

# Kittery Foreside Land Use, Parking, and Transportation Study

*Kittery, Maine*

FINAL REPORT | February 2018



## Contents

ACKNOWLEDGEMENTS.....	4
EXECUTIVE SUMMARY.....	5
SECTION 1: INTRODUCTION.....	6
SECTION 2: PROJECT GOAL, METHODOLOGY, AND METRICS.....	9
SECTION 3: EXISTING TRANSPORTATION CONDITIONS.....	10
3.1: Review of Available Data.....	10
3.1.1: Permanent Count Station.....	10
3.1.2: Road Volumes.....	12
3.1.3: Existing Average Annual Daily Traffic Volumes.....	14
3.1.4: Intersection Turning Movement Volumes.....	15
3.1.5: Vehicle Classification.....	19
3.1.6: Pedestrian and Bicycle Volumes.....	20
3.1.7: Speed Study.....	22
3.2: Assessment of Current Conditions.....	24
3.2.1: Crash History.....	24
3.2.2: Intersection Level of Service.....	26
3.3: Transportation Infrastructure Inventory.....	31
3.3.1: Roadway Circulation.....	31
3.3.2: Bicycle Facilities.....	31
3.3.3: Sidewalks and Crosswalks.....	31
3.3.4: Access Management.....	42

3.4: Parking .....44

SECTION 4.0: EXISTING LAND USE CONDITIONS / 1997 STUDY COMPARISONS .....45

4.1: 1997 Revitalization Strategy for the Foreside District / 20 Years of Change.....45

4.2 Existing Land Use Patterns and Mobility / 1997 Comparison .....50

4.3 Relationship to Comprehensive Plan.....53

SECTION 5.0 TRANSPORTATION RECOMMENDATIONS .....55

5.1 MaineDOT Route 103 Project Status Update .....55

5.2 Future Traffic Volume Growth Assumptions .....61

5.3: Street/Intersection Recommendations .....64

    5.3.1 Route 1/Water Intersection.....65

    5.3.2 Route 1/Government Intersection .....68

    5.3.3 Route 1/Walker Intersection .....69

    5.3.4 Route 1 North / Gourmet Alley.....72

    5.3.5 Jones Avenue – Walker to Government .....75

    5.3.6 Government Street – Two-Way Section .....76

    5.3.7 Walker Street/Wentworth Street/Government/Shipyard .....78

    5.3.8 Love Lane .....79

    5.3.9 Other Side Streets in Study Area .....80

5.4 On-Street Parking Supply .....83

5.5 Off-Street Parking Supply .....84

SECTION 6.0 LAND USE RECOMMENDATIONS .....86

6.1 Land Use Introduction .....86

6.2 Growth Scenarios.....88

6.3 Land Use and Zoning Recommendations .....100

6.3.1: Key Zoning / Design Strategies .....102

6.4 Open Space and Connectivity Opportunities .....104

SECTION 7.0 PUBLIC OUTREACH.....108

## ACKNOWLEDGEMENTS

The Study is an outgrowth of the Comprehensive Plan, The Foreside Forums, and input gathered from the community at workshops. In addition, KACTS, Town Staff and a Working Group provided guidance throughout the process.

### Working Group:

Donnajean Ahigian, Board of Directors for the Dance Hall  
Marissa Day, Planning Board and Foreside resident  
Tom Emerson, Economic Development Committee  
Ken Gilbride, Property owner in the Foreside  
Elisa Winter Holben, Business owner and resident in the Foreside  
Ben Lord, Black Birch business owner in the Foreside  
Terry Lochhead, Foreside resident  
Tom Roberts, Beach Pea Bakery business owner on State Road

### Staff:

Chris Mann, Representing Maine DOT  
Tom Reinauer, Representing KACTS  
Kendra Amaral, Town Manager  
Dave Rich, Public Works Commissioner

### EXECUTIVE SUMMARY

The Kittery Foreside Land Use, Parking, and Traffic Circulation Study is an integrated approach to fostering economic development in a sustainable manner. The recommendations for transportation improvements and zoning amendments are based in community input, the review of previous documents, and analysis. Growth and change are occurring in the Foreside. This Study details how change can occur without fundamentally changing what the community appreciates. The Study also provides strategic recommendations allowing areas, such as the Route 1 corridor, to evolve into a place reflecting the values of the community.

The basic elements of the Study include:

- Improve walkability and safety throughout the Foreside.
- Promote vibrant and historic mixed-use neighborhoods east of Route 1 by allowing infill development and redevelopment at a scale consistent with the character of the area.
- Encourage Route 1 to evolve into a more urban street through road and intersection diets, complete streets, pedestrian amenities, and development framing and defining Route 1 as a place. Larger buildings, such as York Hospital (over 4,000 SF) can be located along Route 1, but not within the historic Foreside. Route 1 has the capacity to absorb development in a manner that will make it more consistent with the Foreside in terms of vibrancy, walkability, density, and a mix of uses.
- Maximize the availability of parking by creating new on-street parking, optimizing existing on-street parking, sharing existing surface parking, and working with the Portsmouth Naval Shipyard to minimize parking impacts on the community. An analysis of parking supply and demand revealed that there is more of a parking perception problem than an actual lack of parking. Parking should be integrated into the fabric of the community. It is recommended that off-street parking is allowed as an accessory use and not a primary use.
- Address the mid and high-level growth scenarios over the next 20 years with transportation recommendations that maintain capacity and improve safety while creating more urban and pedestrian-friendly streets.
- Create more connections to the waterfront with shared use paths, bridges, boardwalks, and improved accessibility.
- Guide visitors to and through the area by making wayfinding an intuitive aspect of placemaking. Wallingford Square is not just a street or an intersection. It is a place. There is the opportunity to create other squares and places by coordinating intersection, architectural, and streetscape design.
- Introduce consistent streetscape amenities such as streetlights, street trees, benches, bike racks, and signage encouraging walking, improving aesthetics, and minimizing environmental impacts. Complete / green streets are an investment in the health and economy of the community.

### SECTION 1: INTRODUCTION

T.Y. Lin International (TYLI) and MRLD Landscape Architecture + Urbanism (MRLD) were contracted by the Kittery Area Comprehensive Transportation Systems (KACTS) and the Town of Kittery to perform a study of Kittery Foreside. The Study Area is depicted on **Figure 1** and is both a popular tourist destination and recognized as Kittery’s downtown with local restaurants and shops fronting Route 1 (known as Gourmet Alley) and vibrant residential and mixed-use neighborhoods along Love Lane, Walker Street, Government Street, and Wentworth Street. Wallingford Square is a destination for restaurants and the arts and is a counterpoint to Gourmet Alley in that it is urban, historic, and pedestrian oriented. The Study Area is also home to the area’s largest employer of approximately 6,000 employees, the Portsmouth Naval Shipyard. The Piscataqua River defines the southern boundary of the Study Area – giving the area the name “Foreside,” however there are currently no strong connections to the river and it is a hidden defining presence as a tidal ecosystem and the boundary with Portsmouth, NH. With the growing popularity of the Foreside, the Town faces challenges accommodating increased traffic volumes and mobility, parking demand, and pedestrian and bicycle safety.

The goals of this Study are directly linked to a sustainable growth plan determining a reasonable build-out scenario guiding land use regulations, traffic patterns, bicycle and pedestrian accommodations, and parking resources. This involves a combination of:

- **Traffic Circulation and Wayfinding:** Are one-way streets circulating existing traffic efficiently and clearly? Can delivery truck movements occur as needed? Can users easily maneuver to their intended destination? How should the Town accommodate shift change traffic from the Portsmouth Naval Shipyard? Can signal replacements and upgrades improve capacity and flow?
- **Studying Parking Demand and Supply (On and Off Street):** Can existing parking regulations, particularly in the Wallingford Square area, be modified to improve utilization in this area? Can private lots be improved to increase supply? How are neighborhoods affected – is parking causing negative impacts to emergency access and pedestrian safety?
- **Laying out Future Pedestrian and Bicycle Facilities:** Are sidewalk widths appropriate and free of obstructions? Are additional sidewalks and crosswalks necessary? Are crosswalks ADA compliant and visible? Do existing signals allow for safe pedestrian travel?
- **Integrating Economic Development with Placemaking:** What are the appropriate patterns of development leading to a sense of place accommodating a range of uses and a scale and intensity of development sensitive to existing and envisioned context?





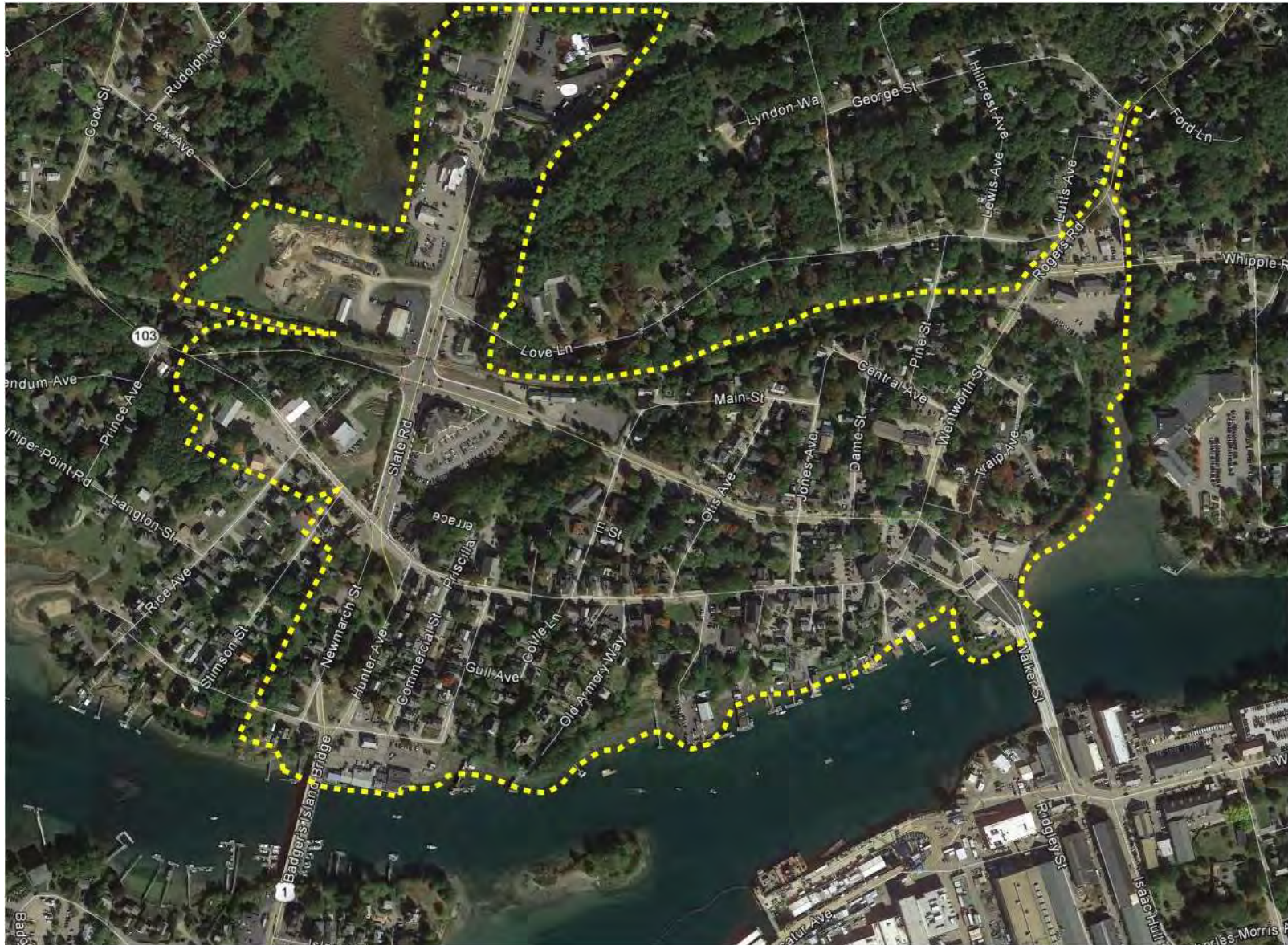


FIGURE 1: STUDY AREA

## SECTION 2: PROJECT GOAL, METHODOLOGY, AND METRICS

The goal of this Study is to determine a reasonable and palatable build-out scenario to use as a model to conclude what land use regulations, traffic patterns, bicycle and pedestrian accommodations, and parking resources are necessary to support and sustain future growth while not diminishing community character and residential qualities.

To achieve the goal of the Study, the following integrated transportation and land use methodology was followed:

1. Existing Conditions: Review previous studies and planning efforts, study existing zoning and policies, map existing land use, urban design, transportation, and parking uses.
2. Visioning: Gather input from community and stakeholders to shape vision for desired future growth
3. Model Growth: Develop build-out scenarios
4. Guide Growth: Develop zoning and transportation recommendations supporting desired build-out and redevelopment

In addition to the above methodology, metrics were established for guiding and informing the analysis and recommendations:

1. Improve walkability and safety for pedestrians and bicycles throughout the Study Area
2. Stabilize residential neighborhoods
3. Identify how the Study Area can absorb change without fundamentally changing in character
4. Make Route 1 more consistent in character with the Foreside
5. Increase access to a range of open spaces
6. Increase awareness of parking options, specifically on-street parking
7. Preserve and amplify what is special about the Foreside without becoming Portsmouth
8. Coordinate the Study and future initiatives with the Shipyard
9. Utilize placemaking as a way to aid wayfinding and economic development

## SECTION 3: EXISTING TRANSPORTATION CONDITIONS

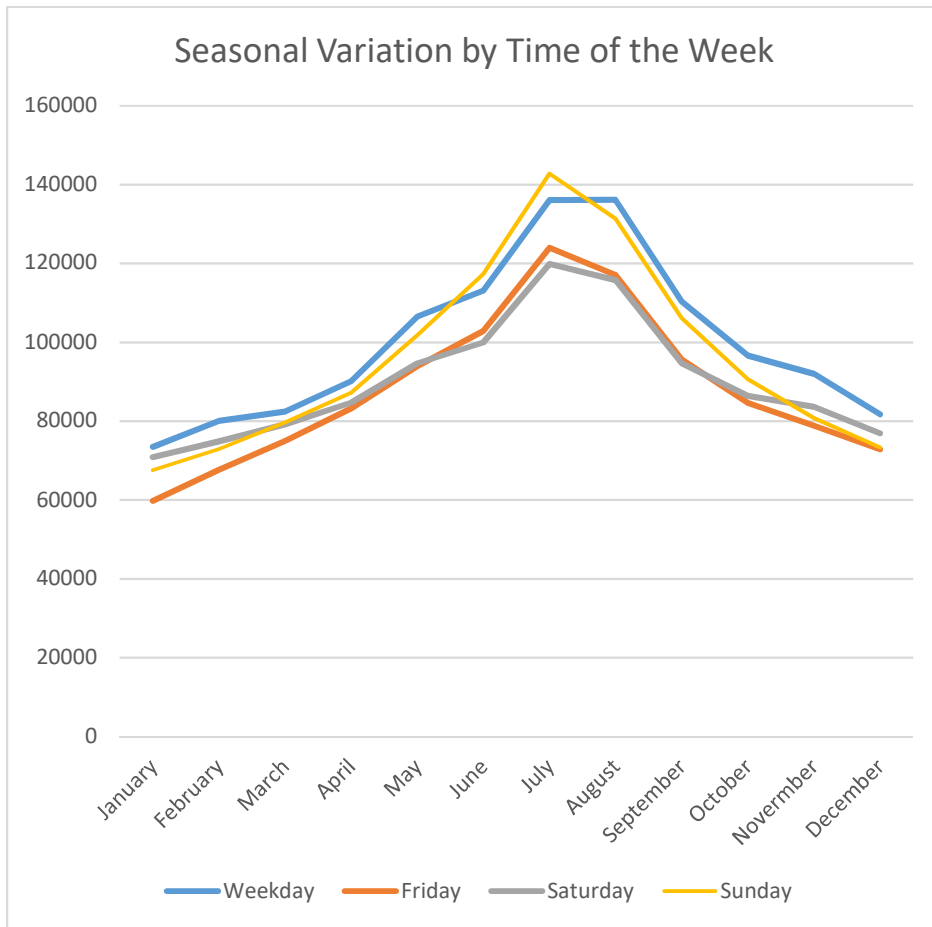
### 3.1: Review of Available Data

As previously stated, the Kittery Foreside is a popular tourist destination with the area's largest employer (Portsmouth Naval Shipyard) located in the southerly part of Maine in York County, just over the Memorial Bridge from New Hampshire. In order to provide recommendations for specific improvements, existing conditions have been studied and are summarized in this report as follows.

#### 3.1.1: Permanent Count Station

The nearest permanent count station is on I-95 at the Piscataqua River Bridge connecting Kittery and Portsmouth. While the specific volumes are not located in the study area and the Interstate roadway function is different, the variation in volume speaks to the strong summer seasonality in Kittery. As anticipated, according to 2016 data gathered by the Maine Turnpike Authority (daily volumes increase during the summer months. **Figure 2** shows this variation, noting that Average Annual Daily Traffic (AADT) summer volumes are approximately double winter volumes.

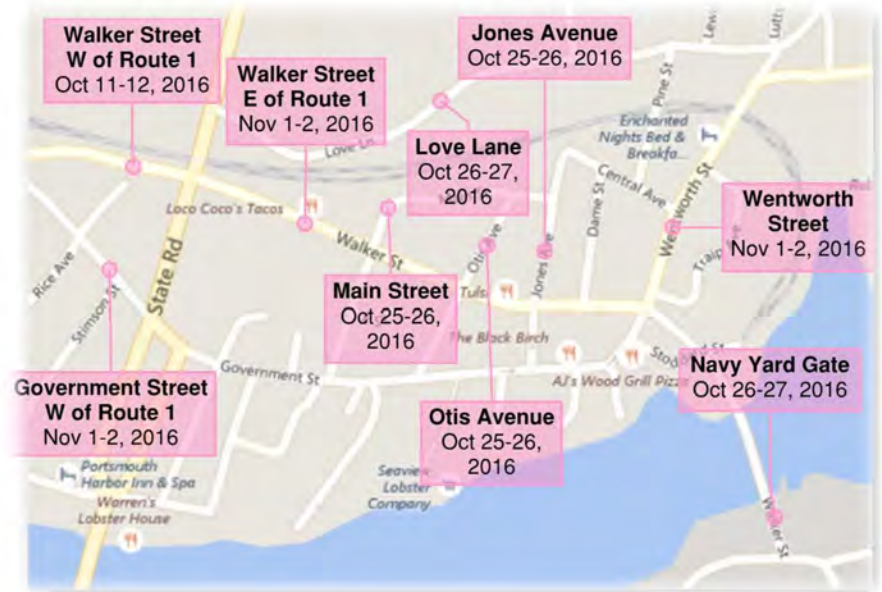
While this data also provides hourly volume variation, because of the influence of the Portsmouth Naval Shipyard, it is anticipated that the Kittery Foreside area has its own unique daily traffic volume variation, which is discussed later in this report.



