



CAPE COD
COMMISSION

Orleans Parking & Circulation Study

Final Report Completed January 2018





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Executive Summary

PURPOSE/GOAL

The goal of this project was to identify improvements to parking and circulation that would increase safety for pedestrians, bicyclists and vehicle drivers, while at the same time encourage commerce, and enhance community character in the core of the Orleans Village Center.

FINDINGS

Like previous studies focused on the Orleans Village Center, this study did not find significant problems but does identify parking and circulation improvements that would benefit all modes of transportation and result in a more efficient and historically appropriate development pattern.

The parking inventory and occupancy counts show enough parking to accommodate current levels of business activity throughout the day and evening in both the off-season and summer peak. Only two locations reach capacity during the summer peak - the parking lot behind the Hot Chocolate Sparrow/CVS during the day and, in the evenings, the lots behind Land Ho!. The study suggests addressing this spot congestion with better signage and by redesigning key lots to improve function and capacity.

In terms of circulation, the Orleans Village Center is working appropriately for a safe, walkable town center able to accommodate all modes of travel. The intersection upgrades on Main Street at Route 6A and at Route 28 currently underway, should further improve safety and efficiency for pedestrians, cyclists, and motorists. Potential additions of housing in the village center can be expected to increase pedestrians and bicycle use while only marginally increasing auto congestion. Next steps for the Town to consider focusing on are the few remaining intersections that challenge travelers, increasing internal circulation, and making safety improvements.



NEXT STEPS

This report suggests six next steps for the Town to pursue as it continues to improve parking and safe, efficient circulation in the Orleans Village Center while preparing the area for in-fill growth in the future.

The three parking next steps are:

1. Parking Lot Design & Signage Improvements

As recommended in the Cape Cod Commission's 2011 Village Center Streetscape Plan, the Town should identify strategic sign locations and use wayfinding tools to direct drivers to currently under-utilized parking and help pedestrians circulate once they have parked. The study included three concept plans to stimulate discussion on how lot design, landscaping, and coordinated lot management can improve parking distribution, use, and safety.

2. Business Improvement District Adoption

As recommended in the 2015 Route 6A RESET Study, the Town should consider, with the Village Center businesses and stakeholder groups, the establishment of a Business Improvement District to implement many of the recommendations in this and previous studies focused on the Village Center.

3. Parking Regulation Updates

The Town should consider updating the parking regulations for the Village Center to be consistent with current best practices. Changes to consider include 1) replacing minimum parking requirements with maximum parking standards or with a range of minimum/maximum standards; (2) revising shared parking and "fee in lieu of" provisions so they will be used more often, and 3) improving the viability of non-motorized modes of travel within the village by providing better interconnections and accommodations for cyclists and pedestrians.

The three circulation related next steps suggested are:

1. Intersection Improvements

Intersection performance in the village is generally good and will be improved with Massachusetts Department of Transportation's redesign of the Route 28/Main Street Intersection, the Route 6A/Main Street intersection and the alterations to Brewster Cross Road/Main Street intersection as part of the



streetscape improvements to be completed soon. As a next step after these projects are completed, the Town may want to address the Old Colony Way/Main Street/Rail Trail intersection to improve performance and safety. The report provides several options to consider for improving this intersection. Short and long-term improvements to the Brewster Cross Road/Route 6A intersection are also recommended.

2. Create New Connections, Complete Sidewalks and Cross Walks

With the goal of making Orleans a walkable village and reducing pressure on existing intersections, this report recommends creating new connections between main roads and completing the sidewalk and cross walk network. The suggested connections break up large blocks, opening up new opportunities for traditional village style and scaled redevelopment, as well as improving the circulation options for pedestrians, bicyclists, and motorists.

3. Redesign and Eliminate Curb Cuts

A relatively straightforward way of improving safety and circulation is to redesign or eliminate non-essential curb cuts. There are a number of overly wide curb cuts identified in the report that could be redesigned to improve safety for both pedestrians and motorists. The report also identifies curb cuts that could be eliminated without limiting access and others that, should property owners agree to joint access, could be eliminated. The inter-connections suggested would also allow the elimination of curb cuts on the main roads and create new intersections aligned with existing roads.



Study Scope

INTRODUCTION

In a letter dated November 13, 2015, the Orleans Planning Board requested technical assistance from the Cape Cod Commission to conduct a “parking and circulation study” of the Orleans Village Center in the Town of Orleans.

In 2015, Cape Cod Commission staff completed the Orleans 6A Corridor RESET Project, an analysis of current conditions along Route 6A in Orleans and how future development and improvements might be managed to reflect the goals of the Orleans Local Comprehensive Plan.

Among the recommendations were several pertaining to parking and circulation which included updating the 2004 study of downtown parking and circulation, evaluating parking requirements in the town by-laws and further vetting concept plans for re-designing the two gateways at each end of Route 6A. The recommendations related to the Village Center are the subject of this scope of work.

PLANNING CONTEXT

The LCP envisions that Orleans will have:

- A maritime village character,
- Distinct commercial nodes,
- A vibrant central village node,
- Year-round job opportunities, and
- Stable or improved water quality





PROJECT GOAL

The goal of this project was to identify improvements to parking and circulation that will increase safety for pedestrians, bicyclists and vehicle drivers, encourage commerce, and enhance community character in the Village Center.

RESEARCH QUESTIONS

This report is organized by the following research questions the town requested CCC address in the study:

- What is the total available parking spaces in the Village Center, both on-street and off-street? How much is public? How much is private?
- What is the current level of parking use by location at different times of day in the spring and the summer peak hours?
- How many businesses have the amount of parking required by the zoning by-law? How many depend entirely on public parking?
- Does the zoning by-law require more parking than necessary? Are the incentives for shared parking and in-lieu of parking payments sufficient? Are there alternative best practices that should be considered in revising the parking regulations?
- How well are intersections in the Village Center working for cars, bikes, and pedestrians in terms of safety and time delay at intersections? How do they perform at different times of day in the spring and the summer peak?
- How will future development affect parking demand and intersection performance in the Village Center?

The specific tasks and project team members are listed in Appendix 1.



Background

PREVIOUS STUDIES

A variety of studies focused on the Village Center have been completed over the past 15 years that contain relevant findings and recommendations to this study. Staff reviewed the following studies to inform our research, place our findings in context, and form a short list of next steps for the Town relative to parking and circulation in the Orleans Village Center:

- 2004 Parking and Circulation Study (Nitsch Engineering)
- 2011 Village Center Streetscape Plan (CC Commission)
- 2015 Route 6A Corridor RESET Project (CC Commission)
- 2014 Cape-wide Market Studies (Chesapeake)
- 2010 Economic Analysis of the Village Center (FinePoint)
- 2015 Orleans Town Center Economic Analysis (FinePoint)

The key findings and/or recommendations for each of these studies is included in Appendix 2.

2004 PARKING AND CIRCULATION STUDY

Judith Nitsch Engineering Inc. evaluated traffic circulation and parking conditions in the Orleans Village Center over the spring and summer of 2003. They used this data to forecast conditions in 2008 and 2013. Notable conditions in 2003 included:

- Traffic volumes peak between 3:45 and 4:45 pm daily
- All signalized intersection operated at acceptable levels of service during the summer peak
- The crash rate at the Main Street/Old Colony Way intersection exceeded state and district averages
- The vast majority of bicyclists (81%) stay on rail trail
- The majority of parking is in private off-street lots



- The only lots that have ever reached capacity were those proximate to Land-Ho!

The report included a series of short and longer-term recommendations (see Appendix 2) that focused on improving circulation and safety, particularly for pedestrians. The report also recommended that the Town purchase off-street parking areas and improve their configuration and signage.

VILLAGE CENTER STREETScape PLAN

At the Town's request, the Cape Cod Commission conducted a planning and design study of Orleans Village Center involving community workshops and detailed site assessments. The goals of the study included:

- Recommend streetscape design guidelines and detailed specifications for street level improvements to improve the pedestrian experience
- Provide conceptual site plans, renderings and visualizations depicting recommendations for specific areas and elements
- Align streetscape improvements with the Town's economic development goals for the Village Center, the Cape Cod Commission's Regional Transportation Plan and the goals of the Regional Policy Plan

The plan recommended several improvements relevant to this study:

- Improve pedestrian comfort through increased landscaping, elimination of "missing teeth" created by parking in front, and the addition of street furniture
- Improve inter-connections through the creation of a pedestrian walkway linking Main Street and Cove Road and the addition of way-finding signage

The plan also recommended that the Town further investigate parking concerns in the downtown to determine if there is a supply problem or just a distribution/location problem.

ROUTE 6A CORRIDOR RESET PROJECT

In 2014, the Town requested a more comprehensive look at the Route 6A Corridor relative to the Town's community and economic development goals



articulated in their 2006 Local Comprehensive Plan (LCP) by the Cape Cod Commission. The study was comprehensive, evaluating how well the LCP goals were reflected in the existing roadway conditions, land uses, building and streetscape character and town by-laws.

Relevant to this study, the RESET project identified inconsistencies between community goals relative to character and economic development goals with the existing parking patterns and policies:

- Location of on-site parking in front of buildings
- Multiple indistinct curb cuts
- Excess parking; poorly located parking
- Cost of on-site parking as a disincentive for investment

Similarly, the study identified inconsistencies between circulation conditions and community goals in the following areas:

- Risks to bicyclists and pedestrians:
 - Poor sidewalk conditions and narrow sidewalk
 - Lack of vegetated barrier or on-street parking between main roads and sidewalks
 - Signage for bike on road surface and for way-finding
 - Poor visibility of bicyclists and pedestrians for auto drivers
- Impediments to traffic flow:
 - Multiple indistinct curb cuts
 - Lack of visibility at certain intersections

MARKET STUDIES – CAPE-WIDE & ORLEANS VILLAGE CENTER

A number of market studies have been conducted to better understand the growth potential both in Orleans and for the Cape as a whole. While these studies do not provide data directly used to evaluate parking and circulation in the Orleans Village Center, they provide a necessary context for projecting future conditions.

The Cape-wide Market Study found very limited future demand for commercial services on Cape Cod over the next thirty years due to several factors:



- Recent population declines and aging resident population
- Limited available land and development potential under current zoning
- Increasing development and living costs
- Seasonal nature of the regional economy
- Labor availability and costs to meet seasonal demands

The two economic studies of the Orleans Village Center completed by FinePoint in 2010 and 2015 found that:

- Current retail demand is satisfied
- Any additional commercial activity will require an increase in demand (i.e. customers/population)
- Barriers to further growth include:
 - Cost of housing
 - Limited housing variety
 - Lack of rental housing
- Opportunities to facilitate growth include:
 - Entry-level housing
 - Housing maintenance business niche

SUMMARY OF PREVIOUS STUDES

Overall, previous studies focused on the Orleans Village Center did not find significant problems relative to parking or circulation but identify measures to improve conditions for pedestrian, facilitate multimodal transportation, and advance safety. Many of the recommendations, where followed, could also result in a more efficient use of the available land and improve the level of social interaction and business activity in the study area. The recommendations made in these reports are itemized in Appendix 2.



PLANNING & REGULATORY CONTEXT

2006 LOCAL COMPREHENSIVE PLAN

CCC staff reviewed the goals and policies within the 2006 Local Comprehensive Plan relevant to parking and circulation in the Orleans Village Center. Important policies in Section 9.2 Transportation Goals & Policies included:

- Traffic improvement measures should be designed with sensitivity to seasonal variations in traffic patterns. However, roadway design should reflect year-round traffic demands, and the Town should develop other management strategies to address peak seasonal traffic flow.
- Existing transportation rights-of-way should be preserved for transportation uses, including bicycle and pedestrian access ways.
- Mixed use development that minimizes dependence on the automobile should be encouraged.

The LCP also identified a number of action steps relating to parking and circulation including the following:

- Through the Capital Budgeting Program, the Town should acquire the Besse Lot, which is located on Main Street, behind the Hogan Art Gallery and Honey Candles. Access-only should be provided from Main Street and full access/egress should be provided on Brewster Cross Road;
- Public Lots: Make better use of existing lots such as Nauset Middle School to help people access the downtown.
- Make connection between lots (public and private) so that people can move from a “full” lot to the next lot without driving on the street.
- To reduce demand for parking: enhance opportunities to use alternative modes of transportation so that people can access the downtown without cars.
- The town should incorporate land acquisition plan into its capital planning to fund purchase of municipal parking space. If new municipal spaces were created, Main Street on-street parking could be removed and converted to bike lanes.
- Re-evaluate parking regulations in the Zoning Bylaws in order to assure that the location, number, size, and screening of parking lots is



appropriate, and to promote shared driveways and internal connections between parking lots.

- Acquire land in strategic locations for better traffic and parking management in the downtown area.

The short-list of action steps recommended in this study reflect the goals of the LCP and many of its recommendations regarding parking and circulation.

CURRENT LAND USES

The study area for this report is slightly smaller than the full Village Center Zoning District. The following table provides a summary of the land uses within the zoning district. The district is dominated by commercial uses with some residential in the core and multi-family residential proximate to the zoning district. The commercial uses are primarily retail which includes grocery stores, department stores, lumber and hardware stores, small boutiques and art galleries, as well as gas stations.

TABLE 1: VILLAGE CENTER ZONING DISTRICT LAND USES

Village Center Zoning District	
Total Land Area (Acres):	90
Number of parcels:	105
Number of Existing Residential Units:	55
Number of SF Residential Units:	7
Number of MF Residential Units:	7
Number of Mixed Use Residential Units:	41
Total SF of Existing Commercial Uses:	477,489
% Commercial that is Retail	86.5%
% Commercial that is Restaurant	3.5%
% Commercial that is Office/Bank	7.0%
% Commercial that is Lodging	3.0%
Total SF Public/Religious Uses:	37,605
% Commercial that is Public/Religious	6%

Source: AECOM Build-out Data



ZONING

The Orleans zoning code establishes the permitted uses, building and site dimensions, housing unit density, and parking requirements for new or redevelopment in the Village Center. The specific elements of the newly updated zoning by-law for the Village Center are outlined in a table in Appendix 3. The table contrasts the zoning at the time the study was conducted, and the new zoning adopted by Town Meeting in May 2017.

The recent AECOM build out estimates for residential units indicate that, under the old zoning, up to about 400 units could be built in the Village Center. Under the zoning change made in May, up to about 670 units could be built in the Village Center – in both cases without accounting for nitrogen limitations. The new zoning also doubled the number of residential units that could be built in the other two businesses districts along Route 6A from 870 to almost 2,000 units. The zoning change did not alter the amount of commercial square feet permitted in any of the three districts.

The 6A Corridor Study (2015) completed by the Cape Cod Commission RESET team made a number of recommendations for zoning changes that if adopted that could affect traffic patterns and parking location and supply:

- Differentiate allowed uses, dimensional standards and density by zoning district
- Consolidate retail and service uses but differentiate office uses based on differences in impacts
- Prohibit industrial/manufacturing uses from the village center
- Expand development permitted by-right to encourage desired uses
- Revise mixed use provision to encourage, rather than discourage, use
- Reduce minimum lot sizes and increase density permitted in village center
- Reduce or eliminate parking requirements in village center; consider developing new provisions to encourage shared parking; and consider updating fee in lieu of parking provision.



SUMMARY OF REGULATORY CONTEXT

The Orleans Local Comprehensive Plan (LCP) supports the development of a mixed use, vibrant village center and reduced dependence on automobile transportation. The Plan includes action steps aimed at increasing the use of existing parking and creating strategic interconnects for parking and circulation. The Plan also stresses that “roadway design should reflect year-round traffic demands, and the Town should develop other management strategies to address peak seasonal traffic flow.”

As new development and redevelopment occurs in the Village Center, the town should consider revising the parking requirement in the zoning code to better reflect the vision outlined in the LCP (suggestions are included in the final chapter of this report).

In an effort to be equitable, the Town extended the recent zoning changes beyond the Village Center district and is planning to provide sewer beyond the Village Center as well. This decision could undermine the LCP goal of establishing a vibrant village core and creating distinct nodes along Route 6A of commercial activity with residential, and residentially based businesses, in between.



Existing Conditions

PARKING ASSESSMENT

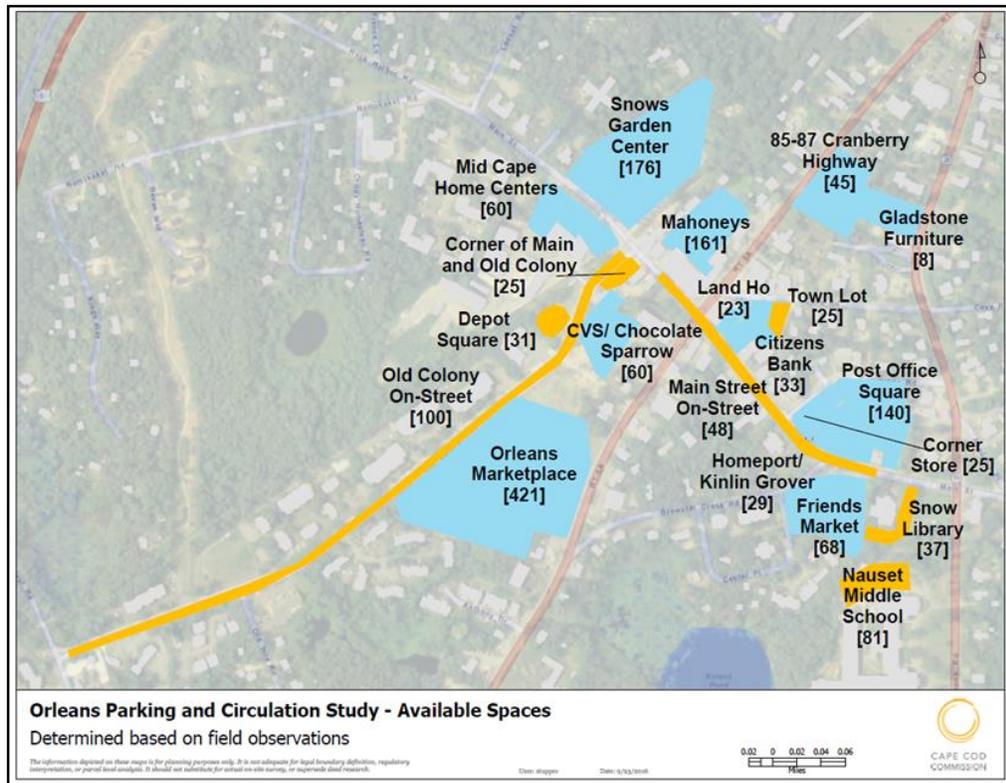
As presented in the scope of work, Commission staff evaluated parking availability and usage within the study area; the area of the Village Center roughly within a half mile of intersection of Route 6A and Main Street.

PARKING SUPPLY

Research Question: *What is the total available parking spaces in the Village Center, both on-street and off-street? How much is public? How much is private?*

There are over 1,500 parking spaces within the Village Center study area.

FIGURE 1: VILLAGE CENTER PARKING MAP





The vast majority of these parking spaces (78%) are located in private lots. On-street parking is only 9% of the total with 100 spaces along Old Colony Way and 48 spaces along Main Street. The largest, centrally located, off-street parking lot is the 161 space private lot behind Mahoney’s Restaurant and the old Watson’s complex. The Orleans Marketplace has the largest parking lot with 421 spaces, providing over ¼ of the spaces in the Village Center.

TABLE 2: VILLAGE CENTER PARKING INVENTORY

Village Center Parking Inventory		
Public Parking	347	22%
Main Street On-street Parking	48	3%
Old Colony Way On-street Parking	100	6%
Depot Square Parking Lot	31	2%
Old Colony and Main Street Corner Parking Lot	25	2%
Town Lot on Cove Road	25	2%
Library Parking Lot	37	2%
Nauset Regional Middle School Parking Lot	81	5%
Private Parking	1,249	78%
Snow’s Parking Lot	176	11%
Mid-Cape Parking Lot	60	4%
Orleans Marketplace Parking Lot	421	26%
CVS/Chocolate Sparrow Parking Lot	60	4%
Mahoney’s et al Parking Lot	161	10%
Cranberry Highway/Sunbirds Parking Lot	45	3%
Land Ho Restaurant Parking Lot	23	1%
Citizen’s Bank Parking Lot	33	2%
Corner Store Parking Lot	25	2%
Post Office Square Parking Lot	140	9%
Friends Market Parking Lot	68	4%
Homeport/Kinlin Grover Parking Lot	29	2%
Gladstone Furniture Parking Lot	8	1%
TOTAL	1,596	100%



Research Question: *What is the current level of parking use by location at different times of day in both the spring and the summer peak hours?*

Working from the parking inventory, Commission staff conducted parking occupancy counts, determining the percentage of spaces occupied, in May and in July of 2016. The counts were conducted during the midday peak period (12:00-2:00pm) and the evening peak period (5:00-7:00pm) on the following dates:

- | | |
|----------------------------------|---------------------------------------|
| May 19 th (Thursday), | July 26 th (Tuesday), |
| May 21 st (Saturday), | July 28 th (Thursday), and |
| | July 30 th (Saturday). |

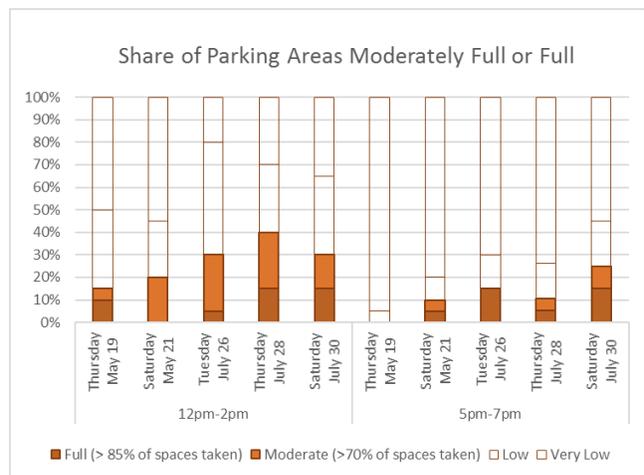
The parking counts indicate that there is sufficient parking available within the study area regardless of the season, day of the week or time of day. Of all the parking spaces available, less than 70% were in use across the various count periods. The highest occupancy rate, with 63% of all spaces occupied, was at midday on a Thursday in July.

TABLE 3: PARKING OCCUPANCY SUMMARY – MAY AND JULY 2016

	Midday (12-2 PM)			Evening (5-7 PM)		
	Tuesday	Thursday	Saturday	Tuesday	Thursday	Saturday
May	-	51%	47%	-	25%	27%
July	60%	63%	58%	41%	35%	45%

Parking areas are considered full when 85% or more of the spaces are occupied. A well utilized lot is generally between 70% and 85% occupied. A maximum of three lots in the Village were ever found to be full at the same time and this was only in July. On average, 56% of the parking areas were less than half full and over 80% were less than 75% full.

