Five Corners Transportation and Land Use Linkage Study

Rotterdam, NY

SEPTEMBER 28, 2011

BFJ Planning

Town of Rotterdam, Five Corners Transportation and Land Use Linkage Study

Prepared on behalf of:

The Town of Rotterdam and the
Capital District Transportation Committee

Capital District Transportation Committee

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1 Introduction

1.1 Goals and Objectives

The Five Corners intersection is a major gateway and commercial center in Rotterdam. Although it is a focal point in the community, it is not a friendly place for motorists, pedestrians and bicyclists alike. Because of the awkward layout of the six-legged intersection, there is poor circulation and safety concerns for all modes of transportation. Motorists often take alternate routes along neighborhood roads to avoid delays at Five Corners. Few amenities exist to make the area a safe place to walk and bike. Nevertheless, Five Corners has tremendous potential for growth as evidenced by recent commercial development in the area.

In February, 2011, the Capital District Transportation Committee (CDTC) and the Town of Rotterdam launched the Five Corners Transportation and Land Use Linkage Study, funded to a large degree by a Linkage Study grant from CDTC. The study's goal is to develop a plan to revitalize the Five Corners area so that the heart of the Town of Rotterdam can become healthy and vibrant. This can be accomplished by developing a balanced circulation system that encourages various forms of travel by car, bike and foot in a way that complements the Town's existing and future land uses. Improving the roadway and streetscape could have numerous and deep effects on the quality of life in the study area.

The study's objective is to develop a coordinated land use and access management plan for the Five Corners area to ensure that any redevelopment activity is properly accomplished using an integrated multi-modal network that compliments the Town's existing and future land uses. The study's transportation and land use improvement recommendations include traffic improvements, land-use arrangements, access management, transit and bicycle/pedestrian enhancements, development standards and design standards.

1.2 Public Workshops

In order for this project to be successful, there are a lot of challenges that face the five corners intersection, in order to make any positive gains, public involvement and support is crucial.

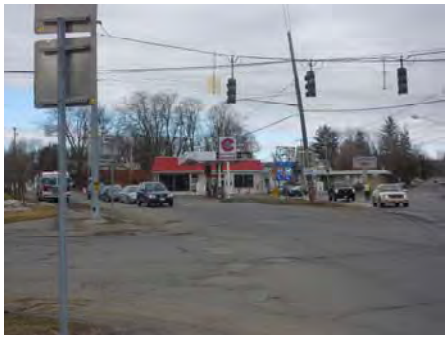
In the 1st Workshop on April 26, 2011, BFJ Planning approached the community with a review of existing conditions and preliminary ideas for Five Corners in terms of traffic circulation and land use. Based on feedback from the 1st workshop, the consultants developed draft conceptual land use and transportation plans. These ideas were discussed with the New York State Department of Transportation to verify that they are feasible and are in agreement with their policies. In the 2nd public workshop on July 28th, 2011, the consultants presented these revised plans for the public to comment on. Approximately 20 people attended each of the presentations.

The workshops were successful in attracting an engaged group of residents who were eager to discuss a range of issues. While participants focused on different issues, the table presentations at the end of the workshop demonstrated that participants all felt that significant transportation and land use improvements were needed in the Five Corners Area. Summaries from the two workshops can be found in the appendix.

2 Existing Conditions

2.1 Land Use and Zoning

The 220-acre study area along with a detailed aerial of the Five Corners intersection is shown in Figures 1 & 2. This study area consists of 758 parcels, many of which are one and two family residential houses. Most of the commercial use occurs at the Five Corners Intersection, the Broadway Gateway area and the Four Corners Intersection. Figures 3 & 4 illustrate the important clusters of commercial, recreational, institutional and industrial uses in the study area as well as the uses around the Five Corners intersection. Some of the structures are in poor condition and contrast strongly with some of the new commercial structures recently constructed. Five Corners business district has grown to be an important center of commercial activity in Rotterdam. This is partly due to it being a crossroad for six roads including Curry Road, Broadway, Wallace Avenue, Duanesburg Road, Mariaville Road, and Princetown Road.



Five Corners – Coastal Gas Station

Five Corners – Getty Gas Station

2.2 Traffic

Daily traffic volumes as compiled by NYSDOT are shown in Figure 5. Figure 6 shows the results of peak period traffic counts performed at the Five Corners intersection on Wednesday, April 6, 2011. The morning peak hour was from 7:30 to 8:30 and the PM peak hour was from 4:00 to 5:00.

Figure 7 illustrates the PM traffic conditions in the Five Corners area. The data indicates that there is a significant amount of traffic during peak periods, especially at the Five Corners and the Four corners intersections. Traffic volumes and signal phasing was reviewed to determine the level of service (LOS) at the important intersections in the study area. The figure shows that at Five corners, the average delay during peak PM periods is two minutes and the Level of Service is F. Level of service is the grade of quality of traffic flow. (A=good traffic flow, F=gridlock). At the four corners, the delay is 51 seconds and the level of service is D. There are also delays at the non-signalized Broadway/Olean/Draper intersection.

