Route 9 MetroWest Smart Growth Plan

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1. Introduction

Project Background

In Fall 2011, the MetroWest Regional Collaborative (MWRC) received funds through MAPC's Sustainable Communities program to create a smart growth plan for future development along the Route 9 MetroWest corridor. MWRC and MAPC collaborated with the communities of Southborough, Framingham, Natick, and Wellesley on a *Route 9 MetroWest Smart Growth Plan* that further develops the recommendations outlined in the *Route 9 Corridor Analysis*, an earlier study of the Route 9 corridor. The *Route 9 Corridor Analysis* evaluated potential for future growth and associated vehicular trips and recommended proposals to accommodate future travel demand and regulatory changes to meet community development goals. The study area of the *Route 9 Corridor Analysis* is shown in Figure 1.

The *Route 9 Corridor Analysis* concluded that the development potential of the Route 9 corridor under current zoning could result in almost doubling the current floor area, severely exacerbating traffic congestion. The principal goal of the *Route 9 MetroWest Smart Growth Plan* is to identify alternative land use changes at specific locations that increase housing and job growth but do so in a way that mitigates single occupant vehicle trips.

Figure 1 – Route 9 Corridor Analysis Study Area

The *Route 9 MetroWest Smart Growth Plan* focuses on alternative designs and land uses for three Smart Growth Opportunity Areas, and provides the associated computer visualizations, traffic analysis, design guidelines, and zoning recommendations. By advancing the recommendations of the *Route 9 Corridor Analysis*, the *Route 9 MetroWest Smart Growth Plan* focuses on the potential for compact, mixed-use (housing, office, and commercial) developments that are pedestrian, transit, and bicycle friendly.

> ***About Sustainable Communities***
>
> *Funded by a $4M grant from HUD's Office of Sustainable Communities, MAPC's Sustainable Communities program serves to implement MetroFuture, the plan for the 101 cities and towns in the MAPC region adopted in 2008. The Sustainable Communities program funds a wide range of projects, including policy, tools and models and data collection. This project is a place-based activity, which seeks to implement aspects of smart growth, equity and sustainable development in a specific group of communities.*

The *Route 9 MetroWest Smart Growth Plan* developed the notion of creating denser Smart Growth Opportunity Areas that would be better served by public transportation and generate fewer automobile trips than current development patterns. Alternative designs and land uses for three Smart Growth Opportunity Areas are included along with, traffic analysis, design guidelines, and zoning recommendations.

The *Route 9 MetroWest Smart Growth Plan* provides illustrative land use concepts, accompanied by a technical analysis of these changes and 3D visualizations. The scope for the project contains the following components:

- Corridor Issues and Opportunities
- Smart Growth Opportunity Areas
- Transportation Analysis and Recommendations
- Zoning Recommendations and Design Criteria
- Public Outreach

An implementation-based document, the *Smart Growth Plan* identifies necessary actions to execute the recommendations and goals. The *Route 9 Smart Growth Plan* promotes a long range vision that is intended to create a competitive and vibrant corridor by addressing issues such as land use and zoning, urban design, transportation, housing, and open space. This Plan also identifies necessary actions to achieve these goals. Moreover, the *Route 9 MetroWest Smart Growth Plan* can be used as a benchmark for implementing smart growth-related action steps not only at each Smart Growth Opportunity Area, but along the corridor as a whole.

By using the *Route 9 MetroWest Smart Growth Plan* as a guide, the Route 9 corridor has the potential to be transformed to a model of smart growth corridor development. Additionally, communities with similar commercial corridors throughout the Commonwealth can refer to this *Smart Growth Plan* as a guide. Specifically, they can identify Smart Growth Opportunity Areas and recreate development design strategies that will establish vibrant, mixed-use areas and help implement smarter, more sustainable development patterns.

Public Outreach

Community feedback is a vital aspect of development feasibility. While market dynamics and economics play a large role in determining what is possible on a given site, the understanding and support of the community is also critical. Community input is important to ensure that future development not only meets private-sector requirements but also provides for the public good. Community input provides an opportunity for residents to express their goals and visions regarding development and how it can enhance the quality of life for residents, workers, and visitors. According to Massachusetts General Laws, a 2/3 majority vote is required at a town meeting in order to pass a bylaw.

The public outreach effort consisted of three public meetings, as well as outreach to a broad spectrum of stakeholders. All public meetings were designed to obtain feedback and shape the development of the *Route 9 Smart Growth Plan*. Extensive outreach and communication was conducted during the course of this project and included development of a project website, advertising meetings in newspapers and community calendar listings, as well as distribution of flyers. A continuously updated website was also maintained during the course of the *Route 9 Smart Growth Plan*.

By incorporating community input, the project team was able to understand what elements of the Smart Growth Opportunity Area concepts the communities liked and would support and which caused concern would likely require further discussion. This information helped to advance the Smart Growth Opportunity Areas.

Previous Study: Route 9 Corridor Analysis

The earlier study, the *Route 9 Corridor Analysis*, determined that the current Build-Out potential could result in an 88 percent increase in the building square footage and a 41 percent increase in vehicular trips that would significantly exceed capacity and overwhelm Route 9. Alternatively, the projected Smart Growth build-out scenario would yield a 61 percent increase in commercial building square footage plus over 3,000 new housing units compared to existing conditions along Route 9 but only result in a 20 percent increase in vehicular trips. Figures 2 and 3 compare the projected Build-Out and Smart Growth Alternatives for commercial development and daily vehicular trips along the corridor respectively.

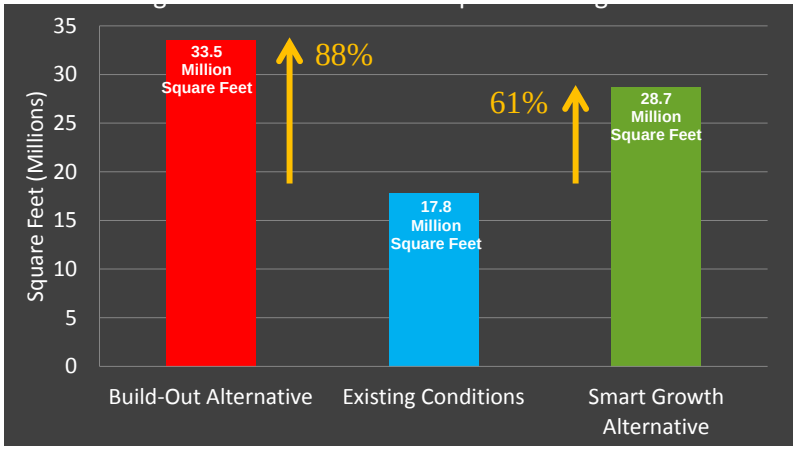


Figure 2 – Commercial Development along the Route 9 Corridor

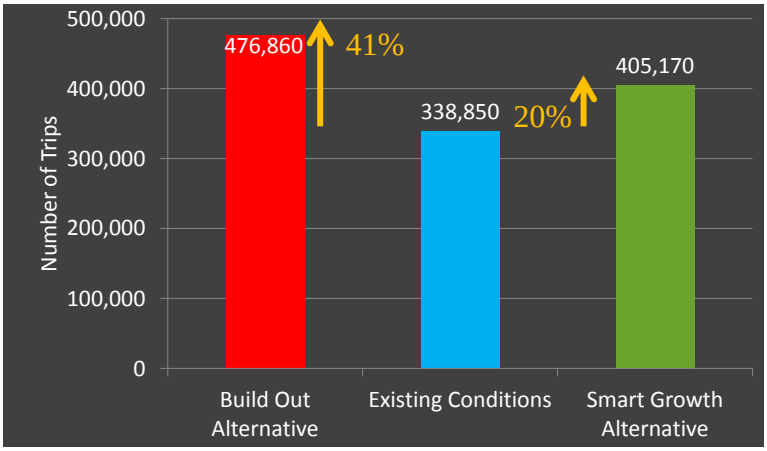


Figure 3 – Daily Vehicular Trips along the Route 9 Corridor

The Build-Out and Smart Growth Alternatives each had different approaches to determining estimated growth potential. The Build-Out Alternative calculated estimated growth potential based on current zoning and other regulatory constraints and physical characteristics of sites along the Route 9 corridor. Estimated growth potential for the Smart Growth Alternative was determined based on the impacts of alternative zoning and alternative mix of uses and/or other development assumptions according to feedback received from the four communities. The *Route 9 Corridor Analysis* concluded that development growth and vehicular trips will continue in the future under both scenarios but will be mitigated in the Smart Growth Alternative.

The *Route 9 Corridor Analysis* recommended that future development on Route 9 entail more mixed use (residential, commercial, retail, etc.) and compact walkable developments (e.g., parcel connectivity) as well as an improved pedestrian, transit, and bicycle friendly environment. Denser areas of development along Route 9 have the potential to be better served by public transportation. As a result, fewer automobile trips would be generated as compared to growth using conventional development patterns. The *Route 9 MetroWest Smart Growth Plan* is a more detailed study of what the implementation of the *Route 9 Corridor Analysis*' recommendations would entail, including the effects on the visual and functional quality of Route 9 and its transportation impacts.

2. Corridor Issues and Opportunities

Overview

Traversing almost eighteen miles through Southborough, Framingham, Natick, and Wellesley and bordered by routes I-495 and I-95 to the west and east respectively, Route 9 contains a significant number of high-tech businesses and various other types of commercial activity ranging from local shops to national retail chains. The Route 9 corridor is also a home for residents in multi-family and single-family homes. Route 9 is currently under tremendous pressure as increasing traffic volumes, congestion, and conflicts are forecast. Decisions need to be made in the near future to balance development and traffic demands since the economic health and quality of life of this area is dependent on the proper functioning of Route 9.