**FIGURE 2: SEASON VARIATION BY TIME OF THE WEEK**

### 3.1.2: Road Volumes

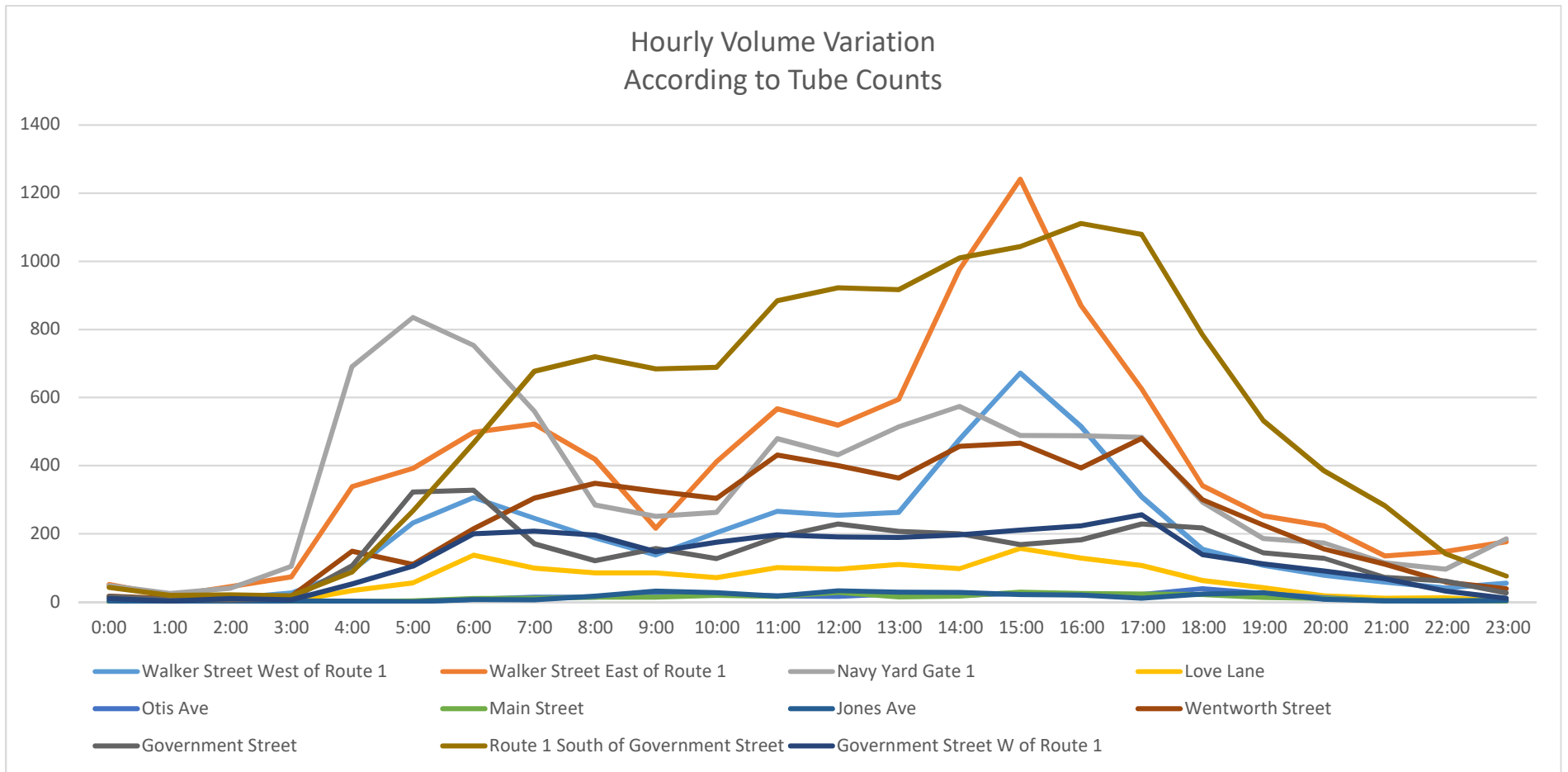
KACTS performed a series of traffic counts in the fall of 2016. The counts were conducted using traffic counter tubes set up at various locations in Kittery Foreside as noted in **Figure 3**.



**FIGURE 3: LOCATION OF TUBE COUNTS**

These tube count volumes were used to examine hourly traffic volume variation as shown in **Figure 4**. While some areas do not have distinct peaks, the majority of roads in this area have distinct AM and PM peak hours with volumes that increase throughout the day.

The data also provides volume comparisons by location. As anticipated, Route 1 has the highest overall daily volume total. Walker Street near the Portsmouth Naval Shipyard Gate 1 Entrance follows. The side streets – north of Walker and between Walker and Government – have the lowest volumes.



**FIGURE 4: HOURLY VOLUME VARIATION ACCORDING TO TUBE COUNTS**

3.1.3: Existing Average Annual Daily Traffic Volumes

Figure 5 illustrates the yearly MaineDOT counts collected to estimate Average Annual Daily Traffic Volume (AADT) on various streets in the study area as a method of understanding traffic volumes levels, roadway importance, and potential mobility conditions. Route 1 carries the highest traffic volume in the study area. Walker Street outside of Gate 1 also carries significant traffic volumes, given its use as the primary access to the Portsmouth Naval Shipyard.

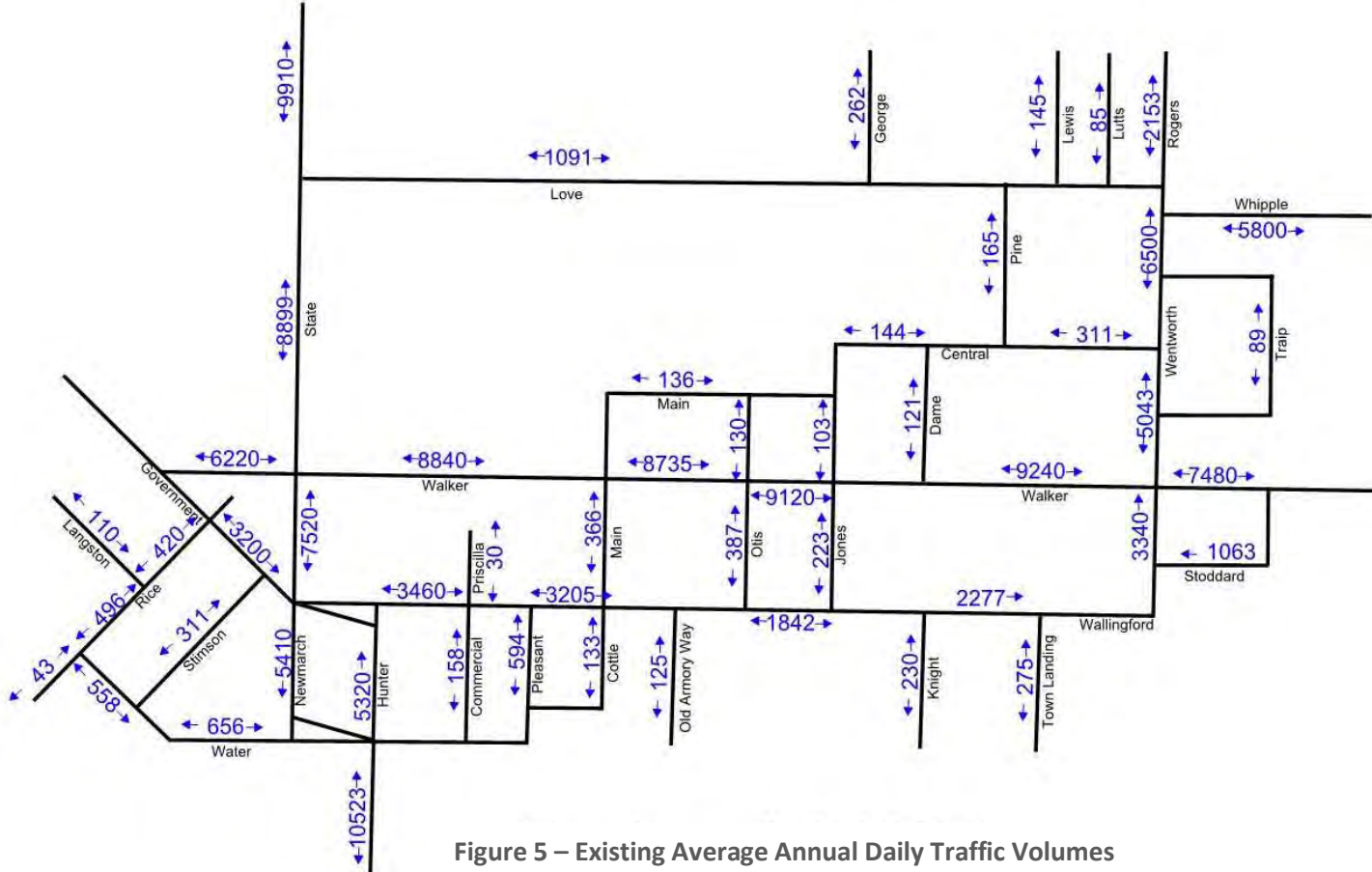
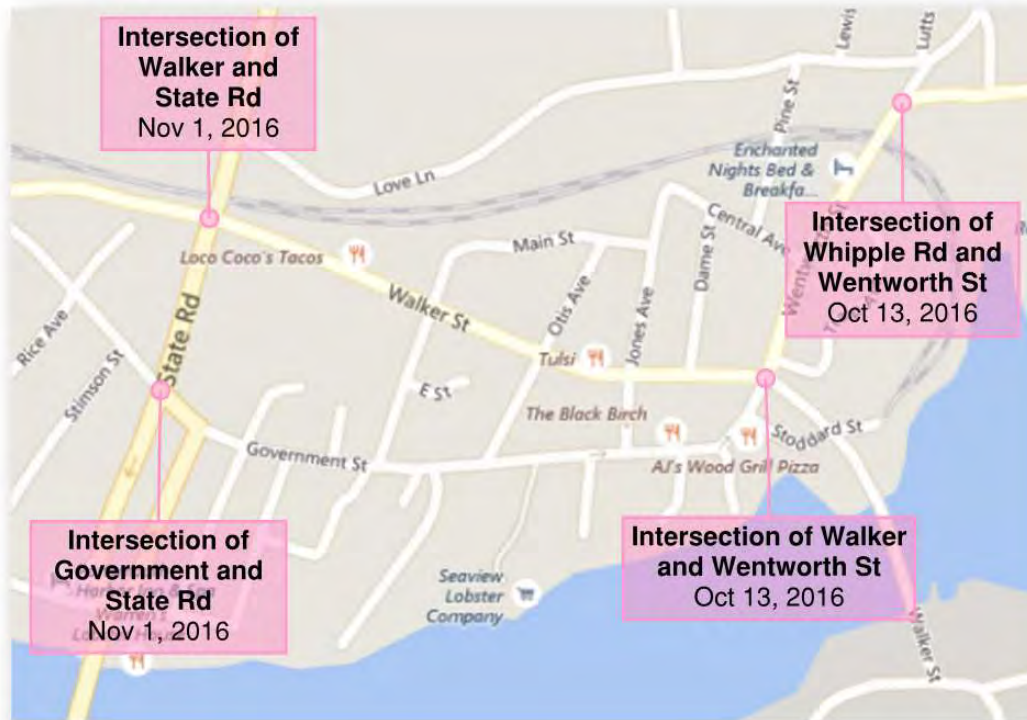


Figure 5 – Existing Average Annual Daily Traffic Volumes

### 3.1.4: Intersection Turning Movement Volumes

Intersection turning movement counts were conducted as noted in **Figure 6**. As previously discussed, it was suspected that this area has unique peak travel periods. Typically, a weekday count will produce an AM and PM peak hour that relates to commuting traffic or other area influences.



**FIGURE 6: TURNING MOVEMENT COUNT LOCATIONS AND DATES**



Upon examination of the turning movement counts it was evident that there were several varying peak hours in the Foreside area – AM and PM peak hours related to employee shifts at the Portsmouth Naval Shipyard, AM and PM peak hours related to typical commuting traffic, and a strong Midday peak hour. Given these variations, two volume scenarios were created; with and without the Portsmouth Naval Shipyard traffic. Alternate mitigation strategies may be considered to manage time-of-day traffic conditions – with and without Shipyard traffic. The overall peak hours are shown in **Table 1** along with the individual peak hours for each intersection.

TABLE 1: INTERSECTION AND CORRIDOR PEAK HOURS					
	Overall Peak Hour	Individual Intersection Peak Hours			
		Walker & State	Gov't & State	Whipple & Wentworth	Walker & Wentworth
Shipyard AM Peak Hour	6:00 to 7:00	11:15 to 12:15	7:45 to 8:45	11:30 to 12:30	6:00 to 7:00
AM Peak Hour	7:30 to 8:30				
Midday Peak Hour	11:15 to 12:15				
Shipyard PM Peak Hour	3:00 to 4:00	3:15 to 4:15	4:30 to 5:30	2:00 to 3:00	3:00 to 4:00
PM Peak Hour	4:00 to 5:00				

Because of the variation in peak hour traffic volumes, two sets of analysis were conducted:

- (1) An analysis related to the Portsmouth Naval Shipyard AM and PM peak hour movements; and
- (2) An analysis related to other influences in the study area during typical commuter AM and PM peak hours.

The traffic volumes collected were seasonally adjusted according to MaineDOT state-wide factors. Traffic volumes collected in October were increased by 5% to 8% and those collected in January by 17%. The purpose of this adjustment is to estimate Design Hourly Volumes (DHV) with which to analyze the performance of existing facilities (typically a summertime condition) and to assess future conditions with and without roadway improvements.

In conjunction with the MaineDOT Route 103 Design Project, traffic counts were performed at the Walker Street/Wentworth Street intersection on April 2016. The April and October volumes were compared to understand spring and fall variation as depicted in **Table 2**. As noted, the October volumes were higher, as compared to April volumes, with the exception of the Midday peak hour, where volumes were almost equal.

TABLE 2: APRIL - OCTOBER SEASONAL VOLUME COMPARISON				
TOTAL ENTERING VOLUME				
WALKER STREET/WENTWORTH STREET				
	Overall Peak Hour	Total Volume Comparison		
		April 21, 2016	October 13, 2016	Percent Change
Shipyards AM Peak Hour	6:00 to 7:00	872	917	5%
AM Peak Hour	7:30 to 8:30	567	726	28%
Midday Peak Hour	11:15 to 12:15	846	828	-2%
Shipyards PM Peak Hour	3:00 to 4:00	1325	1429	8%
PM Peak Hour	4:00 to 5:00	1007	1114	11%

As a final note regarding traffic volumes, the AM Peak hour related to the Portsmouth Naval Shipyards is possibly earlier than 6:00 AM. While turning movement volumes were conducted between 6:00 AM to 6:00 PM, tube counts were conducted over the entire day. According to the daily counts, the morning peak hour at the Portsmouth Naval Shipyards occurred between 5:00 AM and 6:00AM. Given that the PM peak hour volumes are significantly higher than the morning conditions, this issue is not considered to be problematic, as afternoon condition will be the critical analysis time period. **Figure 7** illustrates the Existing Design Hour Intersection Turning Movement volumes in the study area.

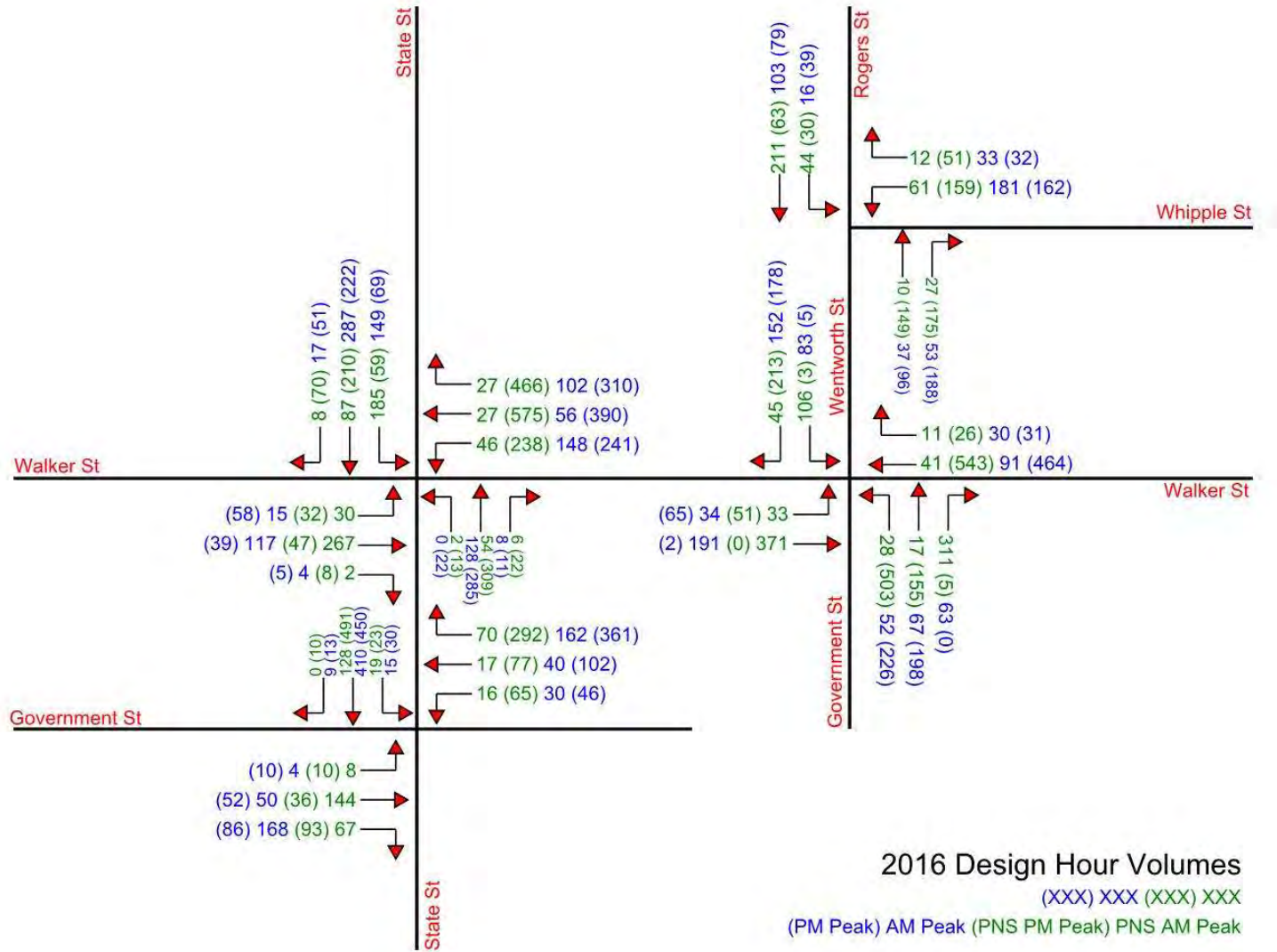
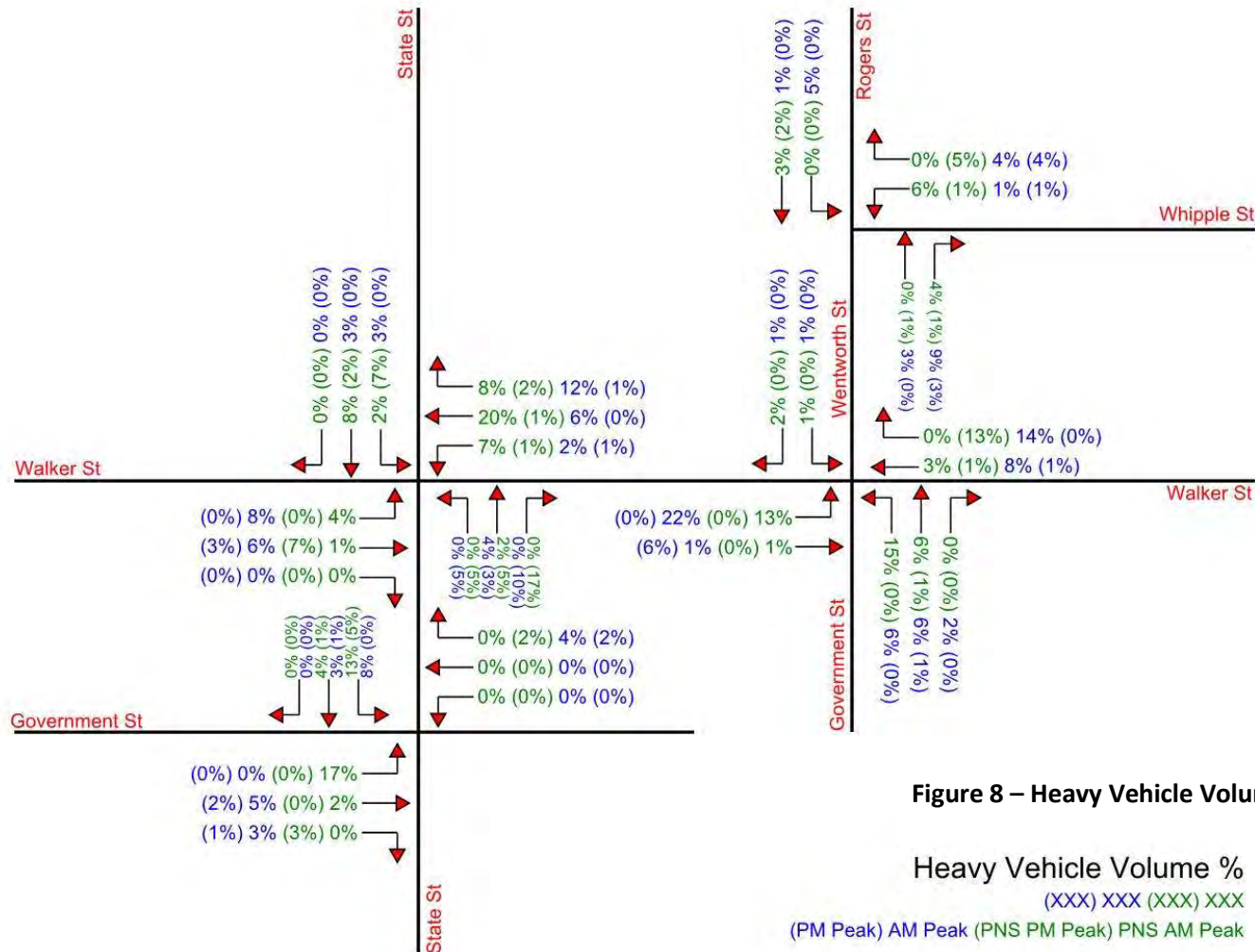