FIGURE 2 – HOW OFTEN ARE THE LOTS FULL OR NEAR FULL?

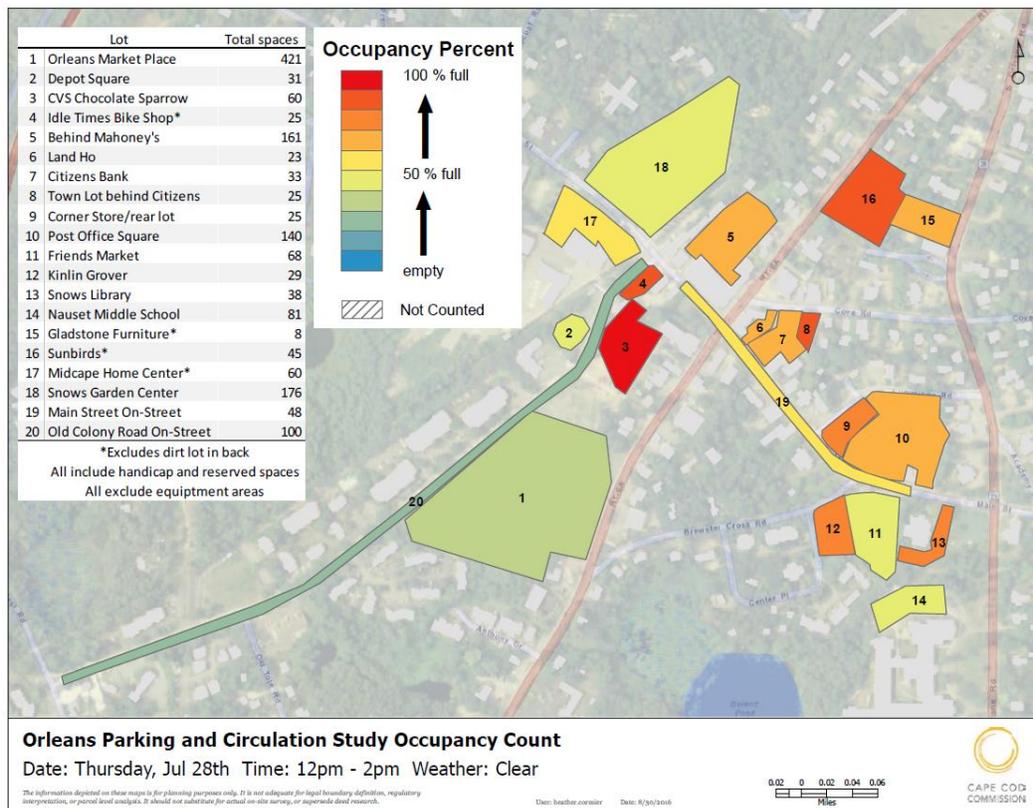




As is often case in downtowns however, overall parking availability is only half the story. The location of available parking relative to popular destinations is equally important. This seemed to be an issue at only two locations - midday at the Hot Chocolate Sparrow and at Land Ho! during the evening. In both cases, there was plenty of parking available within a relatively short walking distance, including on-street parking close to both establishments.

The following maps show the peak season parking occupancy levels (percent of spaces full) throughout the study area on Thursday, July 28th between 12:00 and 2:00 pm and between 5:00 and 7:00 pm. Maps and the data for each location at every collection period are provided in Appendix 4.

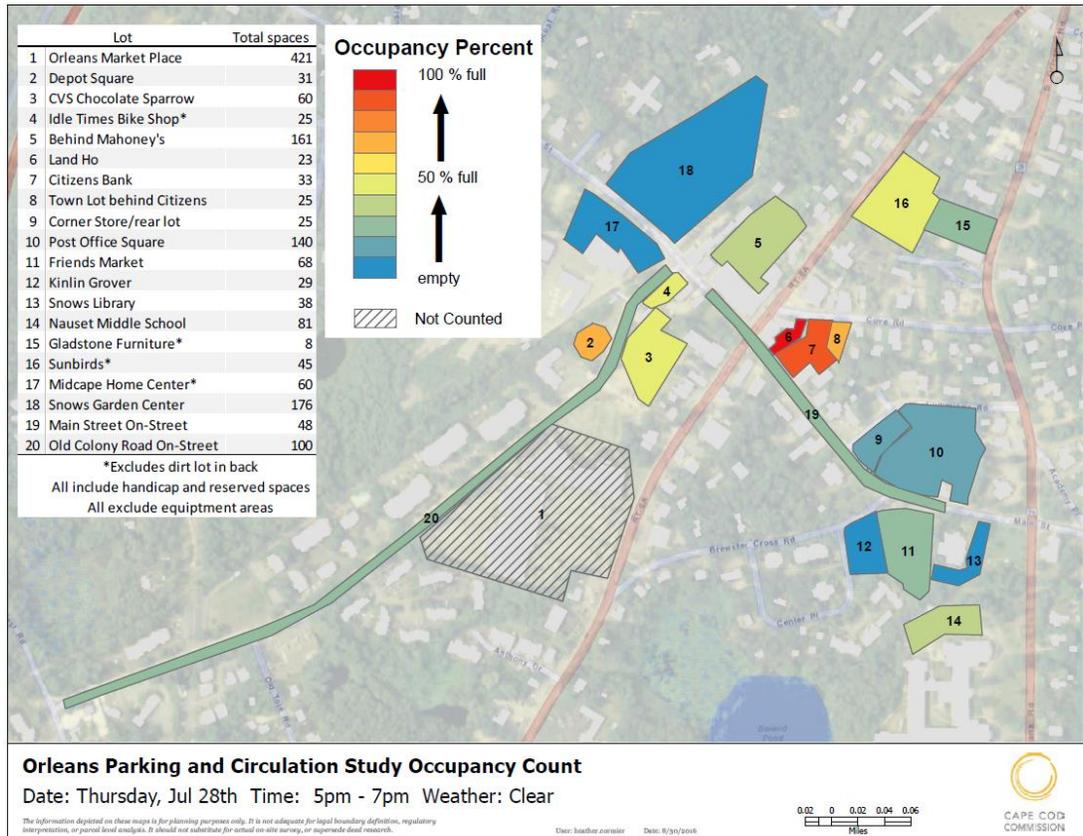
FIGURE 3: PARKING OCCUPANCY, THURSDAY, JULY 28TH 12:00- 2:00 PM





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FIGURE 4: PARKING OCCUPANCY, THURSDAY, JULY 28TH 5:00- 7:00 PM





PARKING REGULATIONS

Under the scope of work for this project, the Town asked the Commission to determine if the parking requirements currently in place where appropriate and effective in providing sufficient but not excessive parking. This section outlines the requirements and then addresses the research questions pertinent to this issue.

Parking Requirements

Orleans has minimum off-street parking requirements that are the same across all zoning districts (§164-34). Buildings with the same uses in existence as of 1981 are not subject to the on-site requirements so long as they are not changed or enlarged to create additional parking needs. The requirements are determined by the use type as per the following table.

TABLE 4: VILLAGE CENTER PARKING REQUIREMENTS

Land Use	Minimum Parking Required
Mixed use* - One bedroom units	1 space/unit
Mixed use* - 2 or more bedroom units	2 spaces/unit
Apartments - One bedroom units	1.5 spaces/unit
Apartments - 2 or 3 bedroom units	2 spaces/unit
Apartments - Visitor parking	1 space/3 units
Office	1 space/300 feet GFA
Retail	1 space/250 feet GFA
Restaurant - customer parking	1 space/4 seats
Restaurant - employee parking	1 space/2 employees on largest shift
Hotel/Motel	1 space/guest room
Place of Assembly – without seats	1 space/300 SF
Place of Assembly – with seats	1 space/4 seats

*in addition to the commercial parking required

Additions or changes in use that result in an increase in required on-site spaces of six spaces or less is not required to provide them. If an increase of six or more



spaces is needed, all of the spaces must be provided. Special permit authorization is required to obtain a reduction in the required number of spaces.

Location of on-site Parking

On-site parking is currently permitted in front of, behind, and to the side of the building. It is permitted in the setbacks except for the side setbacks. There is no requirement that the parking be setback from the building, but it must be 10 feet from the roadway. Off-site parking is permitted but must be within 500 feet of the building or lot line.

Alternatives for Meeting on-site Parking Requirements

The zoning bylaw provides for two alternative means of meeting the on-site parking requirements:

1. Shared on-site Parking
2. “Fee in-lieu of” on-site Parking

The shared parking provision allows adjacent businesses to share parking spaces; it does not, however, automatically allow for a reduction in the number of spaces required. The minimum number required must equal the combined minimum requirement for each business based on their use. While, requiring the minimum for each use ensures an adequate supply of parking, this may not provide sufficient incentive for developers to opt for shared parking. Recent zoning change do allow the building inspector to grant a 20% reduction for shared parking (previously only the ZBA could grant reductions through special permit) where it is shown that shared parking will still meet the needs of different users without conflict.

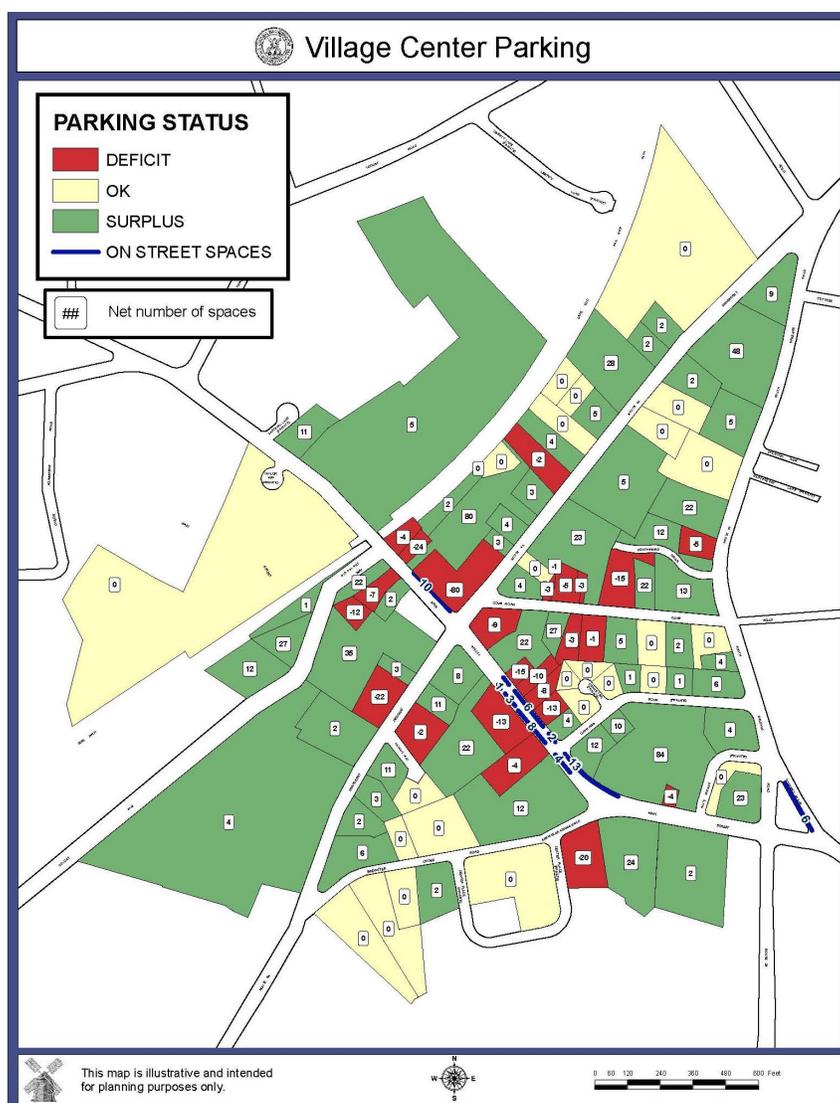
The “fee in lieu of” provision (Section §164-34 A (4)) allows an applicant/use in the Village Center zoning district to satisfy all or part of the required on-site parking by paying an annual access fee (\$500, indexed to the US Cost of Living Index) per space as an option to meeting the minimum on-site requirement. This option is only available if the town has appropriated and authorized buying or creating off-street parking and the cost of that is greater than the amount to be collected in lieu of parking. Municipal finance laws limit the circumstances in which receipts may be dedicated for special accounts. In lieu fee options provide flexibility for developers to meet on-site parking requirements and provide a financing mechanism for a town construct public parking.



Research Question: *How many businesses have the amount of parking required by the zoning by-law? How many depend entirely on public parking?*

An overall analysis conducted by the Town of parking in the Village Center indicates that a clear majority (78%) of properties within the Village Center provide excess parking above that required in zoning or meet the zoning requirements. Only twenty-two properties do not provide the required parking on the same lot – most of these are historic properties that reflect the community character and building design desired by the Town as articulated in the LCP.

FIGURE 5: VILLAGE CENTER PARKING SPACES RELATIVE TO REQUIRED IN ZONING





Research Question: *Does the zoning by-law require more parking than necessary? Are the incentives for shared parking and in-lieu of parking payments sufficient? Are there alternative best practices that should be considered in revising the parking regulations?*

The current parking requirements, had they been in place when the existing development was built, would have increased parking by 41% adding over 600 more parking spaces that exist today.

Given that current parking is seldom used to capacity, the zoning does seem to require more parking than is necessary in aggregate. Furthermore, as shown above, many sites exceed current parking requirements. Many communities faced with this situation have changed minimum parking requirements to maximum parking limits.

TABLE 5: VILLAGE CENTER ESTIMATED PARKING UNDER ZONING

Minimum Parking Estimate in Village Center Zoning District				
Land Use	Units/SF	Units	Minimum Req. Spaces by Use	Est. total Min. Parking Required
Number of Existing Residential Units:	55			
SF Homes	7	homes	2	14
Apartments	7	units	2.33	16
Mixed Use Residential Units	41	units	2	82
Total SF of Existing Commercial Uses:	477,489			
Retail	412,028	SF	.004	1,648
Restaurant - Customers*	668	seats	.25	167
Restaurant – Employees**	91	staff	.5	46
Office/Bank	33,424	SF	.00333	111
Lodging***	43	rooms	1	43
Places of Assembly	37,605	SF	.00333	125



Minimum Parking Estimate in Village Center Zoning District				
Land Use	Units/SF	Units	Minimum Req. Spaces by Use	Est. total Min. Parking Required
Total estimate of parking required by zoning for existing uses				2,252
Existing parking (in inventory)				1,596

Source: AECOM Build-out Data

* Total SF = 16,712; dining room is 60% of total SF; 15 SF per person = estimated 668 seats;

** Employees estimate based on four-tops with one waitperson per 3 tables = 56 waiters plus 35 kitchen and other staff for a total of 91 per shift maximum

***Total SF = 14,325; used Average room size = 325 SF to determine rooms

It is somewhat difficult to assess the effectiveness of incentives for businesses to share parking given the low turnover of properties in the study area. There are a number of lots that are effectively shared and have been for years; these include the two busiest parking areas – the CVS/Chocolate Sparrow lot during the day and, in the evening, the public lot off Cove Road with the lots behind the bank and Land Ho!.

SUMMARY - PARKING

The Orleans Village Center has enough parking to accommodate current levels of business activity throughout the day and evening. Only two lots reach capacity during the summer peak - the parking lot behind the Hot Chocolate Sparrow/CVS during the day and, in the evenings, the lots behind Land Ho!

While most parking is in private hands, it often functions like public parking, serving multiple businesses and allowing people to walk between stores rather than drive. Should the village get busier however, the owners of these parking areas may seek to restrict this informal sharing. This could negatively impact parking availability, congestion, and walkability.

Data suggests that zoning requirements may be excessive and there is already more parking on some properties than necessary.



CIRCULATION ASSESSMENT

Research Question: *How well are intersections in the Village Center working for cars, bikes, and pedestrians in terms of safety and time delay at intersections (level of service)? How do they perform at different times of day in both the spring and summer?*

Commission staff compiled existing traffic volume data and crash data for all major roadways and intersection within the study area. To supplement the available data, staff collected the following data, primarily during the last week of July 2016:

- 12 Roadway counts (24 hours per day – 6 days in duration)
- 5 Intersection peak period counts (4-5:30 PM)
- 12-Hour Cape Cod Rail Trail count (7/5/16 – 861 non-motorist)

SAFETY

Crash data was compiled from the Massachusetts Registry of Motor records for the most recent five years on record, 2010-2014. This data includes all crashes reported on roadways within the study area. It should be noted that only crashes that result in death, injury, or damage that exceeds \$1,000 are required to be reported. Additional, unreported crashes likely occurred within the study area that cannot be tracked. Often crashes involving a pedestrian or bicyclist when injuries do not require hospitalization are not reported.

TABLE 6: REPORTED CRASHES: 2010-2014

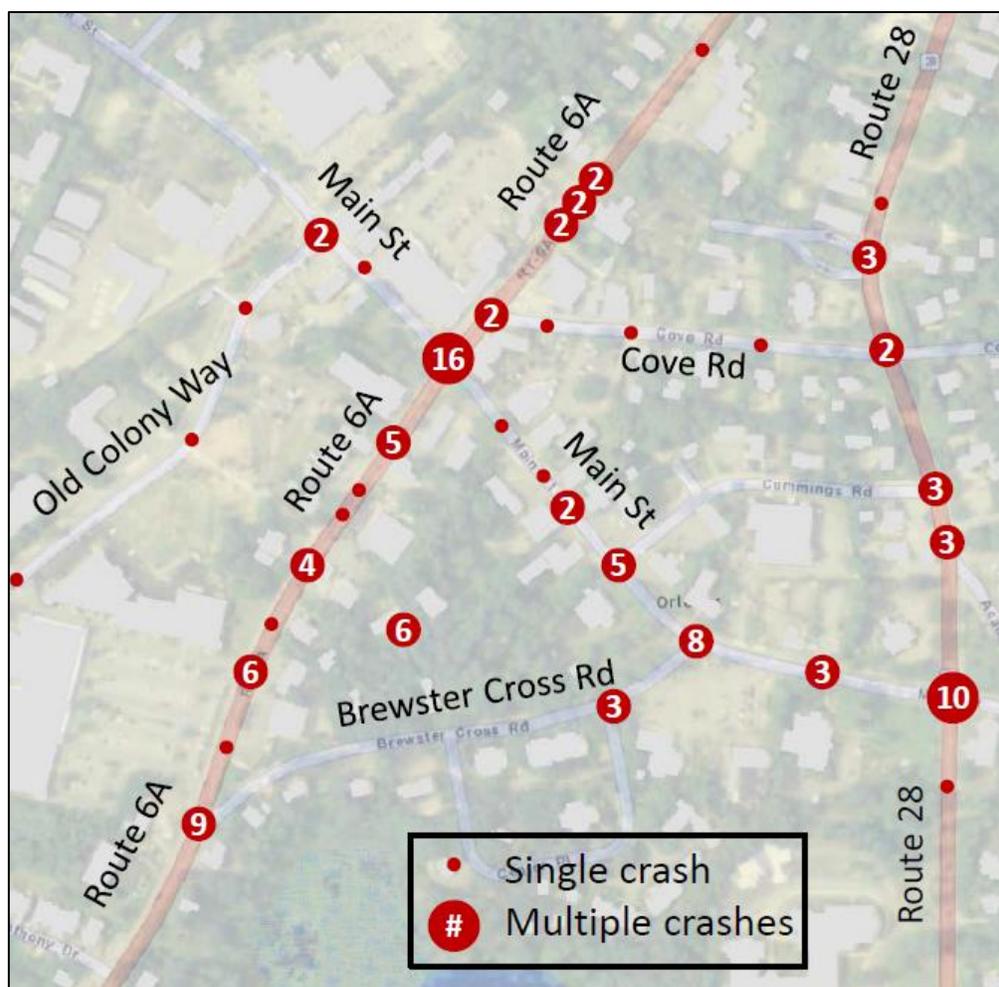
2010-2014 Reported Crashes within the Orleans Village Center		
Total Crashes	114	100%
Route 6A	53	47%
Route 28	23	20%
Main Street (not including intersections with numbered routes)	23	20%
Other (not including intersections with numbered routes)	15	13%
Crashes involving pedestrians or bicycles	9	8%
Crashes at Road Intersections	58	51%
Main Street at Route 6A	16	14%



2010-2014 Reported Crashes within the Orleans Village Center		
Main Street at Route 28	10	9%
Route 6A at Brewster Cross Road	9	8%
Main Street at Brewster Cross Road	8	7%
Main Street at Cummins Road	5	4%
Route 28 at Cummins Road	3	3%
Route 28 at Academy Place	3	3%
Route 6A at Cove Road	2	2%
Route 28 at Cove Road	2	2%

Source: Massachusetts Registry of Motor Vehicles

FIGURE 6: TOTAL NUMBER OF CRASHES (2010-2014)

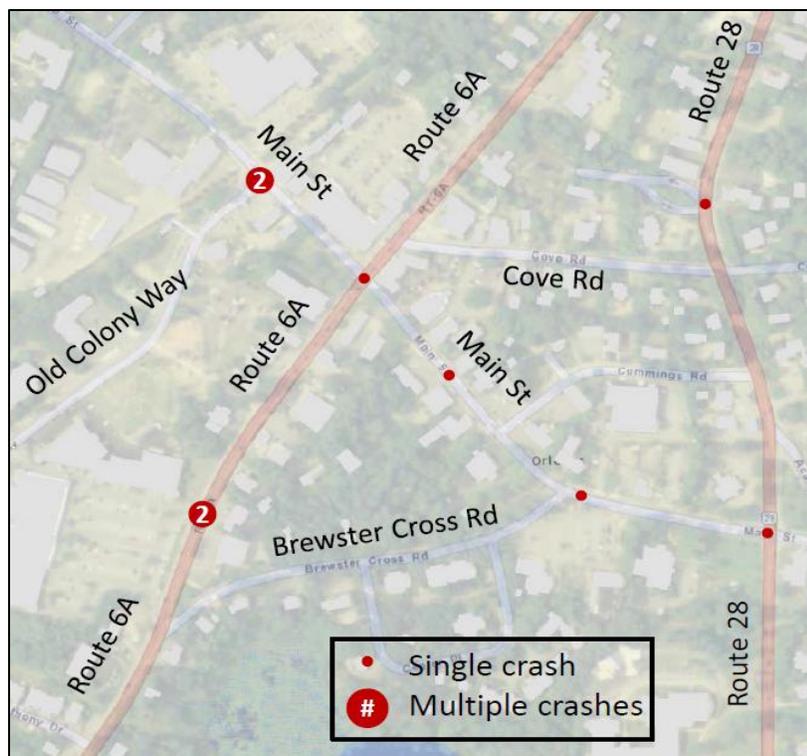




As shown in the next figure, the two locations with the highest number of vehicle crashes are the intersection of Route 6A at Main Street and Route 28 at Main Street. Both intersections are currently being rebuilt by the Massachusetts Department of Transportation, in part, to address some safety deficiencies with the current designs. Both ends of Brewster Cross Road have also been the site of numerous reported accidents, more accidents have occurred at these locations combined than at the intersection of Route 6A and Main Street.

