Requirements by Transect Zone and Use

	T2/T3	T4	T5/T6
RESIDENTIAL	2.0 / dwelling	1.5 / dwelling	1.0 / dwelling
LODGING	1.0 / bedroom	1.0 / bedroom	1.0 / bedroom
OFFICE	3.0 / 1000 sq. ft.	3.0 / 1000 sq. ft.	2.0 / 1000 sq. ft.
RETAIL	4.0 / 1000 sq. ft.	4.0 / 1000 sq. ft.	3.0 / 1000 sq. ft.

Shared Parking

The shared parking factor illustration below shows how shared parking can be calculated for two uses within the same vicinity of one parking area. The shared parking factor is used by adding together the parking requirement for each function then dividing it by the shared factor. For example, if a residential use requires 10 spaces and retail use requires 10 spaces, the total number of 20 spaces is divided by the shared parking factor of 1.2, yielding a requirement of 17 spaces. The shared parking factor should be utilized for uses in adjacent blocks within the proximity of a shared lot. When three functions share parking, the lowest factor should be used to assure enough parking is provided.

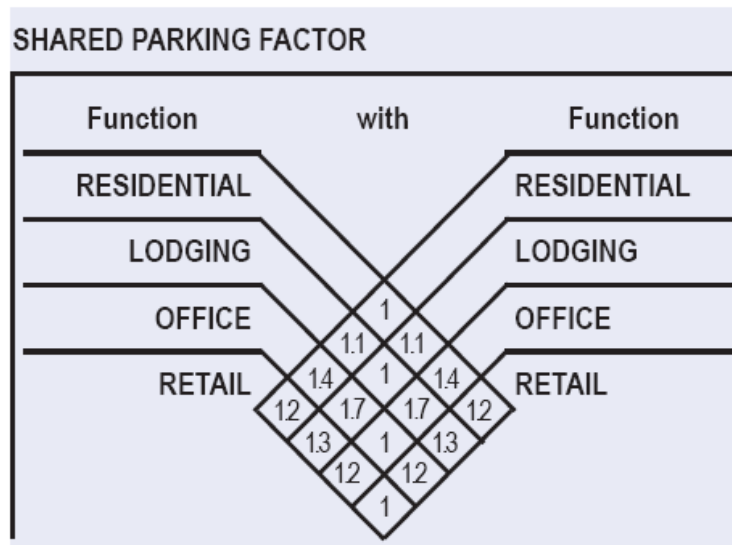


Illustration Credit: Duany Plater-Zyberk & Co.

Design Strategies to Minimize Impacts of Parking

Parking areas can be unsightly expanses of pavement that do little to enhance an area. For this reason, efforts need to be made to minimize the impact of parking areas in the Town. While they are a necessary component of development, appropriate design measure can lessen their impact. Parking areas should be located to the side of, or most preferably behind the building. When parking structures are utilized they should include ground floor retail or a liner building with embedded parking to limit the visual impact of the garage. Where surface parking is constructed, the lots should include some compact spaces to maximize space in the lot, sufficient landscaping to shade the lot and screening or fencing to minimize visual impacts of the lot. See the Landscaping section of this plan for more recommendations to improve parking areas.

Managing the Parking Supply Efficiently

There are a variety of methods to manage parking supply, particularly in the Town Core, where parking is at a premium. The following methods should be employed by the Town to address parking supply:

1. Pricing: Parking should be priced where demand exceeds supply. The price should be set to recover costs and regulate parking demand. The Town should utilize parking revenue to pay for the costs associated with parking, while ensuring high levels of street and sidewalk maintenance in metered districts (see parking benefit districts below.) Payment for parking should be made easy at meters or paid daily/hourly spaces with advanced payment technology. Limits should be set on parking hours or duration to encourage shoppers rather than employees/commuters or vice versa, depending on the goals for the parking being utilized.
2. Signage: Parking areas should be clearly marked with wayfinding signs on main streets to allow the most efficient use of existing parking. Shared parking should be encouraged to allow for overlap of use by different users.
3. Employee Parking: The Town should consider developing a downtown employee parking permit program to encourage employees to park in perimeter spaces. The program would provide dedicated spaces in perimeter lot locations, allowing closer spaces to be utilized by shoppers and visitors.
4. Encourage Transit Use: The Town should work with the County to provide large employers in the Town free transit passes to encourage use of transit services to get to work.
5. Encourage Carpooling: The Town should consider starting a carpooling program to provide premium reserved parking spaces for people who carpool to work in Newton. This would need to be a joint program with local employers.
6. Provide Bike Parking & Amenities: Bike parking should be provided where parking demand is high to allow for ease of use by cyclists. Likewise, a program to encourage employers to provide lockers and showers to bike commuters encourages increased bicycle commuting to work. This should be a joint program with the County.
7. Enforcement: Parking regulations must be enforced so that users will obey the rules; however care should be taken not to alienate users.

8. Shared Parking: The Town should pursue opportunities to share parking with private uses, such as places of worship, that typically use their parking at specific designated times. These private parking areas could be open to public or parking pass holders at times when the private facility is not in use. An incentive, such as revenue sharing, would need to be provided in order to encourage private facilities to participate.

Parking Benefit District

In the Town Core, particularly along Spring Street, free parking is provided for a period of two hours. The parking is often utilized by employees, store owners and residents, leaving the potential shopper struggling to find a convenient space to park along Spring Street. One of the national best practices being promoted and utilized around the country is called a "Parking Benefit District". This is a program through which the town returns all or a portion of the parking revenue generated through meters or non-resident passes in an area to an entity representing the district for extra maintenance, security, beautification projects, etc. The parking benefit district concept can be applied in both business districts and residential neighborhoods.

The commercial application of a Parking Benefit District utilizes meters for on street parking spaces with relatively short time frames for the meters, i.e. two hours, and relatively high fees for the meter, i.e. fifty cents to one dollar per hour. The Town then dedicates a portion or all of the revenue from the parking back into the district in which the parking is located, i.e. Spring Street, to pay for improvements needed in the area. This strategy has been tried in numerous cities across the country with very positive results in revitalizing shopping areas including: Pasadena and San Diego, California and Austin, Texas. This plan recommends applying the parking benefit district to the Town Core Transect Zone, utilizing the revenue to improve the entire Central Business District.

A Parking Benefit District can also be applied to a residential area where parking problems are occurring. This district is usually applied to an area that already has a resident permit parking program. Rather than not allowing non-residents to park in the area, the Parking Benefit District also allows non-residents to purchase permits to park in the area. Because residents in general are not likely to support this idea without some sort of benefit to the neighborhood from the program, the Town agrees to utilize a portion or all of the money raised from the sale of the permits to make improvements to the neighborhood. This program could also apply to off-street parking in municipal lots in the Town Core. Residential permits could be sold on an annual and/or monthly basis to allow residents to park in municipal lots. The permits could also be sold to others who need parking in the area, i.e. business owners, employees, etc. The money from the permit sales would then be utilized for improvements to the area. This type of program could also work in the Town Core where a resident parking permit program is in place.

Parking District on Ryerson Avenue

Parking along Ryerson Avenue in front of Newton High School has become a problem for residents in the neighborhood. There are safety concerns over parking on both sides of the street narrowing traffic lanes to the extent that travel becomes dangerous. This plan recommends implementing a modified parking district for the area to control parking in the area. Parking should first be limited to the High School side of the street on Ryerson Avenue. A parking permit program should be established that permits free parking for residents and either free or purchase of parking passes for students. If parking passes are determined to be free for students, the number of passes available should be limited to limit the amount of parking on Ryerson. This could be done by prioritizing parking for seniors, then juniors, honor students, etc. If parking permits are sold, the money should be utilized within the neighborhood to pay for improvements, enforcement of traffic rules, etc.