Figure 7 – Existing Design Hour Volumes

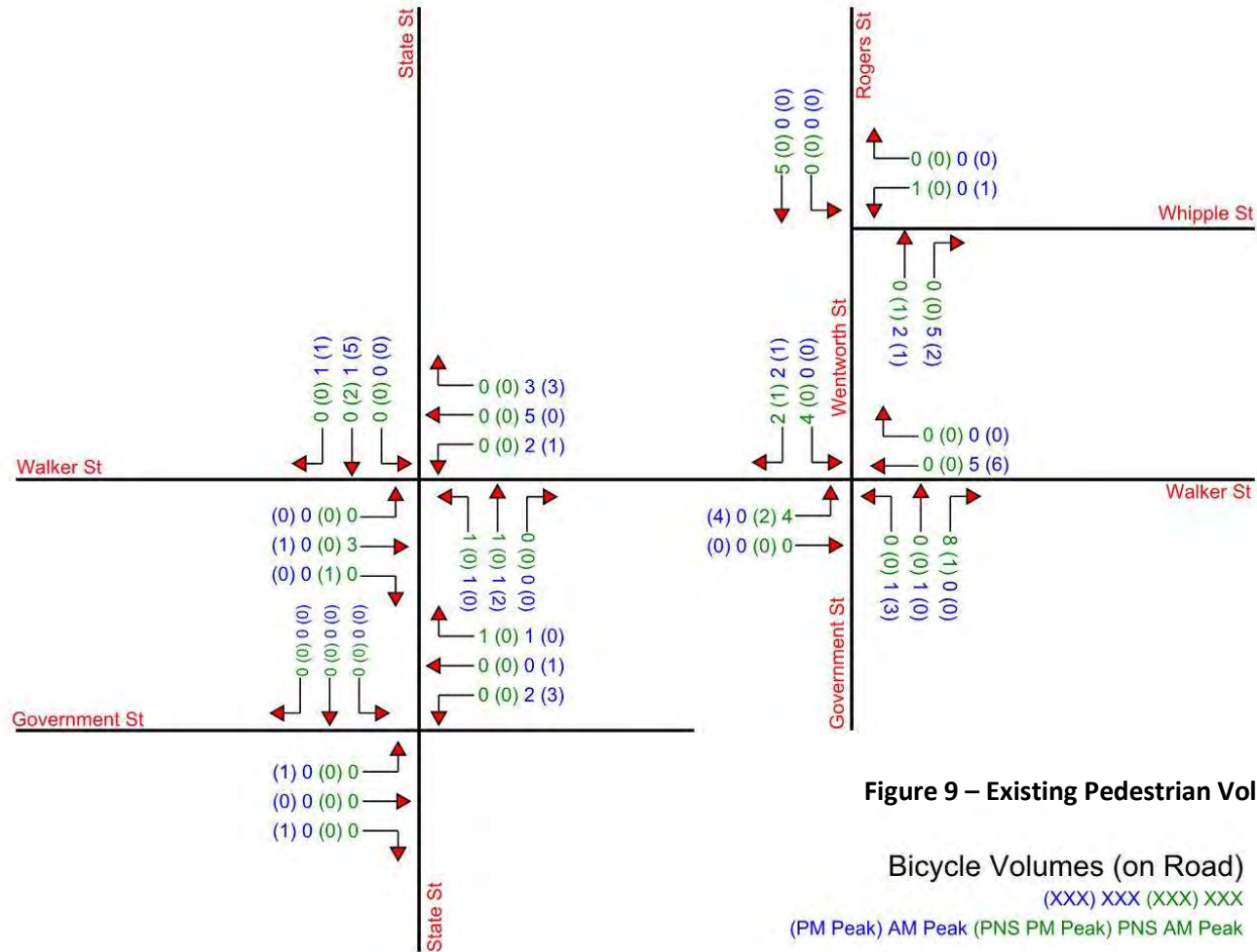
### 3.1.5: Vehicle Classification

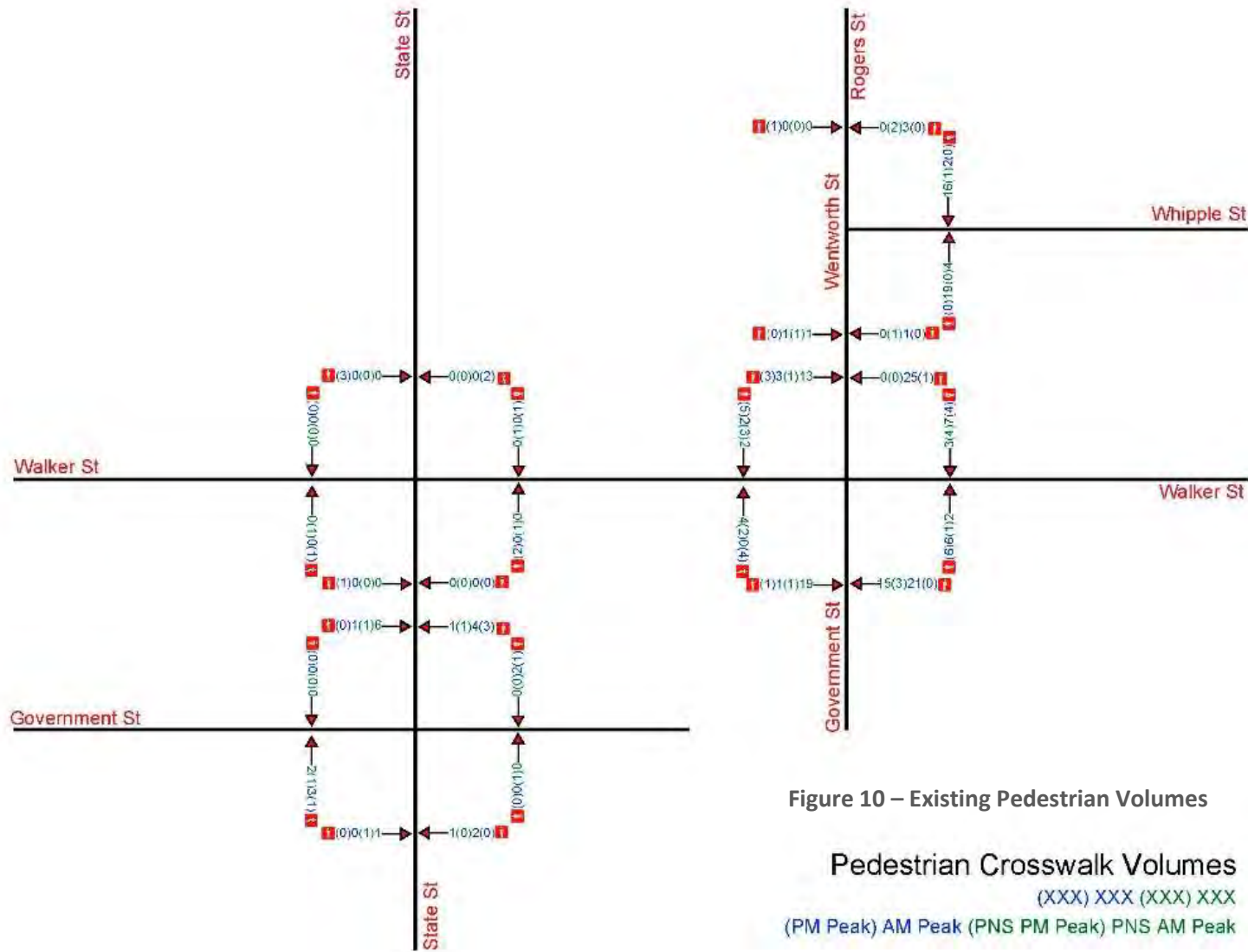
Study intersections have relatively low heavy vehicle movements. **Figure 8** depicts the percent of trucks turning at each of the study intersections. Most movements have 0 to 5 percent trucks, with higher percentages at lower volume movements. These percentages of trucks are typical levels of trucks for the commercial/village setting. This data will be used to assess geometric roadway requirements for truck movements.



### 3.1.6: Pedestrian and Bicycle Volumes

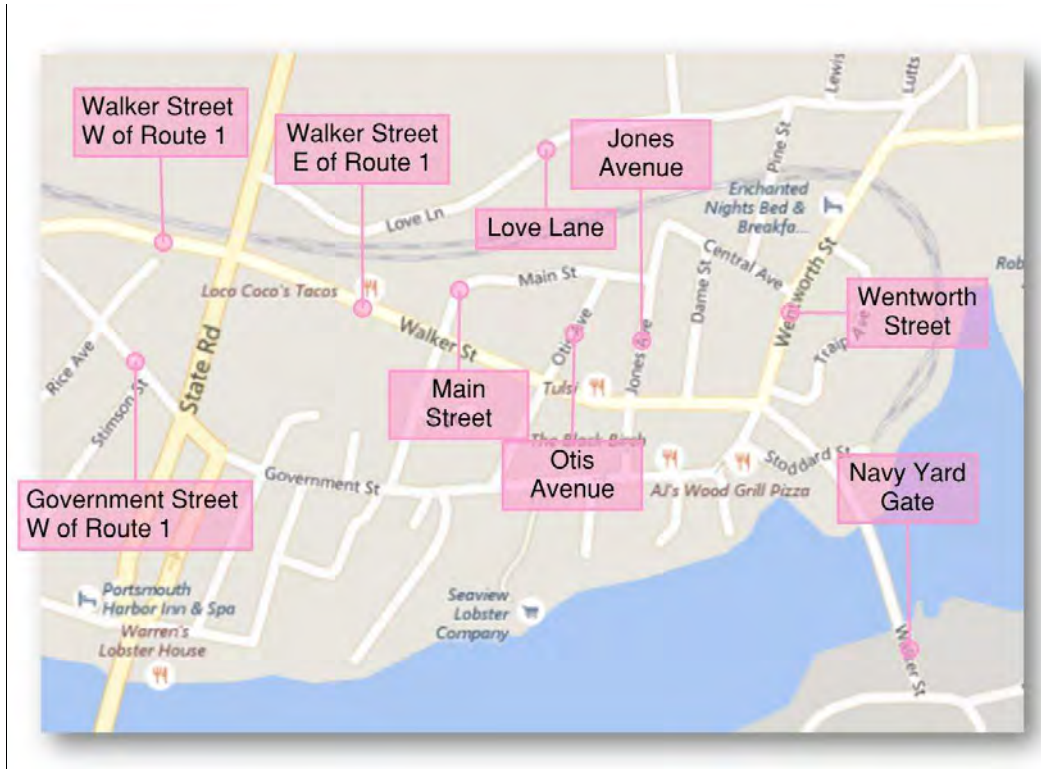
Pedestrian and bicycle volumes were collected as part of the turning movement counts. **Figure 9** depicts bicycle volumes, with less than 10 bicycles recorded over each of the noted peak hours. Pedestrian volumes were highest during the shift changes at the Portsmouth Naval Shipyard with the highest volumes at the Intersection of Walker Street/Wentworth Street (See **Figure 10**).





### 3.1.7: Speed Study

Speed data was collected in conjunction with the tube counts mentioned previously at the Study locations depicted in **Figure 11**.



**FIGURE 11: SPEED STUDY LOCATIONS**

Several speed data measurements were reviewed including:

- 85<sup>th</sup> Percentile: This is the speed at or below which 85% of all vehicles travel during the speed study. This is often used as a guideline to set speed limits.
- Average: The sum of all speeds observed divided by the number of speeds recorded.

The results of this analysis are summarized in **Table 3**. Love Lane and Walker Street have vehicle speeds that are significantly higher than the posted speed limit.

		Start Date	End Date	Average	85th Percentile
Walker Street West of Route 1	Westbound	10/11/2016	10/12/2016	28.9	33
	Eastbound				
Walker Street East of Route 1	Eastbound	11/1/2016	11/2/2016	30.1	35
	Westbound				
Navy Yard Gate 1	Eastbound	10/26/2016	10/27/2016	11.8	18
	Westbound				
Love Lane	Westbound	10/26/2016	10/27/2016	24.1	30
	Eastbound				
Otis Ave	Southbound	10/25/2016	10/26/2016	17.3	22
	Northbound				
Main Street	Southbound	10/25/2016	10/26/2016	19.7	24
	Northbound				
Jones Ave	Northbound	10/25/2016	10/26/2016	11.7	17
	Southbound				
Wentworth Street	Northbound	11/1/2016	11/2/2016	25.9	31
	Southbound				
Gov't Street West of Route 1	Westbound	11/1/2016	11/2/2016	26.0	31
	Eastbound				



### 3.2: Assessment of Current Conditions

In order to assess current study area conditions, safety, traffic operations, and general infrastructure conditions were documented.

#### 3.2.1: Crash History

To be classified as a High Crash Location (HCL), MaineDOT has established criteria where an intersection or road segment must meet two requirements: there must be 8 or more crashes during a consecutive 3-year study period and the intersection must have a Critical Rate Factor (CRF) greater than or equal to 1.0. The CRF is a comparison of the study location with other comparable locations in the state. Between 2013 and 2015 (the latest CRF data available), there were no High Crash locations in the study area, although the intersection of Walker Street and State Road had a high number of crashes. The following notes some of the details on crashes:

- More crashes occurred at signals than any other intersection type
- Most crashes had property damage only
- Most crashes occurred during the daylight
- There were significantly more crashes in 2014 than 2013 and 2015
- Most crashes occurred in November followed by January
- The most common crash type was rear-end collisions followed by typical intersection movements and vehicles that went off the road.
- Weather had little effect on crashes
- Drivers aged 50-59 were involved in most crashes, followed by 30-39-year-old drivers
- Passenger cars were involved in substantially more crashes
- State Road and Walker Street had 20 crashes
- There was one bicycle crash – 10/5/2013 at 4:13pm at the Intersection of Government Street and Walker Street (none in 2016) – non-fatal injury
- There was one pedestrian crash – 5/17/2014 at 2:16 PM at the intersection of Newmarch Street and Water Street (non-fatal injury)

**Figure 12 summarizes** the crash information for intersections and roadway segments for the three-year period between 2014 and 2016.

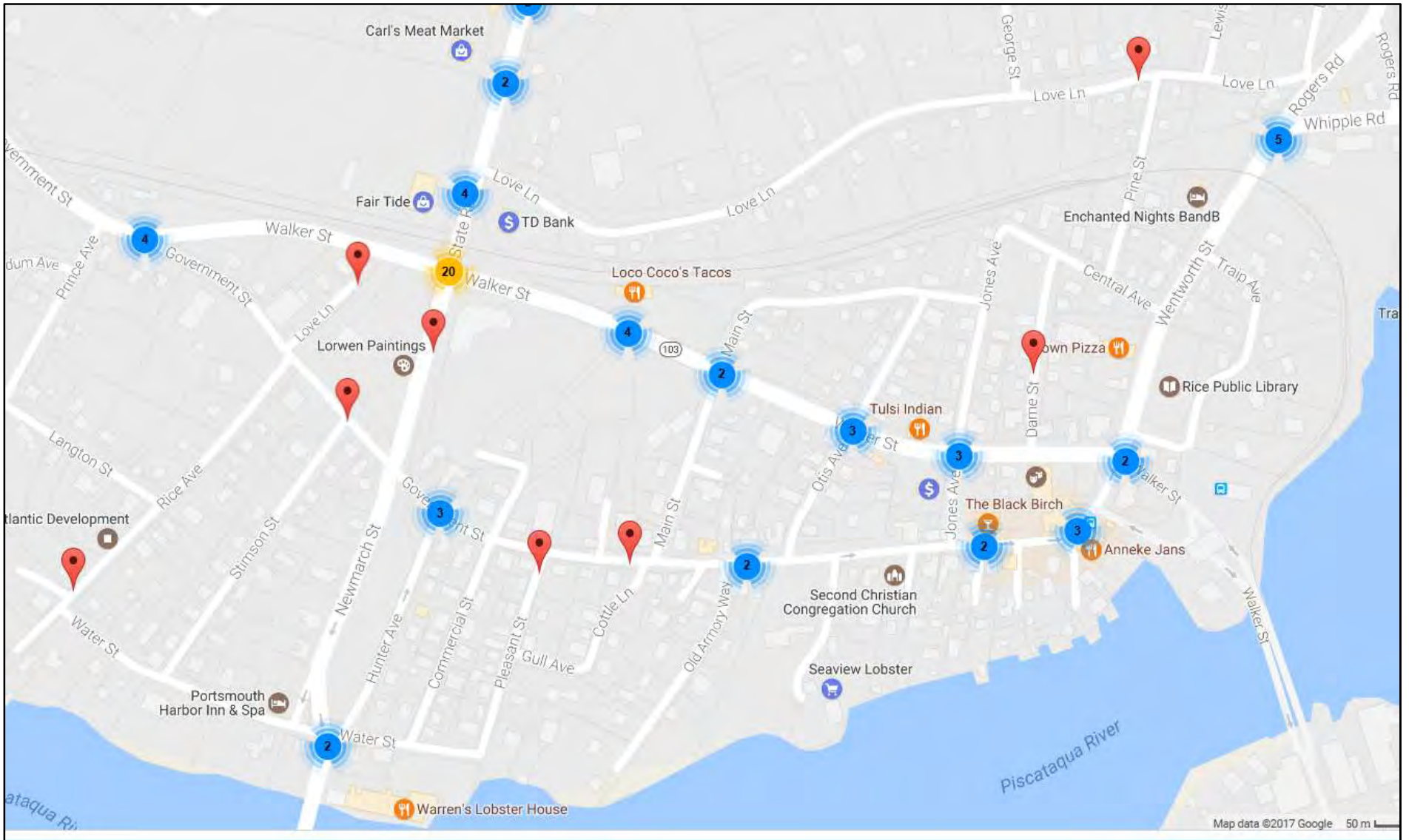


Figure 12: 2014-2016 Crashes by Location

### 3.2.2: Intersection Level of Service

The standard used to evaluate traffic operating conditions of the transportation system is referred to as the Level of Service (LOS). This is a qualitative assessment of the quantitative effect of factors such as speed, volume of traffic, geometric features, traffic interruptions, delays, and freedom to maneuver.

Level of Service provides a measurement of the delay experienced at an intersection as a result of traffic operations at that intersection. In general, there are six levels of service: Level of Service A to Level of Service F. The highest, Level of Service A, describes a condition of free-flow operations where the effects of incidents are easily absorbed. Level of Service B, describes a state in which maneuverability and speed limits are beginning to be restricted by other motorists although level of comfort is still high. In Level of Service C, experienced drivers are still comfortable but maneuverability is noticeably restricted. Level of Service D brings noticeable congestion and driver comfort levels decrease. In Level of Service E, roadway capacity is reached and disruptions are much more prevalent – driver comfort has declined. Finally, Level of Service F is the result of volumes greater than roadway capacity with congestion and possible stopped conditions. MaineDOT has established that Levels of Service A-D are acceptable conditions for intersections.