The rest of the crashes in the area are clustered at various intersection and driveways throughout the study area. This crash pattern is similar to other downtown areas on Cape Cod. Strategies to reduce these types of crashes include improved driveway design and improved access management, particularly reducing the size and number of curbs cut where possible.

FIGURE 7: CRASHES INVOLVING A PEDESTRIAN OR BICYCLIST (2010-2014)



There were relatively few reported crashes involving bicyclists and pedestrians; nine crashes were reported between 2010 and 2014 representing 8% of all crashes reported. Two crashes occurred at near the Cape Cod Rail Trail crossing at

Main Street where it intersects with Old Colony Way. Two crashes were also reported near the Staples Plaza curb cut and the remainder at different locations along Rout 6A, Main Street, and Route 28.



TRAFFIC VOLUMES

Traffic volumes in the Orleans Village Center vary by season and time of day, but on an annual basis, automotive volumes have not changed significantly since the early 1990s.

The automotive traffic count data collected on study area roadways is summarized in the following table. The highest volumes were observed on Route 6A and Route 28. Portions of Main Street also accommodate over 10,000 vehicles on an average July weekday. The following table presents the average number of vehicle travelling on roadways in the Orleans Village Center during an average summer weekday.

TABLE 7: JULY 2016 WEEKDAY AVERAGE AUTOMOTIVE TRAFFIC VOLUME SUMMARY

Location	Daily Volume (24-Hours)	PM Peak Hour Volume (4-5 PM)
Route 6A West of Main Street East of Cove Road	14,000 13,600	1,050 990
Route 28 south of Main Street	11,700	920
Main St North of Route 6A South of Route 6A North (West) of Route 28	9,700 10,000 11,600	730 730 870
Old Colony west of Main Street	6,200	460
Cove Road west of Route 28	2,300	180
Brewster Cross east of Route 6A	2,100	150

The three graphs below show traffic trends across time of day, season, and year.

1. Traffic in the Village Center tends to peak just after mid-day according to the data collected. However, the peak is not significantly higher than the average volume throughout the day.
2. Seasonally, traffic volumes are higher than average (+13%) in the summer months and lower than average (-15%) in January and February.
3. Since 1990, traffic volumes at the Route 28 and Main Street have remained within a 10% range annually.



FIGURE 8: AUTOMOTIVE TRAFFIC VOLUME – VEHICLES BY TIME OF DAY
(ROUTE 28 SOUTH OF MAIN STREET, ORLEANS – THURSDAY, JULY 28, 2016)

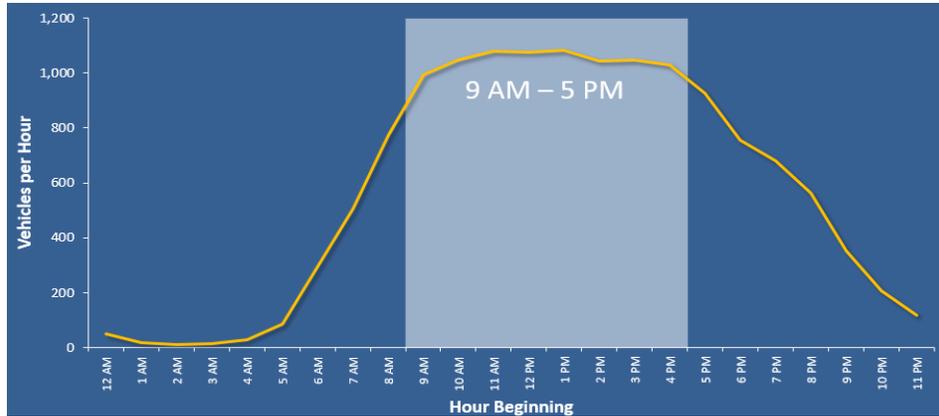
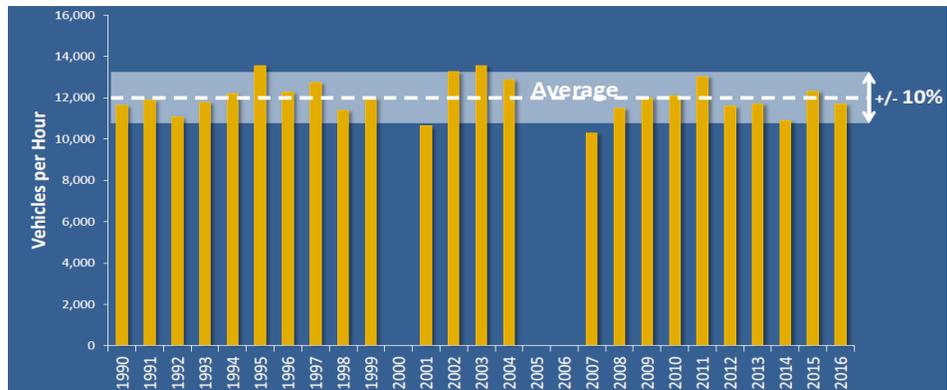


FIGURE 9: SEASONAL AUTOMOTIVE TRAFFIC TRENDS
(ROUTE 137 AT ROUTE 39, HARWICH – 2014/2015)



FIGURE 10: HISTORICAL AUTOMOTIVE TRAFFIC TRENDS
(ROUTE 28 SOUTH OF MAIN STREET, ORLEANS - JULY AVERAGE DAILY TRAFFIC)





INTERSECTION OPERATIONS

A capacity analysis of study area intersections was conducted based on methodology in the 2010 Highway Capacity Manual, published by the Transportation Research Board. The methodology uses inputs such as the traffic volumes for the various turning movements, intersection geometry, and traffic control parameters such as signal timing and phasing.

The busiest intersections for vehicles are where Main Street intersects with the two state roads serving Orleans – Route 6A and Route 28. However, many vehicles were also making turns between Route 6A and Brewster Cross Road or Route 6A and Cove Road.

In terms of pedestrians, the busiest intersection is the one at the center of town where Route 6A and Main Street cross. The intersection of Main Street and Old Colony Way, proximate to the rail trail, is also heavily used by both pedestrians and bicycles. Interestingly there are a number of bicycles using the Route 28 and Main Street intersection as well as Brewster Cross and Main Street indicating that they do move through town as well as along the Rail Trail.

TABLE 8: INTERSECTION VOLUME SUMMARY
ALL MODES - JULY 2016 WEEKDAY 4-5 PM

Location	Vehicles	Pedestrians	Bicyclists
Route 6A at Main Street (signal)	1,803	112	9
Route 28 at Main Street (signal, July 2011 data)	1,859	13	37
Route 6A at Brewster Cross Road	1,225	9	11
Route 6A at Cove Road	1,122	4	8
Main Street at Brewster Cross Road	824	40	24
Main Street at Old Colony Way (including Cape Cod Rail Trail crossing)	978	67	81



The vehicle capacity analysis reports average delay, in seconds, and level of service (LOS). LOS is presented as a letter-grade, from A to F, based on average vehicle delay. The grade of A represents uncongested conditions with very little delay. LOS C or D indicates that the intersection is busy but still considered acceptable. LOS E or F indicates that an intersection is congested, and delays may be considered long. However, in downtown areas, it is not uncommon for intersections to operate to LOS E or F and still be both well-functioning and safe. Efficient vehicle accommodation must be balanced with safe and convenient accommodation of pedestrians and bicyclists.

The following tables provide the vehicle the LOS grades for the major intersections within the study area as well as the level of pedestrian accommodation; first for intersections with traffic signals and then for those without signals.

TABLE 9: EXISTING CONDITIONS
SIGNALIZED INTERSECTION CAPACITY ANALYSIS - JULY EVENING PEAK HOUR

2017 Existing Conditions			
Location	Level of Service ¹	Delay ²	Pedestrian/Bicyclist Accommodation
Route 6A at Main Street	C	27.9	Crosswalks with push button-activated pedestrian signal
Route 28 at Main Street	C	31.7	Crosswalks with push button-activated pedestrian signal

¹ Based on 2010 Highway Capacity Manual methodology
² Average delay in seconds per vehicle; based on 2010 Highway Capacity Manual methodology

TABLE 10: EXISTING CONDITIONS
UN-SIGNALIZED INTERSECTION CAPACITY ANALYSIS - JULY EVENING PEAK HOUR

2017 Existing Conditions			
Location	Level of Service ¹	Delay ²	Pedestrian/Bicyclist Accommodation
Route 6A at Brewster Cross Road			
Route 6A Eastbound	A	8.8	None
Route 6A Westbound	A	9.0	
Brewster Cross Road Northbound ³	C	22.6	



2017 Existing Conditions			
Location	Level of Service ¹	Delay ²	Pedestrian/Bicyclist Accommodation
Route 6A at Cove Road			
Route 6A Eastbound	A ⁴	0.0	Crosswalk at Main Street Signal
Route 6A Westbound	A	9.0	
Cove Road Northbound	D	27.2	Crosswalk
Main Street at Brewster Cross			
Main Street Northbound	A	8.0	Crosswalk south of the intersection
Main Street Southbound	A ⁴	0.0	
Brewster Cross Road Eastbound	B	12.2	Crosswalk
Main Street at Old Colony Way and Driveway			
Main Street Northbound	A	8.7	Crosswalk
Main Street Southbound	A	7.8	Crosswalk (Cape Cod Rail Trail)
Old Colony Way Eastbound	C	20.8	Crosswalk

¹ Based on 2010 Highway Capacity Manual methodology

² Average delay in seconds per vehicle; based on 2010 Highway Capacity Manual methodology

³ No left turns allowed

⁴ Free movement

SUMMARY - CIRCULATION

The circulation system in the Orleans Village Center is, for the most part, working well as a town center. The traffic patterns and congestion levels are appropriate for the area and have remained consistent over time. The intersection upgrades on Main Street at Route 6A and at Route 28 should further improve safety and efficiency.



Growth Impact Assessment

Research Question: *How will future development affect parking demand and intersection performance in the Village Center?*

Zoning amendments alone do not create transportation impacts. As the zoning amendment increased the potential for residential development, it is important to understand the relative impact of residential development compared to other potential types of development.

Residential uses are some of the lowest traffic generators, having significantly less impact on traffic than most commercial uses. For example, the trips generated by a 5,000 square-foot building vary by use:

TABLE 11: TRIPS GENERATED BY 5,000 SF BY USE

Use	Expected Trip Generation (trips/day)
Retail	200
Restaurant	600
Residential	25

The nature and scale of the impacts will ultimately depend on how much additional development occurs as a result of the zoning change.

To analyze potential transportation impacts, zoning provisions must be tested based on a consistent set of assumptions. The assumptions used here are:

1. Scenarios will estimate traffic volumes 20 years from today
2. Underlying traffic volumes will increase 1% percent per year

The 1% annual growth a conservative (high) assumption based on historic traffic volume trends. This one percent annual traffic growth assumption would cover the typical development activity the Town has seen under existing zoning and well as the impact of development in nearby towns.

For this analysis, three different scenarios were considered and compared to existing conditions.



- The “2037 No Build” scenario includes the one percent annual traffic growth and can be considered a baseline as if no new zoning were enacted.
- The “2037 Build – Scenario A” adds 200 new residential units to the no build scenario located within the core of the Village center, within approximately 1/2 mile of the Route 6A and Main Street intersection.
- The “2037 Build – Scenario B” adds 1,000 new residential units to the no build scenario spread throughout the area subject to the recent zoning change.

The transportation analysis scenarios are summarized in the following table and illustrated on a map on the following page. On the maps, unit locations are illustrative and do not represent the exact location of existing developments or development proposals.

TABLE 12: TRANSPORTATION ANALYSIS SCENARIOS

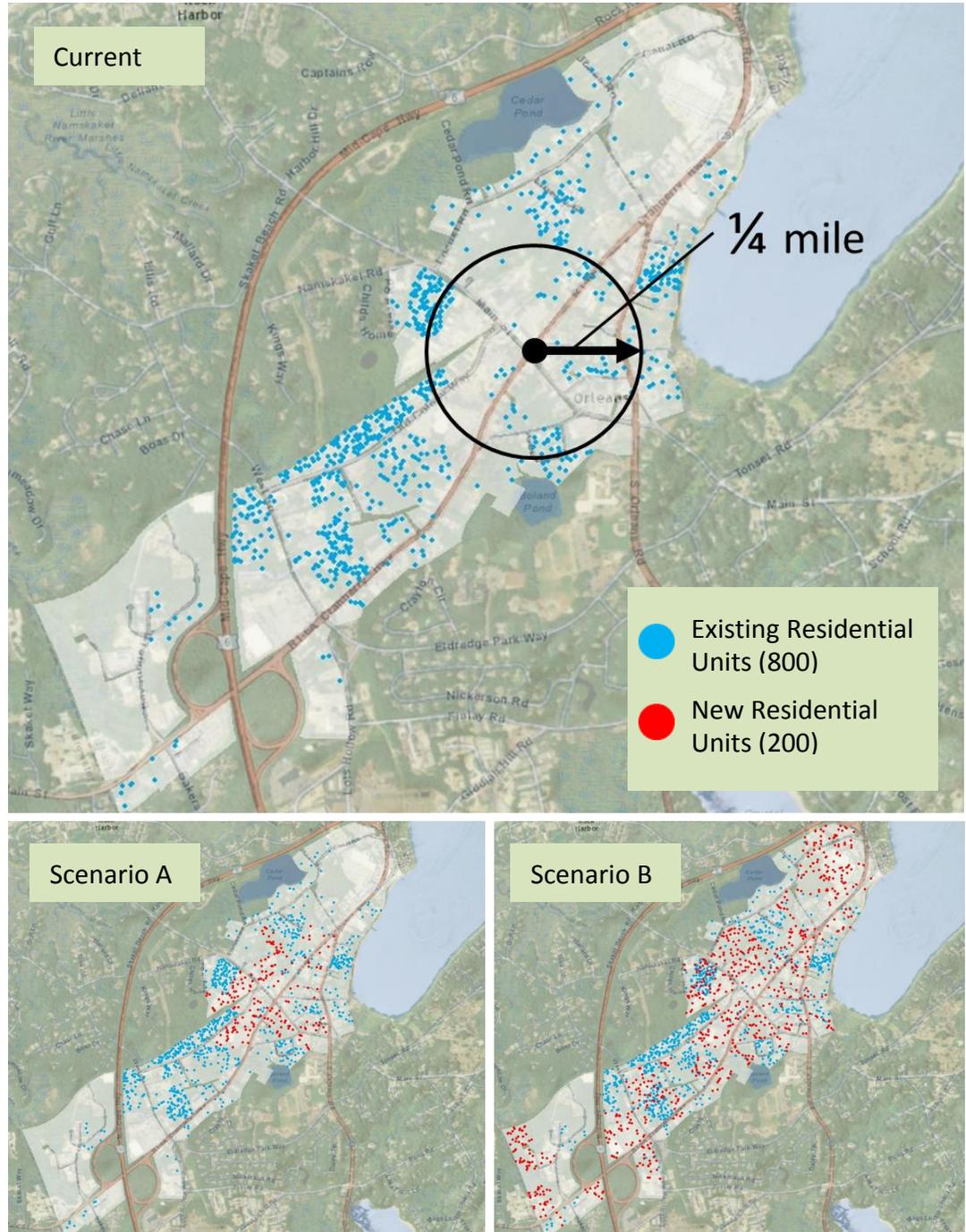
Scenarios	Annual Background Traffic Growth	Additional Residential Development ¹
2017 Existing	NA	NA
2037 No Build (Baseline)	1%	NA
2037 Build – Scenario A	1%	200 new units, located in the core of the Village Center
2037 Build – Scenario B	1%	1,000 new units, located across the area subject to the recent zoning change

¹ Distribution of new units is based on potential units allowed under new zoning

The potential trip generation from the additional residential units was estimated based on data in the *Institute of Transportation Engineering Trip Generation Manual, 9th Edition* and the new trips distributed onto the network based on anticipated travel patterns. Location-based adjustments were made to account for the portion of the trips anticipated to be made as a pedestrian based on walkability of the area.



FIGURE 11: TRANSPORTATION ANALYSIS SCENARIOS





DEVELOPMENT EFFECTS ON PARKING DEMAND

New residential development under either growth scenario will not adversely affect parking in the Village Center, given that:

- excess parking capacity already exists;
- residential and most commercial uses need parking at different times of day; and
- On-site parking requirements for new residential units will easily meet any new demand.

DEVELOPMENT EFFECTS ON INTERSECTION PERFORMANCE

Building on the intersection analysis presented in the Circulation Assessment section of the report, intersection performance was assessed against future No-Build and Build Scenarios. Comparing the No-Build and Build Scenarios demonstrates the expected impact on the intersections of additional trips resulting from residential development.

If developed, the new residential units would have a negligible impact on the traffic signals within the study area as shown in the following table. Should the specific location of development impact the operations of a traffic signal, traffic signal timing can typically be adjusted to lessen any impact.

TABLE 13: SIGNALIZED INTERSECTION CAPACITY - JULY EVENING PEAK HOUR

Signalized Locations	Level of Service, Delay in Seconds ¹			
	2017 Existing	2037 No Build ²	2037 Build Scenario A ³	2037 Build Scenario B ⁴
Route 6A at Main Street	C 27.9	C 28.3	C 29.5	C 32.3
Route 28 at Main Street	C 31.7	D 36.7	D 37.2	D 38.3

¹ Average delay per vehicle; based on 2010 Highway Capacity Manual methodology

² No Build assumes 1% annual traffic growth

³ No Build 1% traffic growth plus 200 new housing units in Village Center

⁴ No Build 1% traffic growth plus 1,000 new housing units spread throughout the area covered by the zoning change



Similarly, the development scenarios indicate only minor impacts on the un-signalized intersections within the study area as show in the following table. None of the impacts identified are likely to necessitate major intersection upgrades.

TABLE 14: NON-SIGNALIZED INTERSECTION CAPACITY - JULY EVENING PEAK HOUR

Un-signalized Locations	Level of Service, Delay in Seconds ¹			
	2017 Existing	2037 No Build ²	2017 Build Scenario A ³	2017 Build Scenario B ⁴
Route 6A at Brewster Cross Road				
Route 6A Eastbound	A 8.8	A 9.0	A 9.0	A 9.2
Route 6A Westbound	A 9.0	A 9.3	A 9.4	A 9.7
Brewster Cross Road Northbound ⁵	C 22.6	D 28.0	D 30.7	E 37.1
Route 6A at Cove Road				
Route 6A Eastbound	A ⁶ 0.0	A ⁶ 0.0	A ⁶ 0.0	A ⁶ 0.0
Route 6A Westbound	A 9.0	A 9.3	A 9.3	A 9.4
Cove Road Northbound	D 27.2	E 37.9	E 39.4	E 43.1
Main Street at Brewster Cross Road				
Main Street Northbound	A 8.0	A 8.3	A 8.3	A 8.3
Main Street Southbound	A ⁶ 0.0	A ⁶ 0.0	A ⁶ 0.0	A ⁶ 0.0
Brewster Cross Road Eastbound	B 12.2	B 14.8	B 14.9	C 15.2
Main Street at Old Colony Way and Driveway				
Main Street Northbound	A 8.7	A 8.9	A 9.0	A 9.2
Main Street Southbound	A 7.8	A 7.9	A 8.0	A 8.1
Old Colony Way Eastbound	C 20.8	D 27.7	D 30.8	E 37.2

¹ Average delay per vehicle; based on 2010 Highway Capacity Manual methodology



- 2 No Build assumes 1% annual traffic growth
- 3 No Build 1% traffic growth plus 200 new housing units in Village Center
- 4 No Build 1% traffic growth plus 1,000 new housing units spread throughout the area covered by the zoning change
- 5 No left turns allowed
- 6 Free movement

Finally, the simulation shows negligible intersection delay increases on Route 6A and Main Street approaches as a result of increased residential development. Drivers approaching the center from the minor streets may face a slight increase in delays when turning left or going straight. These delays will likely be less than what is reported in the tables as estimates of delay at un-signalized intersections, as these tend to be conservatively high. Overall, both signalized and un-signalized intersections are anticipated to continue functioning well even with additional residential trips as a result of housing units being added to the village core.

Nevertheless, depending on location and size, large residential developments could cause larger localized impacts. Such impacts would have to be address during the review of such a development. The impacts of such developments can be minimized by:

- Minimizing curb cuts;
- Good driveway and site design (small block);
- Shared parking and infrastructure; and
- Safe and convenient pedestrian, bicyclist, and transit user accommodation.

SUMMARY – FUTURE IMPACTS

In terms of transportation infrastructure, the Village Center is well positioned to handle additional residential development.

Both signalized intersections currently operate at an acceptable level of service and, with the upgrades underway, the signals will be up to current design standards and capable of handling additional traffic from the potential residential development. Localized impacts may be noticed very close to new developments of substantial scale, but, overall, the transportation network should continue to function well.



Summary of Findings & Next Steps

SUMMARY OF FINDINGS

The parking and circulation system in downtown Orleans is functioning effectively and can accommodate further growth, particularly residential growth in the village core. The system experiences intermittent congestion and full parking lots at peak summer season but there are no systemic impediments to circulation, parking, and related economic and social activity in the village center.

There is no need to add additional parking but use of existing lots could be improved with better signage, layout, and pedestrian connections to store fronts. Opportunities exist for cooperative management of parking lots and the introduction of low impact design (LID) storm water management infrastructure.

The circulation system, with the improvements underway and those under consideration for Brewster Cross, will improve safety and move traffic more efficiently despite seasonal congestion. The system could be further improved by breaking up large blocks with internal roads and alleys, adding signage for cars and pedestrians, and adding safety provisions for cyclists and pedestrians.

With these tweaks, the system can easily manage increased residential development, even and probably especially if the housing is highly concentrated in the village core. A re-distribution of existing commercial activity into the core would benefit the overall vibrancy of the center as well, recognizing that new commercial space is not currently called for according to local and regional market studies. Any near-term growth or shifts should be accommodated with better provisions for non-auto movement within the village center.