During the winter and spring of 2012, MWRC and MAPC developed an Issues and Opportunities Diagram of the corridor focusing on key areas of concern and candidate Smart Growth Opportunity Areas. Based on numerous site visits spanning the corridor, this diagrammatic plan highlights key issues and potential opportunities in addition to documenting existing conditions.

Serving as a baseline, the Issues and Opportunities Diagram broadly identified smart growth opportunities along the corridor as well as major gaps in connectivity along and across Route 9, traffic and pedestrian conflict points, transit availability, visual quality issues, and safety concerns. The intent of the Issues and Opportunities Diagram was to establish a framework for later projections, analysis, and recommendations. Photographs were taken to illustrate the issues and provide a visual record of the corridor. Master Plans, zoning by-laws, and other relevant information pertaining to the study area were collected and reviewed. These materials served to inform the Issues and Opportunities Diagram. Subsequently, eleven locations along the Route 9 corridor were identified as candidate Smart Growth Opportunity Areas and illustrated in the Issues and Opportunities Diagram.

On May 22, 2012, MWRC and MAPC conducted the first in a series of three public meetings to discuss future growth and development along Route 9. Initial findings and analysis of issues and opportunities were presented to the approximately 45 attendees by MWRC and MAPC at this meeting held at Framingham State University. Comments and input regarding issues and opportunities along Route 9 were solicited and recorded. Public reactions to the candidate sites presented on the Issues and Opportunities Diagram were tabulated through the interactive use of key pads by the audience participants. One of the outcomes from the first public meeting was the selection of three Smart Growth Opportunity Areas from the eleven candidate sites.

Prior to discussing its applicability to the Route 9 corridor, the concept and importance of smart growth was presented to the meeting attendees. To allow for a better understanding of smart growth concepts, specific examples, shown in the context of case studies, were presented at this public meeting as well as at the following public meetings. *These case studies are referenced in Appendix A, Smart Growth Case Studies.*

Additionally, Randall Arendt, a well-known and respected leader on the subject of smart growth, discussed smart growth concepts at the first public meeting in a presentation entitled 'Transforming the Commercial Strip into Mixed-Use Corridors and Nodes.' A noted landscape designer, author, lecturer, and an advocate of transforming commercial corridors, Randall Arendt is the president and owner of Greener Prospects, a conservation planning firm.

Candidate Smart Growth Opportunity Areas

Area photographs, the relevant section from the Issues and Opportunities Diagram, and a bulleted list of key observations are shown in this section for each candidate Smart Growth Opportunity Area. The symbols used in the Issues and Opportunities Diagram are detailed in Figure 4 and the eleven candidate Smart Growth Opportunity Areas are shown in Figures 5-15. The selected Smart Growth Opportunity Areas are described in greater detail in Chapter 3, Smart Growth Opportunity Areas.

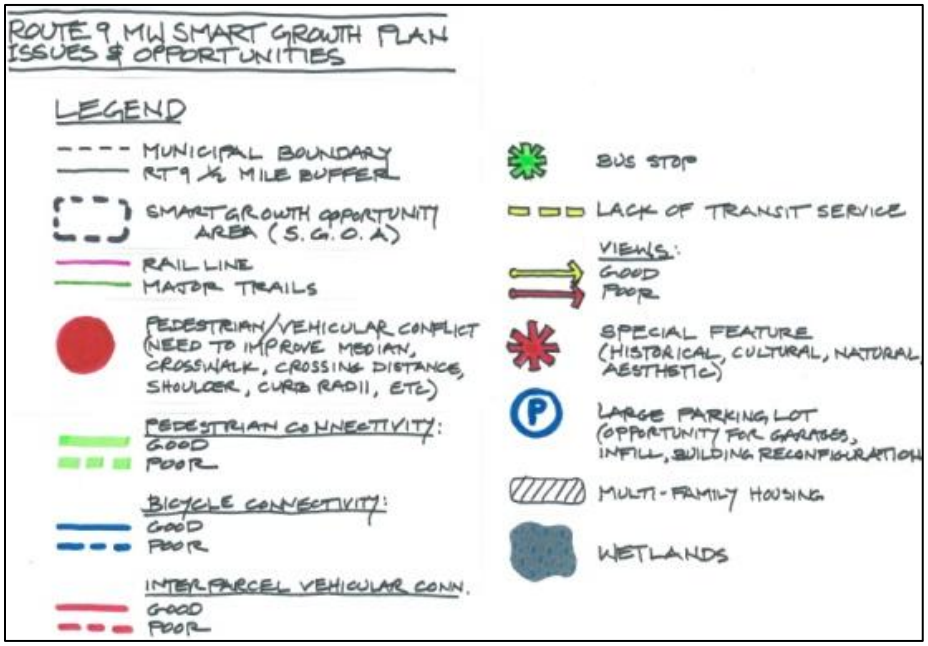


Figure 4 – Issues and Opportunities Legend

Figure 5 – Candidate Smart Growth Opportunity Area – White's Corner - Southborough

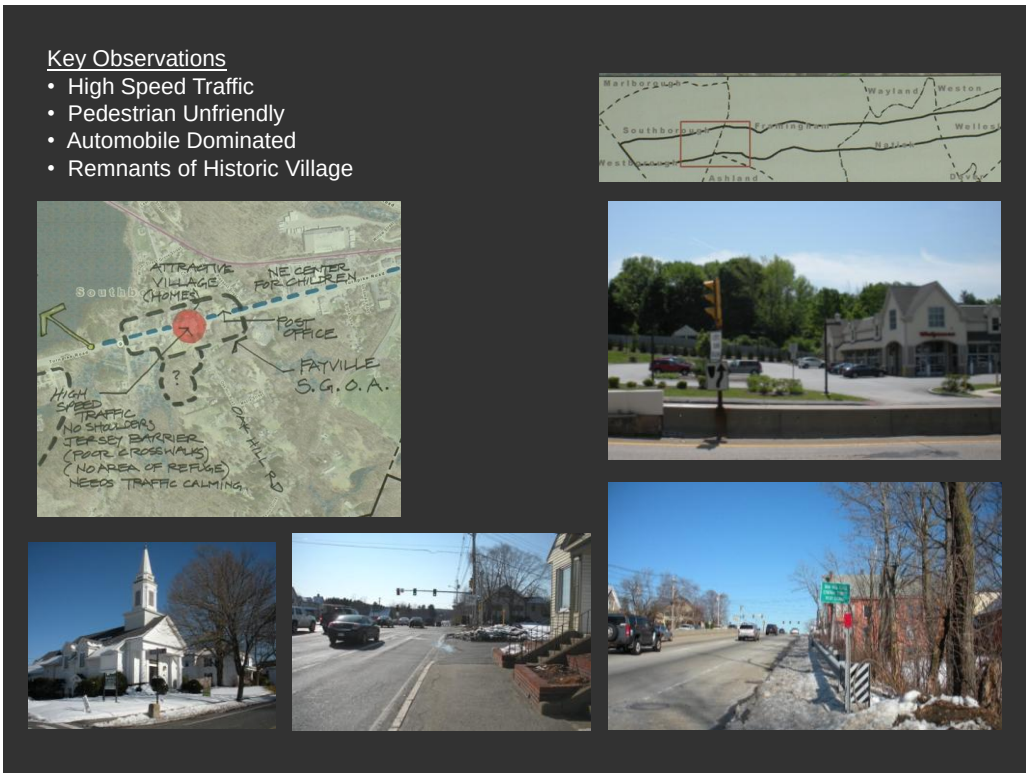


Figure 6 – Candidate Smart Growth Opportunity Area - Fayville Village - Southborough

Figure 7 – Candidate Smart Growth Opportunity Area - 9/90 Tech Park Area - Framingham

Figure 8 – Candidate Smart Growth Opportunity Area – Temple Street - Framingham

Figure 9 – Candidate Smart Growth Opportunity Area – Framingham Centre - Framingham

Figure 10 – Candidate Smart Growth Opportunity Area – Prospect Street - Framingham