The measures of delay for each Level of Service rating for unsignalized and signalized intersections are found in **Table 5**.

LOS	Signalized Intersection	Unsignalized Intersection
A	≤10 sec	≤10 sec
B	10–20 sec	10–15 sec
C	20–35 sec	15–25 sec
D	35–55 sec	25–35 sec
E	55–80 sec	35–50 sec
F	>80 sec	>50 sec

Queue lengths were estimated and represents the distance of vehicles waiting at the stop bar or making a turn. Most commonly reported is the 95<sup>th</sup> percentile queue, which is defined as the queue that will not be exceeded 95% of the time. A vehicle length of 20 feet can be used to estimate the number of vehicles in queue. While it does not impact the level of service directly, it is another measure of the effectiveness of the intersection. SimTraffic computer models were used to analyze the study intersections. For SimTraffic, the Trafficware version 10 standard output was used, based on 5 runs of 60 minutes of simulation. It should be noted that the analysis is based upon an optimized signal timing scenario as intersections are currently being retimed. **Tables 6 through 9** present the results of the analysis.

Intersection of State Street and Walker Street – The analysis indicates that the subject intersection currently operates at an acceptable level of service, which is not surprising given the number of lanes provided. The general conclusion is excess capacity is provided.

		Eastbound			Westbound			Northbound			Southbound			All
		Walker Street			Walker Street			State Road			State Street			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Shipyards AM Peak Hour	Volume	30	267	2	46	27	27	2	54	6	185	87	8	741
	Delay (sec)	10.4	17.5		20.2	12.1	2.8	0	7.6	0.7	7.4	4.3		11.2
	LOS	B	B		B	B	A	A	A	A	A	A		B
	Queue (ft)	66	180		65	56	50	0	49	16	98	67		--
AM Peak Hour	Volume	15	117	4	148	56	102	0	128	8	149	284	18	1029
	Delay (sec)	17	22.8		18.7	12	2.8	0	8.5	0.6	7.6	5.3		10.2
	LOS	B	B		B	B	A	A	A	A	A	A		B
	Queue (ft)	52	133		117	89	69	0	91	19	93	133		--
Shipyards PM Peak Hour	Volume	32	47	8	236	575	466	13	309	22	59	210	70	2047
	Delay (sec)	27.6	30		11.4	17.3	4.1	22.9	28.7	28.5	26.4	21.1		17
	LOS	C	C		B	B	A	B	C	C	C	B		B
	Queue (ft)	62	81		189	548	239	59	251	143	123	243		--
PM Peak Hour	Volume	58	39	5	241	390	310	22	285	11	69	222	51	1703
	Delay (sec)	26.1	27.5		14.3	23.4	3.3	13.4	16.9	2.8	16.4	18.2		15.8
	LOS	C	C		B	B	A	B	B	A	B	B		B
	Queue (ft)	71	84		176	510	180	62	206	87	91	204		--
Available Queue (ft)		75	500		125	150	150	150	400	400	175	175		--

Intersection of Walker Street/Wentworth Street/Government Street/Portsmouth Naval Shipyard Gate 1 – The analysis indicates that some intersection movements operate with long delays, particularly during shift changes. It should be noted that the model is assuming an optimized traffic signal timing plan and thus delays are lower than existing field conditions. Significant queuing and delay were observed on the Gate 1 approach.

TABLE 7 EXISTING LEVEL OF SERVICE SUMMARY WALKER STREET/WENTWORTH STREET/GOVERNMENT STREET/PORTSMOUTH NAVAL SHIPYARD GATE 1											
		Eastbound		Westbound		Northbound			Southbound		All
		Walker St.		PNS Gate 1		Government St.			Wentworth St.		
		Left	Thru	Thru	Right	Left	Thru	Right	Left	Right	
Shipyard AM Peak Hour	Volume	22	371	41	11	28	17	311	106	45	952
	Delay (sec)	7.9	6.7	5.2		7.7	5.4		10.7	1.2	6.9
	LOS	A	A	A		A	A		B	A	A
	Queue (ft)	71	189	54		48	120		117	43	--
AM Peak Hour	Volume	34	191	91	30	52	67	63	83	152	763
	Delay (sec)	8.1	6.2	6		6.7	3.2		7.5	1.3	5.2
	LOS	A	A	A		A	A		A	A	A
	Queue (ft)	73	115	85		50	53		102	57	--
Shipyard PM Peak Hour	Volume	3	0	543	26	155	503	5	3	213	1451
	Delay (sec)	55.4	0.4	13.9		27.8	158.3		76.1	4.7	30.5
	LOS	E	A	B		C	F		E	A	C
	Queue (ft)	16	0	279		100	313		119	31	--
PM Peak Hour	Volume	65	2	464	31	226	198	0	5	178	1169
	Delay (sec)	24.4	1.3	8.9		14.8	8.4		12.6	3.8	9.7
	LOS	B	A	A		B	A		B	A	A
	Queue (ft)	85	36	216		108	166		106	34	--
Available Queue (ft)		85	175	150		75	75		175		--

Intersection of State Road/Government Street - The analysis Indicates this location operates with little delay during the peak hours analyzed.

TABLE 8 EXISTING LEVEL OF SERVICE STATE ROAD AND GOVERNMENT STREET											
		Eastbound			Westbound			Southbound			All
		Government Street			Government Street			State Road			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Shipyards AM Peak Hour	Volume	8	144	67	16	17	70	19	128	0	469
	Delay (sec)	11.7						8.8			
	LOS	B						A			
	Queue (ft)	117						71			
AM Peak Hour	Volume	4	50	168	30	40	162	15	410	9	888
	Delay (sec)	9.7						9.8			
	LOS	A						A			
	Queue (ft)	108						89			
Shipyards PM Peak Hour	Volume	10	36	93	65	77	292	23	491	10	1097
	Delay (sec)	10.3						9.2			
	LOS	B						A			
	Queue (ft)	74						93			
PM Peak Hour	Volume	10	52	86	46	102	361	30	450	13	1150
	Delay (sec)	15.3						12.4			
	LOS	B						B			
	Queue (ft)	123						101			
Available Queue (ft)		125			100			125			

Intersection of Wentworth Street/Rogers Street/Whipple Street – The analysis Indicates this location operates with little delay during the peak hours analyzed.

**TABLE 9  
EXISTING LEVEL OF SERVICE  
WENTWORTH STREET/ROGERS STREET/WHIPPLE STREET**

		Westbound		Northbound		Southbound		All
		Whipple St.		Wentworth St.		Rogers St.		
		Left	Right	Thru	Right	Left	Thru	
Shipyards AM Peak Hour	Volume	61	12	10	27	44	211	365
	Delay (sec)	4.2				0.3		
	LOS	A				A		
	Queue (ft)	48				0		
AM Peak Hour	Volume	181	33	37	53	16	103	423
	Delay (sec)	4				0.3		
	LOS	A				A		
	Queue (ft)	73				0		
Shipyards PM Peak Hour	Volume	159	51	149	175	30	63	627
	Delay (sec)	6.3				0.2		
	LOS	A				A		
	Queue (ft)	89				31		
PM Peak Hour	Volume	162	32	96	188	39	79	596
	Delay (sec)	6.1				0.3		
	LOS	A				A		
	Queue (ft)	82				7		
Available Queue (ft)		675		335		675		

### 3.3: Transportation Infrastructure Inventory

A review of existing infrastructure was conducted as part of this study. The reviewed included roadway circulation, bicycle and pedestrian facilities, and examination of access management.

#### 3.3.1: Roadway Circulation

The following streets are designated one-way streets at all times:

- Government Street, in an easterly direction beginning twenty-five (25) feet east of NET & T #29, CMP #30 utility pole to intersection of Walker and Wentworth Streets;
- Hunter Street, in a northerly direction;
- Jones Avenue, in a southerly direction from bank exit one hundred five (105) feet to Government Street;
- Mitchell School Lane, from Route 103 to the Mitchell School playground;
- Newmarch Street, in a southerly direction;
- Traip Avenue, in a northerly direction, with entrance adjacent to the Kinghorn property;
- Williams Avenue is one-way in a southerly direction from its point of intersection with Whipple Road starting with the property line of Wallace Chick on the west side of Williams Avenue southerly for one hundred eighty (180) feet. Williams Avenue is then two-way from the southerly end of the property line of James Melhorn for its entire length to where Williams Avenue intersects with Whipple Road on the easterly end of Williams Avenue. The exit is one-way from the northerly end of the property line of Mattie Pettigrew northerly for two hundred (200) feet to where the exit intersects with Whipple Road.

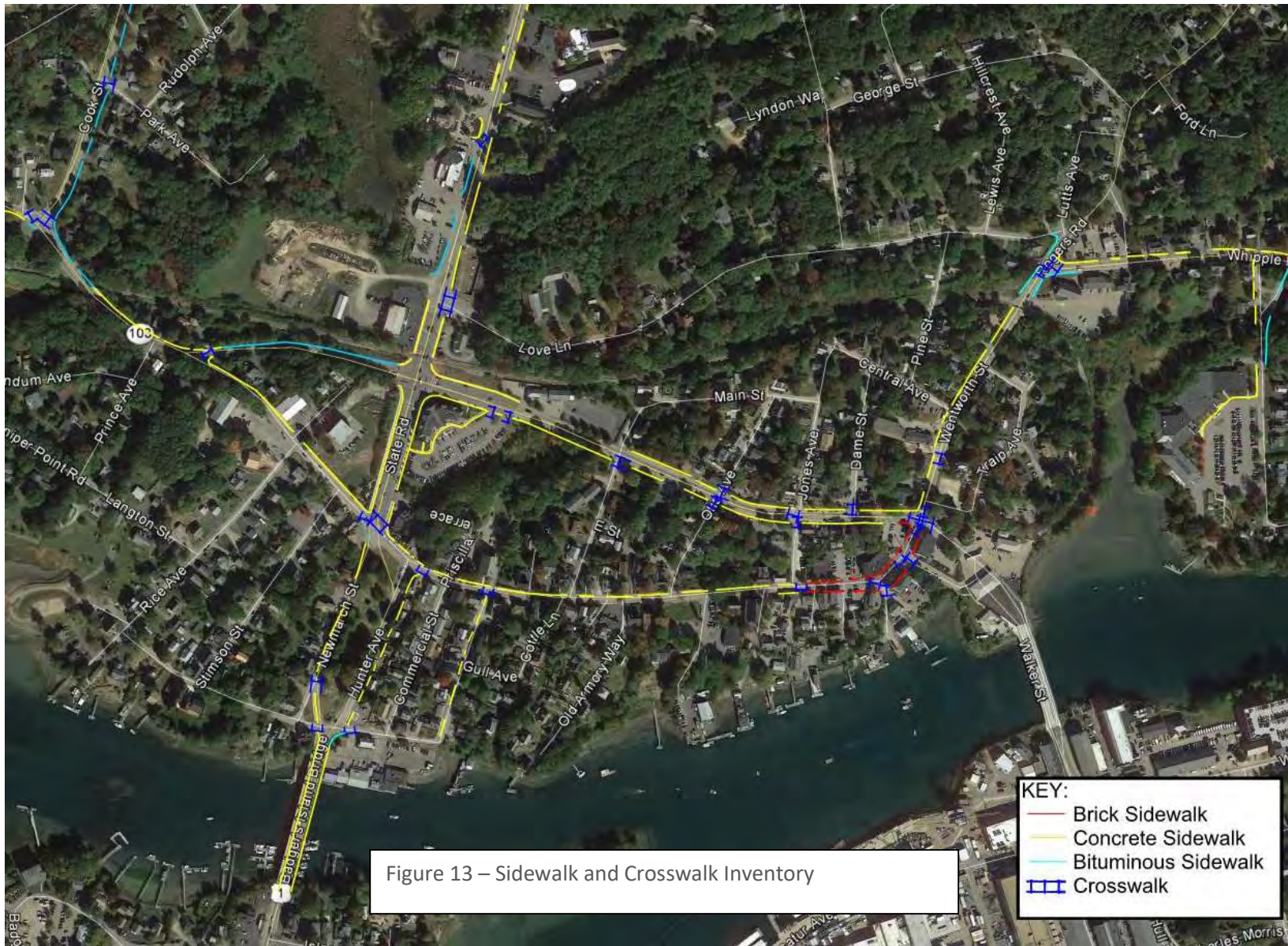
#### 3.3.2: Bicycle Facilities

The only marked section of the Foreside area for bicycles is on State Road.

#### 3.3.3: Sidewalks and Crosswalks

There are many sidewalks in the study area – and they vary in material between brick, concrete and bituminous materials. They often lack appropriate ADA accommodations, in some cases are in disrepair, and occasionally have objects obstructing walking. **Figure 13** illustrates the locations of sidewalk and crosswalks. Following **Figure 13** are photographs that document many of the issues within the study area.





The following are examples of sidewalks deficiencies in the Study Area



ADA compliance and lack of crosswalk markings.



ADA compliance and crosswalk markings.



Obstacles in sidewalk and ADA compliance.



Wide driveway opening creates unsafe crossing.



Sidewalk gap and ADA compliance.



Sidewalk ends and ADA compliance.



No sidewalk or other pedestrian facilities on Love Lane or side streets.



Non-compliant ADA conditions and marking visibility.



Crosswalk leads to tree



Lack of crosswalks for side streets and ADA compliance.



Sidewalk obstruction



Crosswalk paint is fading and hard to see in some locations.





Sidewalk ends



Limited sight visibility at mid-block crossing and ADA compliance.



Crosswalk is not oriented with the ramp

### 3.3.4: Access Management

Existing access management deficiencies within the study area were generally identified following a review of MaineDOT standards. An assessment of existing driveway conditions was performed and consisted of reviewing: the number of driveways for each property; the width of driveways; the spacing of driveways; and how close driveways are to intersections (corner clearance). The purpose of access management is to provide vehicular access to land development in a manner that preserves the safety and efficiency of a transportation system.

#### MaineDOT Standards

##### Entrance Spacing Standards

**Table 10** defines entrance spacing standards according to speed limits.

Posted Speed (mph)	Entrance Separation (ft)
25 or less	Not applicable
30	Not applicable
35	Not applicable
40	175
45	265
50	350
55 or more	525

Given that all roadways in the study area have regulatory speed limits of less than 40 mph, this standard does not apply. I would note that maintaining reasonable separation is appropriate. Some driveways on State Road have little separation.

#### Arterial Corner Clearance

The minimum corner clearance for an entrance onto Arterials must be 125 feet. All driveways at the State Road/Walker Street intersection comply with this standard. At the State Road/Government Street intersection, some driveways do not meet this standard. At the Walker Street/Wentworth Street intersection, several driveways are located with 125 feet of the intersection. Given the village commercial density, this is not unusual. At the Wentworth Street/Whipple Road intersection, a residential use driveway and the church driveway do not meet this standard.

### Number of Entrances

Except for forestry management and farming activities, lots on Arterials will be limited to one two-way or two one-way entrances. Most lots comply with this standard.

### Entrance Width

If 30% or less of the traffic projected to use the proposed entrance will be larger vehicles, the width of a two-way entrance within the highway right of way must be between 22 and 30 feet inclusive. If more than 30% of the traffic projected to use the proposed entrance will be heavy vehicles, the width of a two-way entrance within the highway right of way must be between 30 and 42 feet. There are some driveways in the study area that do not meet this standard. Examples include: Loco Coco's Taco; American Medical Response; and the property at southwest corner of State Road/Government Street.

### 3.4: Parking

A parking analysis was conducted throughout the Study Area on April 12, 2017.

Figure 14 depicts existing on and off-street parking locations.



Figure 14 – Existing Parking Locations

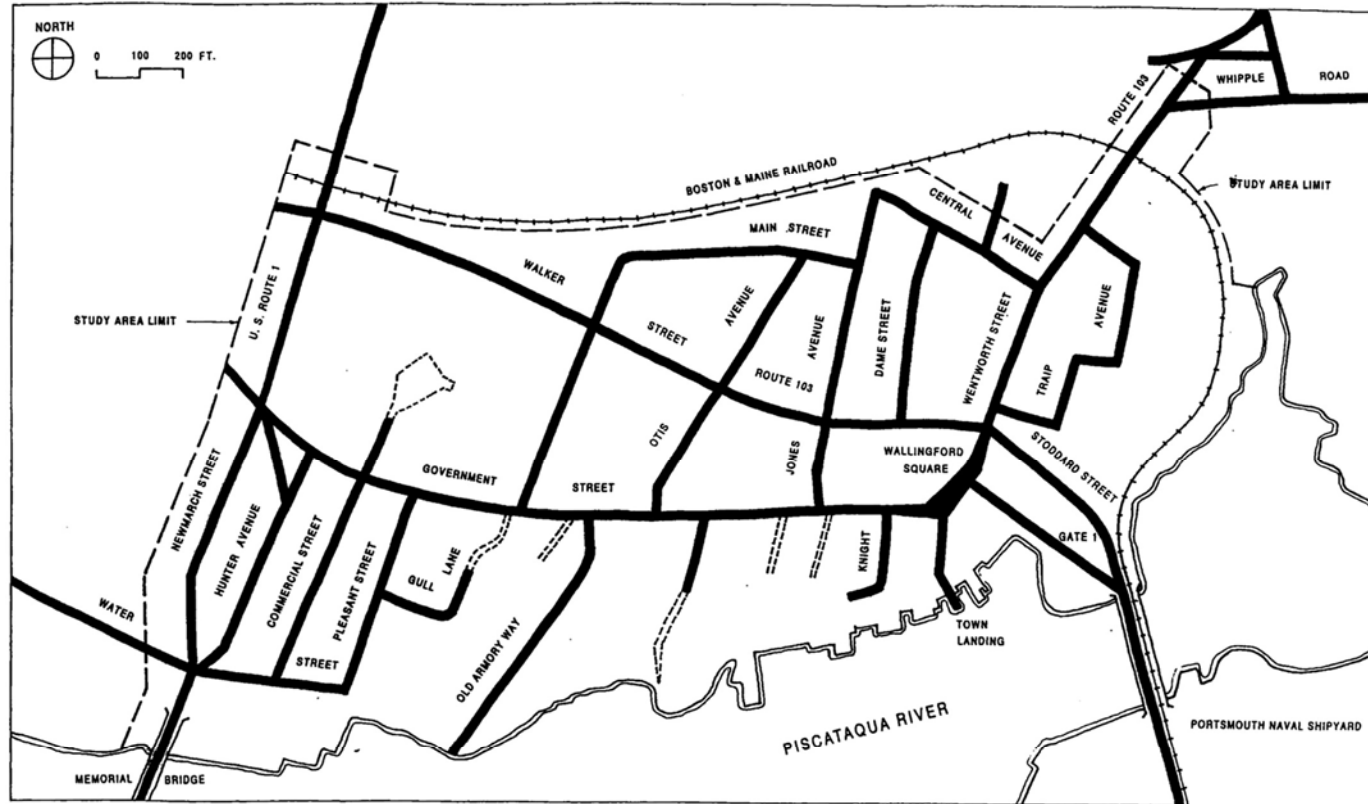
## SECTION 4.0: EXISTING LAND USE CONDITIONS / 1997 STUDY COMPARISONS

### 4.1: 1997 Revitalization Strategy for the Foreside District / 20 Years of Change

Since 1997, the Foreside has seen both public and private investment, serving to transform the area in terms of streetscape, a vibrant mix of uses, and civic pride. A comparison of the key 1997 Study and 2017 Study findings include:

<u>1997 Plan Findings</u>	<u>2017 Study Findings</u>
Disinvestment	Investment
Kick-Start Growth	Guide Growth
Affordable	Expensive
Ample Parking	Parking Proximity Concerns (parking perception issue compared to actual supply issue)
Primarily Residential	Residential with Mixed Use
Strict Parking Standards	Flexible Parking Standards
Suburban Zoning Standards	Urban Zoning Standards
Streetscape Disinvestment	Streetscape Investment
Not a Destination	A Destination
846 Parking Spaces +/-	1,007 Parking Spaces +/-

**Figure 15** depicts the 1997 Study Area, which is comparable to the 2017 Study Area as shown on **Figure 1**. The 1997 Existing Zone Map (**Figure 16**) did not reflect the future growth needs of the area and shows a fragmented approach to zoning that did not look at the area as a whole and discouraged investment due to standards and dimensional requirements more typical of suburban or commercial corridors. **Figure 17** was the proposed zoning map from 1997. **Figure 18** is the 2017 Zone Map for the Study Area, illustrating that most of the zone changes were adopted as recommended from 2017. As noted above in the finding, one of the most important recommendations from the 1997 Study was to adopt more urban and flexible zoning and design standards allowing the Foreside to evolve into the neighborhood that is appreciated for its vitality, character, and diversity.