Preferred Parking for Senior Citizens on Spring Street

During the public information sessions, several people brought up the fact that some senior citizens have problems accessing stores on Spring Street because of the steep grade between the municipal parking areas and Spring Street. People noted that these steep grades can make it difficult for seniors to walk up from the parking areas to access Spring Street. A potential solution is to offer senior preferred parking on Spring Street. The concept is that one or two spaces would be reserved for seniors as a courtesy with signage that states “senior preferred parking.” The spaces would be marked, but not enforced, strictly as a courtesy and suggestion.

Potential Parking Garage Locations

Even with the best management of parking supply in the Town Core, additional parking will ultimately be needed and will benefit the Central Business District and Railroad District areas. Existing parking areas were reviewed for the best potential locations to develop parking garages within the Town. While garages are expensive and will be highly dependent on the potential for both public and private funding, they will provide the added benefit of supporting growth and development in the downtown. The following illustrations show existing ground level parking locations in the Town and show potential locations for future parking structures.



Existing Surface Area Parking Locations in Town



Potential Locations for Future Parking Structures

Special District 9 Plan

Special District 9 is a 44 acre tract located on NJSH Route 94 in Newton to the west of Newton Memorial Hospital. The district is proposed to be rezoned to accommodate a mix of uses including retail/commercial with apartments and/or office on the second floor, apartments, townhouses, single family homes, live/work units, assisted living facilities and day care centers. Special District 9 is included in the Town's Fair Share Plan and is proposed to be a mixed-income neighborhood providing affordable housing to satisfy a portion of the Town's Growth Share obligation under the Third Round Rules of the Council on Affordable Housing. This district is one of the few areas where new roads will be built in the Town and therefore requires some specific attention and recommendations as to how roads will be constructed to serve this neighborhood and how they will be connected to the existing transportation system in the Town.

Special District 9 is split by NJSH Route 94 and development is permitted on both sides of the roadway. Mixed-use retail should front along NJSH Route 94 to form a neighborhood commercial core area. Sidewalks should be added to both side of NJSH Route 94. Access from NJSH Route 94 should be limited to one or two locations on either side of the roadway. Access points should be perpendicular to the roadway and adjacent to each other to encourage connectivity between both sides of NJSH Route 94. New roads constructed within Special District 9 should be set up in a grid or modified grid pattern to provide maximum connectivity in the area. Dead end and cul-de-sac streets are discouraged. Maximum block lengths should be 500-600 feet to encourage connectivity and make walking and bicycling more efficient. If block lengths need to be longer because of topography, bicycle/pedestrian connections should be made at the middle of the block. A pedestrian/bicycle connection to Newton Memorial Hospital should be provided to allow the flow of non-vehicular traffic between the sites. Roadways should be developed as complete streets with sidewalks and bicycle lanes or share lanes to allow for multiple modes of transportation in the district. A future transit stop is proposed along NJSH Route 94 to provide bus service between the site and the central business district as well as other locations throughout the County.

Circulation Plan Recommendations Matrix

The matrix on the following pages provides a summary of the recommended improvements and actions from the Circulation Plan. To assist the Town in implementation of the Plan, the recommendations are broken down by category, i.e. parking, and listed in general order of priority. Estimated costs are also provided for capital planning purposes; however costs are very preliminary and need to be updated and refined on a project by project basis. Costs that cannot be estimated at this time are listed as TBD, to be determined. Items that are not capital related and can be accomplished by Town staff are listed as N/A for estimated cost.