RECOMMENDED NEXT STEPS

The following is a limited set of recommended next steps that, given the data, staff feels will have the most immediate or significant impact on an already well-functioning parking and circulation system in the Village Center. Many of them mirror recommendations found in previous studies that have not yet been implemented. Where possible, conceptual plans and conceptual planning maps have been included.



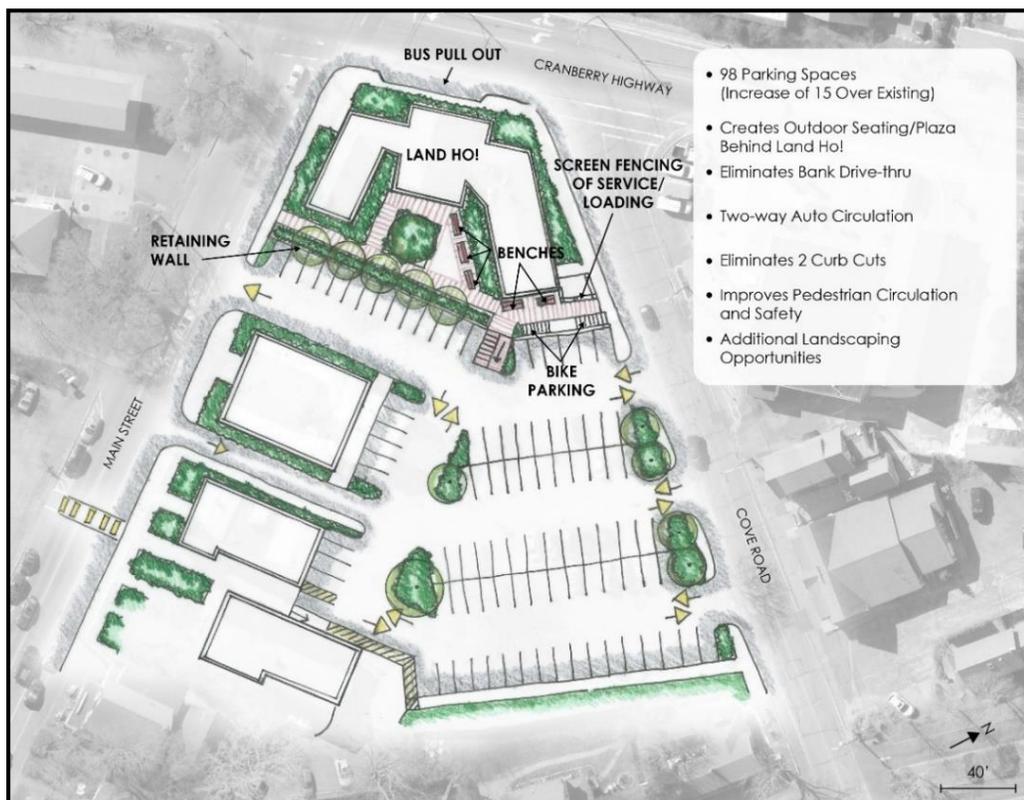
PARKING

1. Improve Design and Signage of Key Lots – Concept Plans

Parking lot design and directional signage to under-used lots can go a long way to improving perceived and real parking congestion as well as safety.

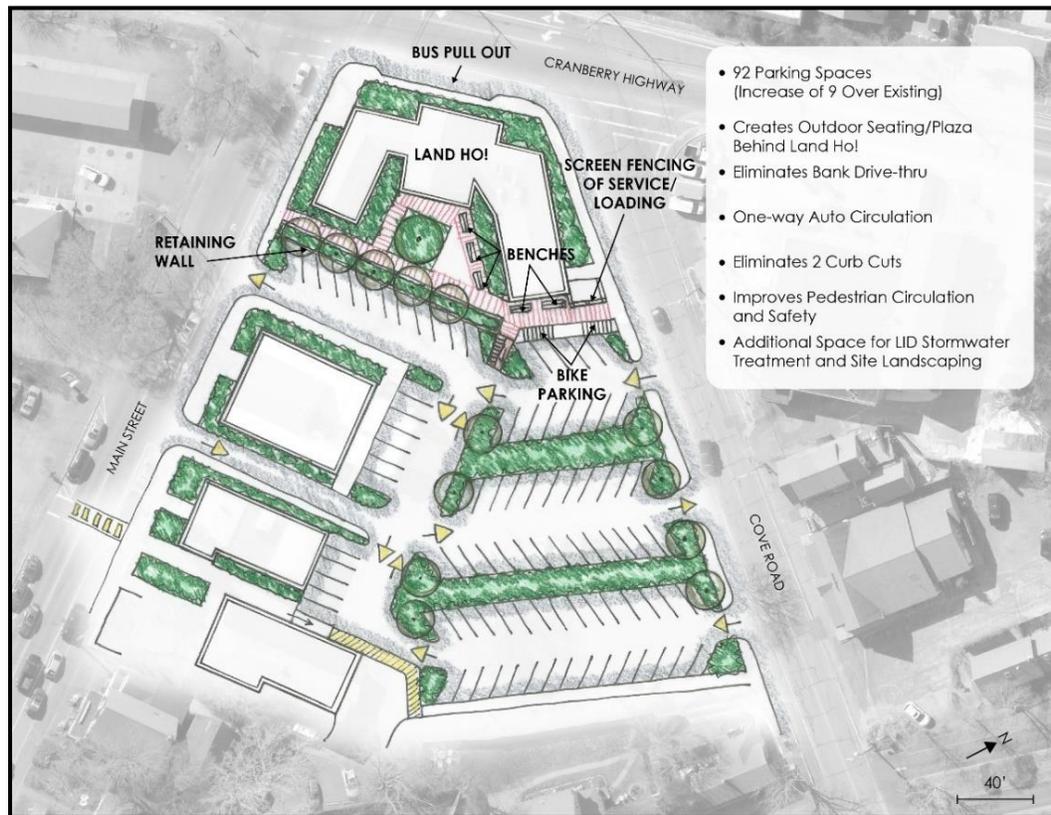
Commission staff prepared conceptual plans at two key locations within the village center to illustrate how existing parking lots could be reconfigured to enhance both pedestrian and vehicular circulation while maintaining adequate parking to meet demand.

The first location, located at the intersections of Main Street, Cove Road, and Route 6A, consists of three parking lots, one municipal and two private, located behind the Land Ho! restaurant and the Town visitor center. Two alternatives were developed for this site, one with two-way circulation and 90-degree parking, and a second with one-way circulation and angle parking. Both concepts eliminate an existing bank drive-through and reduce the lane around the bank building to one-way-in and one-way out.





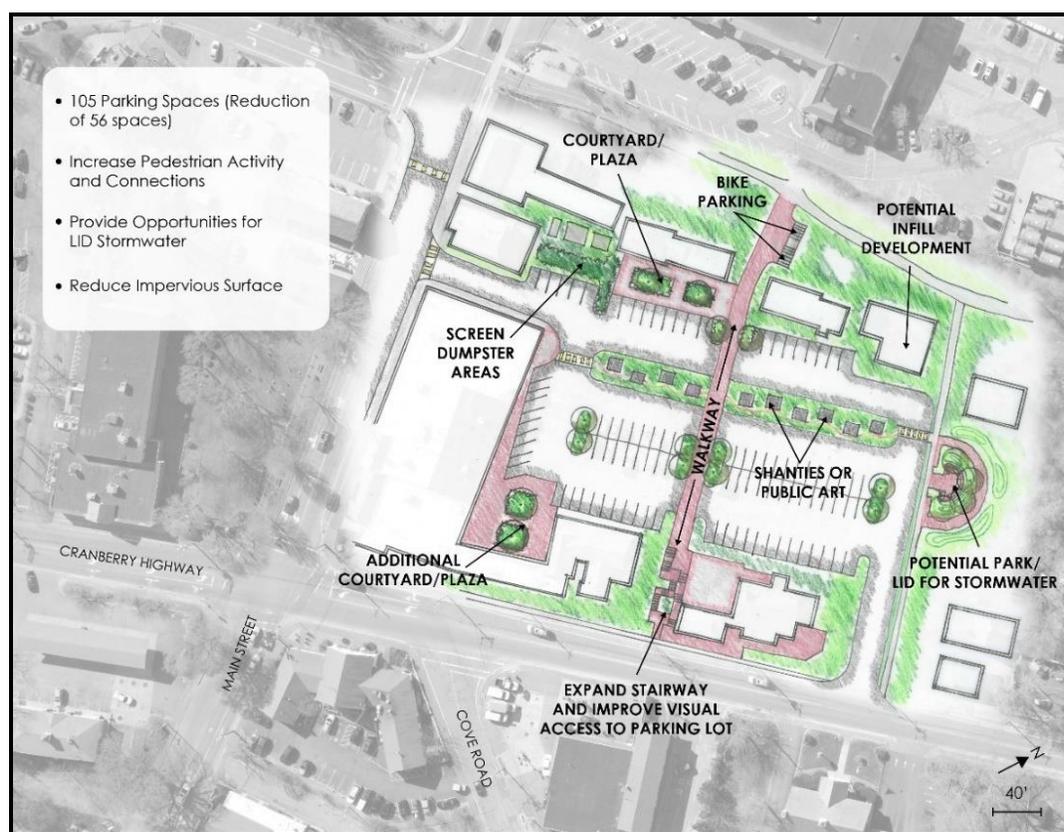
The 90-degree parking lot concept results in a total of 98 parking spaces, an increase of 15 spaces, and aligns vehicular travel through the parking lot to make it more uniform across the site, resulting in less driver confusion and increased safety for both drivers and pedestrians by connecting the welcome center pedestrian path to the recently improved Cove Road connection. This concept also features a redesign of the back of Land Ho!, creating an outdoor seating/plaza area with benches and landscaping.



The second concept for this site utilizes one-way circulation and angle parking, resulting in a modest increase of 9 additional parking spaces. This alternative also aligns vehicular travel through the parking lot to make it more uniform across the site with the same improvements to the back of Land Ho. The one-way circulation pattern frees up additional space within the parking lot for additional landscaped area and potential Low-Impact Development stormwater improvements.



The second key location within the village center that staff identified is located at the intersection of Route 6A and Main Street. The parking inventory completed by Commission staff indicated that this parking lot is underutilized. This concept plan focuses on improving pedestrian connections to and through the parking lot to the nearby rail trail, with potential programming such as shanties or public art to reduce excess pavement and create additional activity. The parking area could benefit from additional landscaping that could provide opportunities for Low Impact Design stormwater improvements.



2. Business Improvement District

As in the Route 6A Corridor RESET Project, we strongly recommend the Town investigate and seriously consider establishing a Business Improvement District (BID) representing the Village Center core. By creating a BID, the Town would be able to leverage existing public and private resources to accomplish many of the other recommendations in this report as well as the recommendations contained in the Route 6A RESET report and the Orleans Downtown Streetscape Plan. The BID staff would have the time and ability to apply for and manage grants,



coordinate Village events, garner volunteer support, and meet regularly with businesses. The BID would support, at a minimum, an Executive Director dedicated to creating a vibrant center with the active support of businesses in the Village Center.

A Business Improvement District is special taxing district enabled through state legislation (MGL 40O) and organized as a not-for-profit corporation to supplement municipal services in a commercial district. They serve a defined area in which businesses agree to pay an annual special assessment to fund the organization and projects within the district's boundaries.

To be approved, a BID must have the support of 60% of the real property owners who represent 51% or more of the assessed real property valuation in the district to be designated. Once approved, a BID organization may focus on a range of activities including public safety, streetscape improvements, business assistance, and/or public policy.

Because BID members pay this special assessment, the organization has an ongoing, stable revenue stream for the District, unlike other redevelopment entities in Massachusetts. In addition to this guaranteed revenue, a BID may receive grants, donations, and gifts to support their initiatives if they are incorporated as a 501C3 non-profit organization.

The [Hyannis Main Street Business Improvement District](#) was established in 1999 to promote and stimulate a renaissance of Main Street, Hyannis. The goal is to promote community and economic development on Main Street, making the Hyannis district as a desirable place to live, work, invest, and visit. The BID is a 501c6 non-profit organization serving the businesses and organizations fronting Main Street.

The BID was established to improve the commercial appeal of downtown Hyannis. Some of the accomplishments of the BID include bringing a police station to Main Street, collaborating with homeless social programs, lobbying for continued road improvements in the areas surrounding Main Street, and leveraging funding for new street lights. The BID also created a WIFI network along Main Street, improved the signs and banners along Main Street, and oversees maintenance and beautification projects that include graffiti removal, power-washing sidewalks, and providing supplemental trash and snow removal.

The BID works closely with local businesses and the Town to advocate for continued improvement along Main Street, working with the Arts & Culture District, launching a summer shuttle service, and supporting the Mid-Cape



Farmers' Market. The BID director meets with the Town Manager each month and works closely with the leadership of the Hyannis Chamber, advocating for the needs of main street businesses and coordinating specific events. The BID often seeks funding for joint projects between the Town, Chamber, and others serving the downtown.

Recent projects include working with the developer of a large housing project off the east end of Main Street to shift the focus from seasonal to workforce housing. In the same area of Main Street, the BID is working to obtain funding for intersection improvements to create more of a gateway to Main Street and encourage in-fill around the Regional Transportation Center.

3. Update parking regulations

Revising the parking requirements in the zoning code could provide for more efficient and economical use of land and improve distribution of parking in the Village Center, particularly as new development and redevelopment occurs. The recommendations below are based in part on strategies provided in the state's Smart Growth/Smart Energy Toolkit produced by the Executive Office of Environmental Affairs.¹

Reduce Parking Requirements in the Village Center: Best practices for parking management discourage using minimum parking standards, in part because they often result in an over-supply of parking, encouraging inefficient use of land, particularly in downtowns/village center areas, where density and high building coverage is desired, and add to sprawl. Reducing existing parking requirements is a critical step toward advancing "smart" land use practices.

Alternatives for the Town to consider include:

- **Maximum Standards:** The minimum requirements in most zoning bylaws today are designed for the maximum amount of parking that a use could ever need and create a vast oversupply of parking spaces. Best practices in parking management promote adopting maximum parking standards rather than minimum requirements. A simple method for Orleans to

¹ http://www.mass.gov/envir/smart_growth_toolkit/pages/SG-bylaws.html. See Smart Parking Model Bylaw. The site also provides case studies.



establish maximum standards would be to change the existing minimum requirements into maximum limits.

- **Flexible Standards:** The property/business owner determines the number of spaces needed with the input of staff through the Site Plan Review process
- **No Parking Standards:** Many towns and cities across the country have eliminated parking standards without adverse consequences.

If the town is uncomfortable with eliminating minimum standards entirely, it could provide both a maximum and minimum amount per use. This allows a range of acceptable parking requirements and flexibility for a developer. Depending on the use, the minimum requirement could be 25%-80% of the maximum. For example, the state’s smart parking model bylaw suggests the following requirements for office and retail (calculations are based on 1,000 sf GFA)²:

Land Use	Maximum	Minimum
Retail	3	2
General Office	4	2

Encourage Shared Parking: The town could offer additional incentives for developers to share parking, such as allowing greater building coverage or flexibility in other dimensional standards in exchange for sharing parking. This may be less important in a downtown area such as the Village Center, where the scarcity and cost of land alone provides an economic incentive to share parking, but could be very influential in other zoning districts.

To help encourage shared parking, the town might consider adding a new section to the bylaw that sets forth guidance on shared parking and promotes it as a preferred option. The current provision to allow parking reduction for “special circumstances” is somewhat hidden in the by-law. The town might want to promote shared parking by allowing a certain automatic reduction for uses on the same or adjacent sites that have different peak hours of use, e.g. a bank and a

² See Smart Growth/Smart Energy Toolkit produced by the Executive Office of Environmental Affairs. Smart Parking Model by available at: http://www.mass.gov/envir/smart_growth_toolkit/bylaws/SP-Bylaw.pdf



restaurant, or an office and apartments. This could also benefit those who share customers, e.g. a package store and a food market. During the review process, a developer would be asked to demonstrate that the two uses have different peak demands or that all parking needs can be met by the total on site. A contractual agreement between the two businesses should be required as well.

Revise “Fee in lieu of” Provision: To make the fee in lieu an attractive option, it must save money for the developer; however, the fee needs to be high enough for the municipality to be able to use the funds to construct parking (or associated amenities). If the fee is less than the cost of providing parking on site, that provides an incentive to choose that option. Alternatively, the payment can be set higher than the cost to build parking if incentives are included to allow the property to be developed more intensively that would be possible under zoning and with the provision of on-site parking.

Typically, municipalities set fees in-lieu provisions by calculating a flat fee for parking spaces not provided on-site or by square foot of building area; or by establishing development-specific fees on a case by case basis. The fees can be imposed as a property tax surcharge or at the time of development permitting. A review of fee in lieu parking provisions in Massachusetts shows a considerable range in fees, including a one-time fee of \$2000 per space in Northampton, to an annual fee of \$50-\$100 in Oak Bluffs.³

Increase trip reduction factors: Reducing demand for parking is cheaper than increasing parking supply. Providing more bicycle and pedestrian infrastructure makes it easier for people to bike and walk to shops and services and helps reduce parking demand. The Cape Cod Rail Trail provides a convenient connection and popular travel route for bicyclists to the village center. Improving bicycle accommodations from the rail trail to Bakers Field/Route 6A area and to east Orleans may encourage more bicycle travel downtown. Other measures to ease parking demand include wayfinding signage that directs visitors to available parking areas they might not be aware of, as well as providing passes or other incentives to take transit (i.e. the Flex).

³ These examples and other guidance on fee in lieu provisions, including a list of resources, can be found in *Fees In Lieu of Parking Spaces*, Metropolitan Area Planning Council, 2006 <https://www.mapc.org/resource-library/fees-in-lieu-of-parking-spaces>.



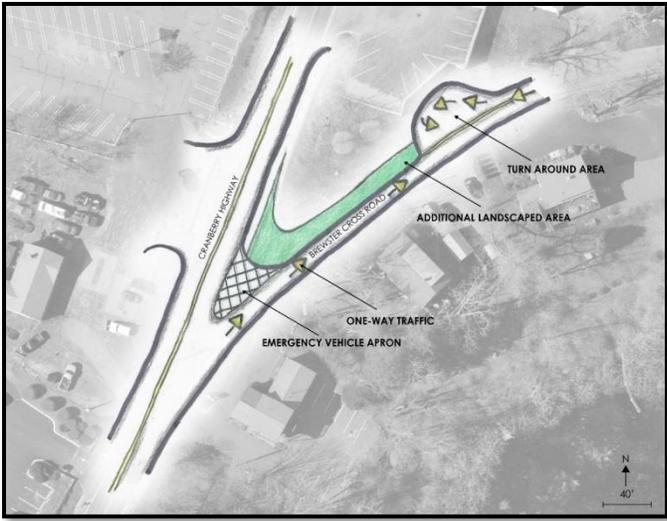
Municipal parking: Over the long-term, the Town can enhance parking supply by providing municipal spaces through land acquisition or by leasing existing spaces from a private owner. Providing centralized parking encourages “one stop” parking so that people park once and walk to several destinations rather than driving to each in a separate trip. As in the Route 6A RESET Report, a good first step is to develop a long-term parking plan that includes potential acquisitions.

CIRCULATION

1. Intersection Improvements

Brewster Cross Intersections: The Orleans Village Center Streetscape Plan included a suggested re-design for the Brewster Cross – Main Street intersection. This served as the basis for an engineered plan for the intersection prepared for the Town by Stantec in August 2016. Implementing this plan is recommended and should improve pedestrian safety and comfort while facilitating vehicle circulation in this area.

The Town should also consider improvements to the other end Brewster Cross Road where it intersect with Route 6A. Improvements here should account for the



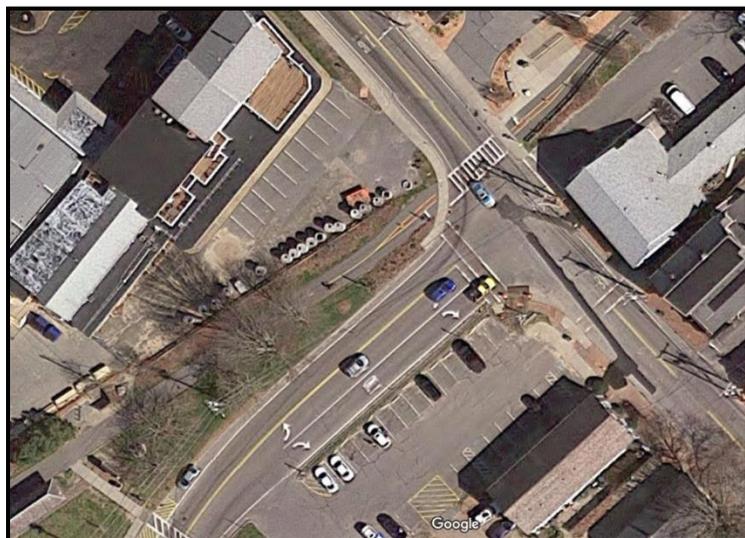
future redevelopment of the commercial “Staples” plaza opposite the intersection and the possible creation of a formal connection here through to Colonial Way.

In the short term, the following concept plan to close off the intersection to traffic onto Route 6A from Brewster Cross would improve safety. In the long-term, the

intersection could be aligned with a cross connection between Route 6A and Colonial Way that would be properly engineered to allow full use by traffic from all directions.



Old Colony Way/Bike Path Intersection: There are numerous potential conflicts that motorists, cyclists, and pedestrians face when traversing this area. Motorists traveling eastward on Main Street must first safely cross the Cape Cod Rail Trail's crosswalk, avoid conflicts with motorists turning into and out of Old Colony Way, and then a second crosswalk on Main Street. Westbound drivers have a similar set of conflicts. Motorists from Old Colony Way must await safe gaps in Main Street traffic and – for those turning left – may be required to immediately stop



at the rail trail crossing. The complications of having left-turning movements and closely spaced conflict areas can in some cases cause cars in opposing directions to block each other's path of travel (i.e., "gridlock").

Many rail trail users (mostly cyclists and

pedestrians) are making through-trips across Main Street and many more are traveling to/from destinations throughout the Main Street area. Once on Old Colony Way, there are no "official" road connections to Route 6A other than the Main Street intersection on the east and a western intersection more than a half of a mile away at West Road. There are several "unofficial" connections, using driveways/alleys and traversing parking lots, that provide access between Old Colony Way and Route 6A.