Five Corners – Traffic

Four Corners Intersection

FIGURE 1: STUDY AREA

FIGURE 2: FIVE CORNERS INTERSECTION

FIGURES 1 & 2

SOURCE: GOOGLE MAP

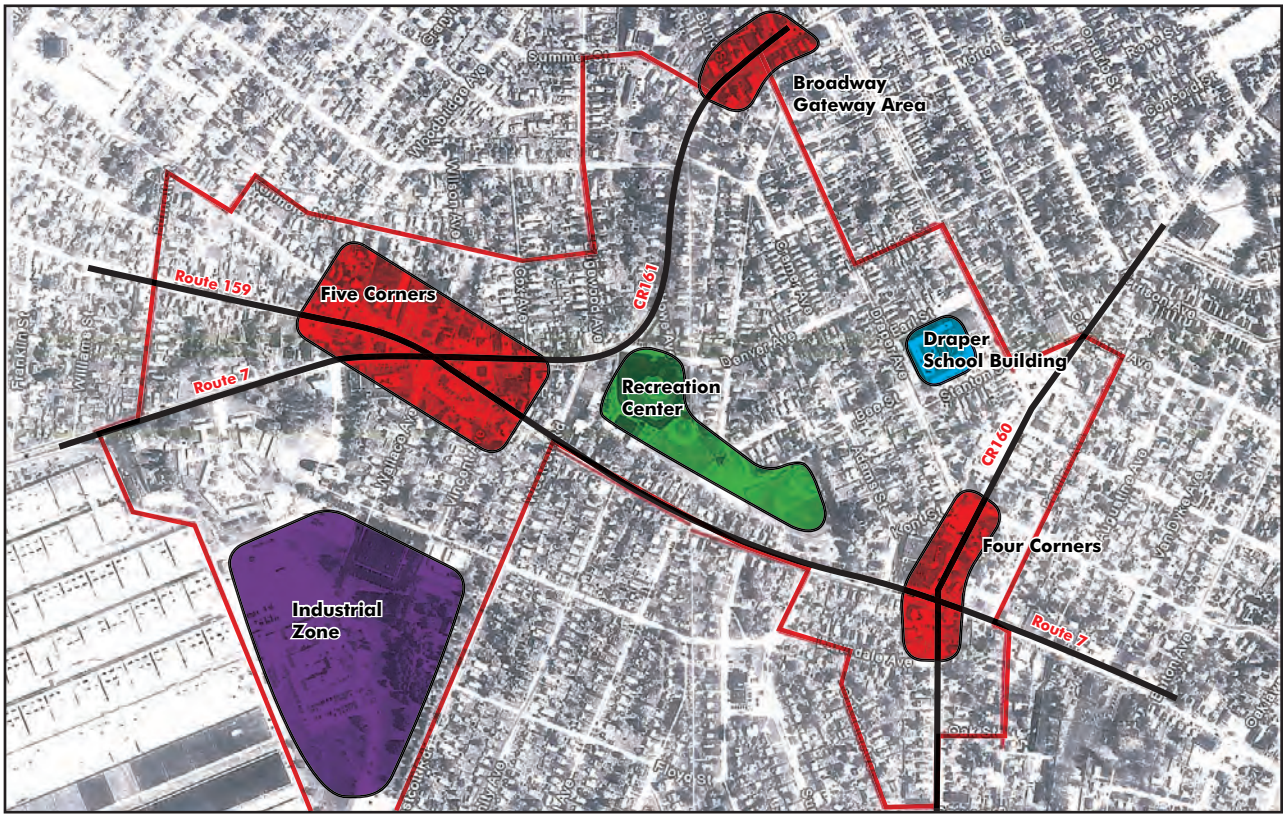


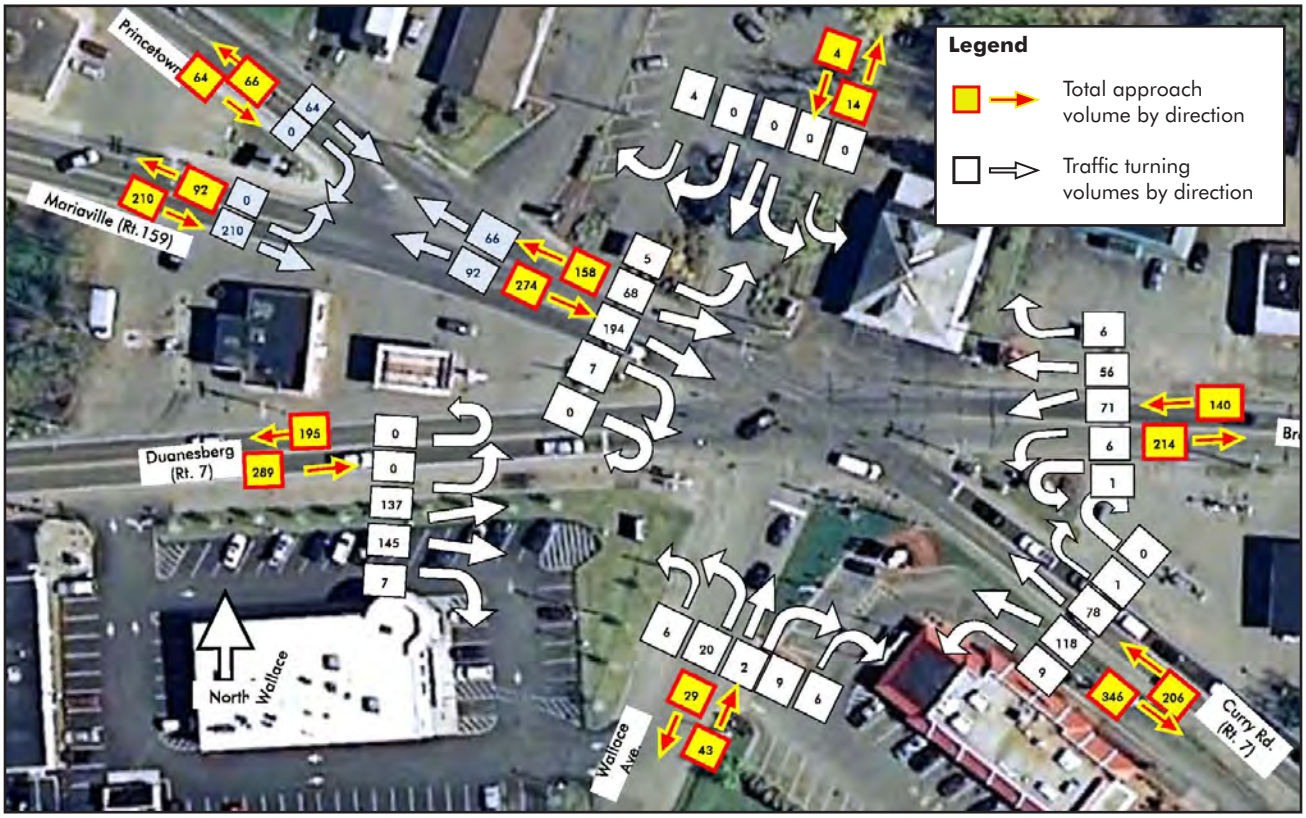
FIGURE 3: STUDY AREA: LAND USE

FIGURE 4: FIVE CORNERS: LAND USE

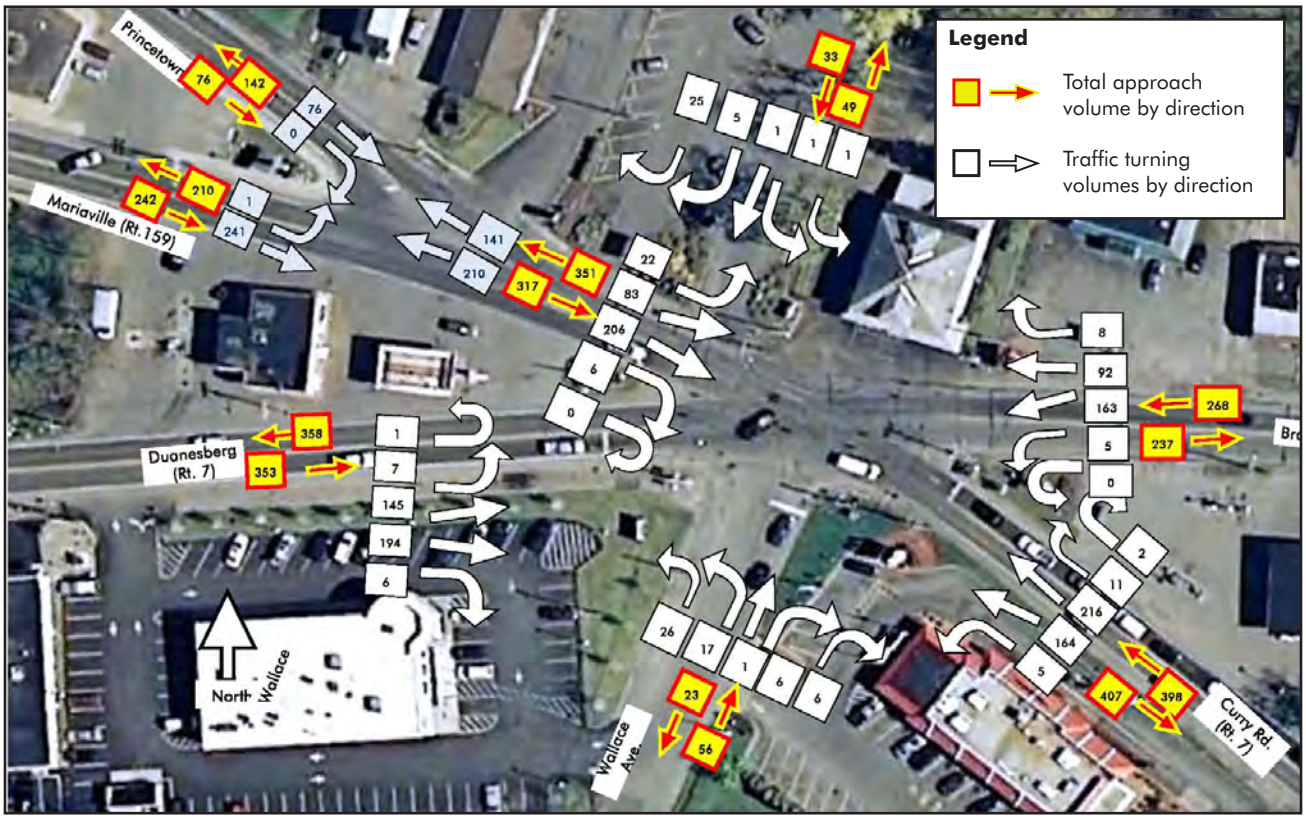
FIGURES 3 & 4

FIGURE 5: STUDY AREA: AVERAGE DAILY TRAFFICE VOLUMES (AADT)

SOURCE: NYSDOT



AM Peak Hour Traffic Volumes



PM Peak Hour Traffic Volumes

FIGURE 6: PEAK HOUR TRAFFIC VOLUMES AT FIVE CORNERS INTERSECTION

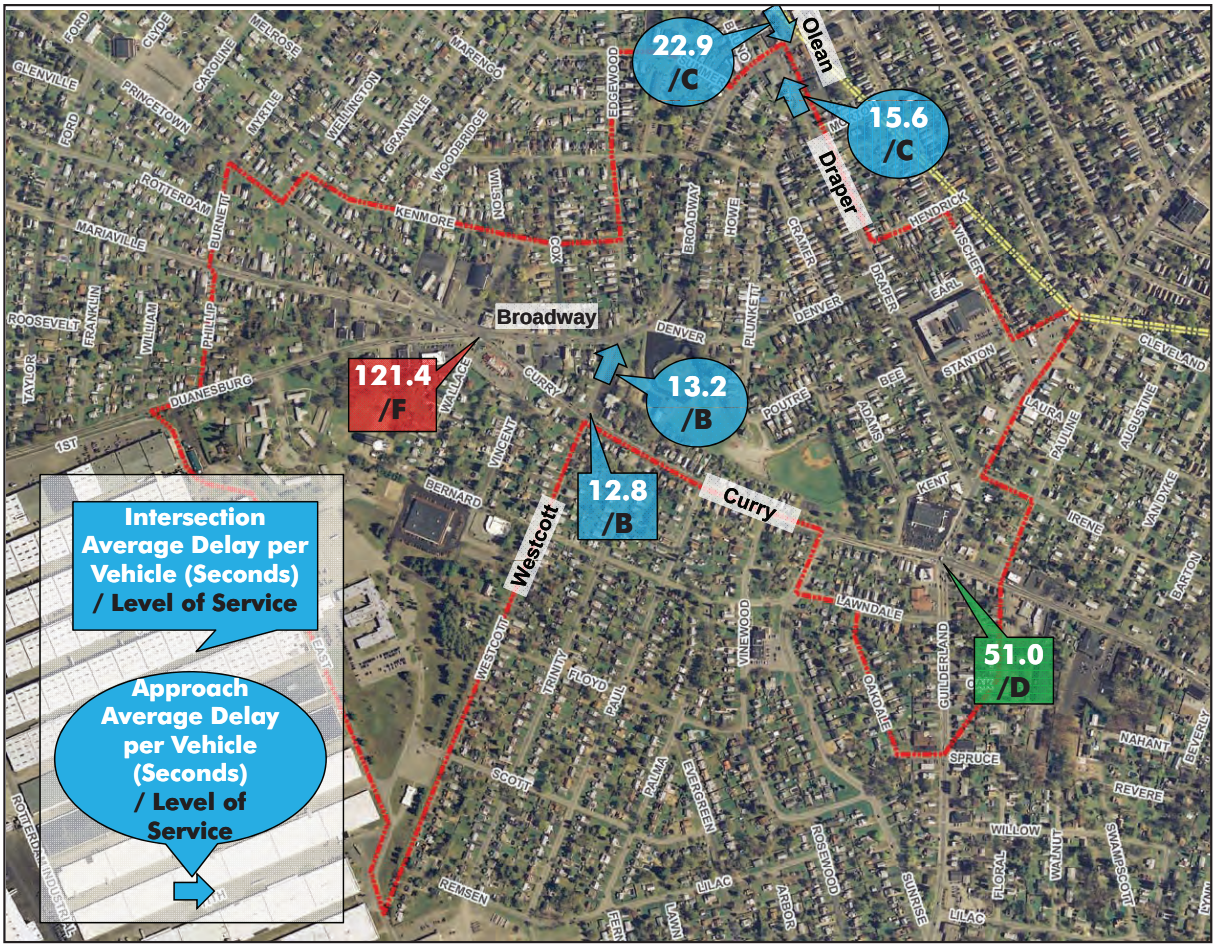


FIGURE 7: PM PEAK HOUR DELAYS & LEVELS OF SERVICE

FIGURE 8: STUDY AREA CRASH SUMMARY

FIGURES 7 & 8

Addressing the traffic delays and safety hazards at the Five Corners intersection is a major component to this study. Traffic movement data show that delays are not caused by the volume of vehicles, but rather because the intersection works inefficiently in its current awkward 6-leg configuration. Traffic signal cycles are long in order to accommodate traffic from 6 roads and the entrance to the CVS Parking Lot (7 approaches). In addition to delays, the intersection has significantly higher accident rates than the surrounding roads (Figure 8).

Traffic and safety issues at Five Corners were confirmed by anecdotal evidence from town officials and participants in the two workshops. Many people stated that they specifically avoided this intersection because of recurring delays. Participants were asked to plot their "rat runs" where they took side roads to avoid long delays at Five Corners. Figure 9 shows how other streets and property owners suffer from the negative impact of traffic congestion at Five Corners. Some rat runs included shortcuts through the Coastal, Tops Restaurant, CVS and McDonald's parking lots. Residents commented that sometimes these shortcuts through parking lots are a hazard as they are often done at unsafe speeds. The figure shows that delays caused by the Five Corners intersection have caused a significant amount of spillover onto the surrounding roadway network.

2.3 Access, Parking and Landscaping

Much of the land around Five Corners is dedicated to roads, driveways and parking. Figure 10 shows how much space is dedicated to parking. Typically, in a the center of town, a more productive use would be commercial uses, restaurants, community uses as opposed to parking which just supports these uses. The figure also illustrates the curb cuts where you can drive in and out of lots. Generally speaking, there are a number of areas where curb cuts are too wide and are not well organized in terms of circulation. This is a hazard to vehicles and pedestrians. Some of the newer commercial properties such as Tops Restaurant and McDonalds have better defined entrances and exits.

Generally, there are few sidewalks and landscaping is minimal around the Five Corners intersection. Landscaping around Top's Restaurant is one of the few places where there are consistent plantings (Figure 11).