RECOMMENDATION	ESTIMATED COST
SIDEWALK INSTALLATIONS/IMPROVEMENTS	
Route 206 on north side from Clinton to N. Park Dr.	\$70,000
Main Street - Between Woodside and Ryerson	\$360,000
Main Street - Between Ryerson and Liberty Street	\$100,000
Mill Street - Route 206 to Swartswood Road	\$110,000
Ryerson Avenue (near Newton High School)	\$100,000
Trinity Street	\$90,000
Park Avenue section of Town (multiple streets)	\$100,000
Linwood Avenue section of Town (multiple streets)	\$150,000
St. Joseph Church section of Town (multiple streets)	\$300,000
Hicks Avenue section of Town (multiple streets)	\$75,000
North Park Drive completion to Mill Street	\$60,000
Woodside Avenue	\$35,000
Pine Street	\$115,000
Sussex Street	\$100,000
Lawnwood Avenue	\$40,000
Mason Avenue	\$45,000
Orchard Street	\$65,000
Garner Avenue, Dogwood Drive, Birch Drive & Linmor Avenue	\$95,000
Trenton Place, Kory Road, Clive Place & York Road	\$90,000
Paterson Place & Stratford lane	\$30,000
Mill Street - Swartswood Road to North Park Drive	\$110,000
West End Avenue (County Route 519)	\$150,000
NJSH Route 94 from Hospital to Special District 9	\$100,000

RECOMMENDATION	ESTIMATED COST
STREETSCAPES	
Lower Spring St. Streetscape	\$250,000
Sparta Avenue - Railroad District Streetscape	\$700,000 (possibly include in County improvements)
Water Street-- Square to Clinton St. Streetscape	\$500,000
RAIL TRAIL IMPROVEMENTS	
Hicks Ave. to Diller Ave.	\$40,000
Diller Ave. /Railroad District	\$20,000
Lower Spring St. to Trinity St.	\$20,000
Trinity to Bridge	\$60,000
Bridge over Creek	\$50,000
Creek to Hicks Ave./Town Boundary	\$20,000
MASS TRANSIT	
Relocate Park-n-Ride to Trinity St.	TBD
Create Bus Loop in Newton	TBD
Expand County On-Demand Service	TBD
Work with County and Shop Owners to Find Appropriate Location for Bus Stop at Spring St./Union St.	TBD

RECOMMENDATION	ESTIMATED COST
BIKING IMPROVEMENTS	
Install Bike Racks on Spring St.	\$5,000
Install Bike Racks on Trinity St.	\$5,000
Install Bike Racks in Railroad District	\$5,000
Work with Weis/Shoprite/ Dunkin Donuts/Walgreens/Applebee's to Install Bike Racks	TBD
Sign Shared Street Bike Routes	TBD
Add bike lanes on Trinity/Diller/Lower Spring St.	TBD
Add bike lanes on Route 206/Water St -Trinity to N. Park	TBD
Add bike lanes on N. Park Dr. /CR 519	TBD
Add bike lanes on S. Park Drive/Connect Route to Park	TBD
PARKING	
Re-stripe/add new meters/signage --Central Plaza	\$18,000
Re-stripe/add new meters/signage -- Adams St. Plaza	\$13,500
Re-stripe/add new meters/signage --Eastern Plaza	\$13,000
Review and Improve (if necessary) Lighting in Parking Areas	TBD
Review and Improve (if necessary) Lighting in Alleys	TBD
Increase enforcement of parking rules	N/A
Parking Benefit District -- Central Business District	TBD
Implement residential parking permit program for apts.	N/A
Parking Garage -- behind Cochran Building	\$20,000 - \$25,000 per parking space
Parking Garage --- Eastern Plaza Lot	\$20,000 - \$25,000 per parking space
Parking Garage-- Railroad District	\$20,000 - \$25,000 per parking space

RECOMMENDATION	ESTIMATED COST
ORDINANCES	
Connectivity Ordinance	N/A (Included in 2010 Zoning Revision)
Complete Streets Design Standards	N/A (Included in 2010 Zoning Revision)
Street Tree Ordinance	N/A (Included in 2010 Zoning Revision)
Landscaping Ordinance	N/A (Included in 2010 Zoning Revision)
Parking Area Landscaping/Screening Ordinance	N/A (Included in 2010 Zoning Revision)
Minimum Parking Requirements/Shared Parking Ordinance	N/A (Included in 2010 Zoning Revision)
WAYFINDING SIGNAGE	
Parking Wayfinding Signage	\$7,000
Central Business District Signage	\$10,000
Business Directory Kiosk	\$9,000
Truck Route Signage	\$7,500
Historic Walking Tour Signage	\$20,000
PUBLIC SAFETY	
Install surveillance cameras on Spring St.	TBD
Develop Ped/Bike/Car Safety Campaign	N/A
Continue Community Police Program	N/A
Create storefront police location on Spring St.	TBD