To improve safety and comfort for all users in the area, the following strategies are offered for consideration. Each strategy would have benefits and challenges to implement, in some cases strategies could be combined. In all cases, signage should also be employed to improve safety and help users navigate the intersection.

Option 1 – Police Officer Control: This option involves providing an officer to guide the travel movements of motorists, pedestrians, and cyclists as they travel through the area. Deployment could be limited to busy travel days (e.g., nicer weather) when larger numbers of the user types would be traveling



in the area. This alternative is essentially a “no-build” option, requiring no physical changes, but it would still require the expense of annual staffing.

Option 2 – Relocation of Old Colony Way: Under Option 2, the eastern end of Old Colony Way would be relocated approximately 60 feet to the south of its current intersection with Main Street, moving it farther away from the Rail Trail. This would require the elimination of the existing public parking lot located on the southwest quadrant of the intersection. The goal of this option would be to increase separation of the Old Colony Way intersection from the Cape Cod Rail Trail crossing.

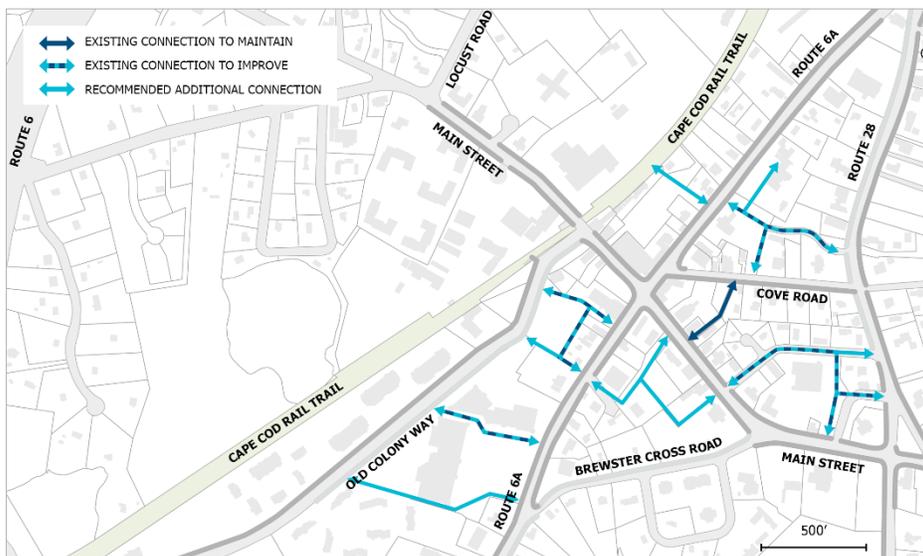
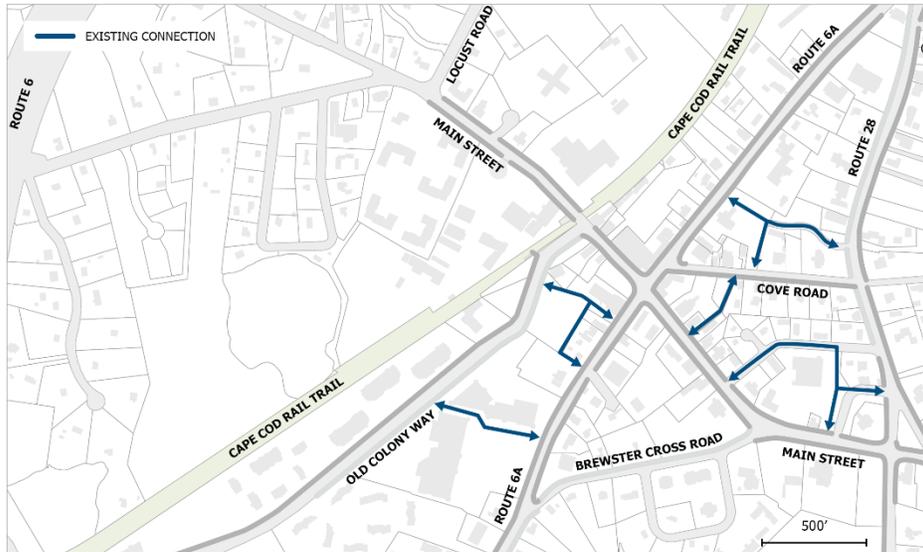
Option 3 – Create Alternative Connections: Mirroring the recommendation below to improve circulation by creating new connections, this option focuses on creating a formal connector road between Old Colony Way and Route 6A that could serve as an alternative route to Main Street. In combination with this, the Town could consider eliminating the current intersection between Old Colony and Main Street, if after a testing period, the new connector road does not reduce traffic at the existing intersection.

Option 4 – Bicycle/Pedestrian Bridge over Main Street: The construction of a new Cape Cod Rail Trail bridge over Main Street would eliminate conflicts between motorists and trail users currently crossing at street level. Alternative ground level connections would need to be fashioned to attract rail users to the Village Center and allow access from the center to the trail. The connector paths should allow access on both sides of Main Street and connect to the public parking area at Depot Square.

2. Create New Connections, Complete Sidewalks and Crosswalks

Promoting safe and convenient bicycle and pedestrian accommodations with the Village Center requires a network analysis that extends beyond the intersections. Connections to and between destinations will allow residents and visitors the ability experience the Village Center by parking just once or eliminating the vehicle trip all together.

There are a number of opportunities to create new connections between the major streets serving the Orleans Village Center. In some cases, the need is for improved pedestrian or bike connections while at other locations, full automobile connections would provide the greatest benefit. The following map illustrates existing and potential new interconnections within the Village core. (Full size maps are provided in Appendix 6.)



Connections

Existing Conditions and Recommended Improvements

The information depicted on these maps is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel level analysis. It should not substitute for actual on-site survey, or supersede deed research.



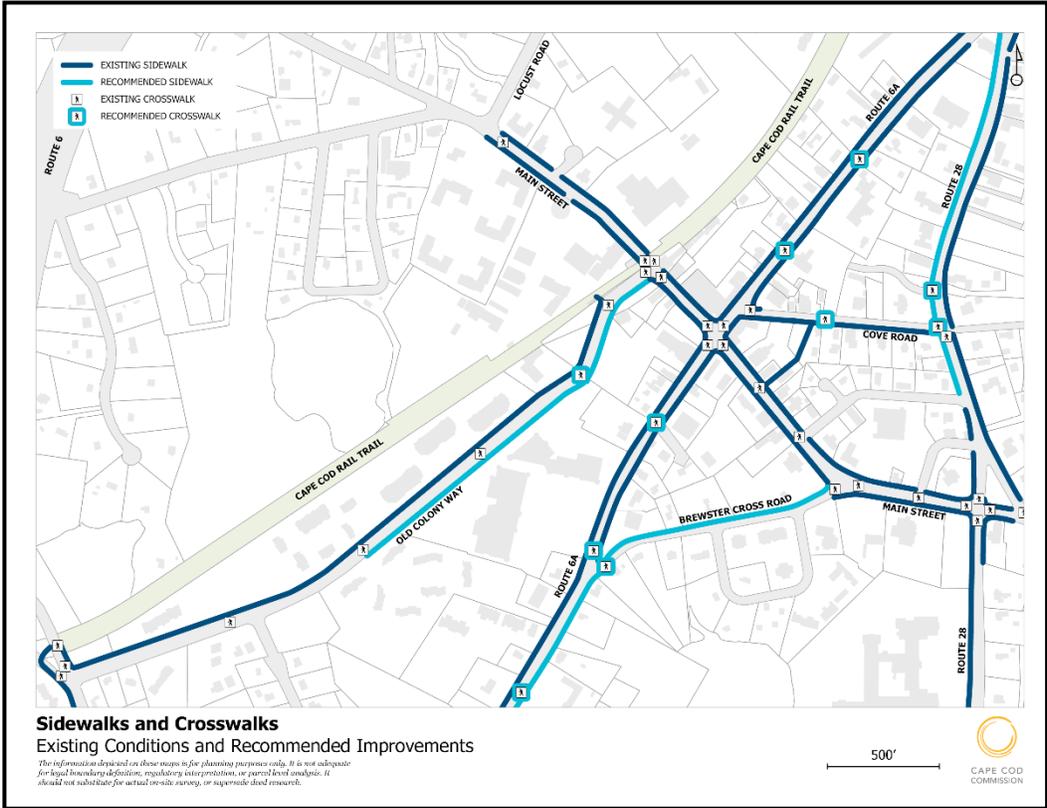
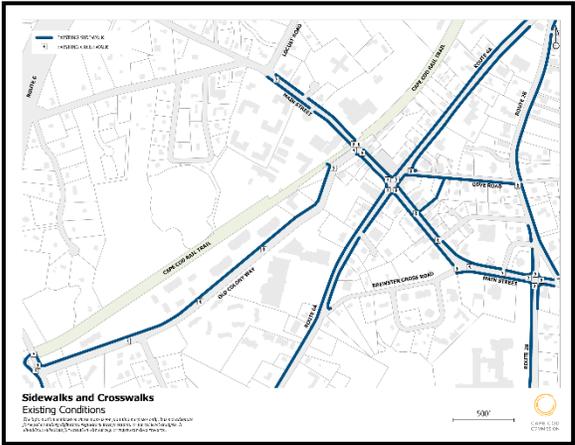
These new connections could relieve congestion during peak periods at key existing intersections as well as build on the village character currently found on the two blocks of Main Street on either side of the intersection with Route 6A.



The general rule of thumb for block sizes in a village center is 400 feet per side or less. The connections suggested here take into account this rule as much as possible while also taking advantage of existing driveways and roadways. Wherever possible, connections formalize existing ways and create safe four-way intersections.

Pedestrian circulation and safety would also be improved by establishing these new connections and completing the sidewalk and cross walk network. There are three gaps in the current sidewalk network:

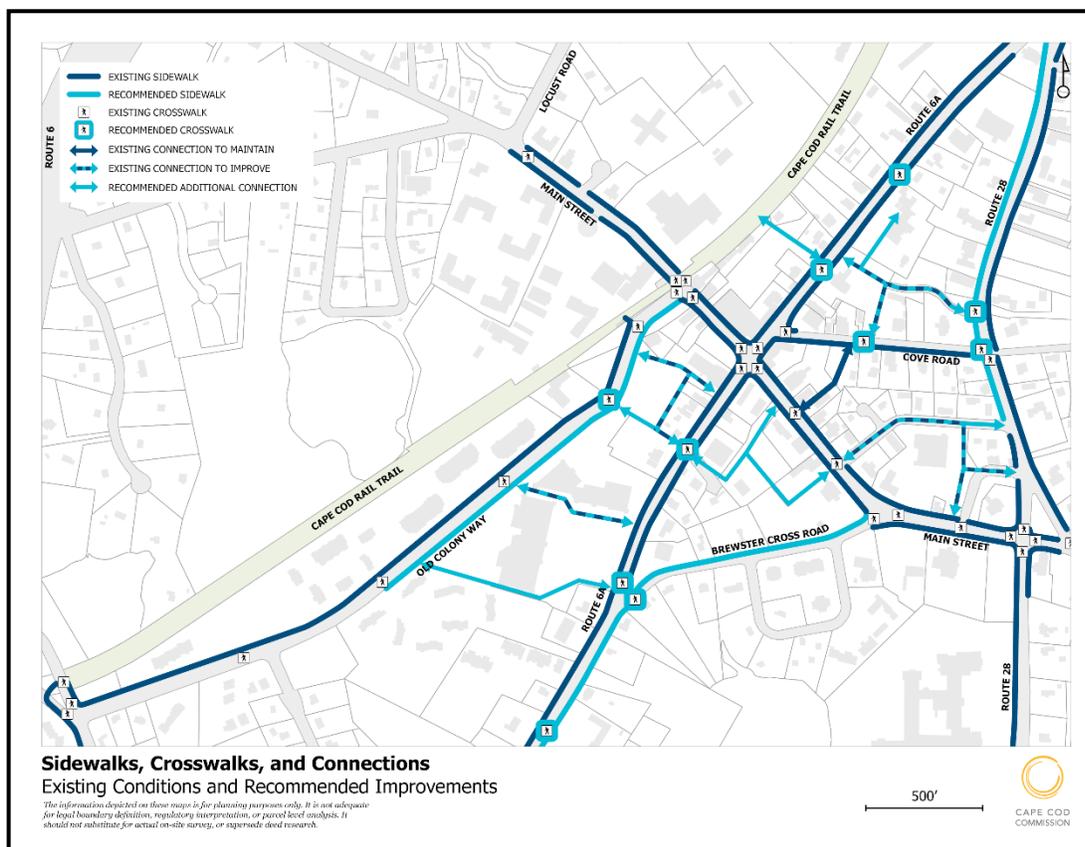
1. The south side of Old Colony Way,
2. Brewster Cross Road, and
3. The west side of Route 28 north of Main Street





The cross walk network is strong along Main Street and Old Colony Way but less strong along Route 28 and Route 6A. The following maps show the existing network and possible future improvements.

Together these new connections and completed sidewalk network with cross walks would create more in-fill opportunities that would allow more people to live within the Village Center. The complete network would enhance the character of the village core, creating the kinds of intriguing spaces typical of historic villages on Cape Cod. The network would also easing the traffic burden on the existing thoroughfares, improve pedestrian safety, and open up new potential bikeways across town from Rock Harbor to Nauset Beach.



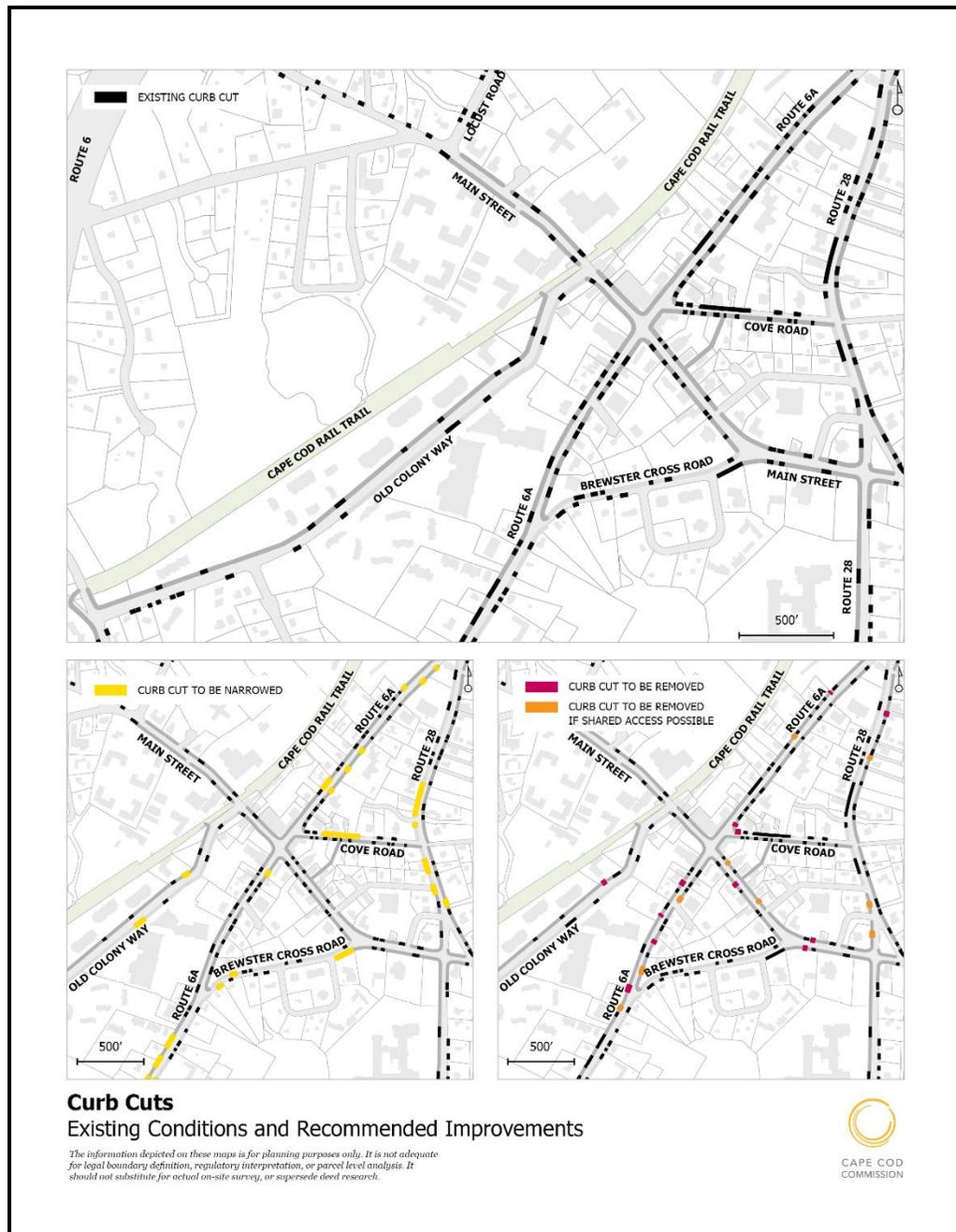
3. Incrementally Redesign and Eliminate Curb Cuts

The operations of the roadway network for both motorists and non-motorists is impacted by the number and size of curb cut. The number of curb cuts on a roadway has a direct correlation to the number of crashes experienced on that roadway. Curb cuts also present conflict points with pedestrians and bicyclists



using the roadway. The number of curb cuts accessing a property should be minimized to the greatest extent possible given site constraints.

There are a number of opportunities for redesigning or eliminating existing curb cuts under current conditions and even more as new interconnections are made





over time. The maps identify the existing curb cuts within the study area as well as highlight those that could be investigated for potential improvements. This analysis was done at the planning level; individual site constraints will need to be considered when evaluating potential curb cut modifications.

Excessively wide curb cuts present a hazard to pedestrians and can cause additional conflicts for motorists. Curbs cuts that appear excessively wide given their function are presented on the map. Curb cut redesign should be considered whenever a property is redeveloped. These opportunities are shown in yellow on the map above and would improve the safety of over twenty curb cuts.

There are also a number of curb cuts that could be eliminated today – these are shown in red on the map above. These could be removed without any significant site changes given alternate access points that currently exist. Others would require an agreement between property owners for shared access to allow a curb cut to be removed – these are denoted in orange. Future connections between parcels and between roads would also provide an opportunity to reduce curb cuts and improve circulation for motorists and non-motorists.



Appendices

APPENDIX 1 - SCOPE OF WORK – TASKS & PROJECT TEAM

Task 1 – Background

Commission staff will review existing planning documents prepared by the town including the Local Comprehensive Plan, the 2004 Parking and Circulation Study, the Village Center Streetscape Plan, the 6A RESET project Final Report, the two Market Studies completed by FinePoint Associates, and any other studies that the Town identifies as beneficial. The zoning by-law, other parking or road configuration standards, and data provided by the Town will also be reviewed by staff. Staff will identify data gaps that need to be addressed under Task 2: Data Collection.

Task 2 – Data Collection and Inventory

Commission staff will visit the study area to evaluate and photograph existing conditions. Data collection will be done in the spring and during the summer peak.

1. Parking Data & Inventory:

Commission staff will inventory private and public parking facilities in downtown Orleans. The inventory will include parking lots and on-street parking. Variables collected will include location, number of spaces, ownership, pricing, and utilization. The occupancy rate of each parking area will be measured by counting the number of available spaces at various times of the day during early spring and the summer peak. To the extent possible, the origin of different users will be sampled using license plates. The locations to be studied are:

1. Main Street on street parking (Old Colony to Route 28)
2. Old Colony Way on street parking
3. The Depot Square parking lot (off Old Colony Way)
4. The parking lot at the corner of Old Colony and Main Street
5. The CVS/Chocolate Sparrow parking lot



6. The parking lot at the Orleans Marketplace
7. The parking lot behind Mahoney's
8. The parking lots on Cove Road, behind banks on Main Street
9. The parking lot adjacent to Land Ho restaurant
10. Post Office Square parking lot
11. Friends Market parking lot
12. Library parking lot
13. Nauset Regional Middle School parking lot

1. Circulation Data:

Commission staff will compile its existing traffic counts in the study area and complete additional counts of autos, trucks, bicyclists, and pedestrians as necessary. The roadway geometry, traffic volumes, turning movement counts, and crash incidence will be collected for different intersections in the study area. The intersections to be evaluated are:

1. Main Street and Old Colony Way
2. Route 6A/Main Street*
3. Route 6A/Cove Road
4. Cove Road/Route 28
5. Route 6A Brewster Cross Road
6. Main Street and Brewster Cross Road
7. Main Street/Route 28*

* These intersections have already been re-designed to improve safety and have funding identified in the Transportation Improvement Program (TIP) and will not therefore be evaluated as intensively.

Task 3 – Existing Conditions

Based on the information reviewed in Task 1 and data collected in Task 2, Commission staff will develop an assessment of existing parking and circulation conditions within the study area. This assessment will use maps, graphs, and tables to explain today's conditions and highlight any issues identified through the analysis.



Task 5 – Future Development Impact Assessment

Commission staff will do an initial evaluation of how an increase in housing along with some additional commercial development will impact circulation and parking demand within the Village Center study area. The factors evaluated will include potential changes in traffic volumes, levels of service, parking utilization, and safety for vehicles, bikes, and pedestrians. Commission staff will evaluate and present the impact of up to three (3) growth scenarios provided by the Orleans Planning Board and Town Planner.

Task 4 – Options to Improve Parking & Circulation

Based on the existing conditions assessment, best management practices and input by town staff and the Planning Board, Commission staff will develop a set of options that could be implemented to help accommodate future growth and correct the issues identified. Options may include suggested revisions to parking policies, consideration of paid parking, development of new parking options, as well as signage and information technology options for parking management and programs to encourage alternative forms of transportation. For circulation, they could include changes in circulation patterns, geometric and/or traffic control improvements at select intersections, and/or options aimed at promoting non-auto transportation. Illustrations of different parking and circulation options will be developed as needed.