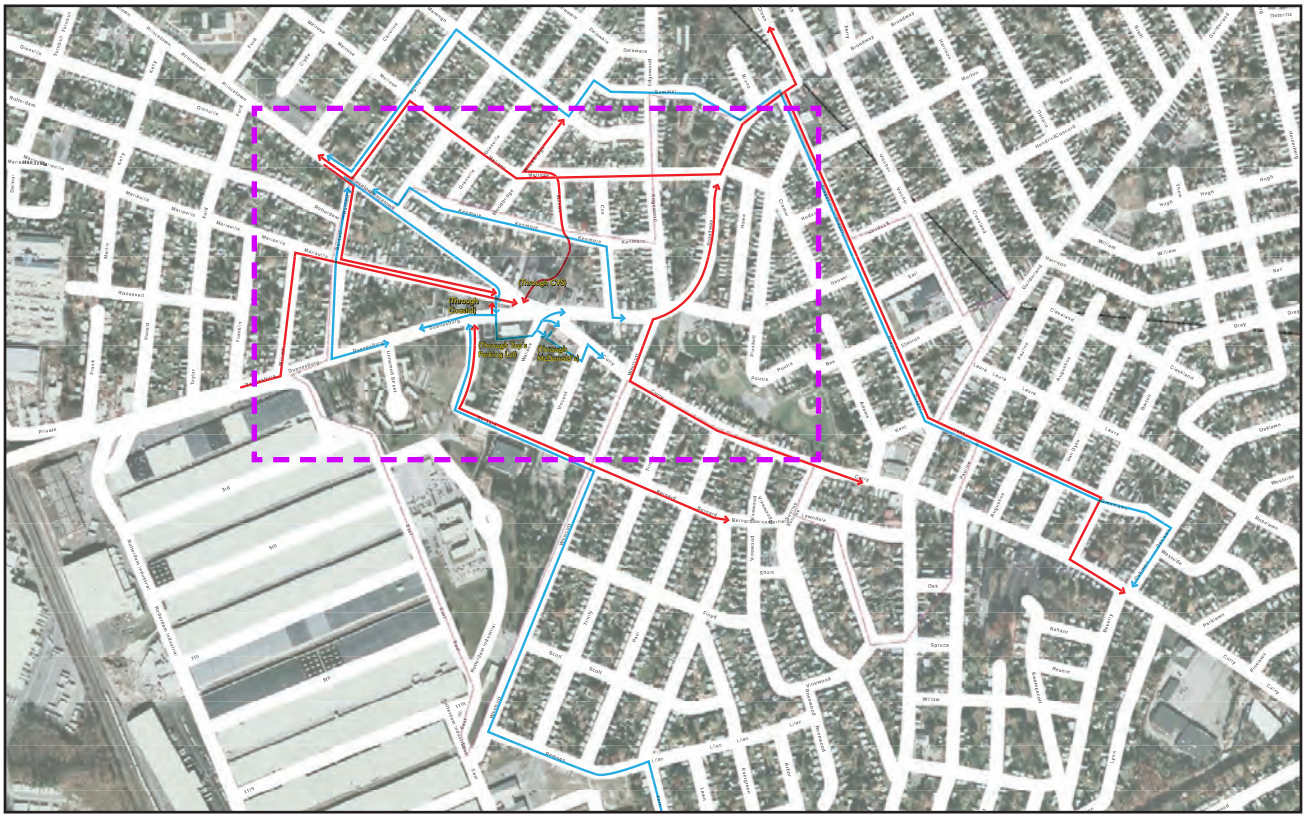


FIGURE 9: "RAT RUN" EXERCISE

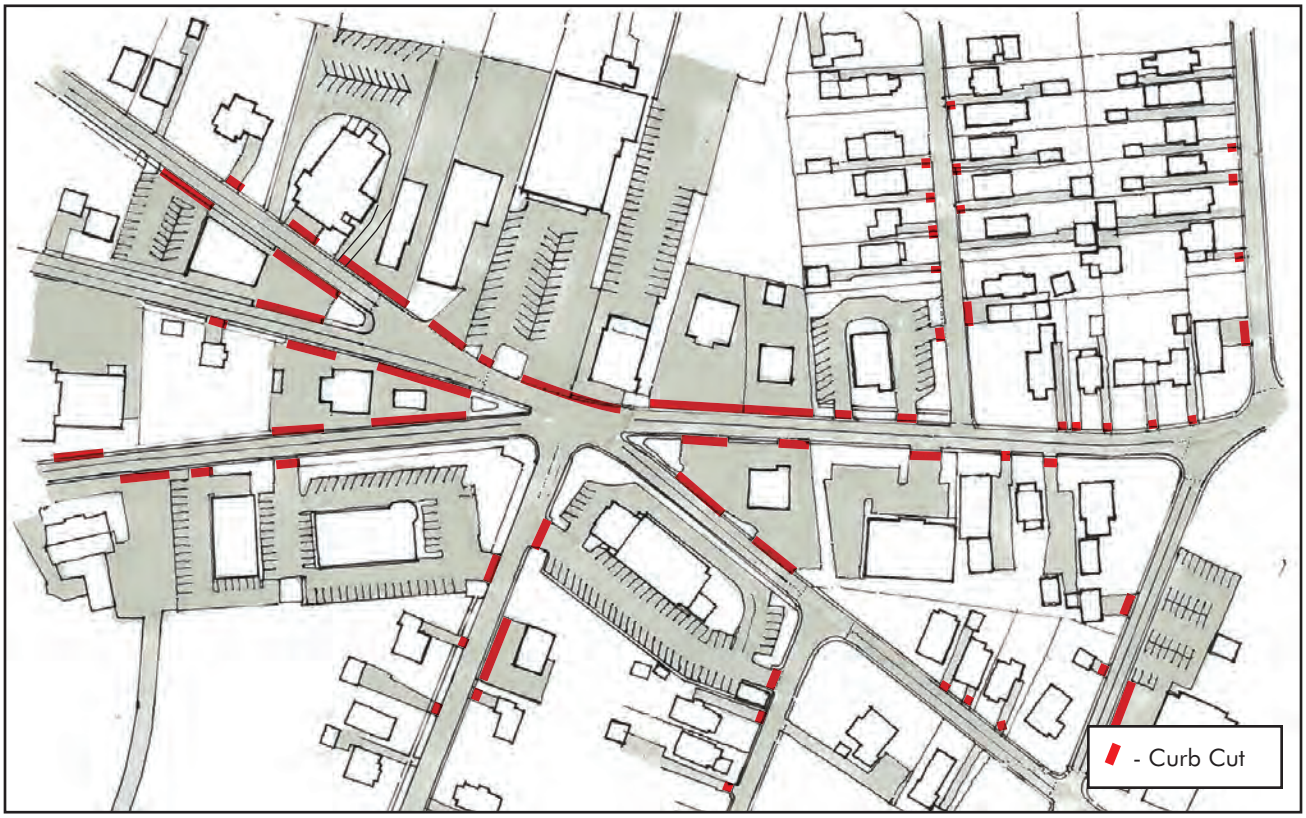


FIGURE 10: FIVE CORNERS: EXISTING ACCESS & PARKING

FIGURE 11: FIVE CORNERS: EXISTING LANDSCAPE

FIGURES 10 & 11

SOURCE: BFJ PLANNING

3 Transportation Improvements

3.1 Abandoned Concepts for Five Corners Intersection

The Five Corners intersection is a primary focus of the study as it is the focal point of the community and has tremendous potential for commercial growth. Five Corners is currently the area's best marketing piece and improving the roadway and streetscape, could have numerous and deep effects on the quality of life in the district. A range of roadway reconfiguration scenarios were examined and presented to the Town, CDTC, NYSDOT and were discussed in the workshops. These scenarios included: the 1969 Master Plan design, a roadway widening without right-of-way acquisition, a single roundabout, an "X-scheme", a widening with right-of-way acquisition and a double roundabout. Four of the scenarios were decided to be infeasible, the reasons for which are in Table 1 below. Two of the concepts, one with a street widening and the other with a double roundabout, both with a right-of-way taking, would significantly improve traffic and safety conditions and both warrant further study. Figures 12 and 13 show the conceptual designs of the alternatives that were rejected. Section 3.2 describe the alternatives that are retained for further analysis.

Table 1: Examined Design Concepts for Five Corners Intersection

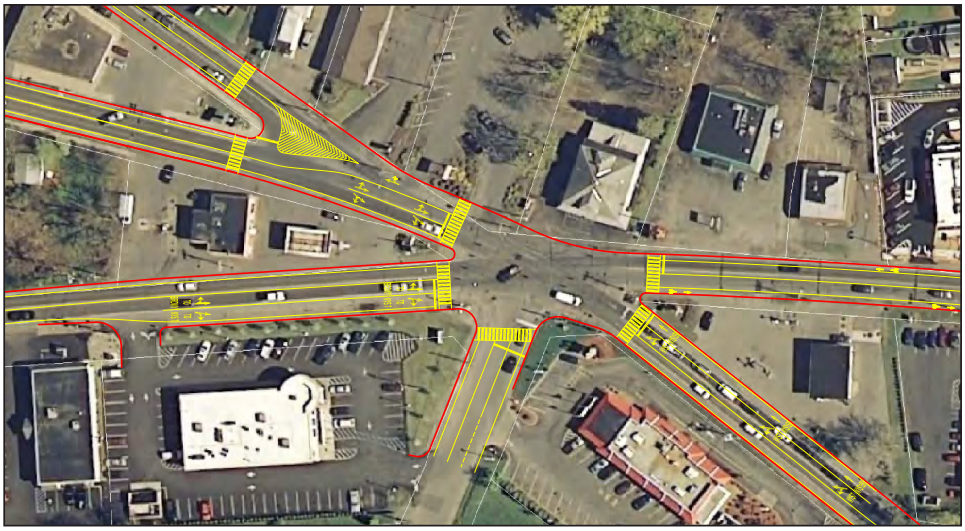
Design Concept	Figure	Right-of-Way Acquisition	Feasible
1969 Master Plan	Figure 12	YES	**NO -** Significant redesign of intersection; requires acquisition of multiple commercial properties including Dunkin Donuts & both gas stations.
Roadway Widening – without ROW Taking	Figure 13	NO	**NO -** Improvement in traffic; no bike lanes; no sidewalks; decreased safety for pedestrians and bicyclists; contrary to CDTC New Visions Principles.
Single Roundabout	Figure 13	YES	**NO -** Because of angle and # of approaches, diameter of roundabout would be too large to accommodate.
X-scheme	Figure 13	YES	**NO -** Minor right-of-way taking, poor truck circulation, safety hazards for vehicles; unacceptable to NYSDOT
Roadway Widening - with ROW Taking	Figures 14 & 15	YES	**YES** (See Alternative 1 below)
Double roundabout	Figures 16 & 17	YES	**YES** (See Alternative 2 below)

FIGURE 12: ROTTERDAM MASTER PLAN (1969)

SOURCE: TOWN OF ROTTERDAM

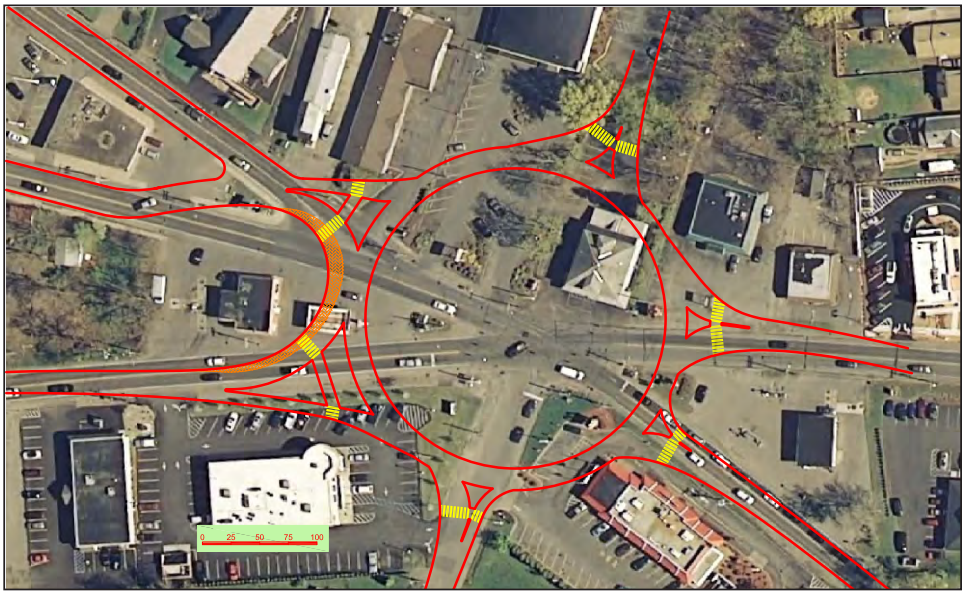
Roadway Widening 1

Widening approaches of Curry, Duanesburg and Mariaville roads without new sidewalks and bike lanes and without right-of-way taking



Single Roundabout

Large roundabout required to accomodate 6 approaches. Significant right-of-way-taking



X-Scheme

Separating Route 7 (Curry/ Duantesburg Roads) from Broadway and Mariaville Road and using N. Westcott and now connection for shifts between road pairs.