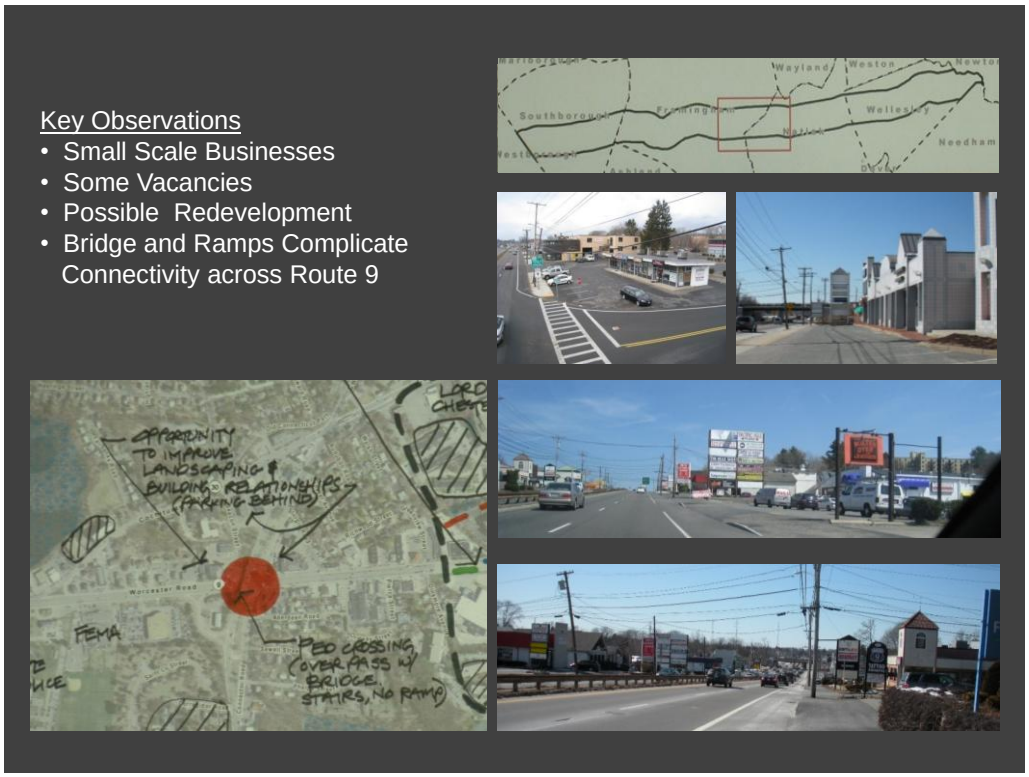


Figure 11– Candidate Smart Growth Opportunity Area – Route 126 - Framingham

Figure 12 – Candidate Smart Growth Opportunity Area – Golden Triangle - Framingham

Figure 13 – Candidate Smart Growth Opportunity Area – Route 27 - Natick

Figure 14 – Candidate Smart Growth Opportunity Area – Oak Street - Natick

Figure 15 – Candidate Smart Growth Opportunity Area – Overbrook Drive - Wellesley

3. Selected Smart Growth Opportunity Areas

Overview

The Issues and Opportunities Diagram evolved to work on designs at three transformative locations along the Route 9 corridor: one that is primarily residential with some retail and office in a suburban setting, one that is mostly small scale office and retail on small lots that are not very deep from Route 9, and one that is large scale with deep lots used primarily for retail. Specifically, the three selected Smart Growth Opportunity Areas were:

- Fayville Village area of Southborough
- Framingham Centre
- Natick Mall/Shoppers World area known as the 'Golden Triangle' on the Natick/Framingham line

MWRC and MAPC developed conceptual design plans and visualizations that depicted what the three Smart Growth Opportunity Areas could look like if redeveloped based on the recommendations in the *Route 9 Corridor Analysis* report, smart growth principles, and feedback received from the first public meeting. Using SketchUp and PhotoShop, three-dimensional visualizations were prepared by using ArcGIS data provided by the communities, developing hand sketches, and referring to photographs of existing conditions.

The conceptual designs for each Smart Growth Opportunity Area looked at options such as mix of uses, higher density and compact housing, and pedestrian-oriented streetscapes. Both short term and long term solutions were addressed, including designs that promoted 'sprawl repair', encouraged housing production, as well as provided equitable access to housing and jobs. Transportation improvements which focused on advancing a safe and connected environment, promoting denser development, and encouraging interior linkages between parcels in addition to public transit, walking and bicycle lanes were consistent among the Smart Growth Opportunity Areas.

Designs for all three Smart Growth Opportunity Areas sought to improve the pedestrian and bicycle environment for healthy lifestyles, safety, and connectivity along and across Route 9. This 'Complete Streets' approach includes specific improvements such as sidewalks, turning lanes, bicycle lanes, medians, crosswalks, curb extensions, bus waiting areas, signage, lighting, roadside stormwater treatment and buffer plantings, traffic signals, traffic calming measures, as well as possible separation of local and through traffic via frontage roads or internal connectors.

The second public meeting was preceded by presentations of the conceptual design plans and visualizations to the Planners in each of the communities, the MetroWest Regional Collaborative, the Boston Society of Architects' MetroWest Committee, MetroWest developers and land owners representing the 'Golden Triangle' area, as well as MAPC's Smart Growth staff. The constructive feedback received from these meetings, which took place during the

fall of 2012, helped refine the conceptual design plans and visualizations for the second public meeting.

The second public meeting, which was held on December 4, 2012 at the Callahan Senior Center in Framingham, had a robust attendance, with about 60 participants. At this meeting, MWRC and MAPC continued the discussion of future growth and development along Route 9. Conceptual design plans and visualizations were presented of what the future could look like along Route 9 if the communities adopted smart growth concepts that facilitate compact, mixed-use development, and make it easier for pedestrians and bicyclists to get around as well as better manage traffic.

A more detailed presentation of the principles of smart growth and 'sprawl repair' was made at the second public meeting with additional examples and case studies. Alternative development scenarios were also mentioned. Feedback was elicited from the meeting attendees regarding their preferences and concerns by using interactive key pads. Specifically, feedback addressed the mix of uses, density, housing, as well as opinions regarding public transit and pedestrian/bicycle access.

The conceptual design plans and visualizations enabled the public to envision the form and massing of future development alternatives as well as provide ideas for discussion. Audience participants were given the opportunity to discuss ideas for advancing the conceptual designs of the three Smart Growth Opportunity Areas. There was much discussion, including suggestions for bicycle lane accommodations, better timing of traffic signals and the importance of safety for pedestrians, bicyclists, and drivers. Attendees were amenable to the concept of air rights buildings and walkways over Route 9.

Following the second public meeting, MWRC and MAPC reached out to other interested groups to discuss future growth and development along Route 9. The conceptual design plans and visualizations were further refined based on feedback received. A presentation was made to the Framingham Historic District Commission in the winter of 2013. This discussion focused on the Framingham Centre area adjacent to the Framingham Centre Historic District. A summary of the conceptual design plans were also presented at a meeting of the Mass in Motion Forum in Framingham during the same time.

Up until the third and final public meeting, MWRC and MAPC continued to hold focused meetings with stakeholders to gain insight into public opinion and municipal preferences. Specifically, MWRC and MAPC held focused meetings with Planners, Planning Board members and Selectmen in Natick and Framingham as well as with the Massachusetts Department of Transportation during the spring to gain insight into public opinion, municipal preferences and agency policies. All of these meetings helped to advance the conceptual designs for the Smart Growth Opportunity Areas which were presented at the third and final public meeting on May 20, 2013 at the Morse Institute Library in Natick.

The third public meeting continued supportive discussion of the smart growth concepts and provided feedback that this type of development is long overdue. With almost 40 in attendance, there was a focused discussion that advancing public transportation is necessary in order to achieve traffic congestion improvements. Specifically, these improvements include more frequent headways and clearly marked bus stops with comfortable waiting areas. There was agreement that pedestrian crossings need to be safer and easier, medians and service roads should be included where possible to shorten crossing distances, and provide areas of

refuge. Service roads also separate through traffic from local traffic and can facilitate access to businesses and residences along Route 9. There was consensus that curb cuts should be consolidated to allow for more efficient turning movements. Limiting curb cuts also provides a safer environment for pedestrians and bicyclists since potential conflicts with vehicles are reduced and additional space for landscaping is available.

Participants also agreed upon the need for connectivity among parcels to minimize vehicular trips on Route 9. The importance of including storm water treatment into the corridor design was also raised. The third public meeting concluded with a discussion of how design criteria and zoning can effectively advance the proposed Smart Growth Opportunity Areas.

Demographic Profiles

The primary geographic area for this project is a 0.5 mile buffer along the north and south sides of Route 9 through Southborough, Framingham, Natick, and Wellesley. The secondary geographic area is the four communities.

Demographics of the primary and secondary geographic areas are summarized in Table 1 below. Specifically, Table 1 contains population, race/ethnicity, age, nativity, language, tenure, and income data. The number and type of employers and employment in the primary and secondary geographic areas are summarized in Table 2. It is interesting to note that both the number of employers and employment for the primary geographic area comprises approximately half the secondary geographic area. The primary geographic area's population is about 29 percent of the secondary area's population. Median income has a broader range for the primary geographic area compared to the secondary geographic area. With the exception of population and income, the demographic characteristics are consistent between the primary and secondary geographic areas.

	Geographic Area	
	Primary	**Secondary**
Population	40,230	139,085
Race/Ethnicity (% Minority)	23%	25%
Age (Median Age)	38	38
Nativity (% Foreign Born)	17%	20%
Language (% Non-English Speaking Households)	25%	28%
Tenure (% Renters)	36%	34%
Income (Range of Median Household Income)[1]	$35,870-$198,890	$64,700-$133,800

[1] Primary area numbers and secondary area income numbers were calculated from Census tracts and Municipal median incomes respectively.

Table 1 – Demographic Profiles of Study Area Communities
Source: Census 2010, ACS, InfoUSA 2011, MAPC Analysis

	Geographic Area	
	Primary	**Secondary**
Number of Employers	3,200	7,700
Employment	46,550	98,870

Table 2 – Employment Profiles of Study Area Communities
Source: Census 2010, ACS, InfoUSA 2011, MAPC Analysis

Tables 3 and 4 contain demographic and employment data for the three Smart Growth Opportunity Areas. These tables illustrate that while the Fayville Village and Framingham Centre Smart Growth Opportunity Areas are predominantly residential, they both have employment bases. The Golden Triangle Smart Growth Opportunity Area is principally business-centered with a minimal population. The Fayville Village Smart Growth Opportunity Area contains a lower percentage of minorities and foreign born residents compared to the Framingham Centre and Golden Triangle Smart Growth Opportunity Areas.