Project Team

- Leslie Richardson, Chief Economic Development Officer (Project Manager)
- Sharon Rooney, Chief Planner & Landscape Architect
- Martha Hevenor, Planner II, Bicycle and Pedestrian Coordinator
- Glenn Cannon, PE, Director of Technical Services
- Lev A. Malakhoff, Senior Transportation Engineer
- Steven Tupper, Technical Services Planner
- Patrick Tierney, Technical Services Planner
- Traffic Techs



APPENDIX 2 - RECOMMENDATION FROM PREVIOUS STUDIES

Parking Recommendations	Source	Status
Prohibit parking in front in all zoning districts	2015 RESET	
Encourage in-fill where parking in-front exists	2015 RESET	
Encourage shared parking by reducing the parking requirements of cooperating businesses	2015 RESET	
Change fee-in-lieu of provision to make it more appealing	2015 RESET	
Adopt maximum parking limits and eliminate current minimum parking requirements	2015 RESET	
Allow developers to propose the amount of parking they believe they need	2015 RESET	
Adopt comprehensive parking plan with demand reduction measures and a municipal parking plan	2015 RESET	
Encourage businesses cover employees transit costs and/or use designated parking areas	2015 RESET	
Strategic use of on-street parking to improve both parking and circulation/safety	2015 RESET	
Improve or add bike lanes/share the road, signs for rail trail and bike racks to reduce parking demand	2015 RESET	
Create wider sidewalks, defined crosswalks, and add benches and shade trees to encourage walking	2015 RESET	
Increase landscaping and LID to reduce runoff from parking areas (Green Streets/Green Parking)	2015 RESET	
Simplify use table (and in turn parking requirements)	2015 RESET	



Parking Recommendations	Source	Status
Delineate on-street parking better	2011 STREETSCAPE	
Redesign parking lots	2011 STREETSCAPE	
Add signage to direct cars to parking and indicate where parking is allowed	2011 STREETSCAPE	
Public-Private parking partnership	2011 STREETSCAPE	
Purchase land for parking	2011 STREETSCAPE	
Acquire the Besse Lot on Main Street, behind the Hogan Art Gallery and Honey Candles. Access-only should be provided from Main Street and full access/egress should be provided on Brewster Cross Road	2004 P&C STUDY	no action
Re-configure the parking spaces and indicate location and access to the Besse lot	2004 P&C STUDY	no action
Erect green on white parking signs to direct visitors to public parking areas	2004 P&C STUDY	no action
Investigate a public/private partnership for additional public parking. Areas to considered: Homeport restaurant front lot and the lot behind the Hole in One and Mahoney's	2004 P&C STUDY	not done

Circulation Recommendations	Source	Action to date
Reduce curb cuts	2015 RESET	
Improve way-finding signage for cars, pedestrians and bikes	2015 RESET	
Reduce waiting times for pedestrians at signaled intersections	2011 STREETSCAPE	



Circulation Recommendations	Source	Action to date
Complete pedestrian connections and sidewalk improvements	2011 STREETSCAPE	
Add bump-outs and on-street parking on wider road sections (see plan for locations)	2011 STREETSCAPE	
Add share the road markings and/or bike lanes, bike racks (see plan for locations)	2011 STREETSCAPE	
Increase shade trees, landscaping and seating, including seat walls	2011 STREETSCAPE	
Re-strip Old Colony Way	2011 STREETSCAPE	
Improve Main Street & Brewster Cross Road intersection	2011 STREETSCAPE	
Designate Cove Road one-way eastbound and add on-street parking	2004 P&C STUDY	no action
Upgrade Cove Road to reconstruct the sidewalk and add wheelchair ramps	2004 P&C STUDY	Done 2014
Create a consistent cross-walk marking pattern such as the red brick imprint at Route 6a/Main Street	2004 P&C STUDY	Use VC motif
At Brewster Cross Road/Main Street install a raised median island to 'tighten-up' the intersection	2004 P&C STUDY	considering
Restripe the Brewster Cross Road/Main Street intersection to show lanes and add 3 curbside spaces on Main Street in front of the Compass Bank	2004 P&C STUDY	Main Street design project
Create an adopt-a-landscape area program to maintain island and landscaped areas	2004 P&C STUDY	Orleans LCP?
At Route 6A/Brewster Cross Road intersection, designate Brewster Cross Road as one-way towards Main Street. The remaining section should be two-way.	2004 P&C STUDY	No left turn 2012
Upgrade signal equipment at the Main Street/Tonset Road intersection	2004 P&C STUDY	Done 2013
Monitor the parcel of land where the Fog Cutter restaurant is located; the land may be of value if the intersection is to be upgraded at some future date	2004 P&C STUDY	not needed RAB



Circulation Recommendations	Source	Action to date
Upgrade the pedestrian signal heads at Route 6A/Main Street and install signal heads at the Route 28/Main Street intersection. Countdown pedestrian signals are recommended	2004 P&C STUDY	MassDOT– Fall 2016
Alter the signal timing at Route 28/Main Street to add more green time for the northbound (southbound) approach	2004 P&C STUDY	MassDOT– Fall 2016
Create designated pedestrian walkway connections between Main Street and Cove Road via the Orleans Chamber of Commerce building and Cummings Road	2004 P&C STUDY	50% complete
Consolidate curb cuts along Main Street at Friends Market and Post Office Square	2004 P&C STUDY	Planned 2016
At Main Street/Old Colony Way install an elephant track crosswalk at the Rail Trail; place the portable pedestrian crosswalk sign at the crosswalk adjacent to Mahoney’s Restaurant; police officer control on sunny days of July and August from 10AM -4PM; and designate Snow’s east driveway as in-only	2004 P&C STUDY	MassDOT– Fall 2016; officer discontinued
Re-design Route 28/Route 6A intersection	2004 P&C STUDY	Done 2015
Consider ‘taking over’ control of Route 6A in the village center from the State.	2004 P&C STUDY	no action

The Orleans Village Center Market Studies included related recommendations

1. Add Way-finding signage
2. Promote landscaping with pedestrian & bike paths as part of parking areas
3. Eliminate “Missing teeth” - breaks in street wall and large expanses of pavement - these discourage pedestrian flow
4. Consider adopting maximum setbacks
5. Make the VC more of a place where people want to “hang out” & “walk around”
6. Attractive, sidewalk, street furniture & streetscape improvements



7. More bike racks throughout the VC; market the VC as bike-friendly
8. Create attractive connection/cut through between Main Street and Cove Road
9. Assess parking situation. Determine how current spots are being used
10. Determine if system that promoted employee parking in designated areas would alleviate problem
11. Reassess previous concept of developing parking lot behind Gotland Horse (approx. 100 spaces)



APPENDIX 3 - SIDE-BY-SIDE ZONING COMPARISON

Orleans Zoning - Apartments Section			
Zoning Rule	Previous Zoning	New Zoning	Notes
New Zoning provides for a Master Plan Special Permit involving proximate lots may combine lots for purposes of setbacks "and other development standards"			
VILLAGE CENTER DISTRICT - Main Street Frontage			
LOT AND DENSITY LIMITS			
Minimum Lot Size	20,000	-	Existing Zoning: If mixed use with more commercial than housing, minimum lot shall equal (3,500 sf upland per housing unit) + (building footprint) + (parking for commercial)
Housing Unit per Acre Buildable Land	6	10	with no reduction in lot area for mixed use (and no requirement for a variance for non-conformities)
VILLAGE CENTER DISTRICT			
LOT AND DENSITY LIMITS			
Minimum Lot Size	20,000	20,000	Existing Zoning: If mixed use with more commercial than housing, minimum lot shall equal (3,500 sf upland per housing unit) + (building footprint) + (parking for commercial)
Housing Unit per Acre Buildable Land	6	10	New Zoning: if mixed use, housing unit density is based on a reduced lot area calculated as follows: (total buildable lot area) - ((commercial footprint + commercial parking)/2)
Maximum Density with Incentives	6	14	New Zoning: Incentives for 1-bedroom units, affordable units, and preservation of "significant buildings"
Maximum Units per Building	12	20	
Affordable Housing Requirement	0	10%	Only applies to developments with 10 or more units



Orleans Zoning - Apartments Section			
Zoning Rule	Previous Zoning	New Zoning	Notes
New Zoning provides for a Master Plan Special Permit involving proximate lots may combine lots for purposes of setbacks "and other development standards"			
DIMENSIONAL REQUIREMENTS			
Max. Building Coverage/FAR	100% FAR	no change	
Lot Coverage	100%	no change	
Min. Frontage	100'	no change	
Front Yard Setback	15' min. or less if existing, 25' max.	no change	
Side Yard Setback	10' min., down to 0' for party walls	no change	
Rear Yard Setback	10' min., down to 0' for party walls	no change	
Max. Building Height	30'	no change	
Max. Building Height with 3rd Floor Units	30' overall, 42' to top of ridge	35' overall, 42' to top of ridge	mean height between bottom of the eave and highest point on ridge shall not exceed 35 feet
PARKING			
Fee in Lieu of Parking	allowed	no change	
RURAL BUSINESS DISTRICT			
LOT AND DENSITY LIMITS			
Minimum Lot Size	60,000	60,000	Existing Zoning: If mixed use with more commercial than housing, minimum lot shall equal (3,500 sf upland per housing unit) + (building footprint) + (parking for commercial)



Orleans Zoning - Apartments Section			
Zoning Rule	Previous Zoning	New Zoning	Notes
New Zoning provides for a Master Plan Special Permit involving proximate lots may combine lots for purposes of setbacks "and other development standards"			
Housing Unit per Acre Buildable Land	3	3	New Zoning: if mixed use, housing unit density is based on a reduced lot area calculated as follows: (total buildable lot area) - ((commercial footprint + commercial parking)/2)
Maximum Density with Incentives	3	3	
Maximum Units per Building	12	15	
Affordable Housing Requirement	0	10%	Only applies to developments with 10 or more units
DIMENSIONAL REQUIREMENTS			
Max. Building Coverage/FAR	15% or 4,000 s.f. w/special permit	no change	
Lot Coverage	75%	no change	
Min. Frontage	100'	no change	
Front Yard Setback	25'	no change	
Side Yard Setback	25'	no change	
Rear Yard Setback	25'	no change	
Max. Building Height	30'	no change	
Max. Building Height with 3rd Floor Units	30'	no change	
LIMITED BUSINESS DISTRICT			
LOT AND DENSITY LIMITS			
Minimum Lot Size	60,000	30,000	Existing Zoning: If mixed use with more commercial than housing, minimum lot shall



Orleans Zoning - Apartments Section			
Zoning Rule	Previous Zoning	New Zoning	Notes
New Zoning provides for a Master Plan Special Permit involving proximate lots may combine lots for purposes of setbacks "and other development standards"			
			equal (3,500 sf upland per housing unit) + (building footprint) + (parking for commercial)
Housing Unit per Acre Buildable Land	6	8	New Zoning: if mixed use, housing unit density is based on a reduced lot area calculated as follows: (total buildable lot area) - ((commercial footprint + commercial parking)/2)
Maximum Density with Incentives	6	12	New Zoning: Incentives for 1-bedroom units, affordable units, and preservation of "significant buildings"
Maximum Units per Building	12	15	
Affordable Housing Requirement	0	10%	Only applies to developments with 10 or more units
Max. Building Coverage/FAR	40% FAR	no change	
Lot Coverage	75%	no change	
Min. Frontage	100'	no change	
Front Yard Setback	25'	no change	
Side Yard Setback	10'	no change	
Rear Yard Setback	10'	no change	
Max. Building Height	30'	no change	
Max. Building Height with 3rd Floor Units	30'	35' overall, 42' to top of ridge	mean height between bottom of the eave and highest point on ridge shall not exceed 35 feet
GENERAL BUSINESS DISTRICT			
LOT AND DENSITY LIMITS			
Minimum Lot Size	60,000	30,000	Existing Zoning: If mixed use with more commercial than housing, minimum lot shall



Orleans Zoning - Apartments Section			
Zoning Rule	Previous Zoning	New Zoning	Notes
New Zoning provides for a Master Plan Special Permit involving proximate lots may combine lots for purposes of setbacks "and other development standards"			
			equal (3,500 sf upland per housing unit) + (building footprint) + (parking for commercial)
Housing Unit per Acre Buildable Land	6	8	New Zoning: if mixed use, housing unit density is based on a reduced lot area calculated as follows: (total buildable lot area) - ((commercial footprint + commercial parking)/2)
Maximum Density with Incentives	6	12	New Zoning: Incentives for 1 bedroom units, affordable units, and preservation of "significant buildings"
Maximum Units per Building	12	15	
Affordable Housing Requirement	0	10%	Only applies to developments with 10 or more units
DIMENSIONAL REQUIREMENTS			
Max. Building Coverage/FAR	40% FAR	no change	
Lot Coverage	75%	no change	
Min. Frontage	100'	no change	
Front Yard Setback	25'	no change	
Side Yard Setback	10'	no change	
Rear Yard Setback	10'	no change	
Max. Building Height	30'	no change	
Max. Building Height with 3rd Floor Units	30'	35' overall, 42' to top of ridge	mean height between bottom of the eave and highest point on ridge shall not exceed 35 feet
ALL ZONING DISTRICTS			



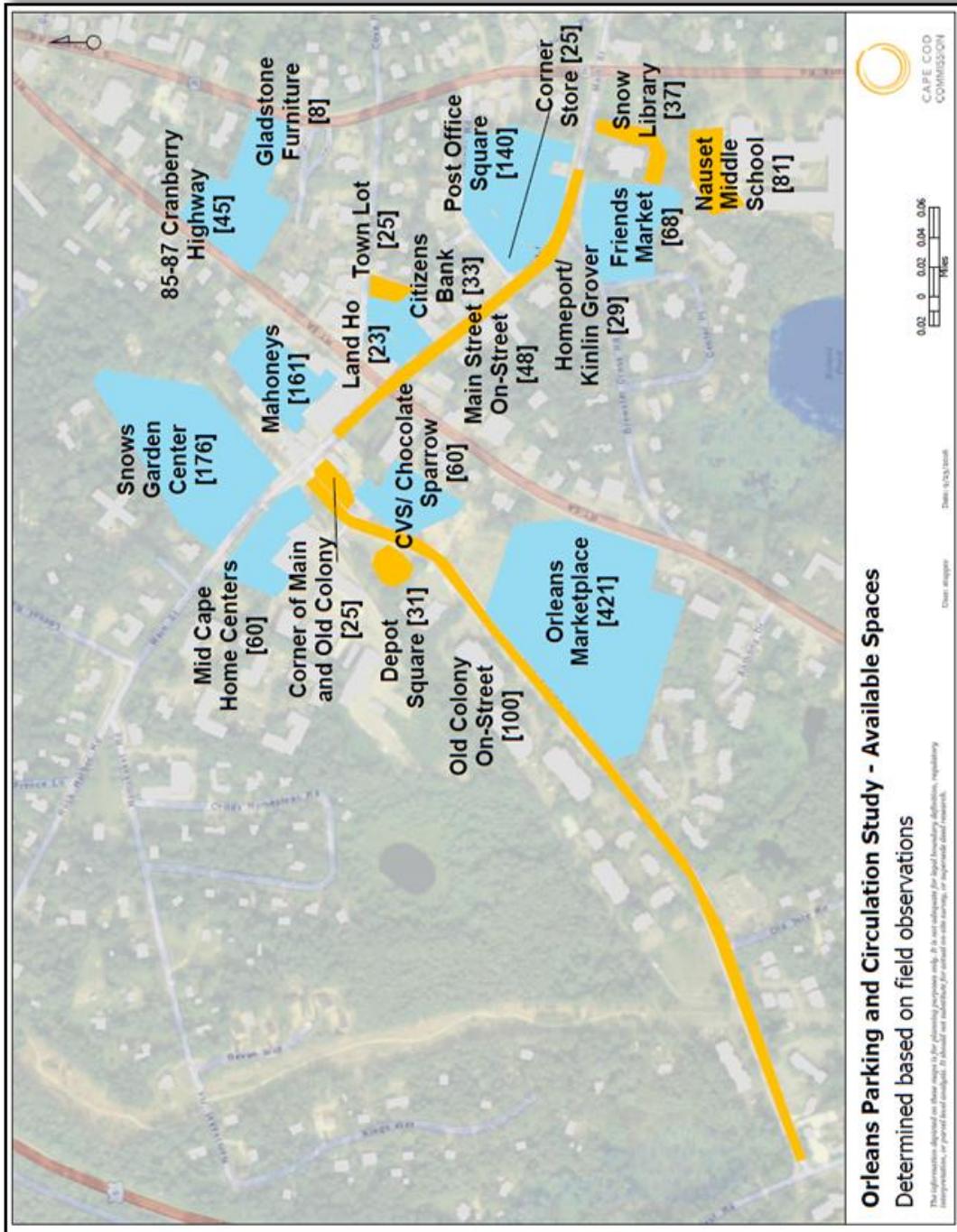
Orleans Zoning - Apartments Section			
Zoning Rule	Previous Zoning	New Zoning	Notes
New Zoning provides for a Master Plan Special Permit involving proximate lots may combine lots for purposes of setbacks "and other development standards"			
PARKING			
Multifamily apartment or condominium 1 bedroom	1.5 spaces per unit (see note)	no change	
Multifamily apartment or condominium 2 or 3 bedrooms	2	no change	spaces per unit
All multifamily buildings must provide for visitor parking	1	no change	space per 3 units
Commercial and retail service establishments	1	no change	space per each 250 square feet of gross floor area
Professional and business offices, including banks, insurance and real estate	1	no change	space per each 300 square feet of gross floor area
Shared Parking Reduction	maximum 20% w/ special permit	20% by building comm, higher by special permit	

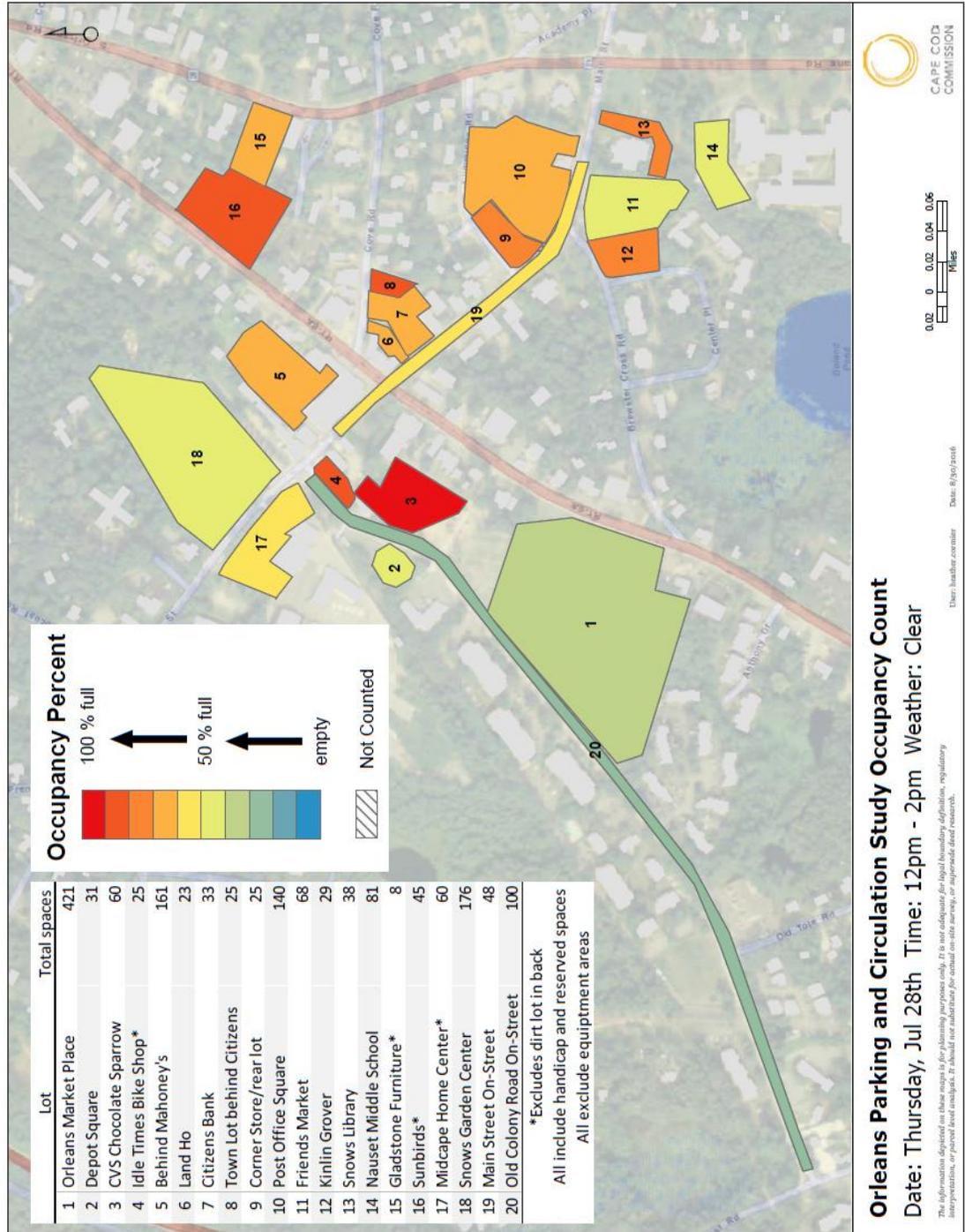


APPENDIX 4 - PARKING OCCUPANCY DATA AND MAPS

May 2016 Occupancy Count Data									
	Date	Thursday May 19	Saturday May 21	Thursday May 19	Saturday May 21				
	Time	12pm-2pm		5pm-7pm					
Lot	Effective	Spaces full	Spaces full	Spaces full	Spaces full				
1	Orleans Market Place	421	30%	29%	23%				
2	Depot Square	31	23%	35%	42%				
3	CVS Chocolate Sparrow	60	52%	77%	42%				
4	Idle Times Bike Shop	25	32%	48%	20%				
5	Behind Mahoney's	161	48%	57%	24%				
6	Land Ho	23	91%	65%	65%				
7	Citizens Bank	33	70%	36%	48%				
8	Town Lot behind Citizens	25	68%	76%	48%				
9	Corner Store/Savory	25	92%	72%	40%				
10	Post Office Square	140	57%	55%	13%				
11	Friends Market	68	60%	71%	37%				
12	Kinlin Grover	29	45%	48%	7%				
13	Snows Library	38	34%	45%	3%				
14	Nauset Middle School	81	63%	0%	4%				
15	Gladstone Furniture	8	63%	50%	0%				
16	Sunbirds	45	44%	51%	18%				
17	Midcape Home Center	60	35%	27%	7%				
18	Snows Garden Center	176	38%	45%	6%				
19	Main Street On-Street	48	54%	44%	27%				
20	Old Colony Road On-Street	100	28%	12%	8%				