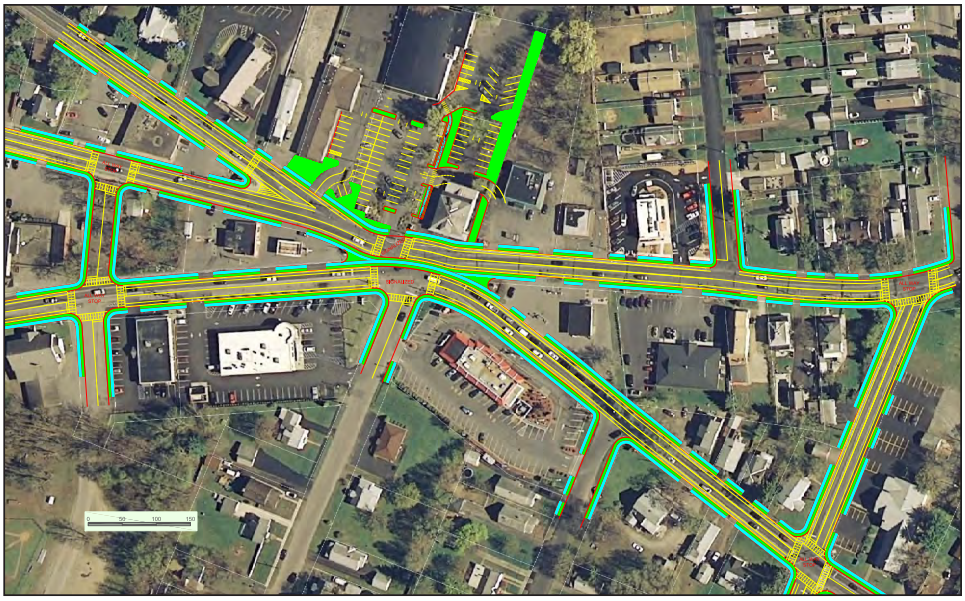


Figure 13: Examined and Abandoned Design Scenarios for Five Corners

source: BFJ Planning

3.1.1 Town of Rotterdam Master Plan, 1969

Many of the traffic and land use issues that face Five Corners today haven't changed for at least 40 years. The Town of Rotterdam Master Plan prepared in 1969 highlighted the need to significantly improve Five Corners (Figure 12). The Plan showed a redesign concept intended to improve traffic movement around the business district while still giving direct auto ingress and egress to the shopping areas. The plan also attempted to coordinate land uses so that they did not arise in a haphazard manner. This significant redesign of the intersection cut off Broadway completely. Today this plan would require a taking of commercial property (including Dunkin Donuts and both gas stations) as well as a significant restructuring of the right-of-way. Although this design was only a suggestion and has never been implemented, it is noteworthy to see that town officials were looking at significantly restructuring the intersection over 40 years ago.

3.1.2 Roadway Widening with Traffic Signal (no-right-of way acquisition)

The first concept reviewed was to see what traffic improvements could be made by maintaining a traffic signal operation and widening the approaches to increase the intersection's capacity. This could be done in two ways. The first way would be a widening within the existing right-of-way without acquiring private commercial property. The results of this concept showed that although vehicular capacity would be improved, there would be no room for bicycle lanes, sidewalks or landscaping areas. Crosswalks would be lengthened. This change would result in a significant decrease in safety for pedestrians and bicyclists and therefore it is not a recommended scenario for implementation.

3.2 Supported Concepts for Five Corners Intersection

3.2.1 Alternative 1: Roadway Widening Concept with Traffic Signal (with right-of-way acquisition)

Another concept (Alternative #1) is to widen the approaches with a right-of-way taking (Figure 14). This scenario would increase the capacity of the intersection while allowing for sidewalks, bicycle lanes and space for landscaping (Figure 14). Travel time through the intersection would be about 37 seconds per vehicle compared to today's 109 seconds. The right-of-way acquisition would eliminate both gas stations. Since the gas station properties are too small for commercial real estate, they could be transformed into green areas or civic spaces which would be a significant amenity for the town. As shown in Figure 15, acquiring the gas stations could provide a new green civic space in a desirable location. Acquiring both gas station properties would be a significant cost for the town (upwards of $1 million). Costs for the entire project are difficult to estimate because it is not known whether there is subsurface contamination from the gas tanks. Remediation of any subsurface contamination would significantly affect the total cost of the project.

3.2.2 Alternative 2: Double Roundabout Concept (with right-of-way acquisition)

A second alternative is to redesign the intersection as a double roundabout (Figure 16). A double roundabout would be necessary at this intersection due to the geometry of the acute angled approaches. The double roundabout allows for safe maneuvers as vehicles always make right turns. The existing peak-hour flows work well for a double roundabout. Because very few cars make sharp left turns (almost uturns) from Broadway to Curry Road and from Duanesburg Road to Mariaville Road, backups from one roundabout into the other roundabout would be unlikely. Alternative 2 features an apron designed to accommodate trucks. This design would allow large trucks to make a u-turn if needed. The double roundabout concept significantly improves access management by eliminating all left turns. The concept also shows access management improvements for the lots on the north side of the intersection.

In general, roundabout design has consistently proven to be superior in safety to conventional intersections. Reduced speeds alone make crashes less likely and less severe when they do occur. Driver error is less likely because the driver who enters the roundabout must be alert to only one traffic movement – the driver looks left for an acceptable gap to enter into the flow. By contrast, a driver at a four-way intersection has to deal with two or three different movements. In a roundabout, no driver can run a red light; therefore, right-angle collisions are not possible. Crashes that might occur are generally side-swipe or rear-end types. The presence of the center island interrupts an otherwise straight path, forcing speed reduction and heightened awareness in the roundabout. It also is worth noting that reduced delays at roundabouts compared to signalized intersections have the effect of decreasing the level of frustration and aggressiveness of drivers.

Overall, Alternative 2 has very good circulation, access and safety aspects. The double roundabout is better performing with regard to sustainability compared to the street widening alternative. Sustainability takes into consideration delays, fuel consumption, air quality and opportunities to walk and bicycle. Like Alternative 2, this scenario would increase the capacity of the intersection while allowing for sidewalks, bicycle lanes and space for landscaping. Travel time through the intersection would be about 23 seconds per vehicle. Opportunities for landscaping would be significantly improved, not only with green spaces at the former gas stations but also with a green median strip as shown in Figure 17. Alternative 2 also allows for the possibility of placing a bus stop in the intersection.

Although this scenario is a significant improvement from existing conditions, like Alternative 1, the right-of-way acquisition would make it impossible for both gas stations to conduct business. The costs of this project would be comparable to Alternative 1, as the major cost would not be in the construction, but the right of way acquisition and potential cleaning of the subsoil beneath the gas station.

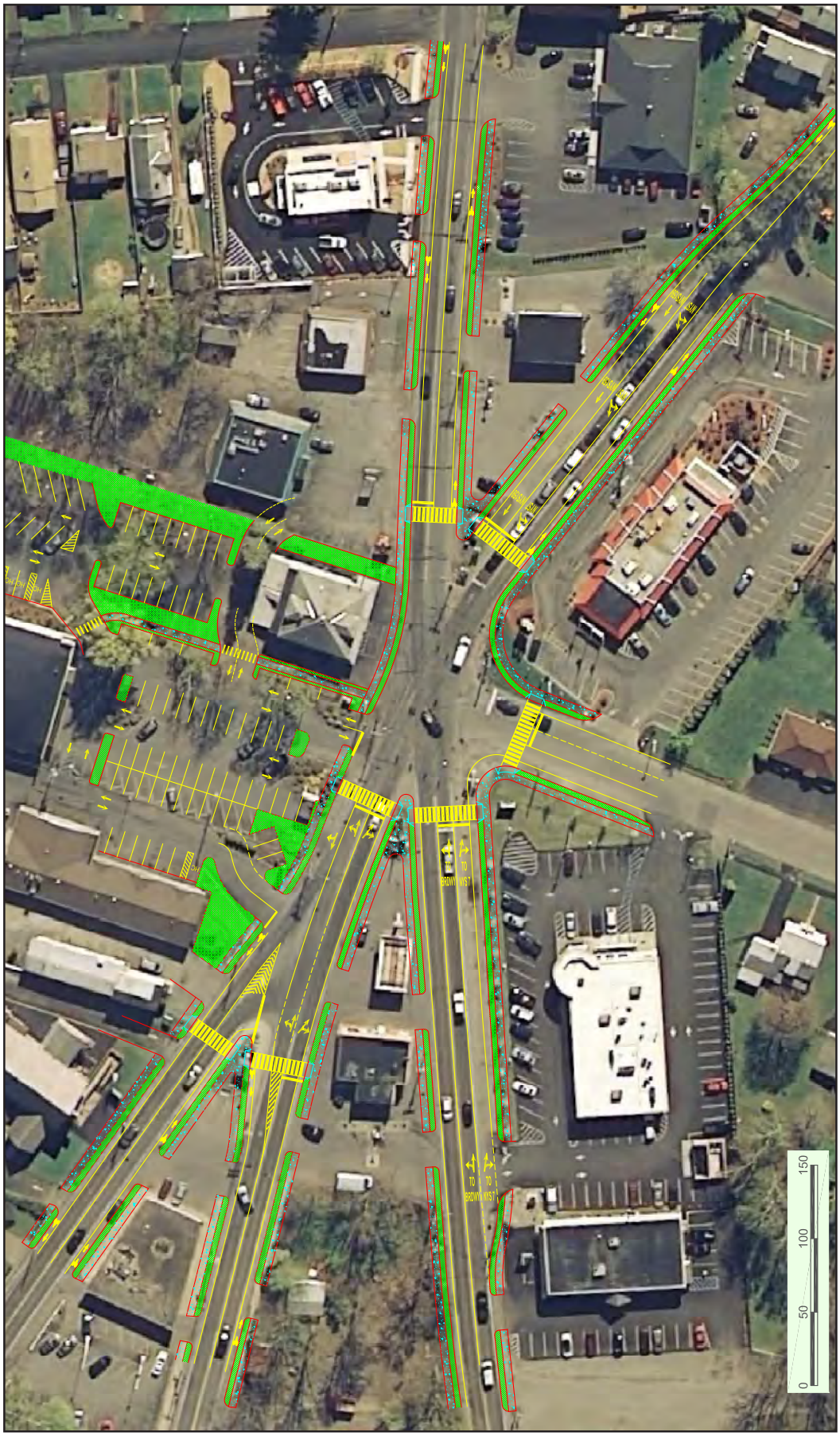


FIGURE 14: ALTERNATIVE 1 - 2-LANE SIGNALIZED INTERSECTION:
PROPOSED GEOMETRIC LAYOUT & ACCESS MANAGEMENT

FIGURE 15: ALTERNATIVE 1 2-LANE SIGNALIZED INTERSECTION: PROPOSED STREETSCAPE

FIGURE 16: ALTERNATIVE 2 - DOUBLE ROUNDABOUT:
PROPOSED GEOMETRIC LAYOUT & ACCESS MANAGEMENT

SOURCE: BFJ PLANNING

Comparisons of the two supported concepts are shown below in Table 2. At the public meetings, participants generally felt positive towards to the idea of a double roundabout, especially considering that the single roundabout recently installed just east of the study area was seen as an improvement. There were access concerns expressed by business owners at the Five Corners Intersection. These concerns will need to be addressed should this alternative be pursued. Although the capital cost was seen as significant issue, especially considering the current economic climate, most of the participants agreed that the roundabout solution would improve the neighborhood substantially, and should be considered a priority by the Town if funds become available.