The Fayville Village Smart Growth Opportunity Area differs from the other two Smart Growth Opportunity Areas by having a significantly higher median household income and lower rental rates. A notable observation is that almost all residents of Framingham Centre and the Golden Triangle are renters. With an estimated 30 percent, there are more minorities residing in the Framingham Centre and Golden Triangle Smart Growth Opportunity Areas as compared to Fayville Village's 8 percent.

Fayville Village's average median household income and rental rates are also higher than those of the primary and secondary geographic areas. Conversely, the income levels for Framingham Centre and the Golden Triangle are on the lower end of the income range compared to the primary and secondary geographic areas.

	Geographic Area		
	Fayville Village	**Framingham Centre**	**Golden Triangle**
Population	90	400	10
Race/Ethnicity (% Minority)	8%	29%	30%
Age (Median Age)	44	34	38
Nativity (% Foreign Born)	11%	21%	21%
Language (% Non-English Speaking Households)	18%	31%	28%
Tenure (% Renters)	54%	99%	100%
Income (Average of Median Household Income)	$129,930	$55,570	$68,310

Table 3 – Demographic Profiles of the Smart Growth Opportunity Areas
Source: Census 2010, ACS, InfoUSA 2011, MAPC Analysis

	Geographic Area		
	Fayville Village	Framingham Centre	Golden Triangle
Number of Employers	35	160	375
Employment	110	1,050	6,000

Table 4 – Employment Profiles of the Smart Growth Opportunity Areas
Source: Census 2010, ACS, InfoUSA 2011, MAPC Analysis

Key Pad Results

Key pads were used as a tool at the first and second public meetings to elicit feedback from the public. Questions addressed issues of connectivity, visual quality, and density along the Route 9 corridor. In turn, the meeting attendees responded to each question by using their keypads. Optional and anonymous, the answers were tallied and immediately displayed on screen. A *detailed summary of the keypad results is described below and the complete results are in Appendix B, Key Pad Results.*

At the first public meeting, questions were asked to get a better understanding of how Route 9 is perceived and utilized. It was learned that Route 9 is utilized both to reach destinations along the highway as well as to reach other locations. Specifically, 36 percent of the keypad respondents said they access Route 9 to reach destinations which are not along Route 9.

Although more than half of the respondents said they are able to walk to Route 9 within 20 minutes from where they live, the vast majority (94 percent) said they use cars most frequently to access locations along Route 9. The primary trip purposes when accessing Route 9 are for shopping (36 percent) followed by working (18 percent). When asked if they were to access locations along Route 9 more often, 60 percent of the keypad respondents said that the primary purpose of their trips would be for shopping.

At both public meetings, close to 60 percent of keypad respondents said they would walk or bicycle more if pedestrian and bicycle improvements were made to Route 9 (e.g., sidewalk improvements, more crosswalks, medians, and shorter street crossing distances). The majority of the meeting attendees also indicated that they would walk between locations along Route 9 more frequently if buildings were closer to each other and had an appropriate mix of uses.

At the second public meeting, keypad respondents were asked to rate specific smart growth concepts as, 'Very Important', 'Somewhat Important', or 'Not Important.' The majority of the keypad respondents assigned five of the six smart growth concepts a rating of 'Very Important.' The specific percentage allocation of the six smart growth concepts is as follows:

- Parcel Interconnectivity and/or Grid of Streets to Minimize Traffic Concentration – 68%
- Good Public Transit – 68%
- Compact, Walkable, Developments – 64%

- Pedestrian and Bicycle Friendly Streetscape (Complete Streets) – 64%
- Mix of Uses – 55%
- Buildings Closer to the Road with Parking Behind and in Garages - 47%

Based on these responses it is apparent that facilitated transportation access is a high priority followed by improvements to building design. It is interesting to note that for a separate keypad question, respondents answered that the smart growth benefits of economic growth and healthier lifestyles (walking/biking/transit) are the most important followed by mitigated traffic impacts and a strong sense of community. Another point of interest is that while the keypad respondents indicated that advancing compact, walkable developments was 'Very Important', only 28 percent responded that they would actually consider living in such developments along Route 9.

Development Concepts

Fayville Village – Southborough

The Smart Growth Opportunity Area for Fayville Village was developed to create a more village-like feel. Building placement would be closer to Route 9 and parking is proposed to be sited behind the buildings. Proposed new growth is a relatively even mix of office, retail and residential. Specifically, land uses include an estimated mix of 44,650 square feet of office and 34,000 square feet of retail space. Two 20,000 square foot apartment buildings are proposed to be constructed at the southwest quadrant of Route 9 and Oak Hill Road. The Proposed Conceptual Plan is shown in Figure 16, Existing Conditions and Proposed Concept Visualizations are illustrated in Figures 17 and 18.

Figure 16 – Smart Growth Opportunity Area for Fayville Village - Proposed Conceptual Plan

Existing Conditions
Source: Google

Proposed Concept Visualization

Figure 17 – Smart Growth Opportunity Area for Fayville Village
Existing Conditions to Proposed Concept Visualization (looking south)

Existing Conditions
Source: Google

Proposed Concept Visualization

Figure 18 – Smart Growth Opportunity Area for Fayville Village
Existing Conditions to Proposed Concept Visualization (looking west)

Framingham Centre - Framingham

The Smart Growth Opportunity Area for Framingham Centre was conceptually designed to bring infill buildings closer to Route 9. Redesigning the pedestrian bridge to a more prominent enclosed structure extending over Route 9 was proposed in addition to significantly reducing the excessive amount of pavement at this Smart Growth Opportunity Area. A small parking structure was proposed to be sited behind the buildings at the northwest quadrant of Route 9 and Vernon Street. The streetscape was designed to allow for bus pick up and drop off.

Proposed new land uses are primarily office and retail with very little residential. Specifically, proposed land uses include a mix of approximatley100,000 and 51,500 square feet of office and retail space respectively. One 26,000 square foot apartment building with 12 units was proposed to be sited at the northeast quadrant of Route 9 and Edgell Road. The Proposed Conceptual Plan is shown in Figure 19, Existing Conditions and Proposed Concept Visualizations are illustrated in Figures 20 through 23.

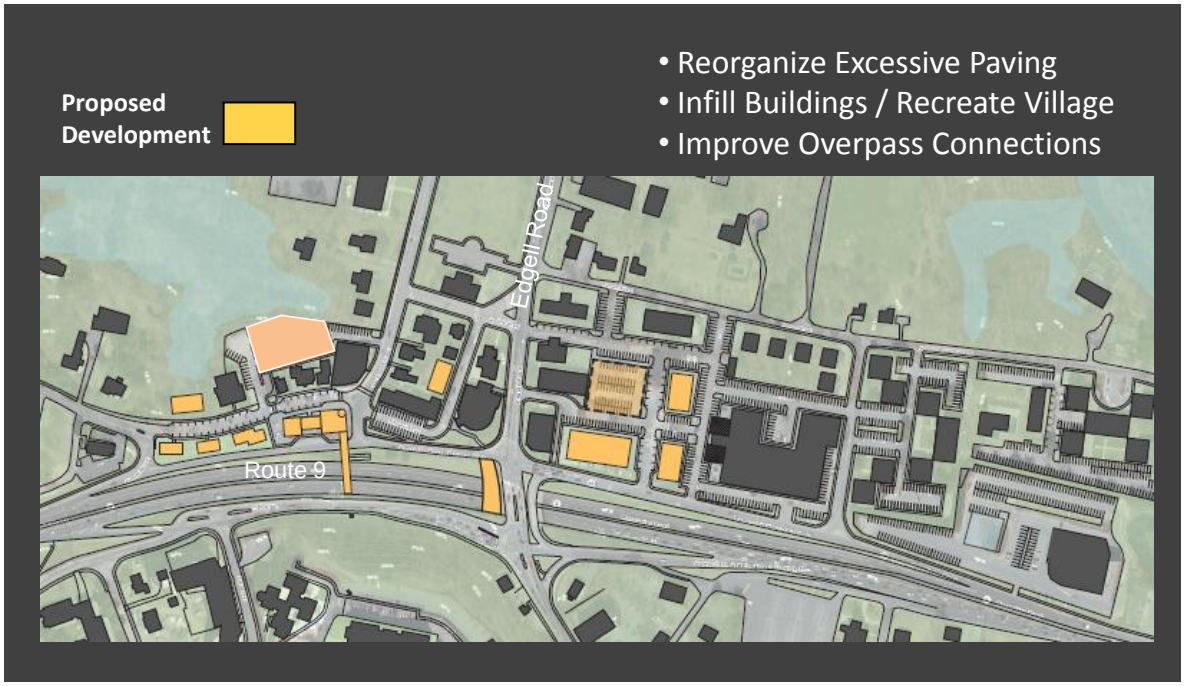


Figure 19 – Smart Growth Opportunity Area for Framingham Centre Proposed Conceptual Plan

Existing Conditions
Source: Google

Proposed Concept Visualization
(note: red and pink buildings in background are existing structures)

Figure 20 – Smart Growth Opportunity Area for Framingham Centre
Existing Conditions to Proposed Concept Visualization (looking northwest)

Existing Conditions
Source: Google

Proposed Concept Visualization

Figure 21 – Smart Growth Opportunity Area for Framingham Centre
Existing Conditions to Proposed Concept Visualization (looking south)

Existing Conditions
Source: Bing

Proposed Concept Visualization

Figure 22 – Smart Growth Opportunity Area for Framingham Centre
Existing Conditions to Proposed Concept Visualization (looking north)

Existing Conditions
Source: Google

Figure 23 – Smart Growth Opportunity Area for Framingham Centre
Existing Conditions to Proposed Concept Visualization (looking west)

Golden Triangle – Framingham and Natick

The Smart Growth Opportunity Area for the Golden Triangle was designed to introduce a mix of residential, retail and office space. Specifically, an estimated mix of 2.9 million square feet of office and 1.7 million square feet of retail space was modeled for this Smart Growth Opportunity Area*. Approximately 780 residential units and a 480,000 square foot assisted living facility were included in this conceptual design to be sited in the Smart Growth Opportunity Area's northwest quadrant. The concept of establishing air rights connections over Route 9 was introduced for this Smart Growth Opportunity Area at two locations. Additionally, a series of specific transportation improvements have been recommended for the Golden Triangle Smart Growth Opportunity Area which is discussed in more detail in Chapter 4, Transportation Analysis and Recommendations. The Proposed Conceptual Plan is shown in Figure 24, Existing Conditions and Proposed Concept Visualizations are illustrated in Figures 25 through 28.