August 2016 Occupancy Count Data							
	Date	Tuesday July 26	Thursday July 28	Saturday July 30	Tuesday July 26	Thursday July 28	Saturday July 30
	Time	12pm-2pm			5pm-7pm		
Lot	Total spaces	Spaces full	Spaces full	Spaces full	Spaces full	Spaces full	Spaces full
1	Orleans Marketplace	421	41%	35%	33%	29%	not counted
2	Depot Square	31	58%	45%	71%	87%	61%
3	CVS/ Chocolate Sparrow	60	82%	98%	135%	58%	50%
4	Corner of Main and Old Colony	25	68%	88%	88%	24%	48%
5	Mahoneys	161	71%	63%	57%	38%	39%
6	Land Ho	23	74%	70%	91%	104%	96%
7	Citizens Bank	33	85%	61%	70%	58%	82%
8	Town Lot Behind Citizens	25	80%	84%	56%	48%	64%
9	Corner Store	25	44%	76%	52%	32%	16%
10	Post Office Square	140	63%	64%	66%	23%	15%
11	Friends Market	68	63%	43%	68%	41%	21%
12	Homeport/Kinlin Grover	29	52%	76%	66%	17%	7%
13	Snow's Library	38	74%	74%	84%	116%	0%
14	Nauset Middle School	81	54%	47%	20%	17%	31%
15	Gladstone Furniture	8	50%	63%	25%	0%	25%
16	Sunbirds	45	31%	89%	53%	53%	44%
17	Mid Cape Home Center	60	53%	52%	42%	13%	5%
18	Snows Garden Center	176	58%	43%	35%	16%	9%
19	Main Street On-Street	48	65%	54%	29%	19%	23%
20	Old Colony On-Street	100	38%	30%	13%	17%	21%





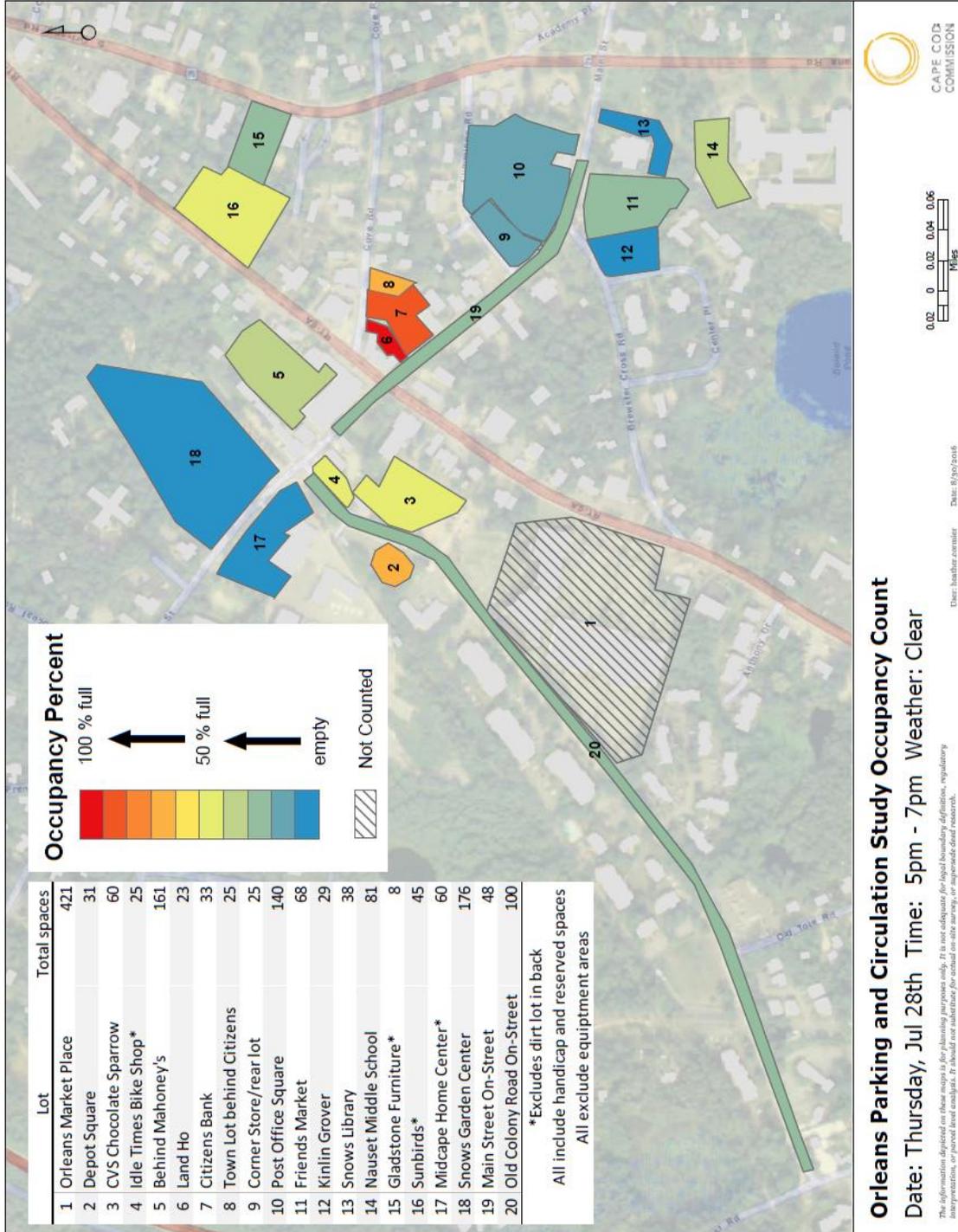
Orleans Parking and Circulation Study Occupancy Count
 Date: Thursday, Jul 28th Time: 12pm - 2pm Weather: Clear

User: hannah.comisar Date: 8/30/2016

The information depicted on these maps is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel level analysis. It should not substitute for actual on-site surveying or supervised aerial research.

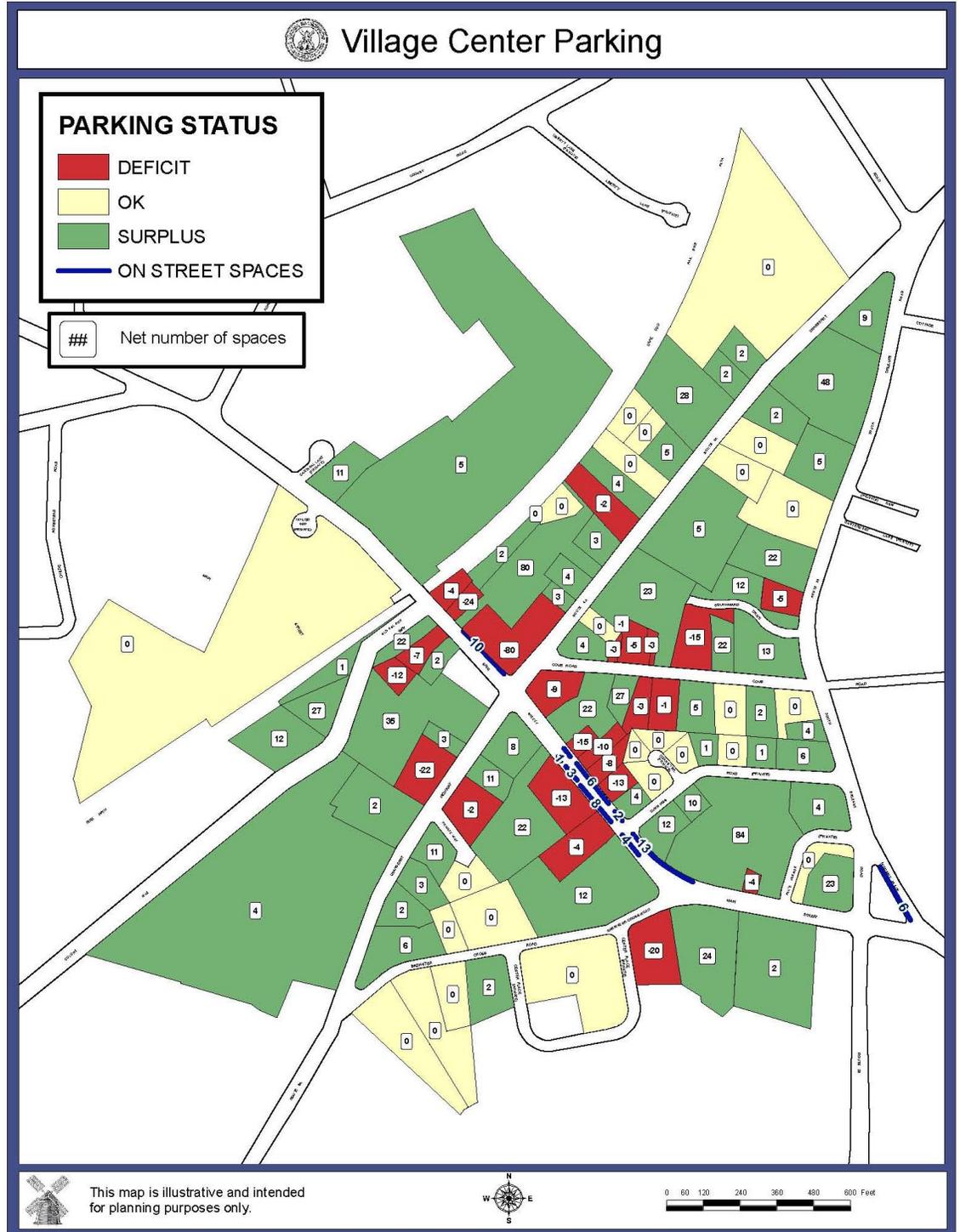


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APPENDIX 5 – EXAMPLES OF COOPERATIVE PARKING AGREEMENTS

SAMPLE SHARED PARKING AGREEMENTS

Shared parking agreements can be made between two or more private parties or between a public entity and one or more private parties. The parties can agree on a shared easement or a shared lease arrangement with detailed provisions on costs and benefits, including maintenance.

Two samples are included here, the first from the City of Portland Oregon and the second from the County of Brazos, Texas.

City of Portland, OR - Sample Shared Use Agreement

This Shared Use Agreement for Parking Facilities, entered into this ____ day of _____, _____, between _____, hereinafter called lessor and _____, hereinafter called lessee.

In consideration of the covenants herein, lessor agrees to share with lessee certain parking facilities, as is situated in the City of _____, County of _____ and State of _____, hereinafter called the facilities, described as:

[Include legal description of location and spaces to be shared here, and as shown on attachment 1.]

The facilities shall be shared commencing with the ____ day of _____, _____, and ending at 11:59 PM on the ____ day of _____, _____, for *[insert negotiated compensation figures, as appropriate]*. The lessee agrees to pay at *[insert payment address]* to lessor by the ____ day of each month *[or other payment arrangements]*.

Lessor hereby represents that it holds legal title to the facilities.

The parties agree:



1. USE OF FACILITIES

This section should describe the nature of the shared use (exclusive, joint sections, time(s) and day(s) of week of usage.

-SAMPLE CLAUSE- [Lessee shall have exclusive use of the facilities. The use shall only be between the hours of 5:30 PM Friday through 5:30 AM Monday and between the hours of 5:30 PM and 5:30 AM Monday through Thursday.]

2. MAINTENANCE

This section should describe responsibility for aspects of maintenance of the facilities. This could include cleaning, striping, seal coating, asphalt repair and more.

-SAMPLE CLAUSE- [Lessor shall provide, as reasonably necessary asphalt repair work. Lessee and Lessor agree to share striping, seal coating and lot sweeping at a 50%/50% split based upon mutually accepted maintenance contracts with outside vendors. Lessor shall maintain lot and landscaping at or above the current condition, at no additional cost to the lessee.]

3. UTILITIES and TAXES

This section should describe responsibility for utilities and taxes. This could include electrical, water, sewage, and more.

-SAMPLE CLAUSE- [Lessor shall pay all taxes and utilities associated with the facilities, including maintenance of existing facility lighting as directed by standard safety practices.]

4. SIGNAGE

This section should describe signage allowances and restrictions.

-SAMPLE CLAUSE- [Lessee may provide signage, meeting with the written approval of lessor, designating usage allowances.]

5. ENFORCEMENT

This section should describe any facility usage enforcement methods.



-SAMPLE CLAUSE- [Lessee may provide a surveillance officer(s) for parking safety and usage only for the period of its exclusive use. Lessee and lessor reserve the right to tow, at owner's expense, vehicles improperly parked or abandoned. All towing shall be with the approval of the lessor.]

6. COOPERATION

This section should describe communication relationship.

-SAMPLE CLAUSE- [Lessor and lessee agree to cooperate to the best of their abilities to mutually use the facilities without disrupting the other party. The parties agree to meet on occasion to work out any problems that may arise to the shared use.]

7. INSURANCE

This section should describe insurance requirements for the facilities.

-SAMPLE CLAUSE- [At their own expense, lessor and lessee agree to maintain liability insurance for the facilities as is standard for their own business usage.]

8. INDEMNIFICATION

This section should describe indemnification as applicable and negotiated. This is a very technical section and legal counsel should be consulted for appropriate language to each and every agreement

-NO SAMPLE CLAUSE PROVIDED-

9. TERMINATION

This section should describe how to or if this agreement can be terminated and post termination responsibilities.

-SAMPLE CLAUSE- [If lessor transfers ownership, or if part of all of the facilities are condemned, or access to the facilities is changed or limited, lessee may, in its sole discretion terminate this agreement without further liability by giving Lessor not less than 60 days prior written notice. Upon termination of this agreement, Lessee agrees to remove all signage and repair damage due to excessive use or abuse. Lessor agrees to give lessee the right of first refusal on subsequent renewal of this agreement.]



10. SUPPLEMENTAL COVENANTS

This section should contain any additional covenants, rights, responsibilities and/or agreements.

- NO SAMPLE CLAUSE PROVIDED-

IN WITNESS WHEREOF, the parties have executed this Agreement as of the Effective Date Set forth at the outset hereof.

[Signature and notarization as appropriate to a legal document and as appropriate to recording process negotiated between parties.]

State of Texas County of Brazos - Shared Parking Agreement

A Shared Parking Agreement may be revoked by the parties to the agreement only if off-street parking is provided pursuant to Section 7.2 Off-Street Parking Standards, or if an Alternative Parking Plan is approved by the Administrator.

THE STATE OF TEXAS COUNTY OF BRAZOS THIS PARKING AGREEMENT is made and entered into as of the *(date)* by and between and *(property I)* and *(property II)*

WHEREAS, (name of property owner I) is the owner of (legal description, Vol., Page) located at (address) within the City of College Station, Brazos County, (address) Texas (herein after referred to as " ");

WHEREAS (name property owner II) is the owner of (legal description, Vol., Page) located at (address) within the City of College Station, Brazos County, Texas (herein after referred to as " ");

WHEREAS in order to be used as (list proposed use), (property I) requires additional off street parking to comply with the parking requirement set forth by the City of College Station Unified Development Code;

NOW, THEREFORE, in consideration of the mutual covenant and agreements set forth herein, the sufficiency of which is hereby acknowledged, the parties hereby agree as follows:

1. Easement Purpose. (by applicant)
2. Grant of Easement.



- a.
- b.
- c.
- d. The easement is nonexclusive and irrevocable, but only for so long as (property I) is used for the purposes of (use of property I)
- e. This Easement shall remain in full force and effect for so long as the (property I) is used for the purposes of (use of property I). At such time that (property I) is no longer used for purposes of (use of property I) the Easement shall become null and void by its own terms, and (property II) shall not be required to file any release, termination or other document to evidence the termination of this Easement.

MAINTENANCE & LIABILITY: by applicants

No Portion of the drives or parking areas on the (property I) or the (property II) shall be used for any purpose other than authorized by this instrument and no fence, barricade or improvement shall be constructed by either party that would prohibit the use of the (property I) or the (property II) for the Easement purpose.

It is mutually agreed that the intention of the parties is that this Agreement is for the private benefit of the parties and their respective successors and assigns and shall be strictly limited to and for the purposes herein expressed.

The rights and obligations contained in this Agreement and the terms and condition hereof shall be deemed to be covenants running with the land and binding upon the parties and their respective successors and assigns.

(signatures of both parties)

STATE OF TEXAS COUNTY OF BRAZOS This instrument was acknowledged before me on (date) by (property owner) Notary Public, State of Texas

STATE OF TEXAS COUNTY OF BRAZOS This instrument was acknowledged before me on (date) by (property owner) Notary Public, State of Texas

REVOVATION: Failure to comply with the shared parking provisions of Section 7.2.K Alternative Parking Plans, shall constitute a violation of the Unified Development Ordinance and shall specifically be cause for revocation of a Certificate of Occupancy or Building Permit.

PROVIDE ATTACHMENTS: Shared Parking Study Form



USEFUL ON-LINE RESOURCES

1. Maximizing Urban-Core Parking with Private Public and Private-Private Parking Agreements - Convening Findings, Nelson Nygaard, 2015 for Urban Sustainability Directors Network

This is a comprehensive toolkit on shared parking. It lays out the value of shared parking to property owners and communities, discusses types of shared parking agreements, issues to consider, and a process list for making shared parking a reality. The document includes slides from presentations that could be useful in explaining the value of shared parking.

https://www.usdn.org/uploads/cms/documents/2015usdnconvening_summary.pdf

2. Shared Parking – Sharing Parking Facilities Among Multiple Users, TDM Encyclopedia, Victoria Transport Policy Institute, updated 2015

Another comprehensive explanation of shared parking covering the benefits and costs of shared parking, its implementation, impacts, best practices, and application in different development settings. Case studies and numerous resources are also included on the site.

<http://www.vtpi.org/tdm/tdm89.htm>

3. Sub-regional Planning Tools, Shared Parking, The Houston-Galveston Area Council

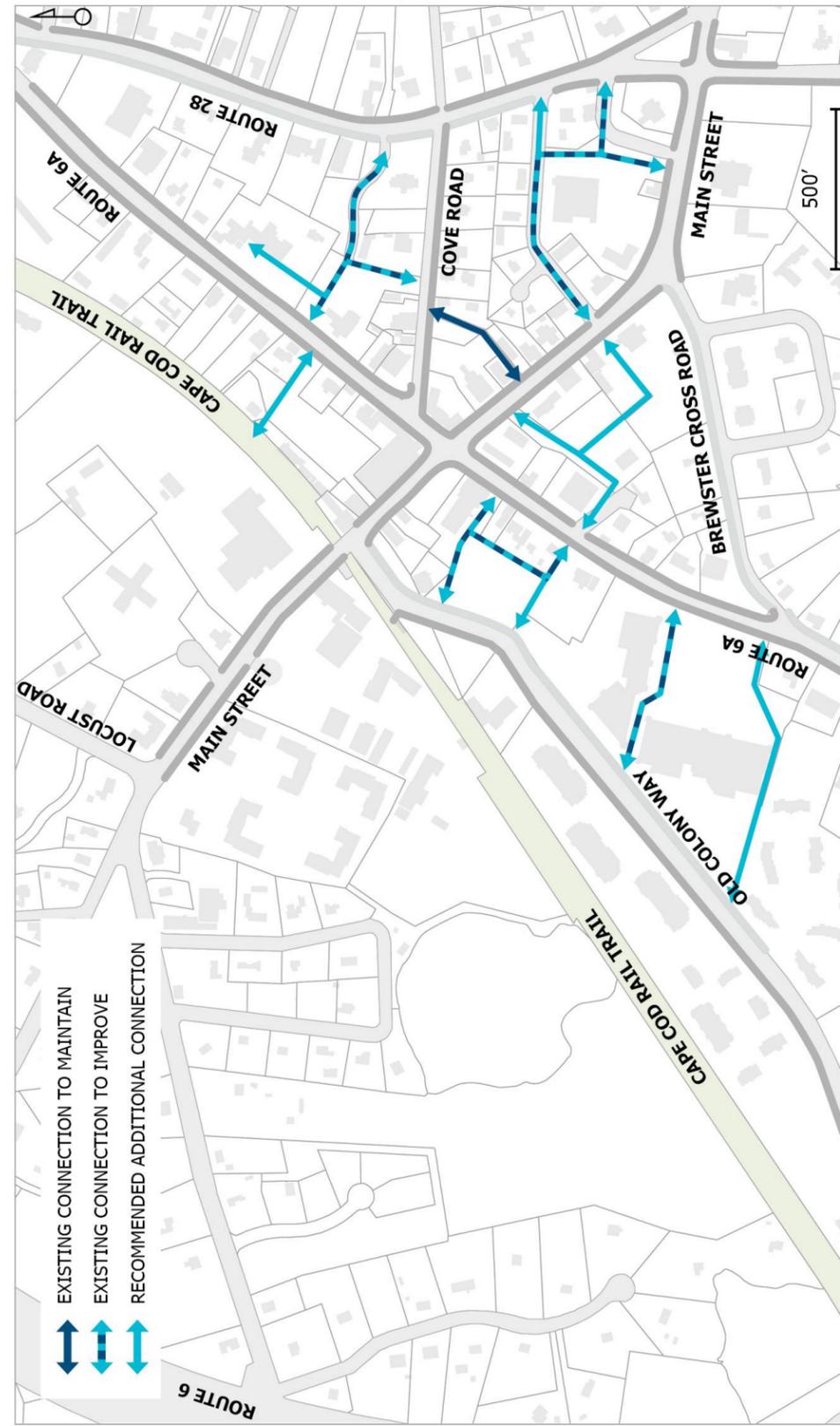
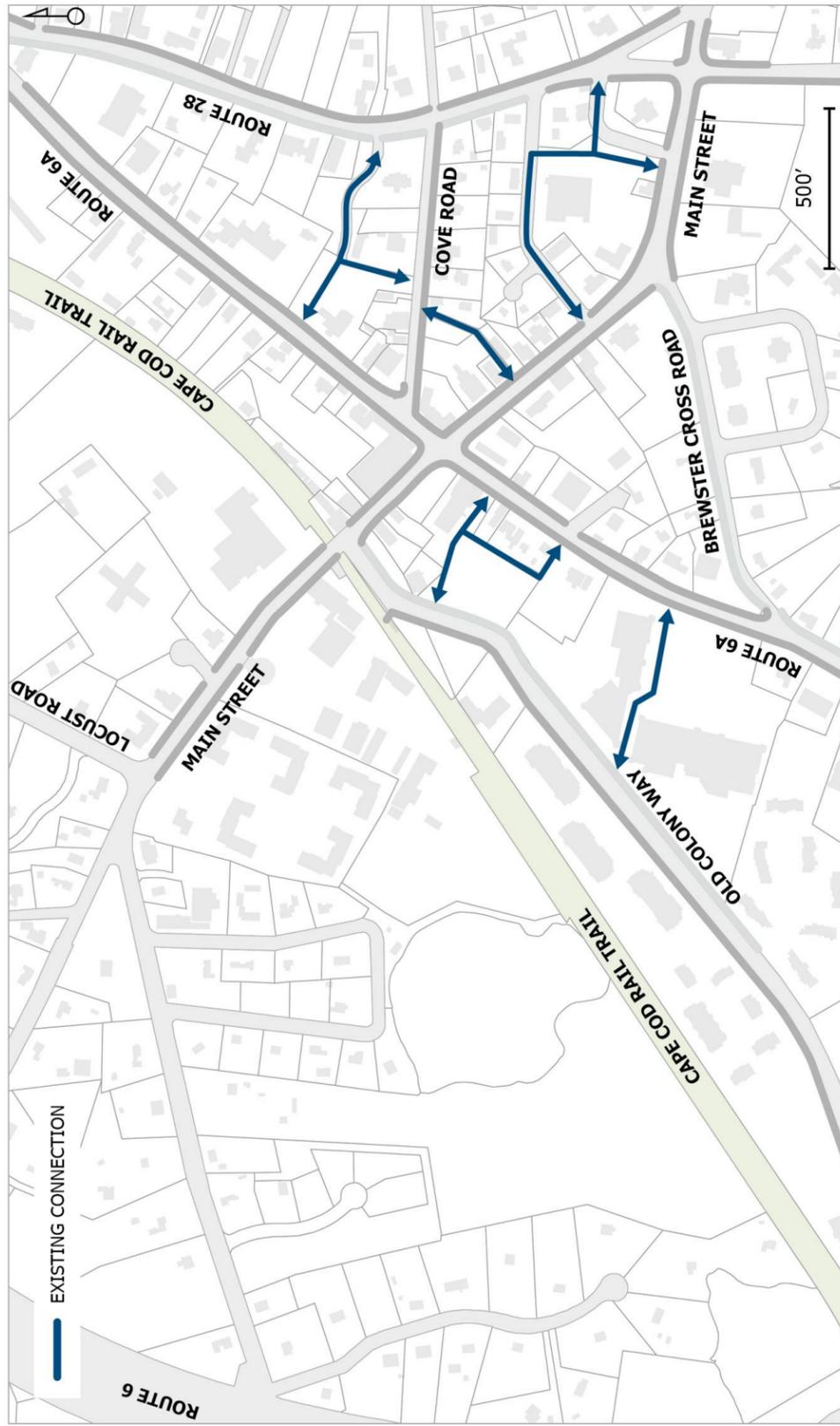
A brief outline of shared parking, its benefits and implementation, and resources for more information and sample ordinances.