Table 2: Five Corners Intersection Design Concepts

Alternative	Existing	Widening without Bike Lanes/ Sidewalks	Alternative #1 (Widening with Sidewalks/ Bike Lanes)	Alternative #2 (Double Roundabout)
Average Traffic Delay (Seconds in PM)	108.9	47.0	36.7	22.9
Right-of-Way Taking	---	No	Major	Major
Gas Station Removal	---	NO	YES	YES
Provision of Bike Lane	---	NO	YES	YES
Provision of Sidewalk	---	NO	YES	YES
Order-of-Magnitude ($million)	---	<1	5-10	5-10
Sustainability	Bad	Bad/Fair	Fair	Excellent
Truck Circulation	OK	OK	OK	OK
Comments		Does not meet study goals		

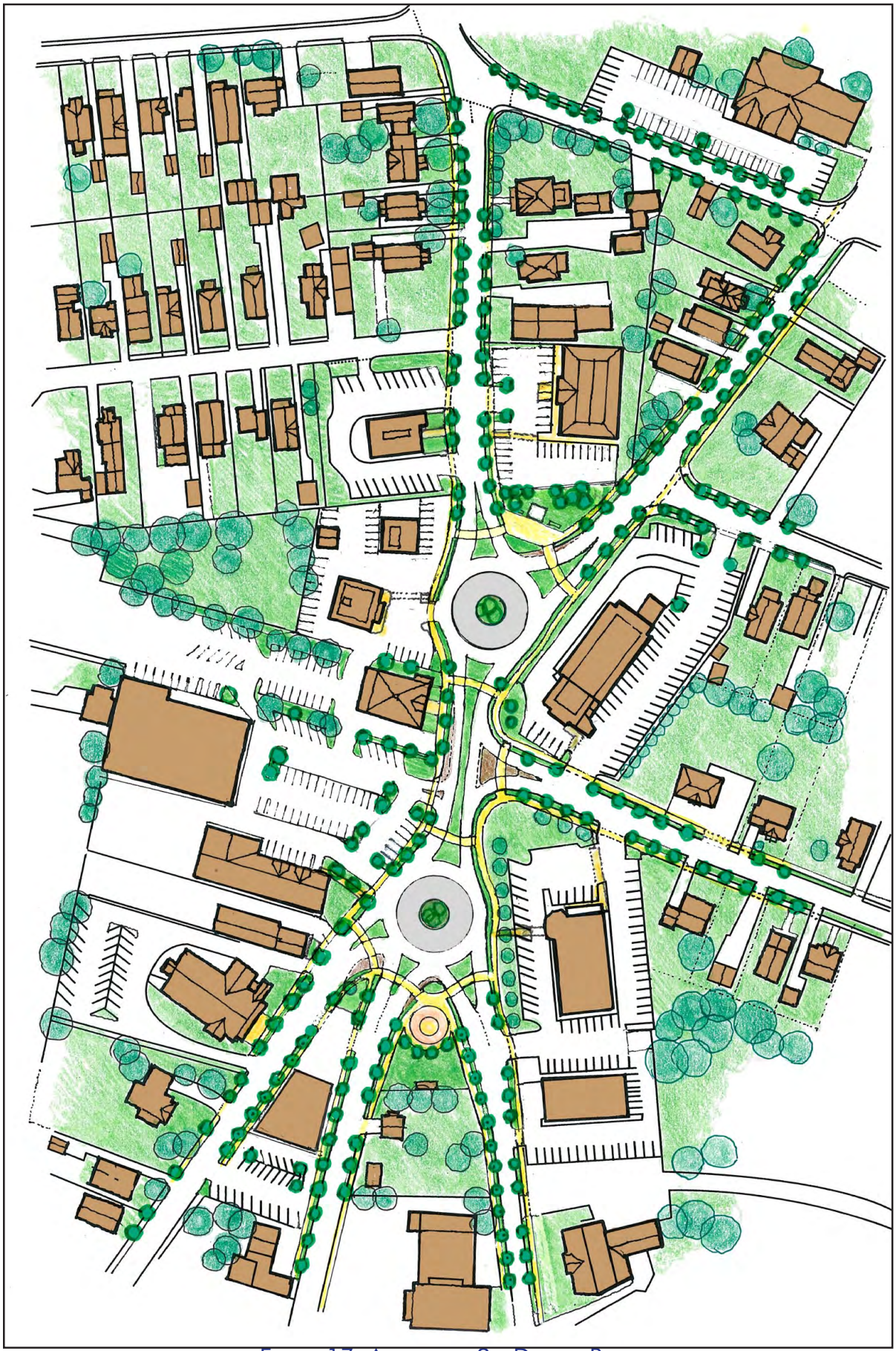


FIGURE 17: ALTERNATIVE 2 - DOUBLE ROUNDABOUT: PROPOSED STREETSCAPE

SOURCE: BFJ PLANNING

3.3 Broadway, Olean Street and Draper Avenue Intersection

Average delay times for vehicles approaching Broadway from Olean Street and Draper Avenue are 22.9 and 15.6 seconds respectively. Backups occur at this intersection because the streets are offset in a way which causes left turns from Broadway to be in conflict. Signalizing the intersection would not be an efficient solution. One way to improve the situation would be to stripe a 2-way left-turn lane in the middle of the street between Olean and Draper. The proposed configuration is shown in Figure 18.

To improve safety for pedestrians, a signal could be installed at the intersection that only turns on when activated by the pedestrian. These signals are called pedestrian hybrid beacons or HAWK Signals and have been used safely and successfully in many cities to stop traffic and allow pedestrians to cross safely.

HAWK Signal

Studies have shown a better compliance rate by motorists with a HAWK beacon than other devices at pedestrian crossings. The signals are designed for use in locations that do not meet traffic engineering 'warrants' for a conventional signal. The new signal is intended to aid pedestrians who desire assistance crossing a street with heavy traffic and it also provides visually impaired pedestrians audible information as to when the WALK signal is on. The HAWK is technically a "beacon" in that it remains dark for traffic unless a pedestrian activates the pushbutton. When the pedestrian presses the button, approaching drivers will see a FLASHING YELLOW for a few seconds, indicating that they should reduce speed and be prepared to stop for a pedestrian in the crosswalk. It then goes to solid yellow like a typical traffic signal, advising drivers to prepare to stop. The beacon then turns solid red, requiring drivers to stop at the crosswalk. Finally, the beacon goes to flashing red, letting drivers know that after coming to a complete stop, they can proceed once the pedestrian has crossed safely. The beacon then turns to the dark condition. The activation of the HAWK signals by pedestrians at either one of the two proposed locations would provide gaps in the Broadway traffic flow and would allow traffic from Draper and Olean to make their turns.

CDTC's 2010-15 Transportation Improvement Program (TIP) includes $2.650M for Project S201 (NYSDOT PIN 1759.20). The description for project S201 is "Broadway Reconstruction, City/Town line to NY 7: curbing, access management, storm drain replacement, sidewalks, crosswalks, curb ramps and bus stop shelter" and "Broadway: Reconstruction and N. Westcott Sidewalk Only (one side from NY 7 to Library)". Preliminary Engineering and design is programmed for the 2011-13 time frame while construction is programmed in year five (2015) of the TIP. The town should pursue the possibility of implementing the proposed modifications and the intersection of Broadway, Olean and Draper in concert with this TIP project.

FIGURE 18: BROADWAY/OLEAN/DRAPER GEOMETRIC DESIGN

SOURCE: BFJ PLANNING

3.4 Pedestrian Improvements

The lack of continuous sidewalks throughout the study area has created a vehicular dependent community that is unpleasant to walk. Improving the walkability and pedestrian safety will help improve the connectivity between and within the Five Corners intersection and the surrounding residential area.

Figure 19 shows the existing sidewalk conditions along the major roads in the study area and also the proposed new sidewalks in the study area. The new sidewalks would connect the major commercial areas and activity nodes including the library and park. The figure shows proposed continuous sidewalks for the roads which intersect Five Corners (Broadway, Princetown Road, Duanesburg Road, Wallace Ave and Mariaville Road). In addition to the streets that intersect Five Corners, sidewalk upgrades are recommended along Broadway, Westcott Road and intermittent areas on Draper Avenue and Guilderland Avenue.

According to the CDTC New Visions 2030 Plan, Princetown Road and Broadway are part of the Schenectady County bicycle and pedestrian priority network. The proposed sidewalk improvements took this priority network into consideration. Figures 20 & 21 illustrate the pedestrian access paths proposed for the two 5 Corners alternatives.

3.5 Bicycle Improvements

Figure 22 shows the proposed bicycle improvements in the Study area. Like the sidewalk improvements, the proposed bikeways would connect the major community and business centers. The recommendations also take the CDTC and County priority network into consideration.

Dedicated bicycle lanes are proposed for Mariaville Road and Duanesburg Road at Five Corners. "Sharrows" or share-the-road markings are proposed for Princetown Road, Broadway and Curry at Five Corners. Dedicated bicycle lanes are also proposed for the roads, which intersect Four Corners including Draper Avenue to the north.

3.6 Bus improvements

CDTA has two routes (#351 and #63) which pass through the Five Corners study area. Route #351 passes through the Five Corners intersection. Figure 23 illustrates how the 2nd intersection alternative for Five Corners allows for a bus stop in the intersection between the roundabouts. A bus stop at this location would be advantageous not only for passenger accessibility, but also because the roundabout would allow buses to make a U-turn to travel in any direction from Five Corners.

The bus stop would have a bus bay large enough so that regular traffic can pass comfortably by the stopped buses. This segment would need to have a shoulder regardless to give space for a truck to pass a disabled car. The distance between the two roundabouts is approximately 230 feet. The westbound bus stop has a long segment, which can accommodate a bus stop. The eastbound stop would either be immediately past the pedestrian crossing of the westerly roundabout or on the splitter island at Wallace Street. A detailed design analysis is needed to determine the best location, taking into consideration the turning radii and mountable areas for large trucks in and out of Wallace Street.