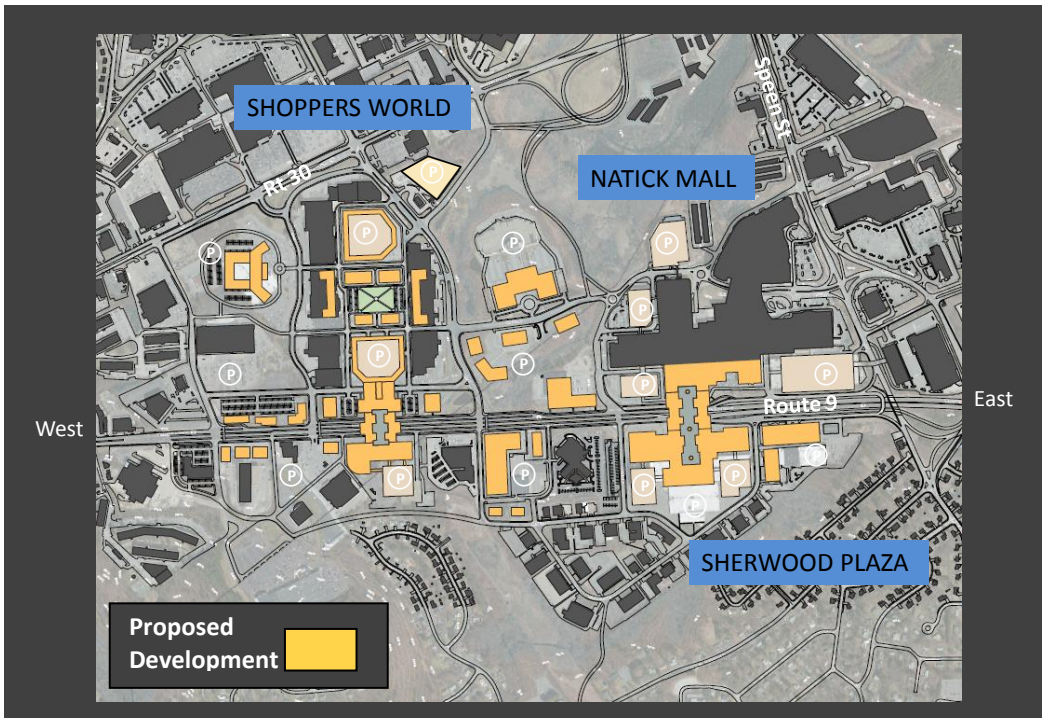
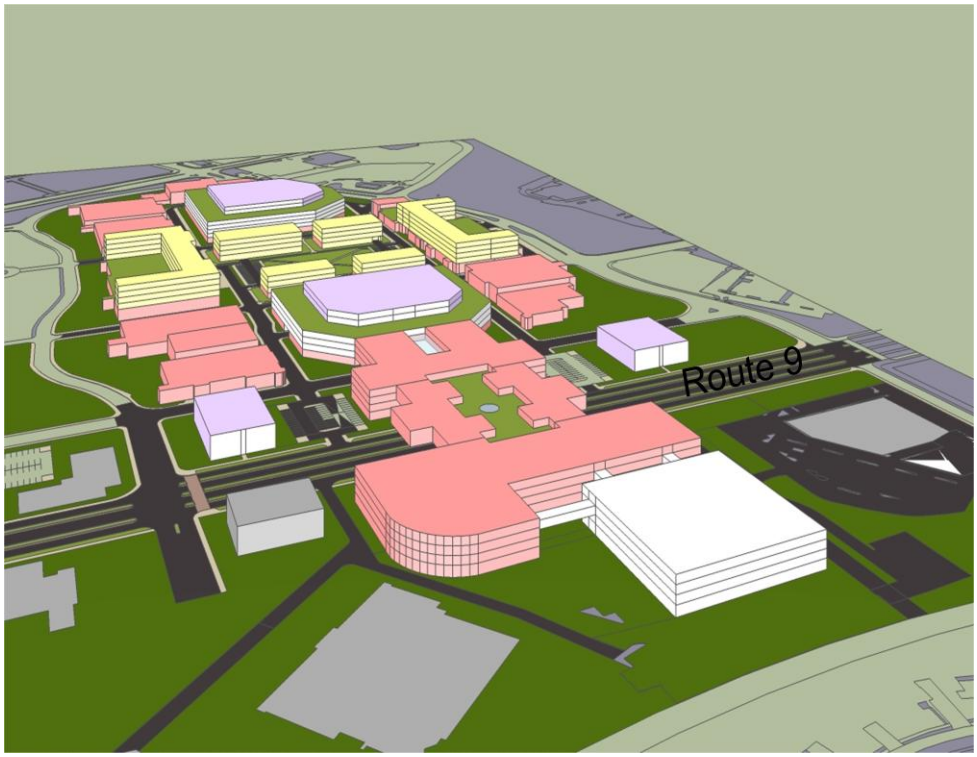


Figure 24 – Smart Growth Opportunity Area for Golden Triangle Proposed Conceptual Plan

** MAPC's goal in this project was to demonstrate one alternative development pattern for the Golden Triangle that would illustrate the Smart Growth patterns of development and appropriate mix of uses. Additional transportation analysis and discussions within and between the communities of Framingham and Natick should occur to determine appropriate future densities that should then be incorporated into the zoning codes.*

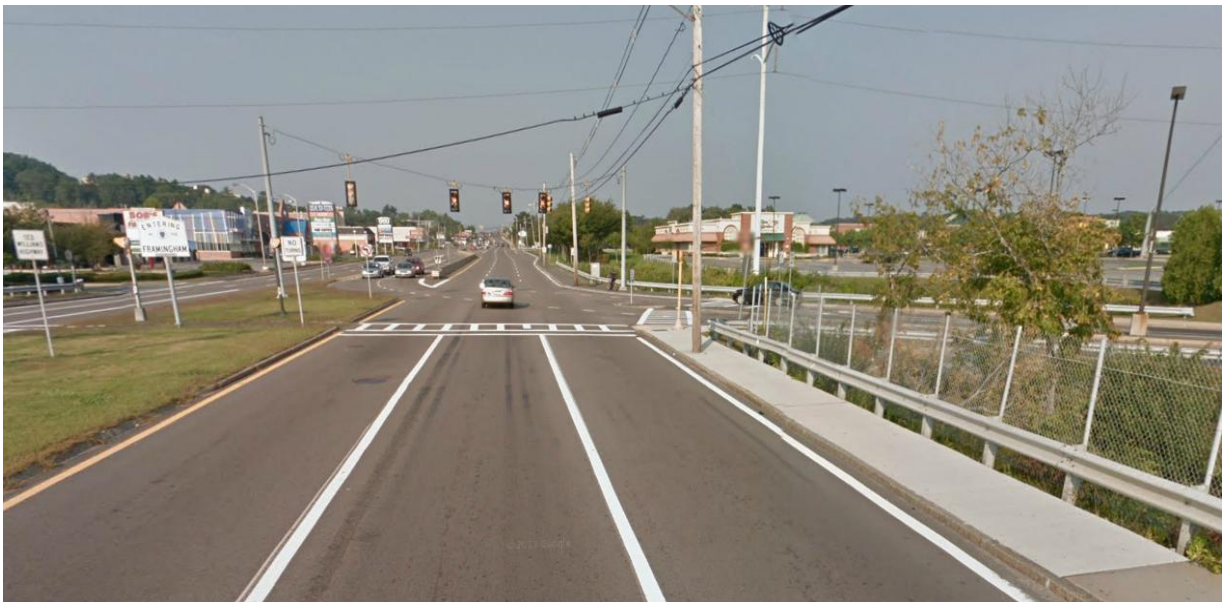
Existing Conditions
Source: Google



Proposed Concept Visualization

Figure 25 – Smart Growth Opportunity Area for Shopper's World - Golden Triangle (looking north)
Existing Conditions to Proposed Concept Visualization (Massing Concept Diagram)

(note: pink = office/retail, yellow = residential, white/purple = parking garages)



Existing Conditions
Source: Google

Proposed Concept Visualization

Figure 26 – Smart Growth Opportunity Area – Air Rights at Shopper's World - Golden Triangle Existing Conditions to Proposed Concept Visualization (looking west)