Revitalization Strategy for Kittery-Foreside District

Study Area Map

Stafford Consulting Group, Ltd.  
Sasaki Associates, Inc.  
March, 1997

Figure 15 – 1997 Study Area

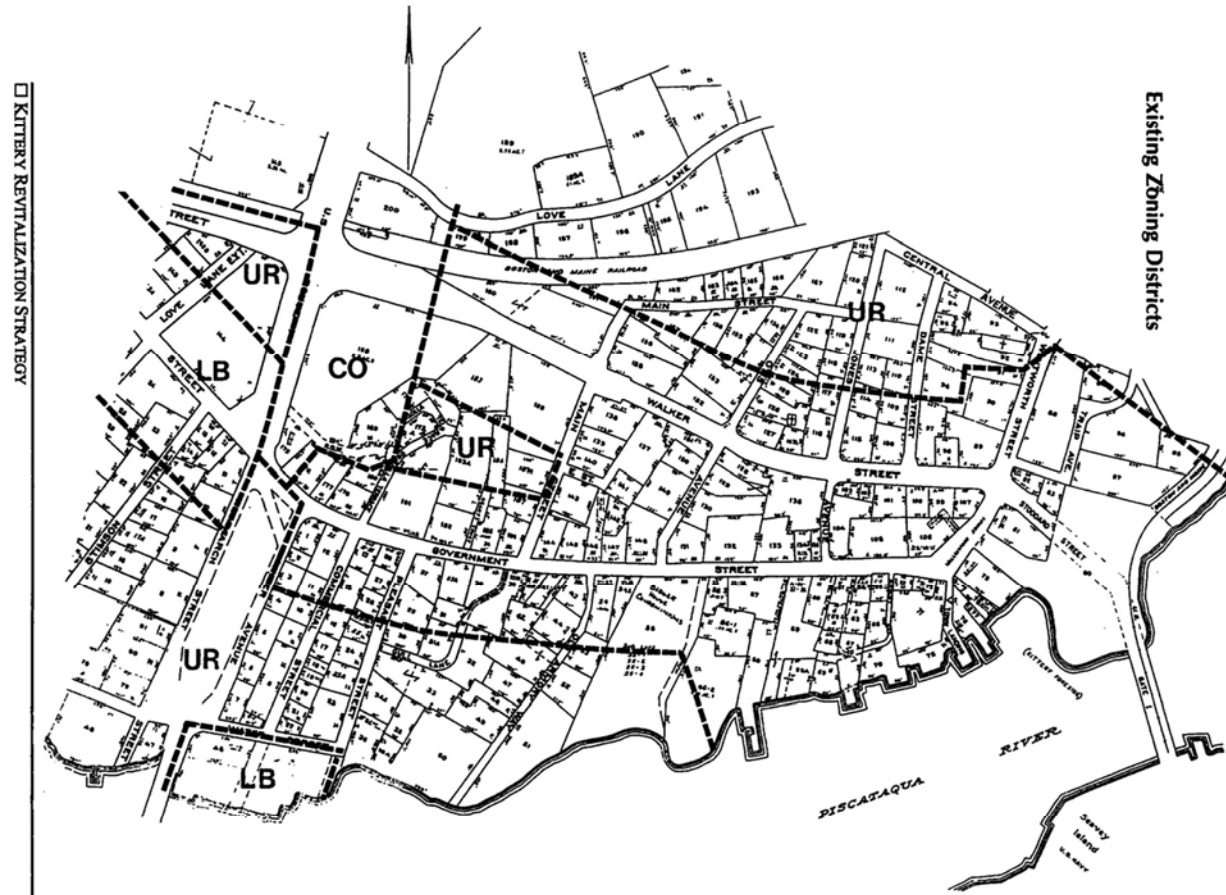


Figure 16 – 1997 Zoning



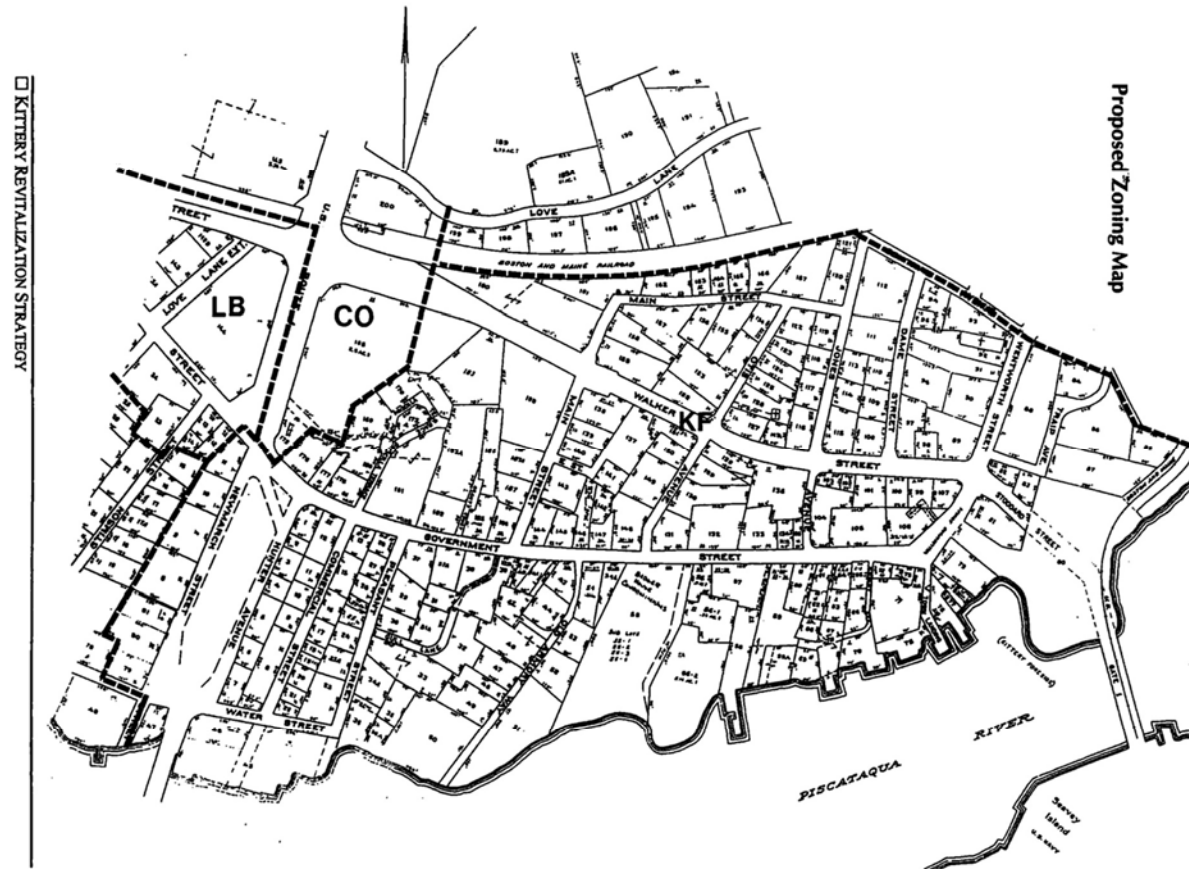


Figure 17 – 1997 Proposed Zoning

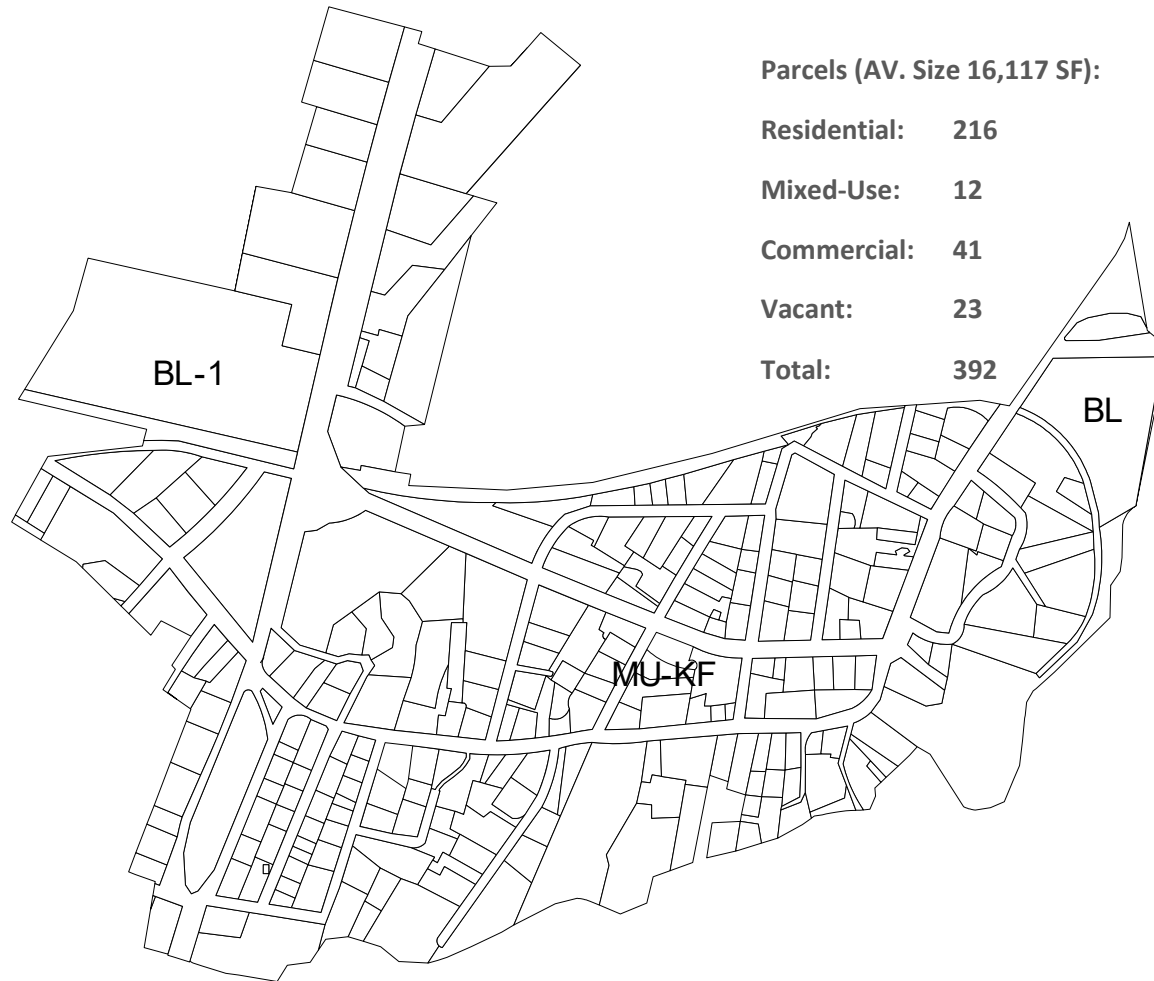


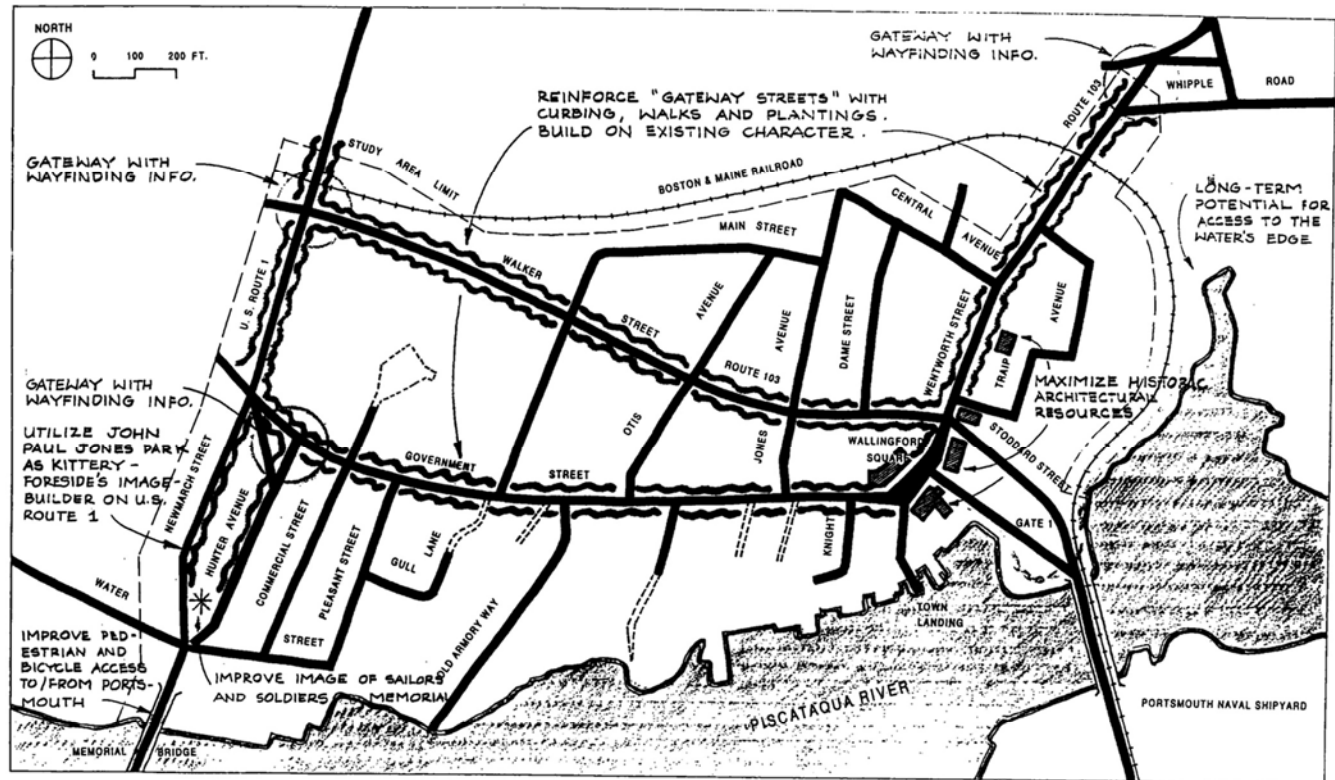
Figure 18 – 2017 Study Area Existing Zoning

## 4.2 Existing Land Use Patterns and Mobility / 1997 Comparison

**Figure 19** from the 1997 Study identifies “design opportunities” that are still relevant today – and ideally with the proposed zoning recommendations noted below in this Study will continue to be addressed in a holistic manner. Two of the key design findings were that the major streets including Route 1, Government, Walker, and Wentworth, should be the bones or framework for guiding development and providing a safe and friendly pedestrian experience encouraging economic development and placemaking. The second design opportunity was that key intersections should become gateways and aid wayfinding. The intersections include Route 1 / Government, Route 1 Walker, and Wentworth / Whipple.

It is important to note that Wallingford Square was revitalized in a manner sensitive the scale of development, the urban street typology, and supporting streetscape. Route 1 from Government through Gourmet Alley was redesigned in a manner that was not sensitive to the future character of this area. A key aspect of the 2017 Study – along with the Route 103 Project tracking with this Study – is to design/redesign streets to balance the needs of all users while remaining sensitive the context of the Foreside.

**Figure 20** depicts design opportunities the consultants noted for the Study Area during a site walk in 2017 prior to the beginning of the Study. These initial observations, in general, remained intact during the course of the Study and many ways identify opportunities that were noted in 1997.



**Revitalization Strategy for Kittery-Foreside District  
Analysis Plan - Design Opportunities**

Stafford Consulting Group, Ltd.  
Sasaki Associates, Inc.  
March, 1997

Figure 19 – 1997 Design Opportunities

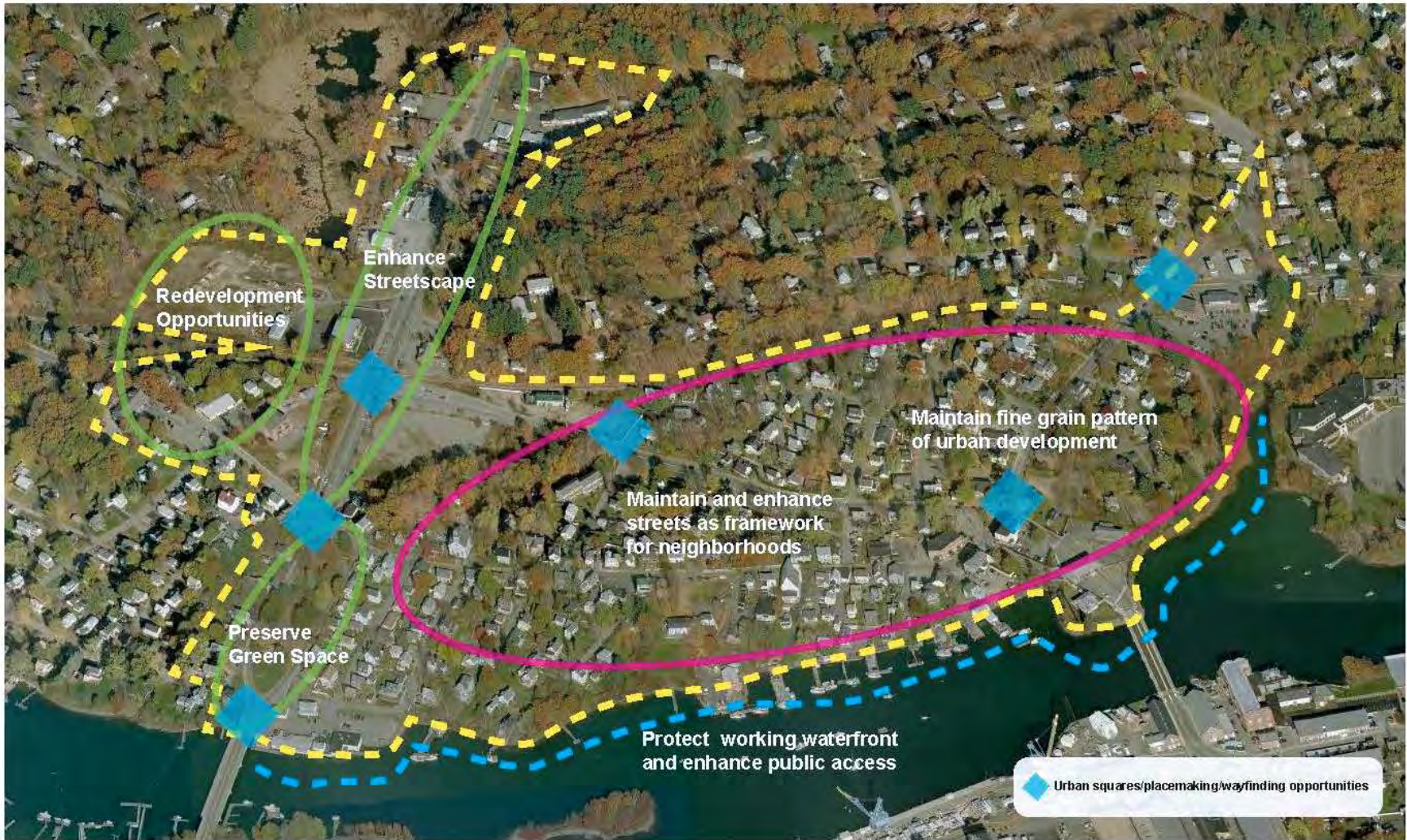


Figure 20 – 2017 Design Opportunities

### 4.3 Relationship to Comprehensive Plan

While the 2017 Comprehensive Plan has not been officially adopted, the 2017 Study references it for consistency and inspiration. As show on **Figure 21**, an important conclusion of the Comprehensive Plan is that the heart of the Foreside should include policies leading towards “neighborhood stabilization.”