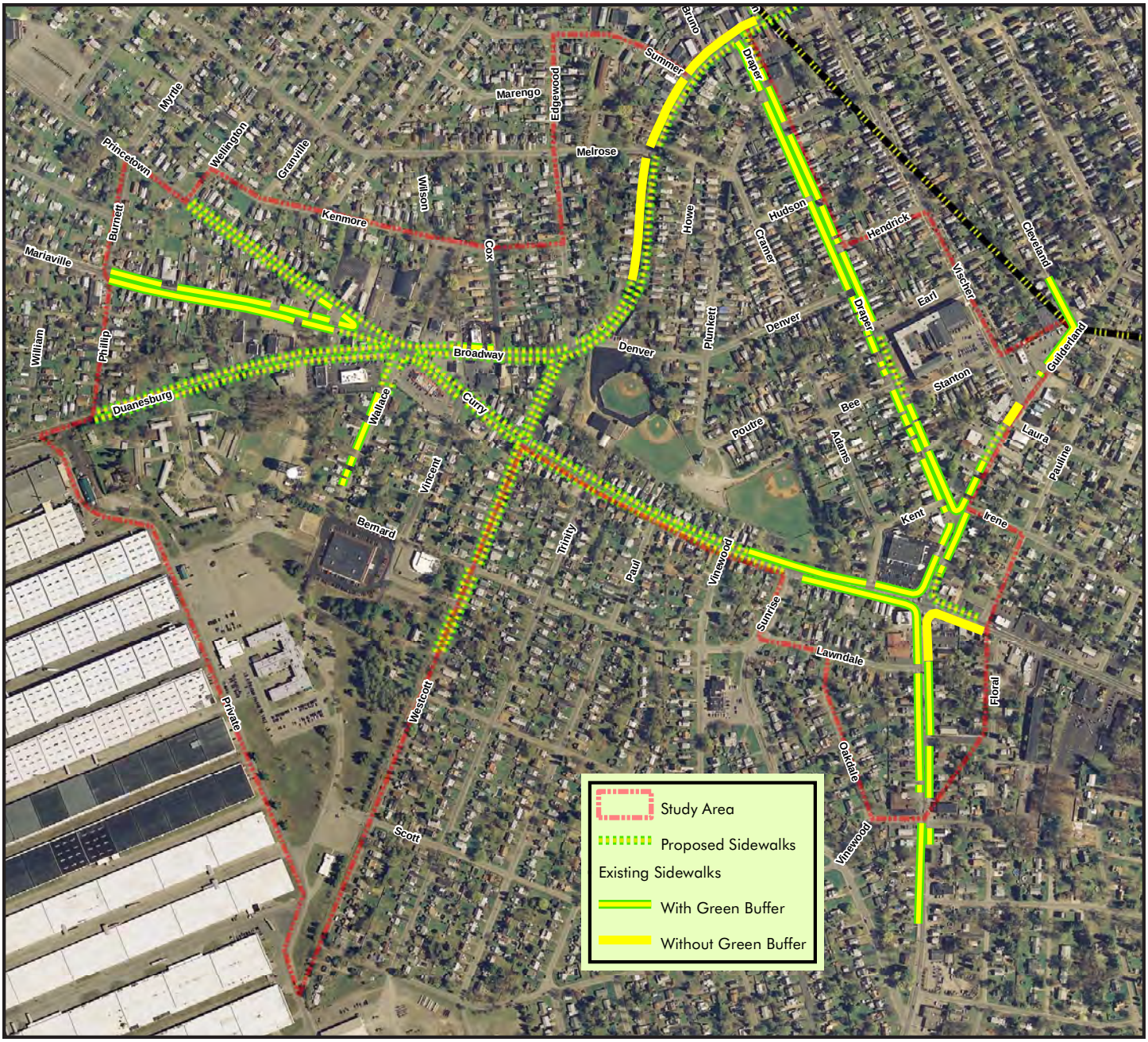


FIGURE 19: POTENTIAL SIDEWALKS IN STUDY AREA

SOURCE: GOOGLE MAP , BFJ PLANNING

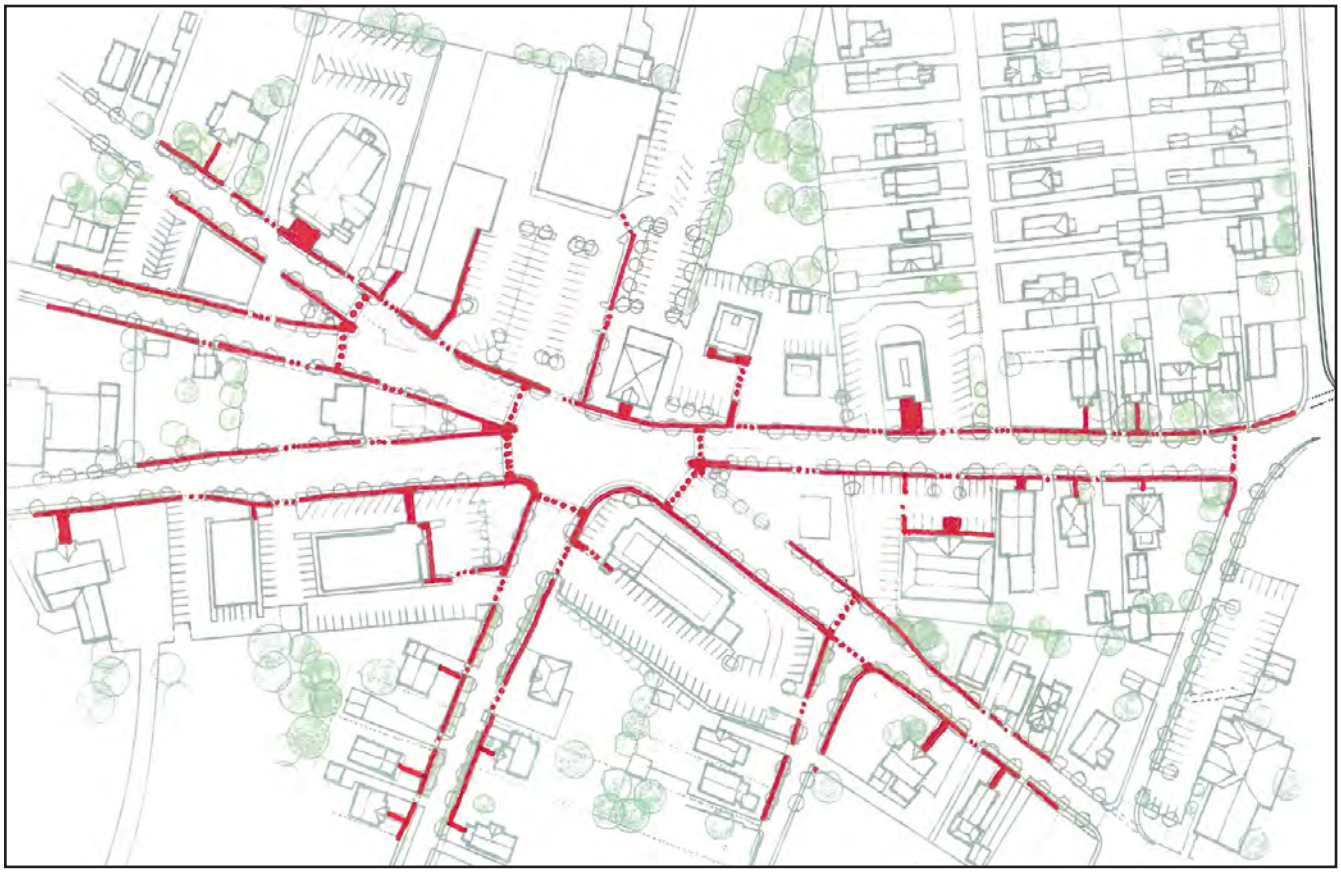


FIGURE 20: ALTERNATIVE 1: PEDESTRIAN ACCESS

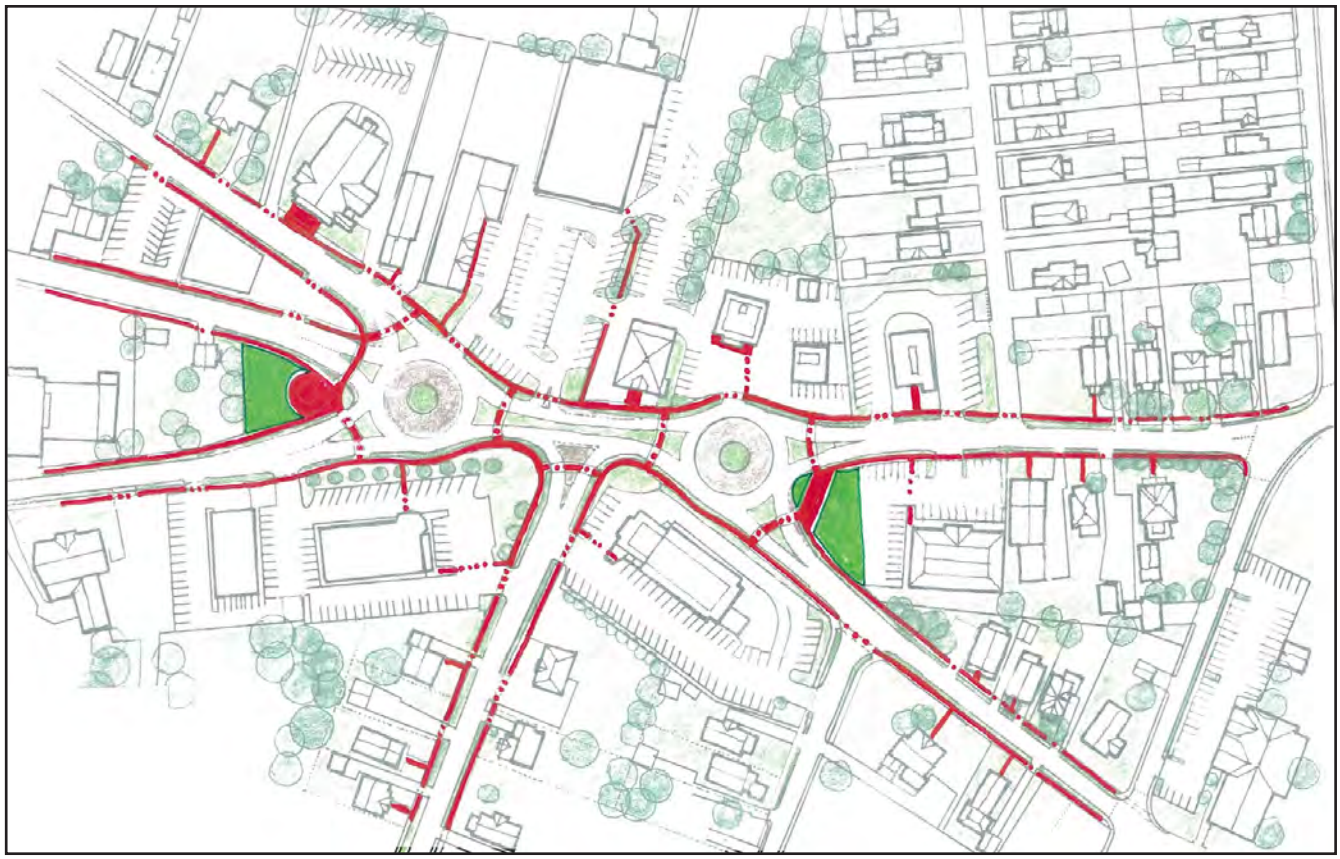
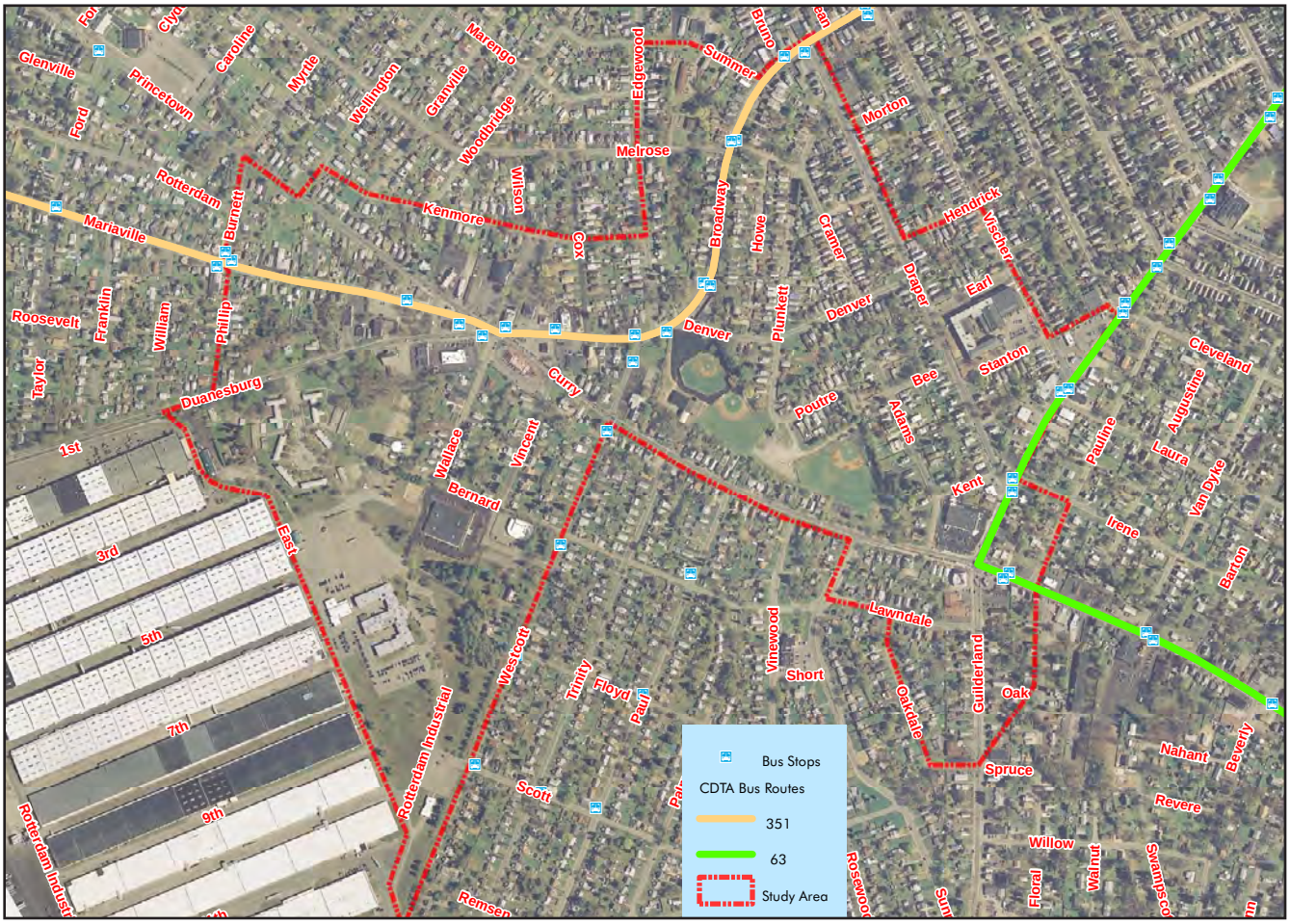