RECOMMENDATION	ESTIMATED COST
TRAFFIC CALMING	
Diller Ave. Traffic Calming (speed tables & textured crosswalks)	\$10,000 to \$20,000
Trinity Street Traffic Calming (speed tables & textured crosswalks)	\$10,000 to \$30,000
Main Street Traffic Calming (textured crosswalks)	\$10,000 to \$30,000
Ryerson Ave. Traffic Calming (speed tables & textured crosswalks)	\$10,000 to \$30,000
Liberty Street Traffic Calming (speed tables & textured crosswalks)	\$10,000 to \$20,000
Merriam Ave. Traffic Calming (speed tables & textured crosswalks)	\$10,000 to \$30,000
Woodside Ave. Traffic Calming (speed tables & textured crosswalks)	\$10,000 to \$30,000
Madison Street Traffic Calming (speed tables & textured crosswalks)	\$10,000 to \$20,000
Perform Speed Studies to reduce posted speeds by Transect Zone	\$3,000 per street to perform study
Perform Speed Study for North Park Drive to allow for reduced speed posting	\$3,000
Enforce speeds in high accident/speed locations	N/A
STREET TREES AND LANDSCAPING	
Shade Trees on Route 206 bet. Trinity /N. Park Drive	\$4,600
Become a TreeCity USA	N/A
Start a Tree Bank	N/A
Develop Landscaping/Planter Box Program in CBD	N/A
Adopt Percent for Public Art Program	N/A (future cost from capital budget)

RECOMMENDATION	ESTIMATED COST
INTERSECTION/STREET IMPROVEMENTS	
Town Square Intersections: Begin dialogue with NJDOT to review existing traffic issues	N/A
Town Square: Request that the NJDOT upgrade signal hardware/image detection devices.	TBD
US Route 206: Analyze signal timing on 206 at Trinity/Mill, Clinton & North Park Drive	TBD
US Route 206: Pursue dedicated left turn lane at 206 and Trinity	TBD
US Route 206: Pursue 4 lanes northbound after Trinity Street	TBD
US Route 206: Pursue a dedicated left turn signal on 206 and North Park Drive	TBD
US Route 206: Pursue dedicated right turn lane along Clinton Street at 206 and Clinton Street	TBD
US Route 206: Install Crosswalks bet. North/South Park Drive on 206	TBD
CR 616 (Sparta Avenue) Continue dialogue with County to ensure operations and safety improvements include provisions to promote the neighborhood center and redevelopment planned for this section of Town.	N/A
CR 616 (Sparta Avenue)/ Hicks Ave. Intersection: Pursue full signalization, the construction of turning lanes on all three Roadways and construct sidewalks and lighting.	TBD
CR 616 (Sparta Avenue)/ Diller Ave. Intersection. Pursue dedicated left and right turn lanes, modernization of traffic signals, and the construction of sidewalks and lighting.	TBD
CR 616 (Sparta Avenue)/ Merriam Ave. Pursue a dedicated right turn lane along Merriam Avenue and the construction of pedestrian sidewalks, lighting and traffic calming devices along Sparta Avenue.	TBD
CR 616 (Sparta Avenue) / Woodside Ave. Pursue construction of dedicated left turn lanes, modernization of traffic signals, and the construction of crosswalks.	TBD
CR 616 (Sparta Avenue) Support the upgrading of traffic signals and request County to install image detection devices.	TBD
Trinity Street: Consider a full traffic signal at the intersection of Trinity Street and Union Avenue and the intersection of Trinity Street and Moran Street.	TBD