Figure 21 – 2017 Comprehensive Plan Neighborhood Stabilization Target Area

In addition to calling for a stabilization of the historic Foreside area, the Comprehensive Plan makes policy recommendations that are in keeping with what was expressed by the Working Group and at the Public Forums. In specific, The Comprehensive notes for the Foreside and Route 1 the following visions:

### **Foreside**

The Plan recommends enhancing this district by protecting its walkability, encouraging mixed use (housing above retail) and reuse of existing buildings, the development of workforce housing, improving pedestrian and bicycle access to the area, and exploring water-taxi access from Portsmouth. It is also recommended that parking strategies are explored (including shared parking) and that innovative uses such as makerspaces that afford artists and small business owners with space to create, invent and learn be encouraged to compliment the other small scale uses in the district.

### **Route 1**

It is recommended that the Town invite property and business owners in this area to embark on developing a vision and plan for the future redevelopment of the area. Many of the buildings will be reaching the end of their life cycle and the future of brick and mortar retail includes creating more of a pedestrian-oriented mixed-use environment.

As part of the methodology, integrating, cross-referencing, and fine-tuning the findings from previous studies with this Study was critical for developing recommendations grounded in community consensus, prior visioning, and analysis. In summary, this Study builds on and fine-tunes the recommendations from the Comprehensive Plan, creating a living document that can be adopted as an addendum to the Comprehensive Plan.

## SECTION 5.0 TRANSPORTATION RECOMMENDATIONS

### 5.1 MaineDOT Route 103 Project Status Update

As noted above, a separate, but interrelated project to the Study is the MaineDOT Route 103 Project. This project is an opportunity to investment and realize mobility and streetscape infrastructure in keeping with the findings from the Study. The graphics and text in the following section summarizes the Project as of the date of this Report. **Figure 22** shows the extent of the Project.

Overview of proposed design of Walker Street.

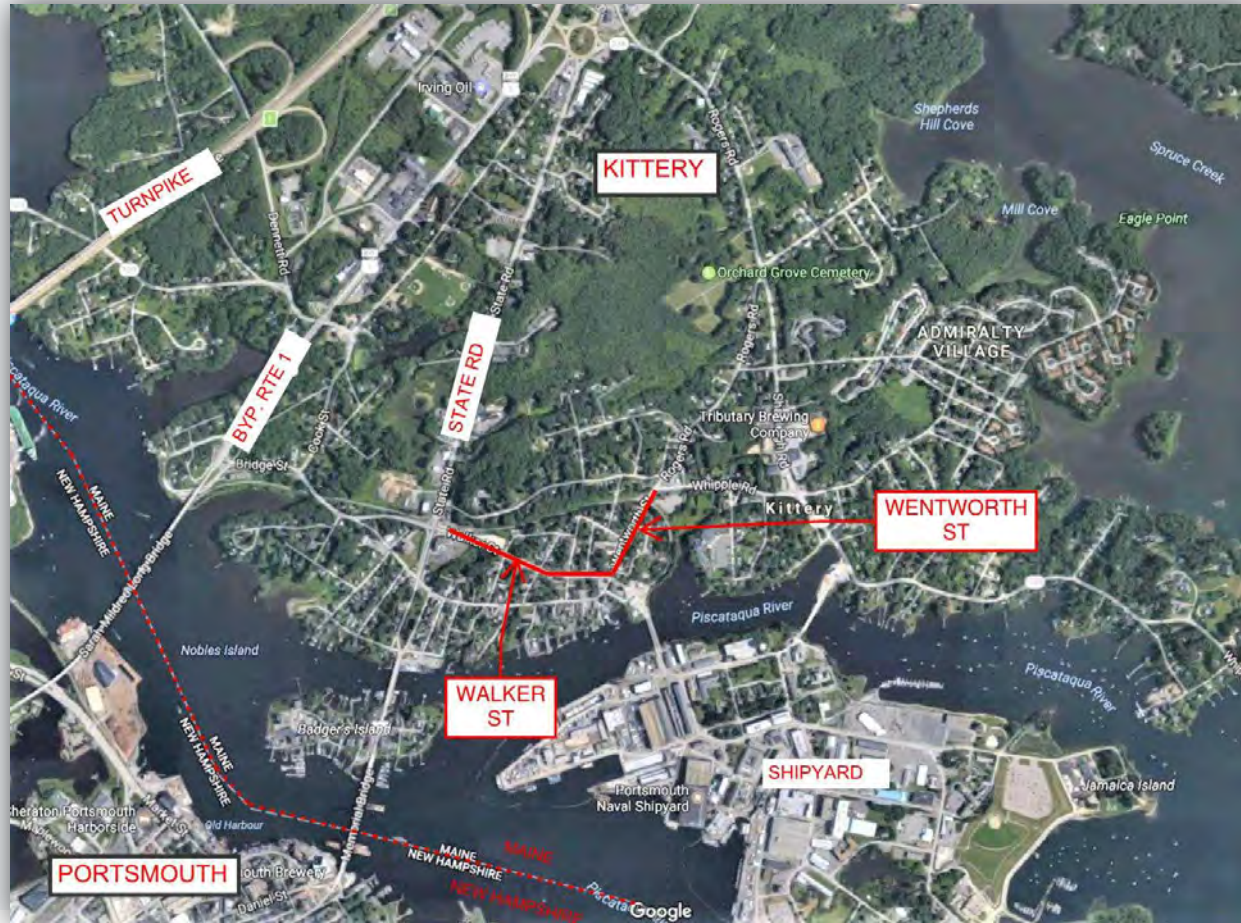
- 5' sidewalk both sides
- New crosswalks
- 8' on-street parking both sides
- 11' travel lanes with sharrows
- Bump outs and specific intersections to improve pedestrian safety and calm traffic
- Conduit for street lights currently being evaluated

Overview of proposed design of Walker / Wentworth Street. Intersection and Wentworth to Whipple (design from Walker to Whipple being studied for cost concerns and to best integrate with long-term uses (such as the recent vote to maintain and expand the library in the current location).

- New signal
- New crosswalks
- 5' sidewalks on both sides
- No shoulder
- 11' travel lanes with sharrows
- Drainage cost implications currently being evaluated
- Conduit for street lights currently being evaluated
- Requires Design Exception to meet MaineDOT approval process



## Project Location



- ▶ Begins 400' east of State Rd
- ▶ 0.31 mile on Walker Rd
- ▶ 0.19 miles on Wentworth St
- ▶ Ends at Whipple Rd
- ▶ Includes Intersection at Walker / Wentworth / Wallingford Square



Figure 22 – Route 103 Project Location







Filename: ...MCI\Axx...e0\plan-02 - RI...02.dgn  
 Division: HIGHWAY  
 Username:  
 Date: 8/11/2017

STATE OF MAINE DEPARTMENT OF TRANSPORTATION NHPP-1865(300)X	
PROJECT MANAGER	DATE
DESIGNER	SIGNATURE
REVISIONS	P.E. NUMBER
REVISION 1	DATE
REVISION 2	
REVISION 3	
SCALE	
KITTERY ROUTE 103 PLAN - 2 OF 4	
SHEET NUMBER	WIN 18653.00 HIGHWAY PLANS
2A	
# OF	



Filename: \\MCI\Anx...H01\plan-03 - RL-02.dwg Division: HIGHWAY Username: Date: 8/11/2017

<b>KITTERY ROUTE 103 PLAN - 3 OF 4</b>	DATE	SIGNATURE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION
			<b>NHPP-1865(300)X</b>
		P.E. NUMBER	WIN 18653.00 HIGHWAY PLANS
		DATE	
SHEET NUMBER <b>3A</b>	# OF		

TYLIN INTERNATIONAL



Filename: ...MST\Axx...R01Plan-04 - RI\_02.dwg Division: HIGHWAY Username: Date: 8/11/2017

STATE OF MAINE DEPARTMENT OF TRANSPORTATION NHPP-1865(300)X WIN 18653.00 HIGHWAY PLANS	
PROJ. MANAGER	DATE
DESIGNED BY	SIGNATURE
DRAWN BY	P.E. NUMBER
REVISION 1	DATE
REVISION 2	
REVISION 3	
LEGAL NOTES	
KITTERY ROUTE 103 PLAN - 4 OF 4	
SHEET NUMBER	
4A	
# OF	

TYLIN INTERNATIONAL

## 5.2 Future Traffic Volume Growth Assumptions

As noted below and in Section 6.2, three growth scenarios were reviewed and projected for the next 20 years: Existing conditions as a baseline, mid growth as a realistic assumption given market trends and site capacity, and a high growth scenario where (re)development proceeds at an unprecedented rate. These growth assumptions were made to not only understand the implications of current zoning and how the future character of the Study Area might change, but also to integrate transportation infrastructure needs with urban design. The mid and high growth assumptions were modelled using the recommendations for street and intersection designs to ensure the function, capacity, and safety of these streets and intersections. In summary, the Study recommends right sizing streets and intersections for an urban context without diminishing capacity or parking demand as depicted on **Figure 23**.

In addition, in response to a key metric, 2036 future Shipyard volumes, are taken into account in the design of intersections and streets as show on **Figure 24**.

The 20-year future traffic growth, both localized development and area background growth, was assumed to be approximately 34 percent at the State Road/Walker Street intersection and 39 percent at the Walker Street/Wentworth Street/Government Street intersection during the PM peak hour.

Existing	Mid	High
Comm: 268,854 SF +/-	25,000 SF	90,000 SF
Residential: 400 +/-	95 Units	200 Units
Totals:	294,000 SF	359,000 SF
	495 Units	600 Units
Additional Parking:	500 +/-	1,500 +/-
Peak AM Trips:	121	294
Peak PM Trips:	216	517

While the Walker / Wentworth intersection was a critical intersection to analyze and design (as part of the Route 103 Project), the focus of the intersection and street evaluations for this Study are along the Route 1 corridor running north from the river through Gourmet Alley as shown on **Figures 25-34**.

# 2036 Future Volumes

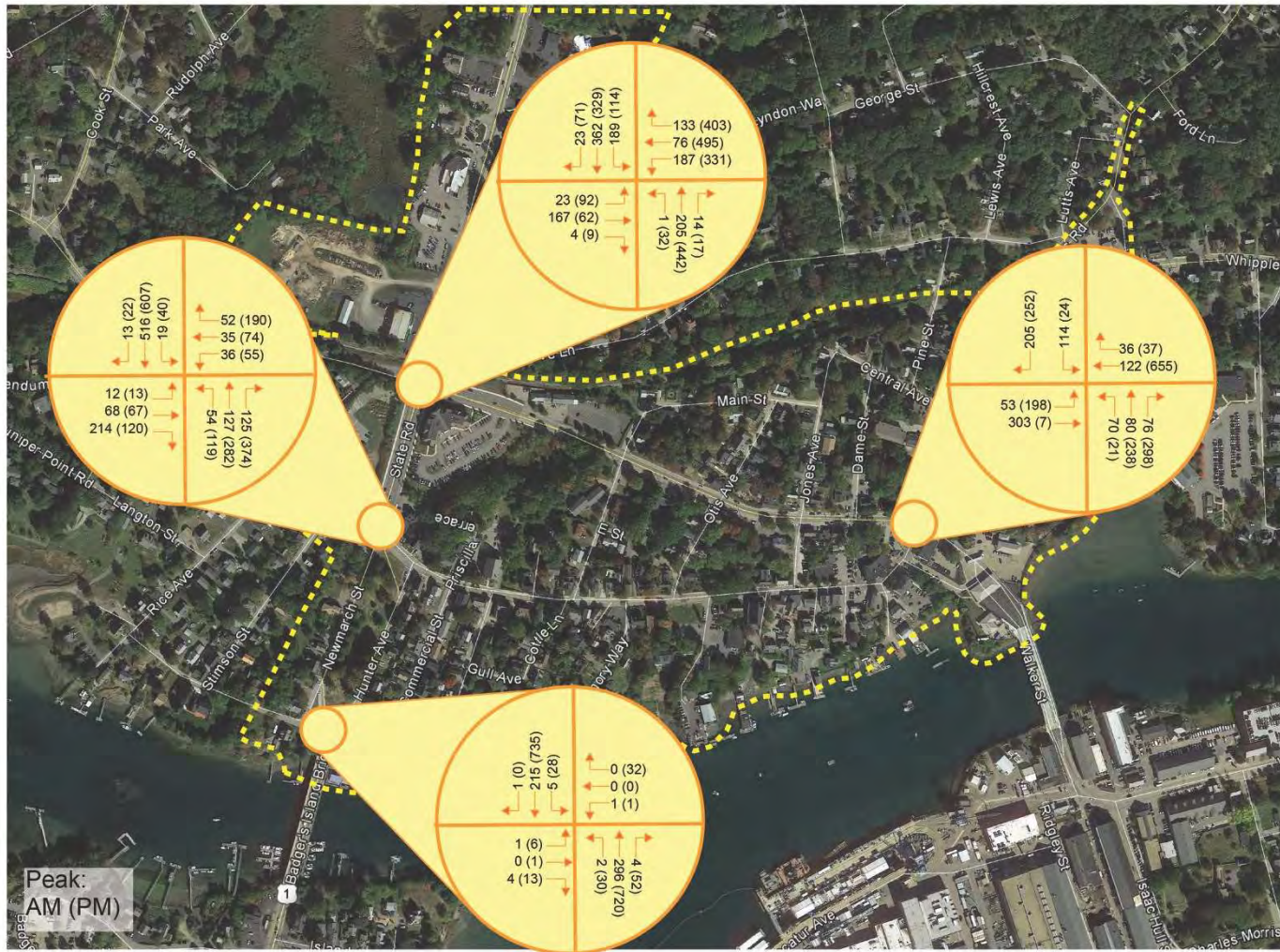


Figure 23 – 2036 Future Intersection Volumes

## 2036 PNS Future Volumes

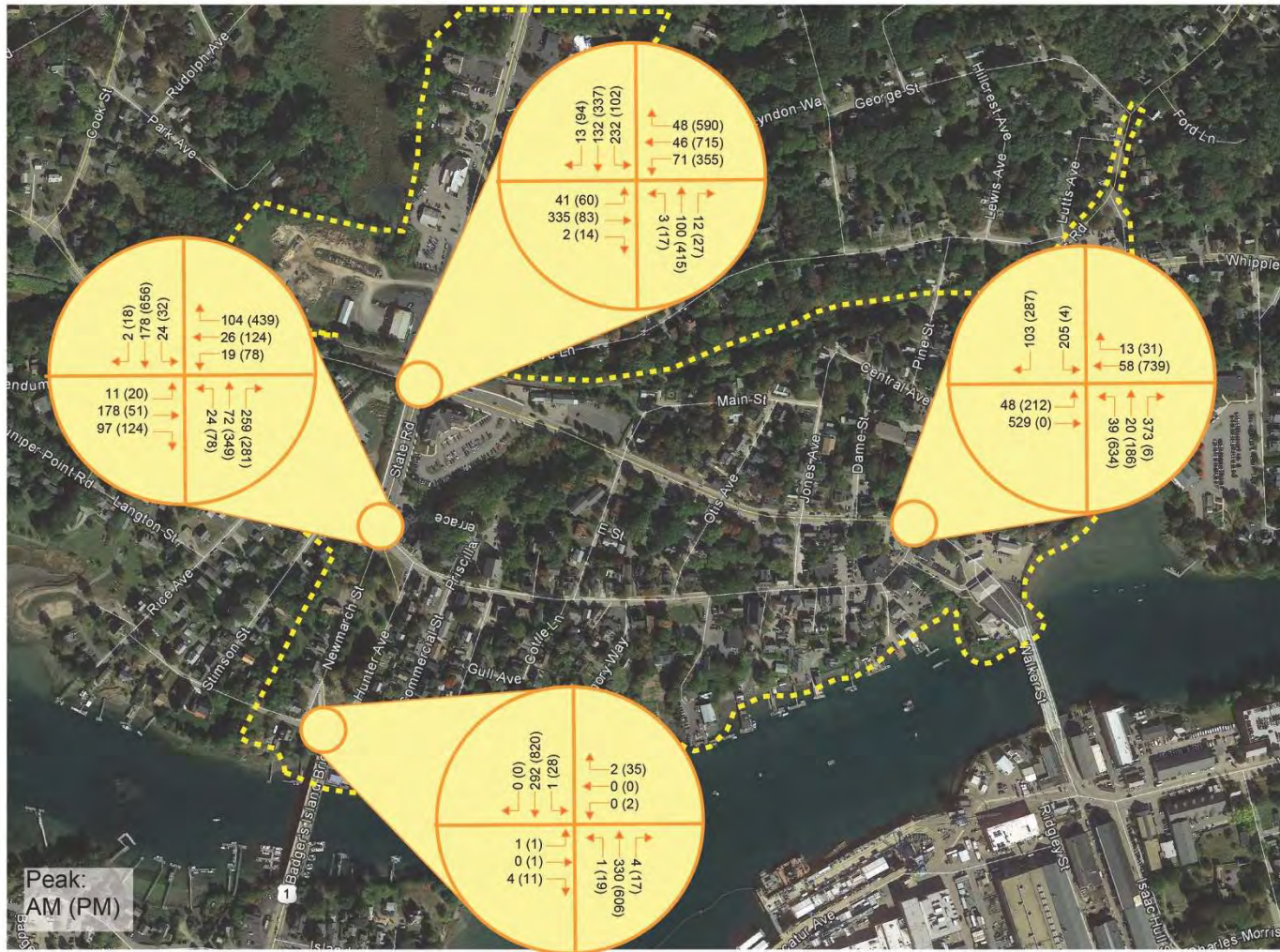


Figure 24 – 2036 Portsmouth Naval Shipyard Intersection Volumes



### 5.3: Street/Intersection Recommendations

As noted above, the transportation improvements are integrated with a vision for growth throughout the Study Area. Streets and intersections are (re)designed not only for their capacity, but for ability to create a sense of place and promote economic development. Route 1 has been identified as the segment of the Study Area that can absorb growth at larger scale than the Foreside, while integrating the walkability and general character of the Foreside.

As a part of addressing Route 1, a goal is to make the experience more consistent from the river north through Gourmet Alley as shown on **Figure 25**. The following recommendations envision a future Route that is more in keeping with an urban street – including sidewalks, on-street parking, and road / intersection diets encouraging walking, “park once” shopping, and traffic calming – all while meeting projected growth scenarios.



Figure 25 – Overall plan for Route 1 Intersection and Street Segment Improvements

### 5.3.1 Route 1/Water Intersection

Currently John Paul Jones Park (1998 National Register of Historic Places) is underutilized. Route 1 splits at the park with one-way segments on Newmarch and Hunter. Newmarch runs south and Hunter runs north. The goal is to combine the north and south bound traffic on to Newmarch, creating more traditional intersections at the northern and southern ends of the park, calming traffic, and beginning a traditional alignment running north through Gourmet Alley. Currently on-street parking is allowed on Newmarch and Hunter, but it is not marked and is unsafe to park along these segments in order to access the park. By converting Hunter to a local street with on-street parking, people will be able to directly access the park. By creating two travel lanes on Newmarch and removing on-street parking, this complete street will have reduced traffic speeds and increased safety. Additional design review is required for Hunter to assess turnaround movements or a local connection to Water Street. **Figure 26** shows the proposed Route 1 Jones realignment and **Figures 27-28** show a before and after cross-section through the park. Input from the Working Group, the Planning Board, and the Public favored increased access to the park and the traffic calming aspects of this concept. As part of due diligence, the concept was presented to the Maine Historic Preservation Commission. The MHPC responded that the vehicular experience of the monument in the park should not be diminished with reassignment of vehicular movement. The MHPC works with communities to minimize impacts on historic resources, but is not a regulatory agency. As noted on the cross-sections, the eastern curb on Newmarch would be moved approximately six feet to the east into the park. Every effort should be taken to minimize impacts on the park and trees when implementing this concept.