[http://subregional.hgac.com/toolbox/Transportation and Mobility/Parking Management/Shared%20Parking-final.html](http://subregional.hgac.com/toolbox/Transportation%20and%20Mobility/Parking%20Management/Shared%20Parking-final.html)



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APPENDIX 6 – CIRCULATION NEXT STEPS MAP

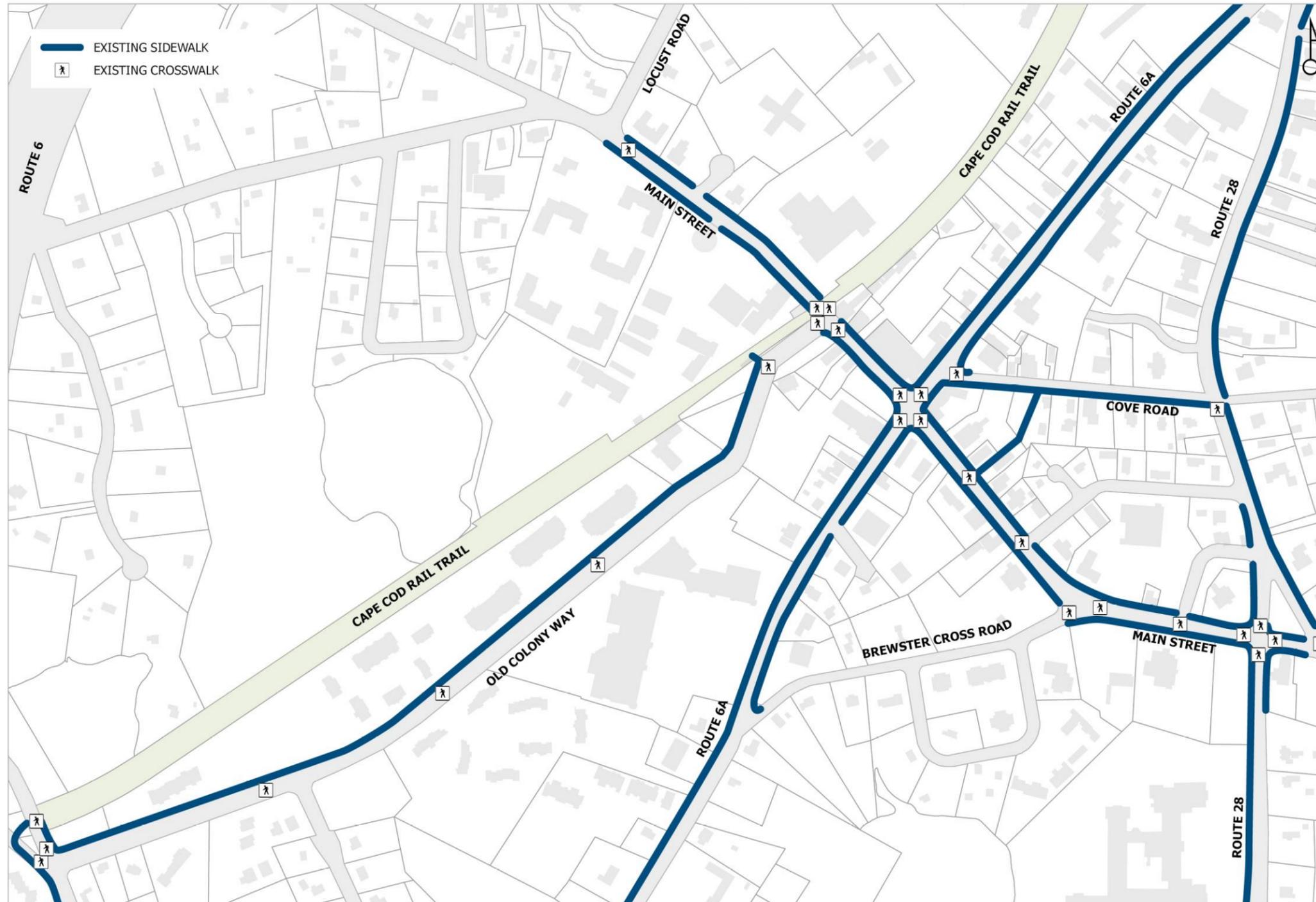


Connections Existing Conditions and Recommended Improvements

The information depicted on these maps is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel level analysis. It should not substitute for actual on-site survey, or supersede deed research.



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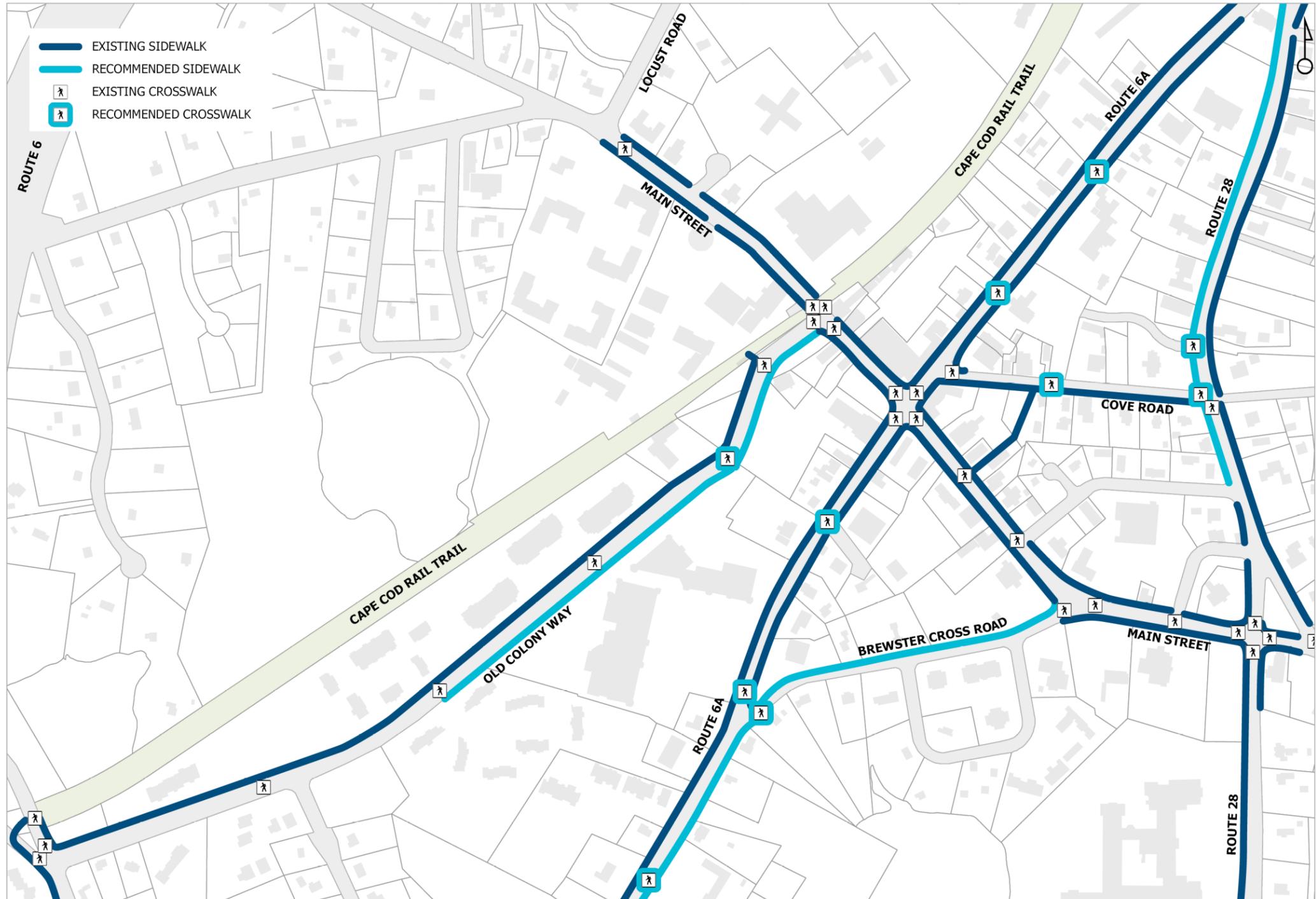


Sidewalks and Crosswalks Existing Conditions

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500'

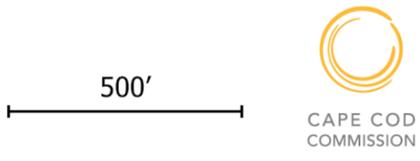


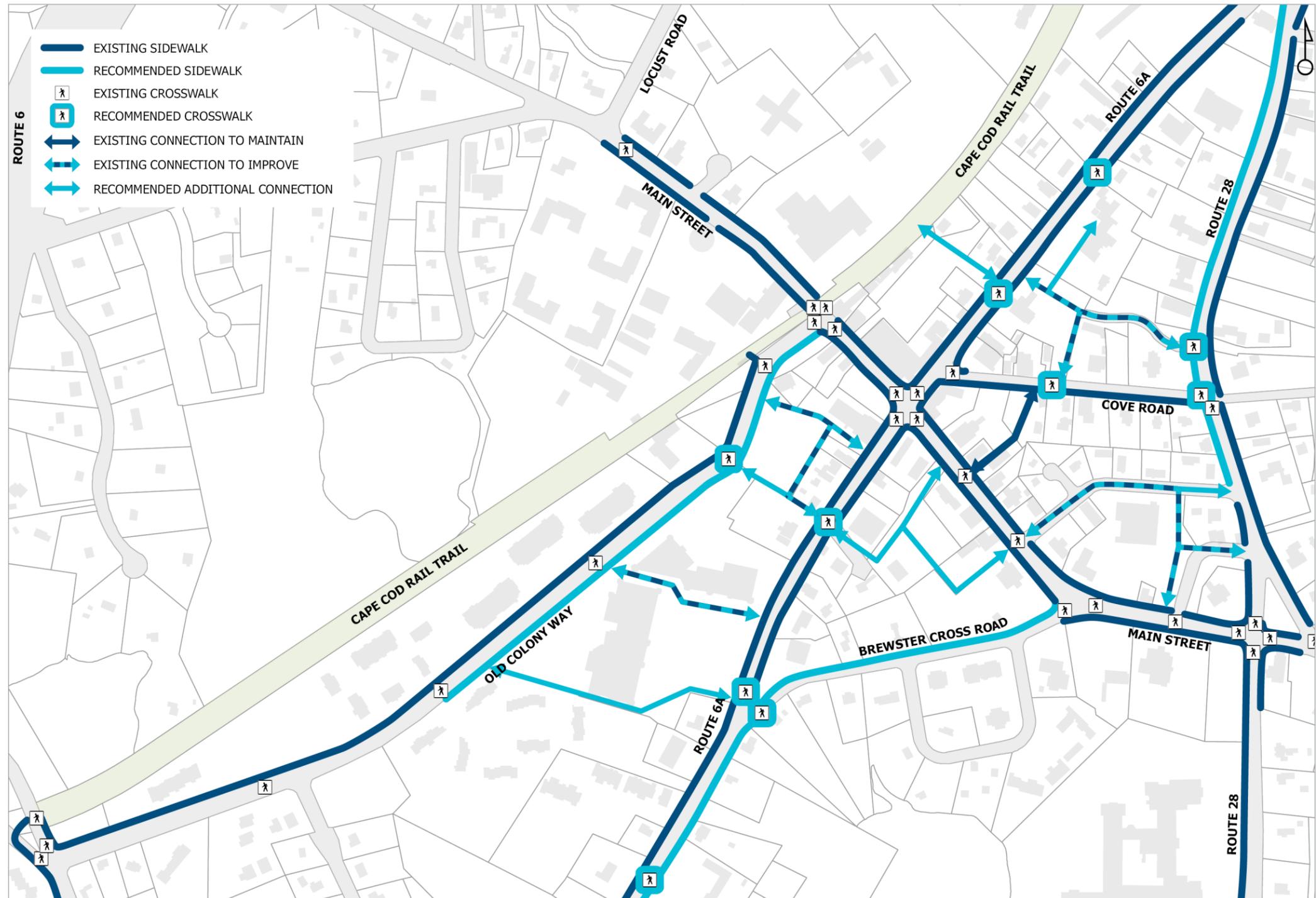


Sidewalks and Crosswalks

Existing Conditions and Recommended Improvements

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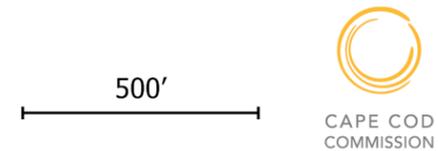


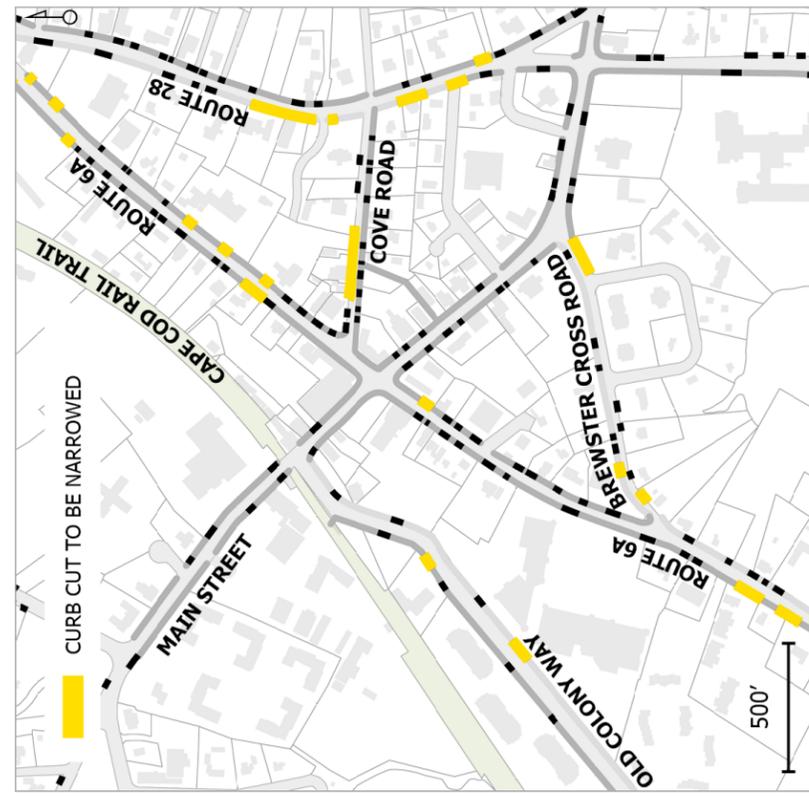
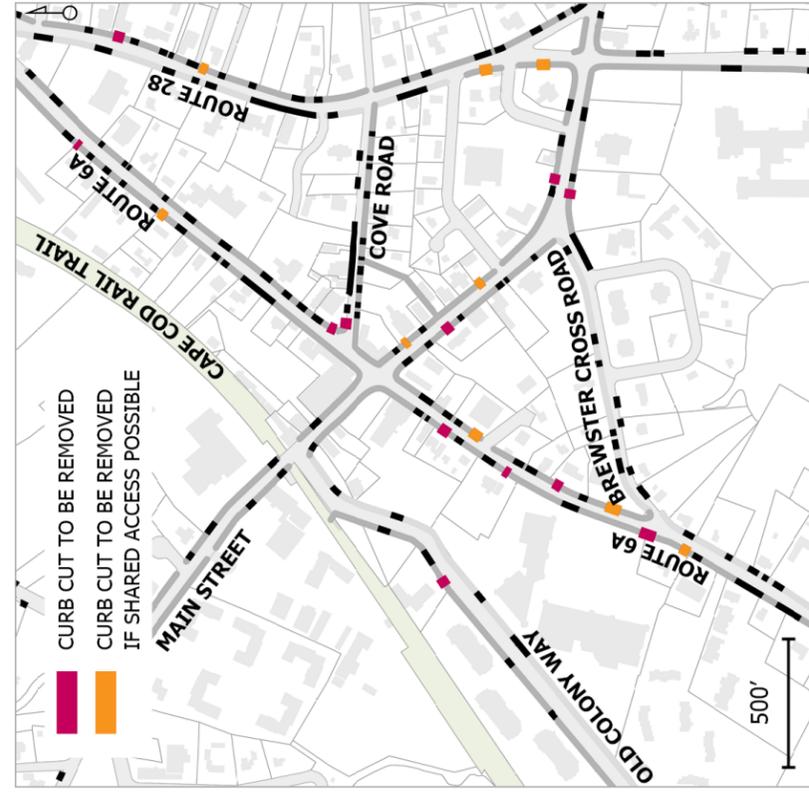
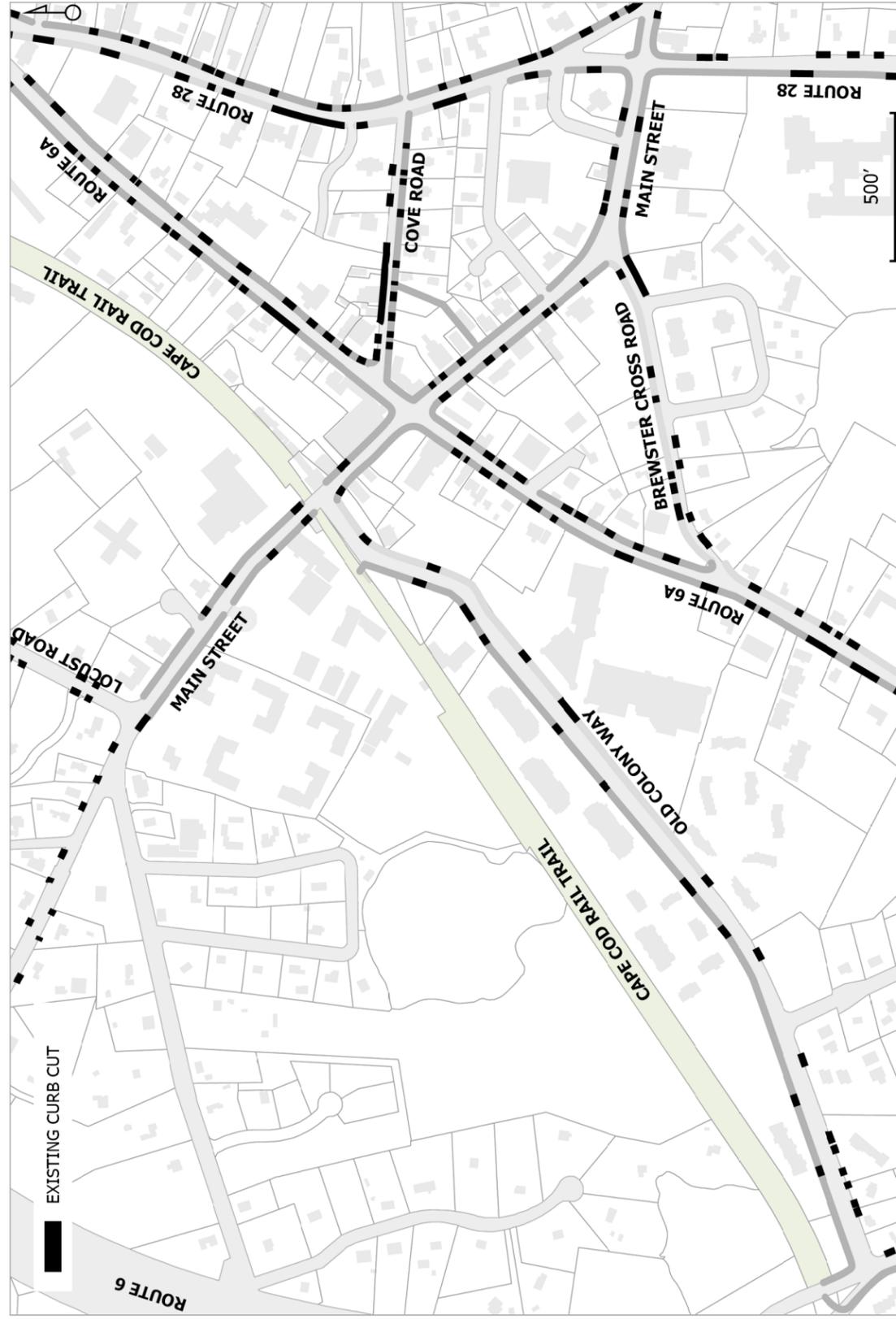


Sidewalks, Crosswalks, and Connections

Existing Conditions and Recommended Improvements

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Curb Cuts

Existing Conditions and Recommended Improvements

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