FIGURE 21: ALTERNATIVE 2: PEDESTRIAN ACCESS

FIGURES 20 & 21

FIGURE 22: POTENTIAL BIKEWAYS IN STUDY AREA

SOURCE: GOOGLE MAP , BFJ PLANNING



EXISTING BUS ROUTES & STOPS

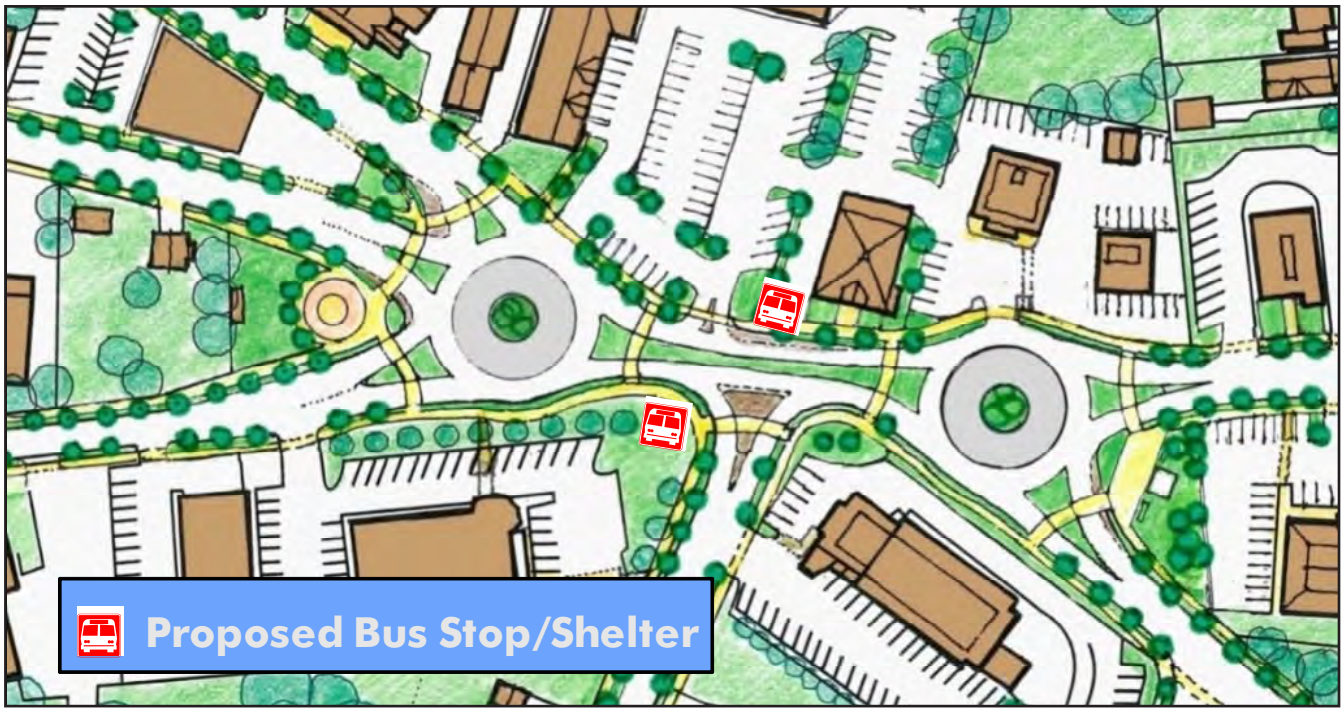


FIGURE 23: BUS IMPROVEMENTS

SOURCE: CDTA, BFJ PLANNING

4 Land Use Improvements

4.1 Zoning Recommendations

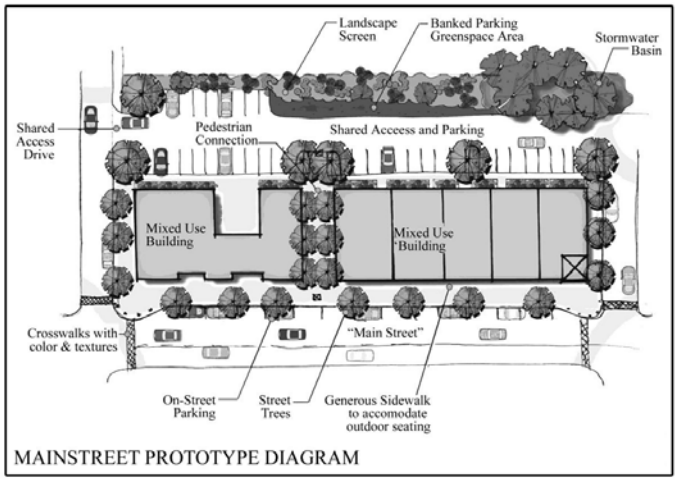
Most of the study area is zoned for one and two family residential. There is a significant amount of single-family homes located in business zones. No zoning recommendations are recommended in these areas (Figure 24).

Mixed-use redevelopment should be explored to capitalize on the market potential of both the Five Corners and the Four Corners intersections. The town should consider rezoning these areas as Main Street/Neighborhood Center Districts [(MSNC), Figure 25]. Establishing Five Corners as a mixed-use commercial center will be an important step to improve "Downtown Rotterdam." Creating a mixed-use district with well defined boundaries will benefit both the commercial and residential districts by creating distinct land-use areas that will provide a greater sense of place, as well as improve vehicular navigation resulting in a safer vehicular and pedestrian environment.

The objective of the Main Street/Neighborhood Center District is to:

- Allow true mix of uses to encourage economic & social vitality (Non-residential uses ground floor with residences above)
- Encourage pedestrian & non-motorized travel through linkages within the zone & to surrounding residential areas (sidewalks, pathways)
- Maintain mobility along important traffic corridors
- Design guidelines to provide flexibility & ensure quality development & redevelopment
- Design guidelines to address visual elements of buildings, landscaping & parking

Rezoning these parcels to the Main Street/Neighborhood Center District could become an incentive for existing building owners to rehabilitate or rebuild their properties, while welcoming new and diverse businesses to the District. Site design, architectural, signage and landscaping guidelines will help improve the aesthetics and marketability of the area. A prototypical diagram of how redevelopment in this district might look is shown here. Redevelopment scenarios for the Five Corners alternatives 1 and 2 (street widening or double roundabout) are illustrated in Figure 26.