Existing Conditions
Source: Google

Proposed Concept Visualization

Figure 27 – Smart Growth Opportunity Area – Town Green at Shopper's World - Golden Triangle Existing Conditions to Proposed Concept Visualization (looking east)

Existing Conditions

Proposed Concept Visualization

Figure 28– Smart Growth Opportunity Area – Starbucks at Shopper's World - Golden Triangle Existing Conditions to Proposed Concept Visualization (looking north)

4. Transportation Analysis and Recommendations

Transportation Concepts to Support Smart Growth

If implemented correctly, transportation improvements will allow for the formation a corridor that is more livable and accessible in addition to reducing vehicular traffic. Recommendations for all Smart Growth Opportunity Areas include:

- Incorporate effective pedestrian, bicycle, and public transportation access both along and across* Route 9. Examples include installing sidewalks, crosswalks and medians where appropriate.
- Use MassDOT's Project Development and Design Guidebook as a primary reference for developing street standards. For example, street standards need to address multimodal accommodation, number of traffic lanes, turning movements, curb cuts, and location of street trees.
- Design sites to ensure pedestrian and bicycle safety as well as ease of use for riders.
- Design sites to allow for bus and shuttle access.
- Provide sufficient bus and shuttle service with shorter headways.
- Expand MetroWest Regional Transit Authority (MWRTA) service and connect with other transit services.
- Combine curb cuts and apply shared parking programs where appropriate.
- Add service roads and medians to separate through and local traffic where appropriate.
- Reduce curb radii at street or driveway entries.
- Implement parking pricing strategies where suitable.
- Reduce parking requirements in mixed-use areas and those well served by public transit.
- Promote a park once and walk strategy.

** MWRTA staff indicate that safe and frequent crossings of Route 9 are critical to increasing transit usage.*

Estimated Trip Generation Scenarios

Table 5 outlines the estimated trip generation and building square footage for each Smart Growth Opportunity Area for two scenarios – Existing Conditions and Smart Growth Proposed. The existing land uses were determined by site visits and reviewing assessing data while the proposed land uses were estimated by reviewing the conceptual plans and hand drawn illustrations developed during the course of this planning study. Trip generations were calculated by using the Institute of Transportation Engineers Trip Generation Manual. The trip generation information indicates that while development growth and vehicular trips will continue under both the Exiting Conditions and Smart Growth Proposed scenarios, trips will be mitigated in the Smart Growth Proposed scenario due to land uses that facilitate more walking, biking, car pooling, and public transit use. This is consistent with the findings from the earlier Route 9 Corridor Analysis study.

The new land uses proposed under the Smart Growth scenario are estimated to double the amount of existing square footage for all three Smart Growth Opportunity Areas. However, it is important to note that the type (e.g.; residential, retail, office) and amount (square footage) of land use varies for each Smart Growth Opportunity Area. Specifically, the primary land use proposed for the Golden Triangle and Framingham Centre Smart Growth Opportunity Areas is office. While the building square footage will more than double, the forecasted number of trips will only increase by approximately thirty and sixty percent for each Smart Growth Opportunity Area respectively. Alternatively, while the total building square footage for the Fayville Village Smart Growth Opportunity Area will also double, the number of trips is projected to more than triple. The significant increase in the number of trips can be attributed to the fact that an estimated one-third of proposed new land use is retail. Retail land uses are known to be significant trip generators on a per-square foot basis in comparison to office or residential land uses.

Estimated Trip Generation for Smart Growth Opportunity Areas

Golden Triangle

Daily Weekday Trip Generation	Existing	% of Total Trips	Smart Growth Proposed	% of Total Trips	Existing & Smart Growth Proposed	% of Total Trips	% increase from Existing to Smart Growth Proposed
Drive Alone	178,412	89	47,559	70	225,971	84	27
All Alternative	21,287	11	20,383	30	41,670	16	96
Total	199,699		67,942		267,641		34

Framingham Centre

Daily Weekday Trip Generation	Existing	% of Total Trips	Smart Growth Proposed	% of Total Trips	Existing & Smart Growth Proposed	% of Total Trips	% increase from Existing to Smart Growth Proposed
Drive Alone	17,861	90	9,277	76	27,138	85	52
All Alternative	2,077	10	2,894	24	4,971	15	139
Total	19,938		12,171		32,109		61

Fayville

Daily Weekday Trip Generation	Existing	% of Total Trips	Smart Growth Proposed	% of Total Trips	Existing & Smart Growth Proposed	% of Total Trips	% increase from Existing to Smart Growth Proposed
Drive Alone	4,135	91	11,890	77	16,025	80	288
All Alternative	432	9	3,477	23	3,909	20	805
Total	4,567		15,367		19,934		336

Estimated Building Square Footage for Smart Growth Opportunity Areas

Golden Triangle

	Existing	% of Total Square Footage	Smart Growth Proposed	% of Total Square Footage	Existing & Smart Growth Proposed	% of Total Square Footage	% increase from Existing to Smart Growth Proposed
Residential	480,240	11	1,445,894	28	1,926,134	20	301
Retail	2,788,094	64	1,174,213	23	3,962,307	42	42
Office	574,393	13	2,631,183	51	3,205,576	34	458
Other	483,473	11	-53,661	-1	429,812	5	-11
Total	**4,326,200**		**5,197,629**		**9,523,829**		**120**

Framingham Centre

	Existing	% of Total Square Footage	Smart Growth Proposed	% of Total Square Footage	Existing & Smart Growth Proposed	% of Total Square Footage	% increase from Existing to Smart Growth Proposed
Residential	10,902	6	26,000	15	36,902	10	238
Retail	119,936	65	51,554	29	171,490	47	43
Office	36,728	20	99,869	56	136,597	38	272
Other	16,917	9	0	0	16,917	5	0
Total	**184,483**		**177,423**		**361,906**		**96**

Fayville

	Existing	% of Total Square Footage	Smart Growth Proposed	% of Total Square Footage	Existing & Smart Growth Proposed	% of Total Square Footage	% increase from Existing to Smart Growth Proposed
Residential	104,894	71	38,800	28	143,694	50	37
Retail	19,609	13	54,710	40	74,319	26	279
Office	18,717	13	44,717	32	63,434	22	239
Other	5,414	4	0	0	5,414	2	0
Total	**148,634**		**138,227**		**286,861**		**93**

Source: Institute of Transportation Engineers, Trip Generation Manual, 9th Edition

Alternative Trip Generation includes - public transit, walking and bicycling

Assumed a 25% pass by rate for retail and commercial uses.

Assumed a 15% reallocation of Drive Alone trips to All Alternative trips for Smart Growth scenario.

Table 5 – Estimated Trip Generation and Building Square Footage for the Smart Growth Opportunity Areas

Specific Modifications to the Golden Triangle Smart Growth Opportunity Area

Of the three Smart Growth Opportunity Areas, the Golden Triangle is the most complex and has the potential for considerable modifications to its transportation network. The transportation improvements illustrated in Figure 29 are anticipated to better manage traffic as well as advance pedestrian, bicycle, bus, and commuter rail access both in the vicinity of this Smart Growth Opportunity Area and along Route 9. The specific modifications include: providing new connections to the Massachusetts Turnpike or Route 30, extending the Flutie Pass, allowing for shuttle bus access along the extended Cohituate Rail Trail, advancing east-west interparcel connections on the south side of Route 9, and providing a north-south connection to Mill Street from the West Natick Commuter Rail station stop. The incorporation of service roads and medians to separate through and local traffic as well as a shuttle bus service that will provide a loop service should also be explored for this location.