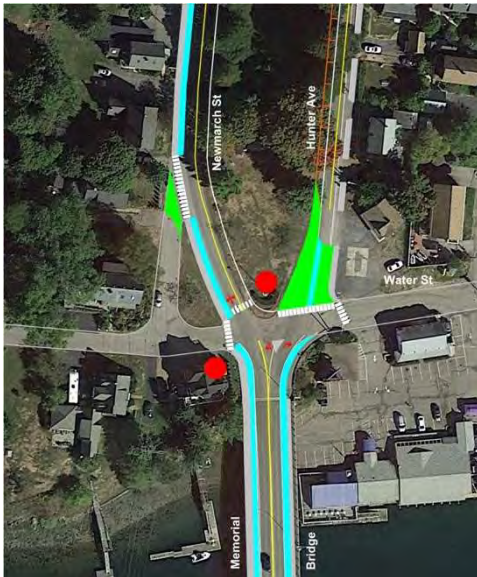


Figure 26 – Route 1 / Water Intersection

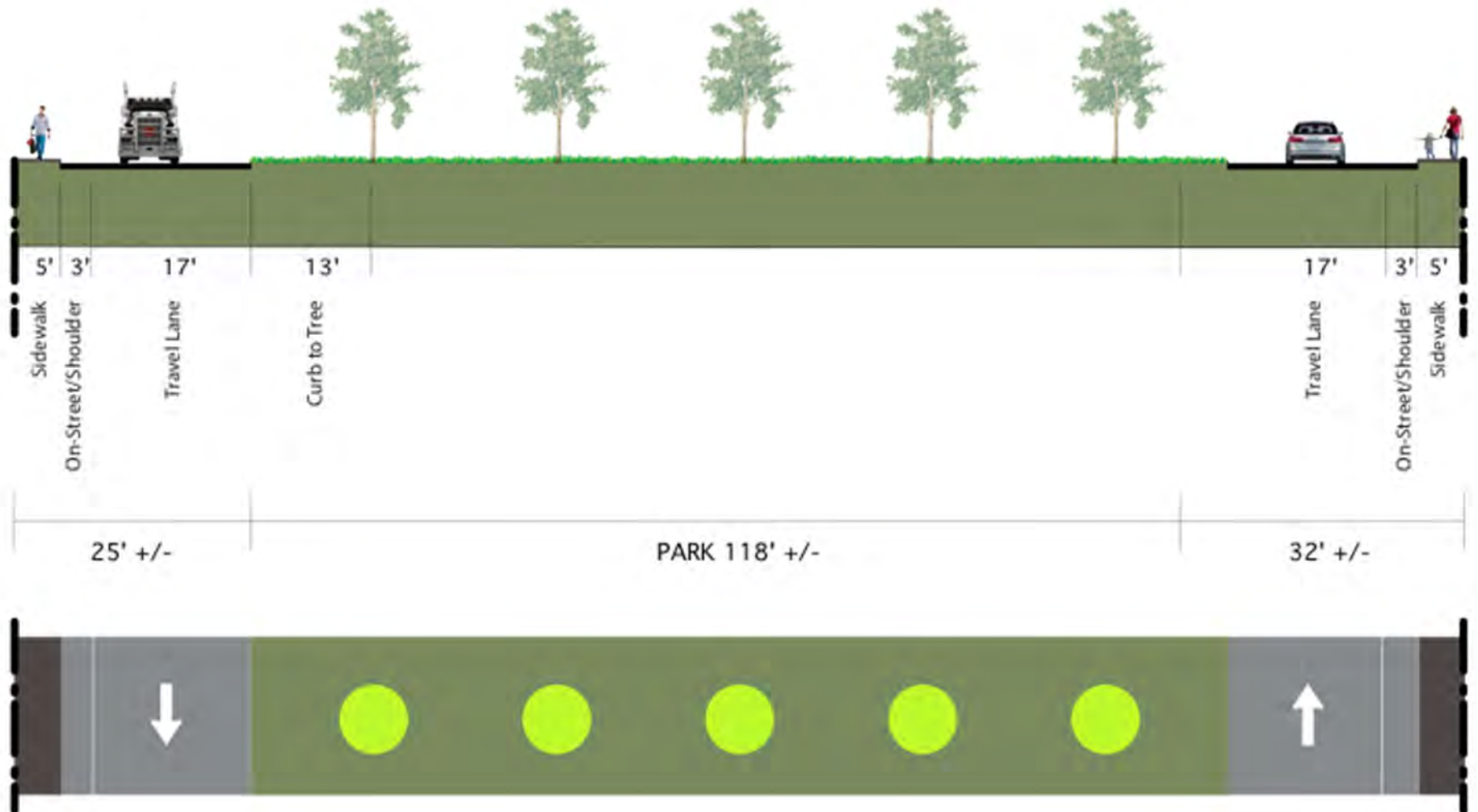


Figure 27 – Existing Cross Section through John Paul Jones Park

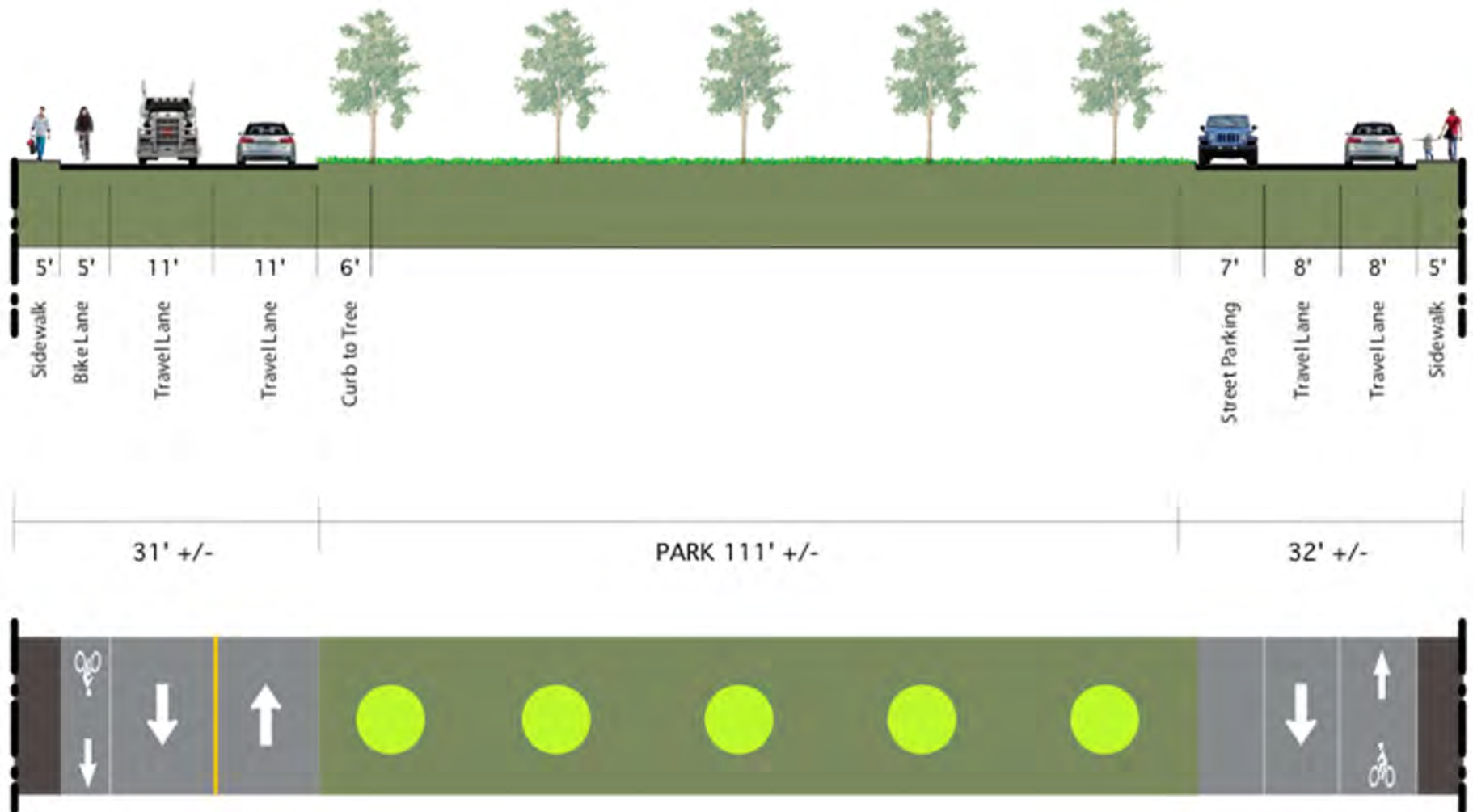


Figure 28 – Proposed Cross Section through John Paul Jones Park

### 5.3.2 Route 1/Government Intersection

Currently all users travel north on Hunter and then are required to navigate a confusing intersection at Hunter and Government and then Government and Newmarch before heading north on Route 1. By shifting Route 1 vehicles to Newmarch, Hunter becomes a local street with on-street parking serving the park as shown on **Figure 29**.

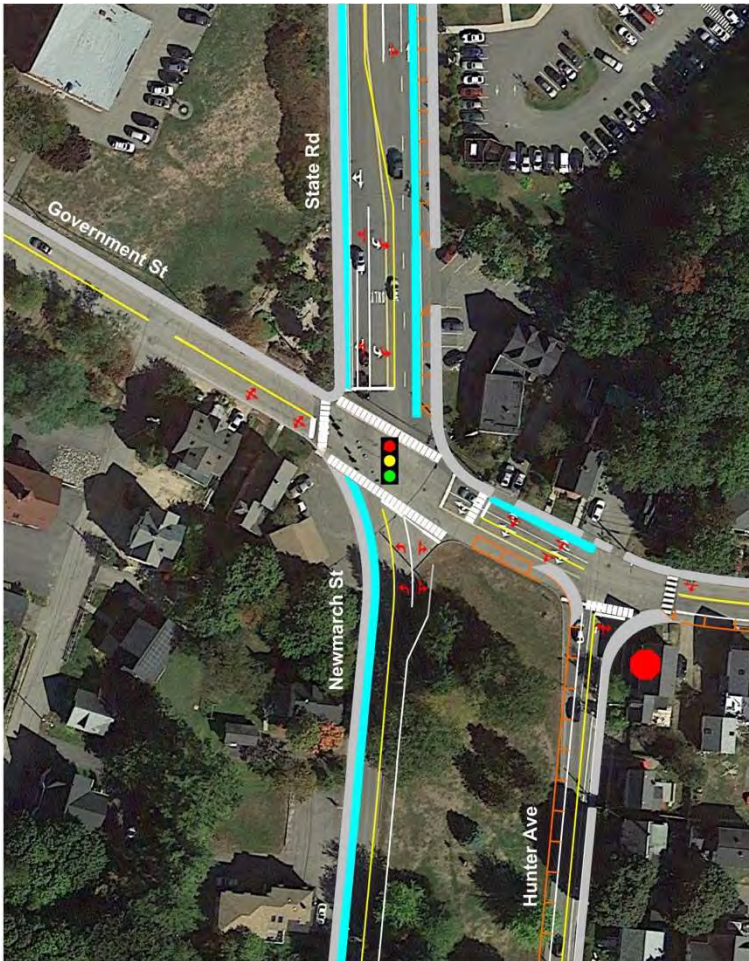


Figure 29 – Route 1 / Government Intersection

### 5.3.3 Route 1/Walker Intersection

The Route 1/Walker Intersection can be redesigned to maintain existing and future capacities while right sizing it to make it more walkable and safe as shown on **Figure 30**. Throughout the Study process, this intersection was noted as too wide to cross in a comfortable and safe manner and out of scale with the existing neighborhood and the potential sense of place. **Figures 31-32** depict the existing and proposed conditions south of York Hospital on Route 1.

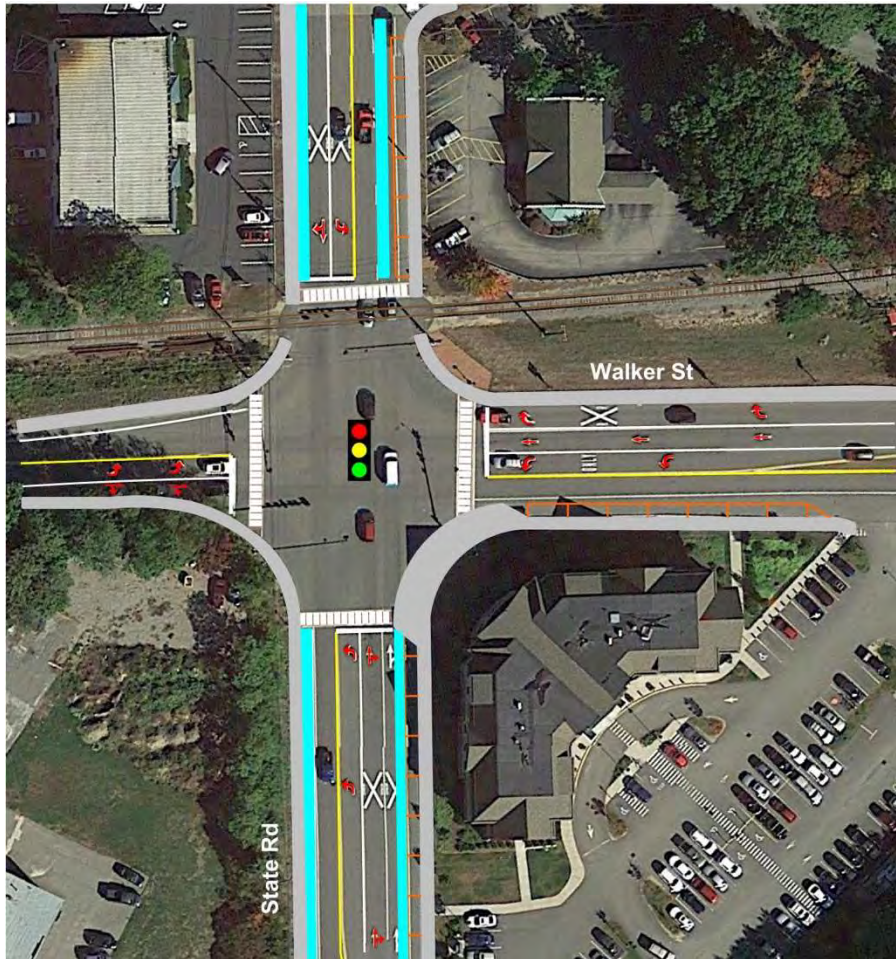


Figure 30 – Route 1 / Walker Intersection

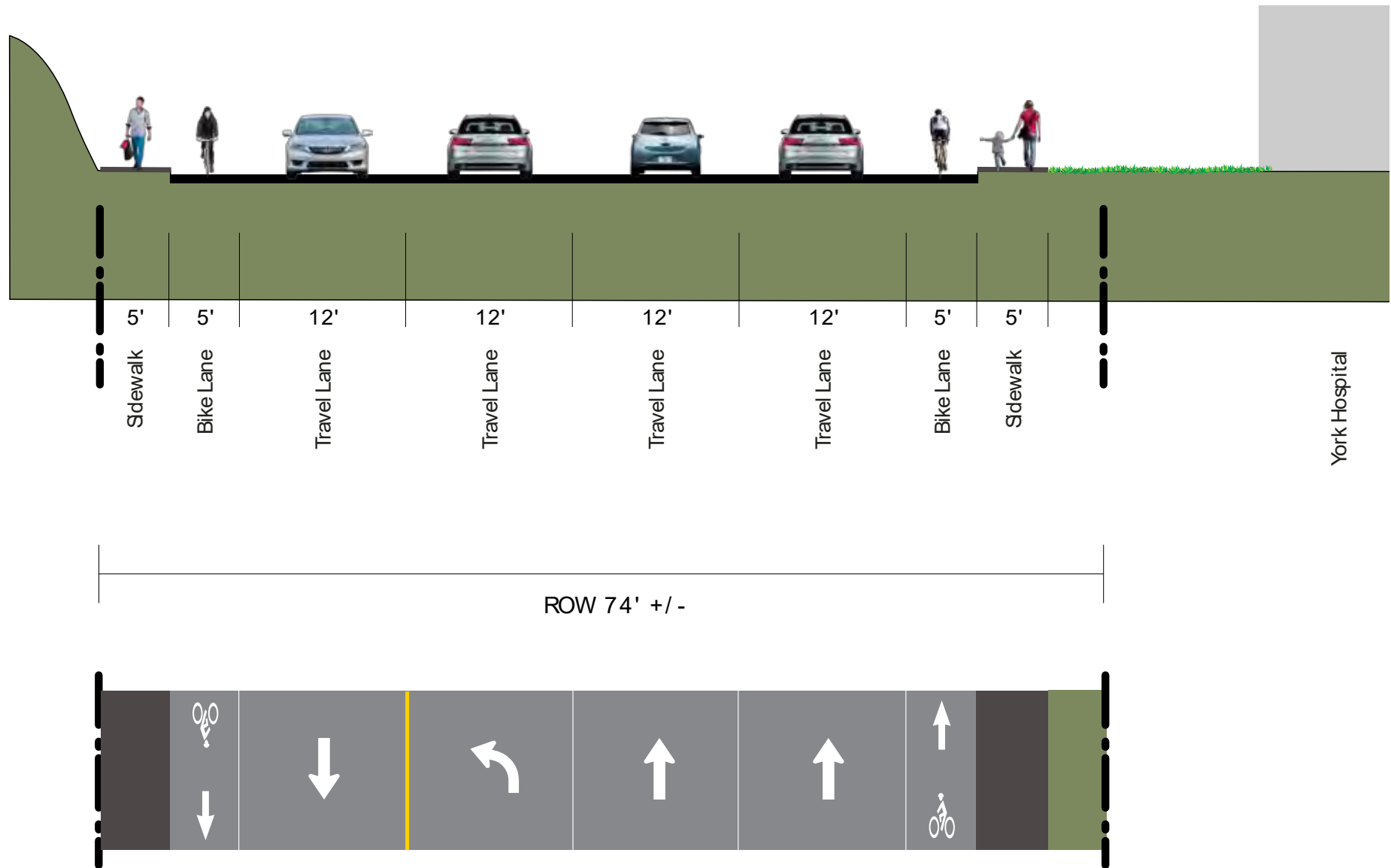


Figure 31 – Existing Cross Section South of York Hospital

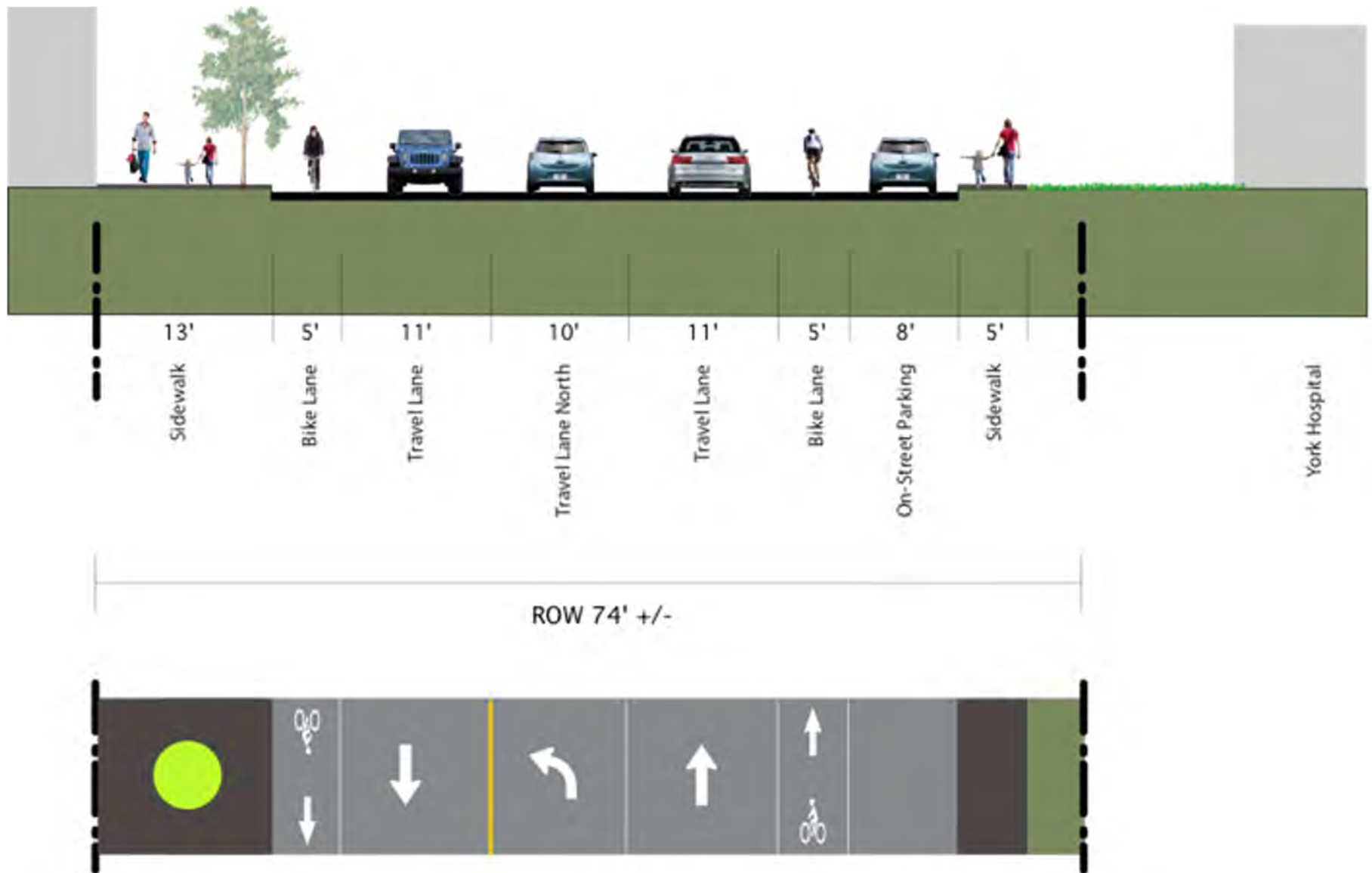


Figure 32 – Proposed Cross Section South of York Hospital



#### 5.3.4 Route 1 North / Gourmet Alley

This section of Route 1 includes many successful local businesses. An issue that was raised throughout the planning process was that Route 1 lacks an urban street feel in this segment. The following concept was developed to create sidewalks and enhanced streetscapes on both sides, adding on-street parking, while maintaining the bikes lanes and capacity. The idea is to simply flip the parallel parking along the buildings to the west to on-street parking along Route 1, creating a protected sidewalk area between the travel lanes and the parking lot. This before and after transformation is depicted on **Figures 33-34**.