MAINSTREET PROTOTYPE DIAGRAM

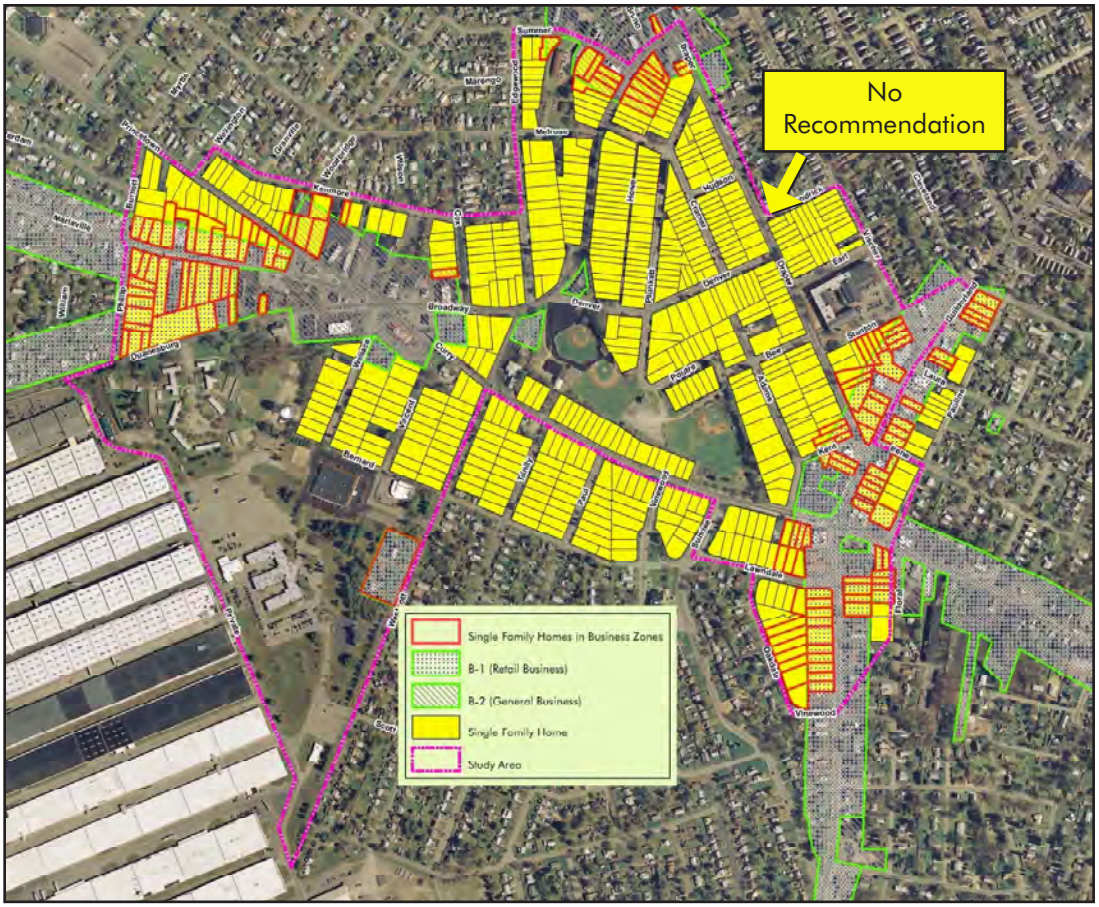


FIGURE 24: RESIDENTIAL USES IN STUDY AREA

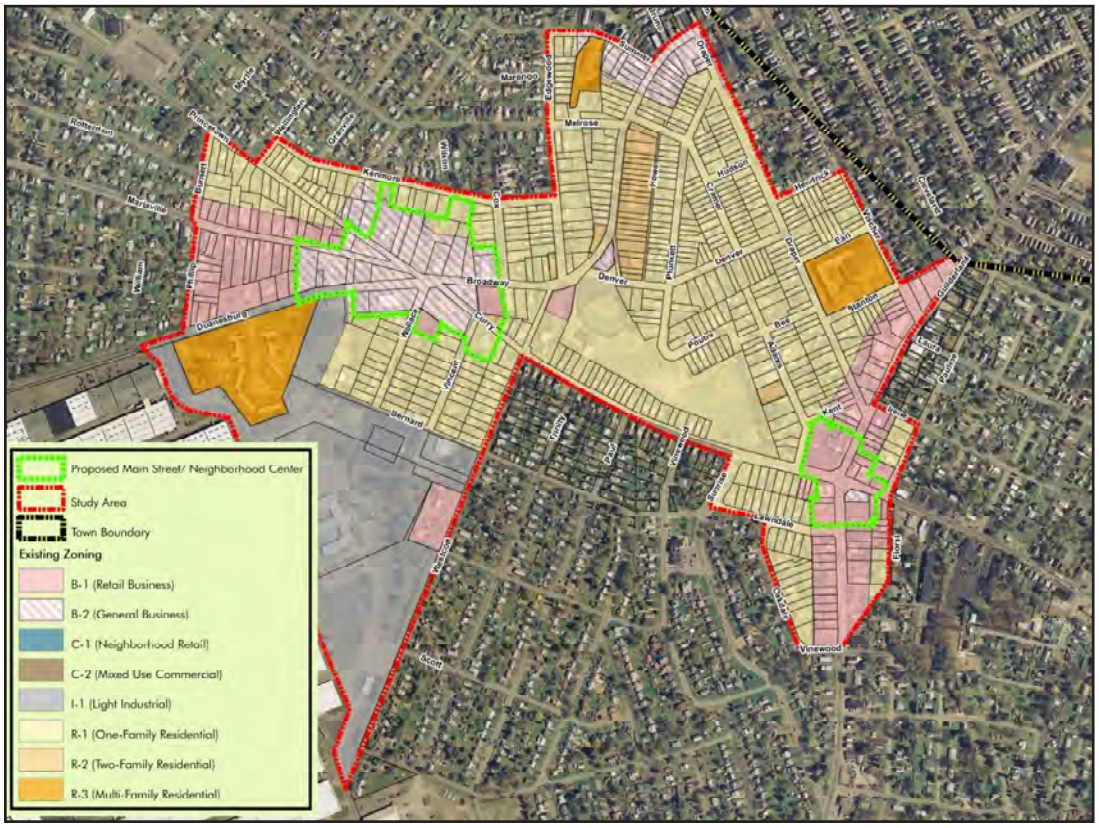


FIGURE 25: ZONING RECOMMENDATIONS FOR MAIN STREET/NEIGHBORHOOD CENTER

FIGURES 24 & 25

With regard to parking the Town should update parking ratios for commercial properties. The Main Street/Neighborhood Center district should allow for:

- Off-site parking (park-and-walk) subject to Planning Board approval
- Shared parking between different uses, subject to analysis and Planning Board approval (no maximum % credit)
- An increased landscape minimum of 15%

4.2 Access Management

Access Management is defined as the "systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway. It also involves roadway design applications, such as median treatments and auxiliary lanes, and the appropriate spacing of traffic signals." The purpose of access management is to ensure that a roadway functions safely and efficiently while providing the appropriate degree of access to adjacent properties. Good access management reduces traffic congestion and improves safety for motorists, bicyclists, and pedestrians alike.

Access management strategies aim to alleviate conflicts between the through-traffic function of an arterial and the local function of access to abutting properties. One key to access management is connecting adjacent properties (for example, a shopping strip) with interconnecting driveways or service roads. This allows pedestrians and motorists to travel between two abutting parking areas without having to use the main road. These connections also minimize the number of ingress and egress points (curb cuts) from the main road to the adjacent properties, thereby reducing the number of turning movements. The collective result is increased traffic flow along the main road, as well as a safer environment for motorists and pedestrians.

In order to facilitate improved access management, the Town should incorporate these goals into the Main Street/Neighborhood Center zoning description and into site plan approvals. Applications for commercial approval should satisfy the following criteria below.

- Minimize access drives or restrict turning maneuvers
- Attempt to share driveways with adjacent commercial parcels
- Attempt to share parking with adjacent property owners
- Provide vehicular and pedestrian connections to adjacent commercial parcels, or at a minimum provide an access easement to an adjacent parcel.

The Town Planning Board may grant adjustments to the zoning regulations as an incentive to provide these access management measures. As noted in the "rat run exercise" conducted at the first public workshop, any vehicular connection between adjacent commercial parcels in the Five Corners area should be analyzed by the Planning Board for potential negative impacts.

Alternative 1

Alternative 2

Figure 26: Five Corners: Potential Redevelopment of North Side

source: BFJ Planning

5 Implementation Plan

The purpose of the implementation plan is to outline a series of steps and identify partners that can assist in moving the plan into action and locate funding sources. The recommendations outlined by the study will be phased in over time based on available funding. The table below shows a matrix of implementation actions to move the study recommendations toward realization. It provides a listing of the recommended improvements, priorities, timing, lead roles and potential funding sources. Recommended actions are categorized into short-term, mid-term and long-term actions based on their anticipated year of completion. Short-term actions are recommended to be completed within 1-3 years. Mid-term actions are recommended to be completed within 4-7 years. Long-term actions are recommended to be completed within 8-10 years. Because a recommendation is listed as a long-term goal that does not preclude it from being started in the short or mid-term.

Table 3: Implementation Matrix

Project	Priority	Timing	Lead Role	Partners	Possible Fund Source
Put Five Corners and Broadway/Draper/ Olean intersection improvements on TIP	High	Short	Town	CDTC	N/A
Detailed design and feasibility study of Five Corners alternatives	Med	Long	NYSDOT	CDTC Town	Federal Funds programmed in CDTC's TIP
Implement proposed pedestrian improvements	High	Medium	County NYSDOT	NYSDOT Town County	Federal Funds programmed in CDTC's TIP, County
Implement proposed bicycle improvements	High	Medium	County NYSDOT	NYSDOT Town County	Federal Funds programmed in CDTC's TIP, County
Implement proposed traffic improvements at Broadway/Draper/Olean intersection	High	Medium	County	Town CDTC	
Adopt MSNC District at Five Corners and Four Corners intersections	High	Short	Town		
Create Transportation Improvement District as an implementation mechanism	Med	Med	Town	CDTC	
Use the SEQRA process to study impacts of adjacent developments on Five Corners, and devise a fair share contribution mechanism to mitigate	Med	Med	Town	CDTC	

APPENDIX

Workshop I Roundtable Discussion Summary

Roundtable Questions

Participants were split into three roundtables and were given a map of the study area and the questions below to address:

1. What are the major transportation issues in the overall study area?
2. What should be the main strategies for making the Five Corners intersection safer for vehicles? For pedestrians and bicyclists?
3. To what degree should the Town/region/New York State Department of Transportation consider expropriation of land to achieve the above improvements?
4. What are your concerns regarding future changes to the intersection?
5. What do you like about the study area? What should we preserve?

Roundtable Presentations

Following the roundtable discussion, each table had one person report back to the group the conclusions that they had come up with. These ideas are summarized below:

All of the groups seemed to agree that delays during peak commute hours, traffic volume and accidents were all consistent transportation issues. Creating a more pedestrian friendly environment was seen as a need by all groups. Some strategies included reducing the amount of curb cuts, creating more sidewalks and pedestrian crossings. Bike lanes were desired by all groups however, it was expressed that improving Five Corners for pedestrians was a more pressing need.

All of the groups expressed the need for substantial changes at the Five Corners intersection. The five corners intersection is the focal point of the community and has tremendous potential for commercial growth. One participant stated "Five Corners should have a 'wow factor' as it is often the first impression a visitor gets, especially if they are coming in from the west." All of the groups agreed that if any roadwork changes are made, to save money, rather than making *ad hoc* improvements, sidewalks, lighting, and utilities such as sewer and electric should be installed at the same time street changes are made.

Most of the participants felt the double roundabout concept should be considered, however they acknowledged that funding the project would be difficult given the budgetary constraints. Some other concerns for this concept included the appropriation of private property (gas stations), loss of sales tax revenue, removing the gas tanks, snow removal, and maintaining access to existing businesses. One group felt that changing the existing roadway would affect existing businesses and negative impacts should be explored.

One of the roundtable groups came up with a few strategies and specific solutions to consider. The first was modifying the streets around the Five Corners intersection so that only four streets converge as opposed to five. This plan involved creating a cul-de-sac to end Mariaville Road behind the Bank of

America lot. Participants stated that this would reinforce the existing residential land uses of Mariaville and would also serve to create a small town center between Mariaville and Duanesburg Road. This group also expressed concerns about truck traffic along Curry Road. They suggested that Route 7 be shifted from Curry Road to Broadway so that truck traffic can be routed down Broadway from I-890 instead of down Curry Rd. Since the Town cannot make changes to the state controlled right-of-ways, the group felt that these roads should be re-designated so that improvements (i.e. along Curry Road, Altamont Ave) could be implemented by the Town. Other changes recommended by this group included: installing a traffic light with sensor trigger at Sunrise Boulevard and Curry Road, investigating a roundabout at Guilderland Road (Four Corners), and addressing drainage issues in the study area.

Workshop II Roundtable Discussion Summary

Participants were grouped into one large roundtable with a map of the study area and the questions below to address:

Roundtable Questions

1. Which one of the 5-Corner options should be proceed? Why?
2. What do you think about the proposed Broadway/Draper/Olean improvements?
3. What should be the priorities regarding other modes of transportation (transit/bike/walk) in the study area?
4. What do you think about the proposed zoning changes?
5. Should the Town consider establishing a special Improvement District including the commercial properties around the 5 Corners to generate a reasonable local financial contribution towards these improvements?

Roundtable Discussion

Participants seemed to agree that improving the five corners intersection for all users should be a priority. Much of the discussion was focused on the double roundabout alternative and whether it would work. By the end, most of the participants agreed that the roundabout solution would improve the neighborhood substantially, and should be considered by the Town. There was no support for the idea that commercial properties in a "Five Corners Special District" (properties adjacent to the intersection) should make contributions toward this capital improvement. This was stated even when representatives from CDTC said that contributions would show commitment from the community and could help raise the priority level of this particular project to get funding grants. Asking businesses to contribute was seen as too big of a financial burden, even though it would ultimately result in increased property values around the district. Some participants expressed concern that funds garnered for this project would be put in an unrestricted fund and used elsewhere. Mr. Jacquemart explained that other towns have set up restricted funds so that if people contributed money and it wasn't used by a set date, it would be returned.

Participants agreed that many people currently ride their bike through the five corners intersection and it is not safe. Participants expressed the need for pedestrian and bicycle safety improvements, not only at the Five Corners intersection but throughout the study area. The proposed improvements along Broadway, Draper and Olean streets were seen as a reasonable way to reduce congestion and improve safety for pedestrians. No strong opposition was expressed to the proposed zoning changes.