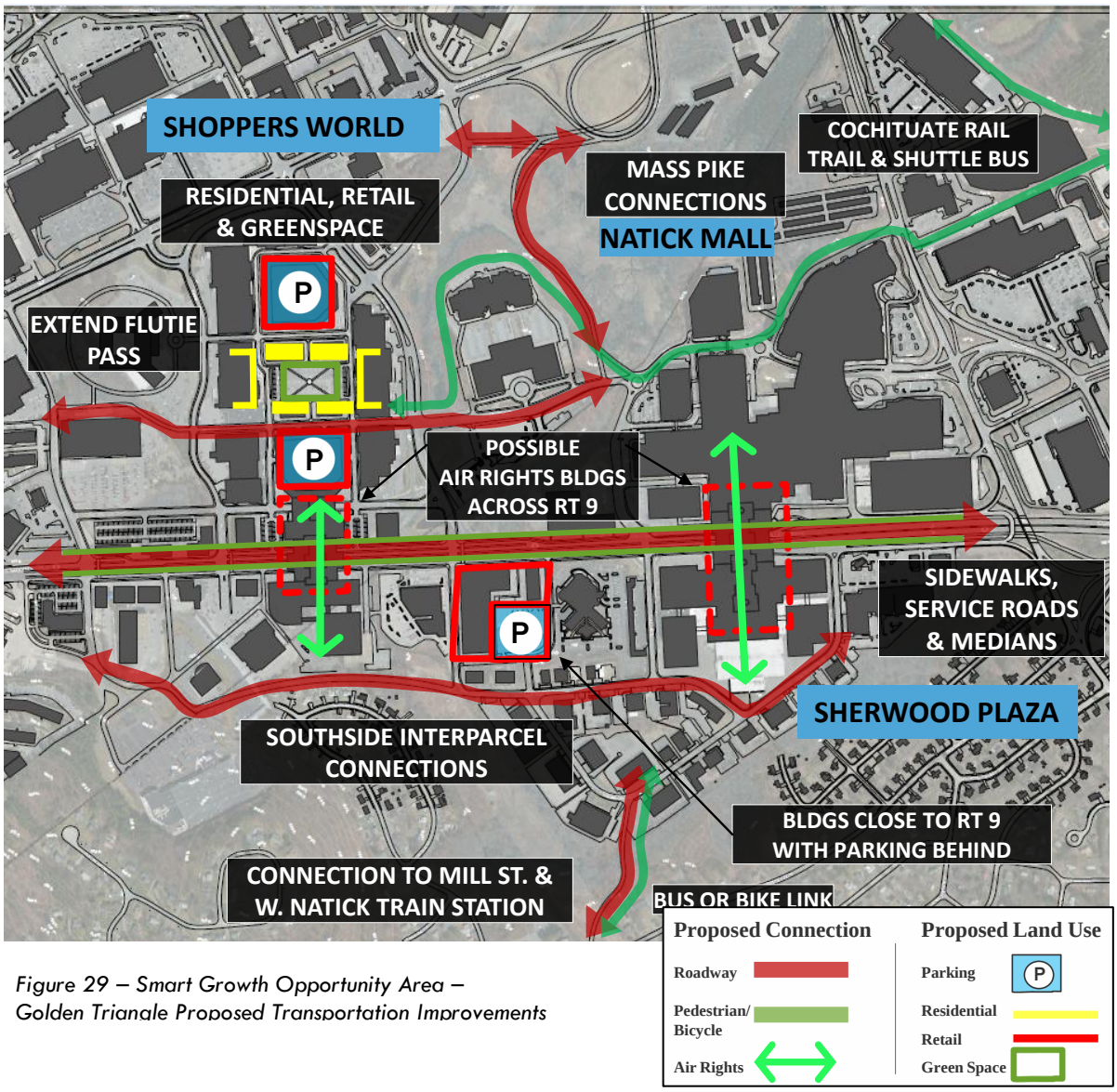


Figure 29 – Smart Growth Opportunity Area – Golden Triangle Proposed Transportation Improvements

5. Implementation: Design Criteria and Zoning Recommendations

There are important follow-up steps the communities should take to ensure smart growth components are advanced for each Smart Growth Opportunity Area. For the Route 9 corridor to be functional, livable, and serve an ever-changing economy, it must have a better-defined physical form and a mix of land uses. In addition to transportation improvements, design criteria and zoning recommendations are the foundation for making this possible.

Specific zoning recommendations and design criteria are necessary to successfully implement smart growth development patterns. The design criteria and zoning recommendations would be used by the communities to revise their current zoning bylaws and overlay districts such as the Golden Triangle Overlay District in Framingham and Natick.

Design Criteria

The design criteria should not be viewed as a comprehensive bylaw, but rather as a set of recommended design standards that would promote the goals of sustainable design in the Smart Growth Opportunity Areas and in general along the Route 9 corridor. It is important that all users of Route 9 (drivers, public transit users, pedestrians, and bicyclists) be given equal importance; a design concept is also referred to as 'Complete Streets.' Examples of design criteria include:

- Pedestrian and bicycle friendly streetscape
    - Sidewalks set back from curb with planting strips
    - Continuous sidewalks
    - Extend sidewalk material across driveways and curb cuts
    - Design the centers of roadways for pedestrian refuge
    - Medians for refuge
    - Highly visible crosswalks (e.g., unit pavers[1], reflective border feature strips)
    - Pedestrian actuated signals
    - Minimize turning radii to slow traffic
    - Bicycle racks that are conveniently located, secure, highly visible, and attractive
    - Bus shelters
    - Landscaping (e.g., planted medians, shade trees, shrubs, planters)
    - Lighting that is both attractive and adequate
    - Benches for outdoor seating

- Include mix of residential and commercial land uses.

- Require adjacent commercial parcels to be connected by roadways and pathways.

- Consider breaking larger mega-blocks into a smaller grid of traditional streets.

[1] A unit paver is a paving service comprised of segmented paving units usually made with bricks or concrete.

- Buildings closer to road with parking behind buildings.
- Design buildings with appropriate scale and detailing for context.
- Sensitively designed infill buildings.
- Adaptive reuse and building on previously developed sites.
- Provide or support good public transit facilities.
- Well designed commercial signage and facades (e.g., avoid blank facades, encourage public art).
- Designate areas for gathering spaces outdoors (e.g.; cafes, courtyards).
- Natural storm-water management.

Other examples of design criteria are outlined in more detail in Appendix C, General Guidelines for Smart Growth. Appendix C can serve as checklist of design elements and techniques for planning boards and agencies to consider when reviewing projects and/or developing revised zoning.

Zoning Recommendations

Zoning is the primary municipal lever to implement land use and is also a powerful tool for economic development. If successfully applied, new zoning regulations will contribute to the mitigation of vehicular trips along Route 9 and promote alternative modes of transportation such as walking, bicycling, and transit. The zoning recommendations outlined below facilitate density and mixed-use development, which promote compact development – a critical smart growth component.

Mixed-Use Developments

Mixed-use developments establish a multi-use, multi-purpose building or set of buildings, which incorporate a combination of residential, commercial, industrial, office, institutional, or other land uses. Mixed-use development may be built at various scales and can be either vertical (mixed in one building such as allowing residential development over first floor retail) or horizontal (a combination of uses in close proximity such as a housing project located adjacent to an employment center).

Requiring housing as an element in most or all developments within the Smart Growth nodes along Route 9 will lead to the establishment of a mixed use commercial and residential area that can promote walkability and a decrease in the use of single-occupant vehicles.

Use Density Bonuses to Increase Floor-to-Area Ratio (FAR)
Communities may allow developers the opportunity to increase the size and use of buildings beyond that which is otherwise allowed by zoning, as a tool to promote smart growth, in exchange for public benefits provided by the developer. This is often accomplished through a special permit process, although some communities have elected to accomplish this through by-right zoning in order to further increase the likelihood of the zoning being used by a developer. Density bonuses can be granted in exchange for a variety of public benefits, including affordable housing, increased open space, and additional amenities for a community. Implementing density bonuses can result in higher density developments in targeted areas, creating, for instance, housing and retail space in buildings that may have been previously zoned solely for office use. More information can be found in the Smart Growth America's report, Getting to Smart Growth.

Transfer of Development Rights (TDR) is one tool that can be used to increase density within developments in targeted areas. TDR is a type of zoning that allows owners of property zoned for low-density development to sell development rights to other property owners within an area in which the community seeks to promote more density. TDR can be used as a tool to reallocate and manage where development takes place. The Commonwealth's Smart Growth/Smart Energy Toolkit contains more information about TDRs.

Note that Framingham already enables density bonuses within the Golden Triangle portion of the Roadside District. Within this area, increases to FAR beyond that allowed by right may be approved by the planning board; in exchange for this approval, the developer makes a payment to the town based upon the amount of increased square footage of development. The town then uses these funds for mitigation, including the acquisition of open space in the town. This is essentially a TDR program in which the town acts as the purchaser of the lands to be preserved, using funds from the developer.

Create More Housing Choices
By creating a diverse mix of housing options (e.g., single-family homes and apartments of varying sizes, condominiums, affordable units) people with different housing needs can all live in the same neighborhood, and residents can remain in a neighborhood even if their housing needs change. More information can be found by accessing the Housing section on Smart Growth America's website.

Inclusionary Zoning
Inclusionary zoning requires developers to make a portion of the housing units in a new construction project affordable to low- and moderate-income households. A mandatory or optional approach, inclusionary zoning ensures that adequate affordable housing is included as part of a development. The Commonwealth's Smart Growth/Smart Energy Toolkit contains more information about inclusionary zoning.

Inclusionary Zoning is one tool that can be used to provide for more housing affordability; it is also one potential benefit that can be offered by a developer in exchange for residential or commercial density bonuses.

Upzoning
Upzoning, the process in which a property is zoned from a lower to a higher use, can provide opportunities for higher density residential mixed-use developments. Communities along Route 9 should determine the appropriate densities for future uses and make appropriate changes to their zoning codes to enable those future uses and densities (keeping in mind that they may wish to reserve some of the potential density as a possible bonus to exchange for public amenities from developers).

Parcel Interconnectivity
Vehicular interconnectivity between adjacent parcels will lessen the need for short trips along Route 9 and will help to minimize traffic. Appropriately designed public access between parcels will also promote pedestrian activity. Requirements for such interconnectivity could be incorporated into the Route 9 communities' zoning codes.

Buildings Oriented Toward the Street with Parking in Rear
Parking in front of buildings where it is most visible from the street requires that the buildings be set back from the street, and can detract from the pedestrian environment and make the area less comfortable for pedestrians. However, if parking is sited behind buildings pedestrian accessibility from sidewalks and transit stops can be promoted. If buildings front directly on Route 9, they can create an active and engaging environment where pedestrians can be comfortable walking between buildings rather than choosing to drive. MAPC's Sustainable Transportation: Parking Toolkit contains additional information about integrating parking and building design.

Form Based Codes and Design Guidelines
Form based codes address the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, as well as the scale of streets and blocks. Form based codes provide strong design controls and produce more consistent and predictable patterns of development in relationship to the public realm than what can be achieved through conventional zoning. The Form-Based Codes Institute's website is a resource for additional information on creating and implementing this type tool. However, since Form Based Codes are new in Massachusetts and are expensive to institute, some communities prefer instead to incorporate strong design criteria into their permit approval processes to enhance their existing conventional zoning. One example is a set of Design Review Guidelines for the Town of Canton.

Preserve Open Space
Open space or natural areas in municipalities provides important community space, recreational opportunities, habitat for plants and animals, and critical environmental areas (e.g., wetlands). The preservation of open space supports smart growth goals by advancing local economies, preserving environmental areas, improving quality of life, and guiding new growth. Open space to be preserved in the Route 9 corridor includes areas for wildlife habitats and wetlands protection, important trail connectivity, and relatively small but important areas to be preserved as part of the higher density developments to provide public amenities such as gardens, public seating and recreational space for the future residents. Open space should be publically accessible to the maximum extent feasible.

Low Impact Development (LID)

Low Impact Development (LID) begins with a site planning process that first identifies critical natural resource areas for preservation. LID ensures that the maintenance of natural drainage flow paths, minimization of land clearance, building clustering, and impervious surface reduction are incorporated into the project design. LID includes a specific set of strategies that treat stormwater management at the site level, ensuring that water is managed locally rather than engineering the discharge of water away from its source. MAPC's Low Impact Development Toolkit is a resource for additional information on this sustainable development approach.

Proposed Application of Design Criteria and Zoning Recommendations to the Smart Growth Opportunity Areas

A desired policy outcome is that the outlined design criteria and zoning recommendations will be adopted by the communities. Communities will need to determine whether new zoning regulations should be incentive based (e.g., a bonus system), mandated, or a combination of both. Figures 30 – 36 illustrate the specific components of proposed applications of design criteria and zoning recommendations for the three Smart Growth Opportunity Areas.

Figure 30 – Smart Growth Opportunity Area for Fayville Village (aerial view)
Proposed Application of Design Criteria and Zoning Recommendations

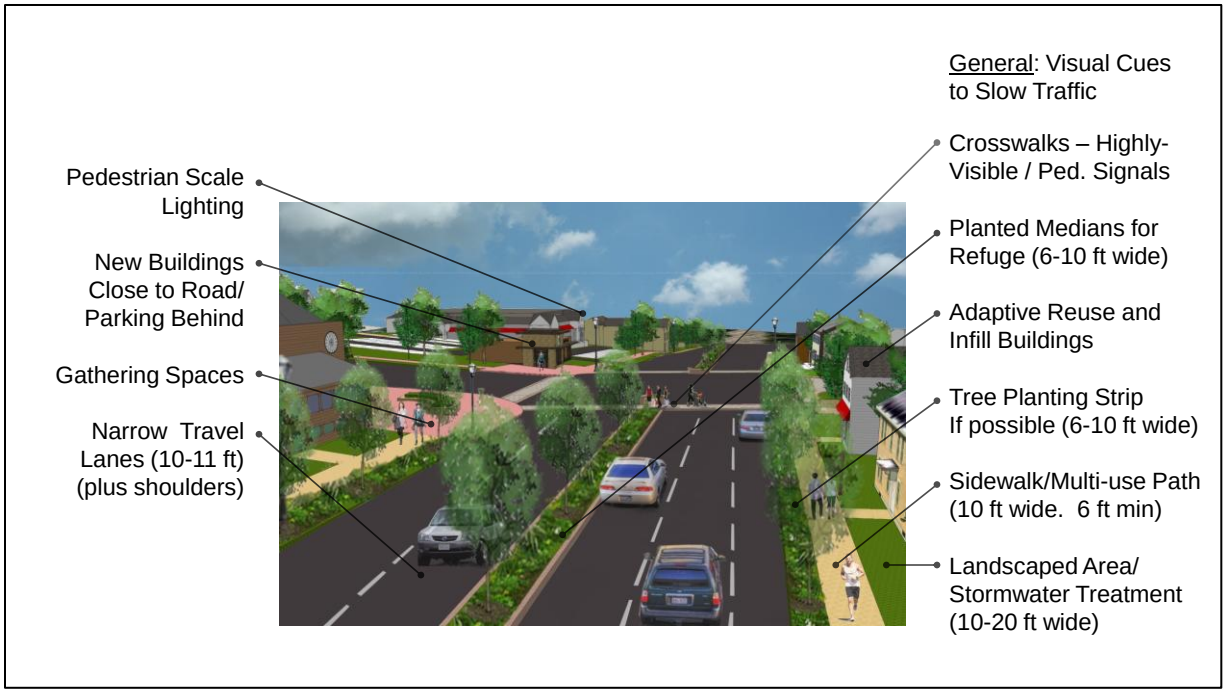


Figure 31 – Smart Growth Opportunity Area for Fayville Village (street view)
Proposed Application of Design Criteria and Zoning Recommendations

Figure 32 – Smart Growth Opportunity Area for Framingham Centre (street view)
Proposed Application of Design Criteria and Zoning Recommendations

Figure 33 – Smart Growth Opportunity Area for Framingham Centre (aerial view)
Proposed Application of Design Criteria and Zoning Recommendations

Figure 34 – Smart Growth Opportunity Area – Air Rights at Shopper's World - Golden Triangle
Proposed Application of Design Criteria and Zoning Recommendations

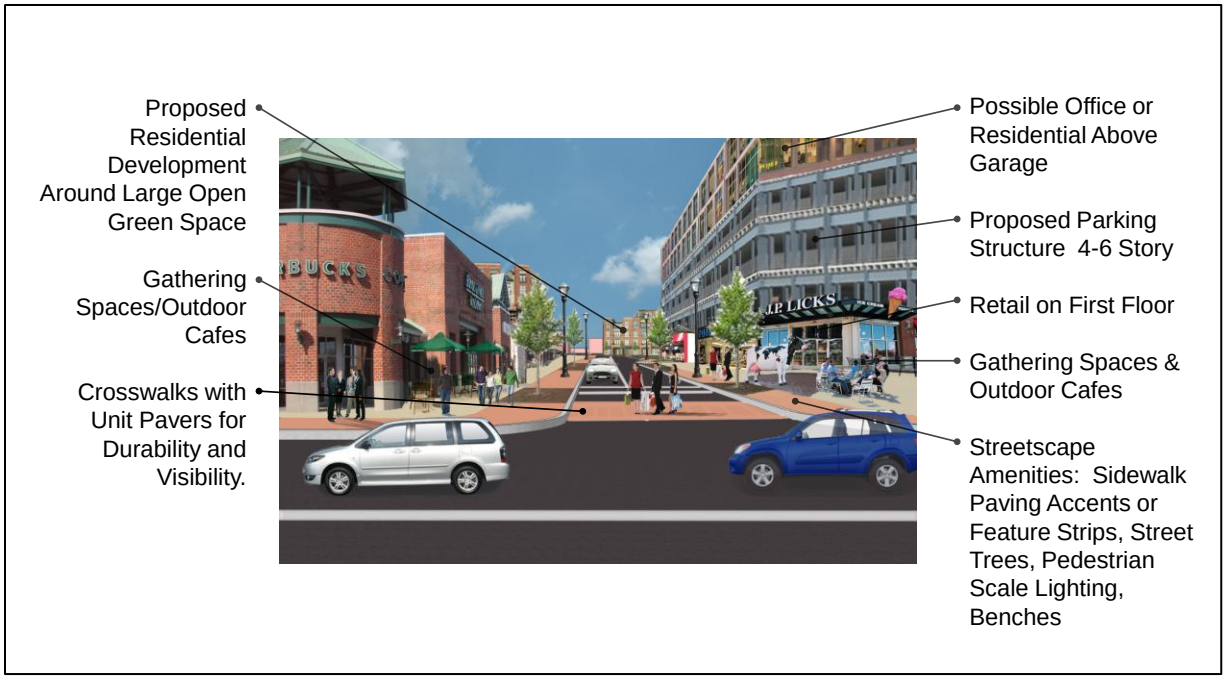


Figure 35 – Smart Growth Opportunity Area – Starbucks at Shopper's World - Golden Triangle Proposed Application of Design Criteria and Zoning Recommendations

Figure 36 – Smart Growth Opportunity Area – Town Green at Shopper's World - Golden Triangle Proposed Application of Design Criteria and Zoning Recommendations

Conclusion

Currently along Route 9, existing land uses tend to favor automobile dependency. Smart growth will require policy reforms in order to promote more compact and mixed use development that can support alternative modes.

Smart growth starts with incremental steps, yet has the potential to yield significant cumulative impacts. To start implementing the design criteria and zoning recommendations outlined in this plan, the communities will need to continue to host public discussions around possible redevelopment opportunities and continue dialogue with property owners. They will also need to build public support for newly proposed design criteria and zoning changes.

It is important to note that the concepts presented for the three Smart Growth Opportunity Areas are illustrative. The communities should evaluate and determine the viability of alternatives and appropriate densities and other design criteria in full detail prior to implementation. Presently, Southborough is reviewing zoning around the Fayville Village Smart Growth Opportunity Area.

It is also important to highlight that the Route 9 corridor is a challenging area for redevelopment and for sprawl repair strategies to yield significant change. Even with implementing smart growth strategies, Route 9 is projected to have increased vehicular traffic. A key product of this report are a set of illustrative land use changes and characteristics, focused at specific locations, that identify how increased growth can be managed and designed to yield an increase in walking, bicycling, and public transit use.

If successfully implemented, smart growth solutions can provide various economic, social, and environmental benefits in addition to providing more mobility choices and reducing dependence on personal vehicle use and demand for parking along the Route 9 corridor.