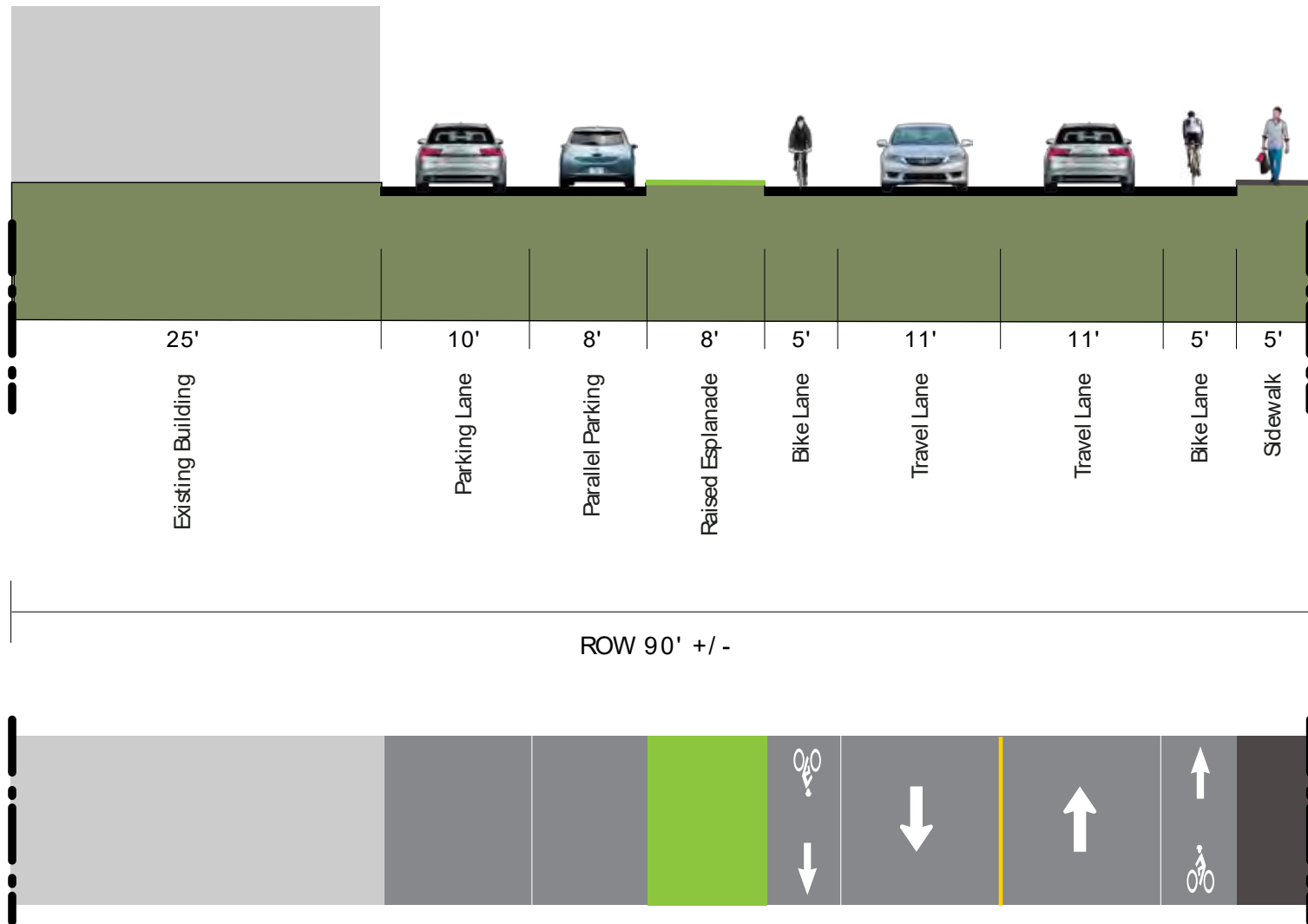


Figure 33 – Existing Cross Section at Gourmet Alley

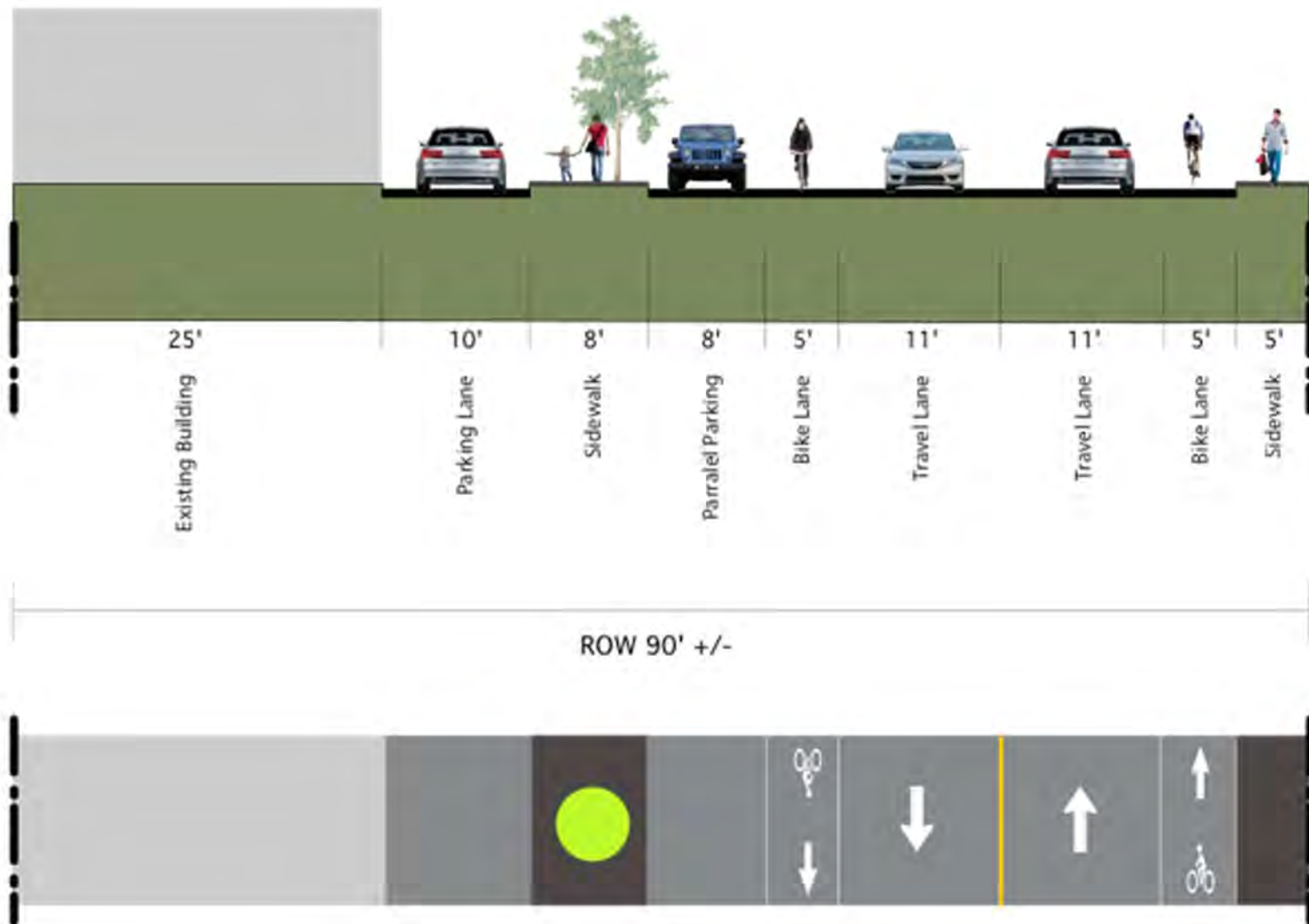


Figure 34 – Proposed Cross Section at Gourmet Alley

### 5.3.5 Jones Avenue – Walker to Government

Particular attention was given to the redesign of Jones Avenue because it is the first “loop” drivers make after passing through Wallingford Square, it also includes a large surface parking lot and lacks sidewalks. The existing and recommended conditions are shown on **Figures 35-36**.

- One-way flow to Government should be maintained.
- Sight distance is restricted when turning onto Government Street. Construction of a sidewalk and a curb extension will shift motorist sight to the east and improve sight lines
- On-street parking may be possible along the proposed sidewalk nearest Government Street. Three to four spaces could be added. Current Town regulations prohibit parking on both sides between Walker Street and Government Street.

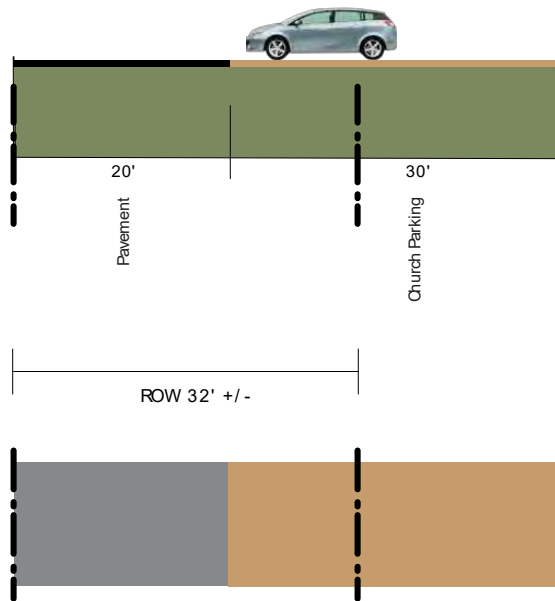


Figure 35 – Jones Avenue Existing Cross Section

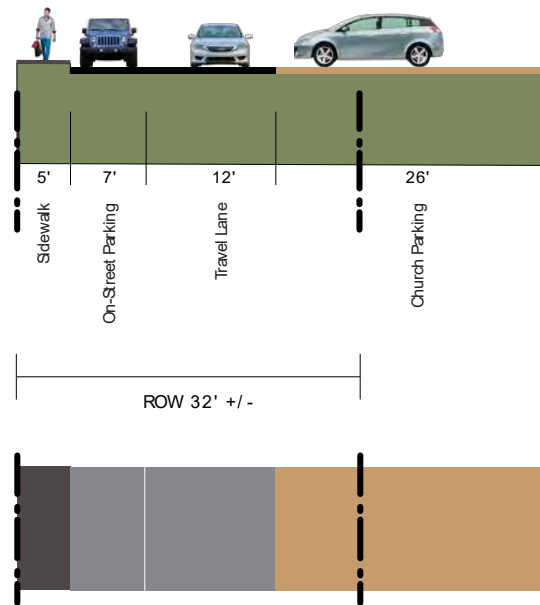


Figure 36 – Jones Avenue Proposed Cross Section

### 5.3.6 Government Street – Two-Way Section

The two-way segment of Government currently allows on-street parking in close proximity to the activities of the Foreside. However, the distribution of space makes on-street parking difficult. By reallocating space and new striping within the existing curb lines, underutilized and much needed on-street parking is formalized and made available to the public. The existing and recommended conditions are shown on **Figures 37-38**.

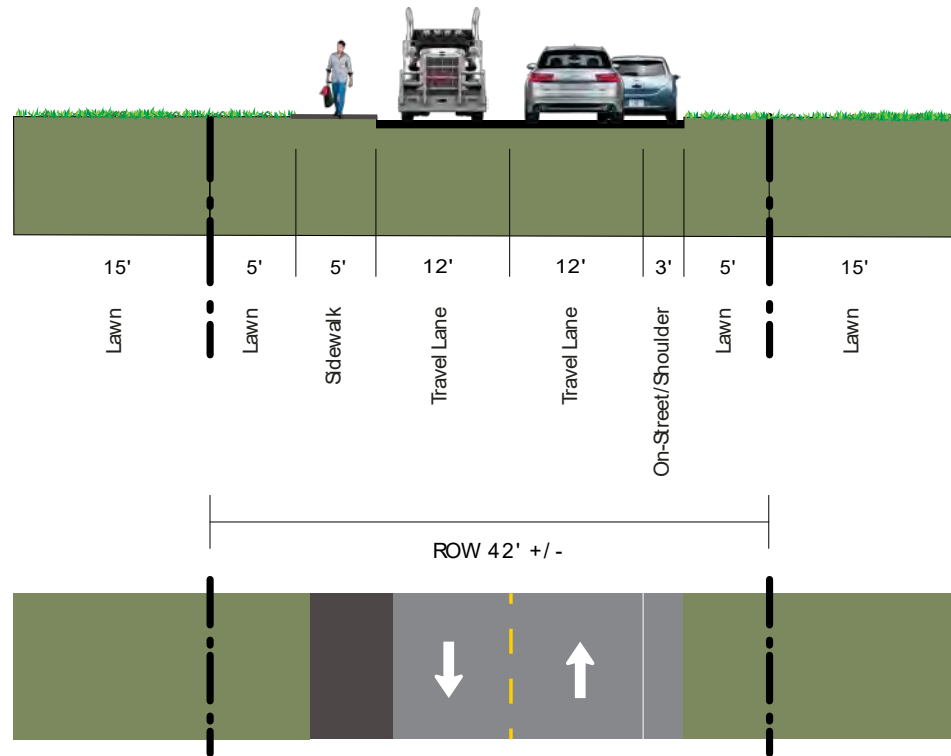


Figure 37 – Government Street Existing Cross Section (two-way-segment)

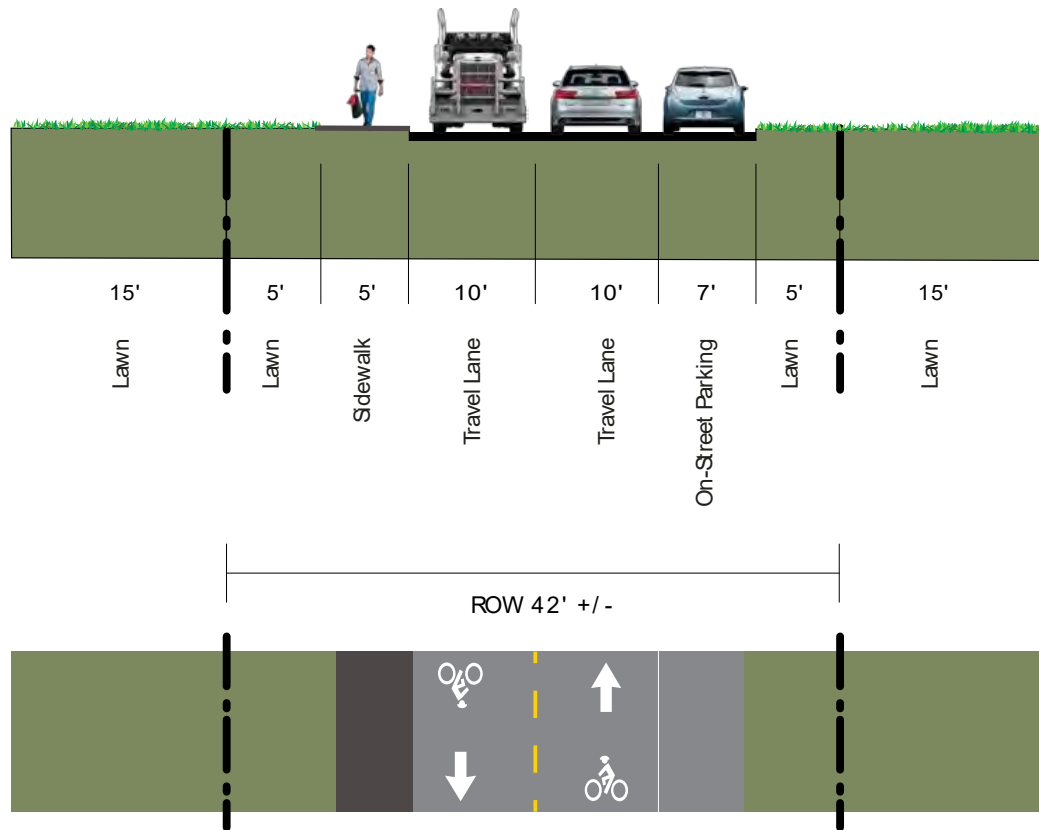


Figure 38 – Government Street Proposed Cross Section (two-way-segment)

### 5.3.7 Walker Street/Wentworth Street/Government/Shipyard

The MaineDOT project will be improving this intersection with the following key upgrades.

- Replacement of the traffic signal
- Upgrading all crossing to meet ADA requirements.
- Providing crosswalks on all approaches.
- Modifying the traffic signal phasing so that left-turn movements from Walker Street will have a protected phase.



### 5.3.8 Love Lane

#### Issue: Vehicle Speeds and Cut-Through Traffic and No Sidewalks

Love Lane has a maximum pavement width of approximately 22 feet. The right-of-way is approximately 35 feet.

**Sidewalk** – A sidewalk is not recommended. Significant impacts to trees and landscaping would occur. Side slopes would complicate sidewalk construction.

**Traffic Calming** – the following options are suggested for feedback.

- Narrow intersection throat width at Route 1
- Install a raised median island on Route 1 and restrict movements to right-turn entry and exit movements (this will also restrict movements to TD Bank).
- Install a chicane device that will calm traffic
- One-way restriction
- Vertical devices (speed humps) are not recommended due to noise impacts.





### 5.3.9 Other Side Streets in Study Area

#### Otis Avenue – Walker to Government

Formalizing on-street parking on Otis Avenue is recommended. The following should be noted.

- The pavement width is approximately 21 feet near Walker Street.
- The right-of-way width is approximately 33 feet.
- Current Town regulations permit one-hour parking between 7:00am to 6:00pm.
- It is suggested that parking be permitted and marked on the east side and prohibited on the west side.



#### Otis Avenue – North of Walker

Formalizing on-street parking on Otis Avenue is recommended. The following should be noted.

- The pavement width is approximately 16 feet near Walker.
- The right-of-way width is approximately 33 feet.
- Current Town regulations permit one-hour parking between 7:00am to 6:00pm.
- It is suggested that parking be permitted and marked on the east side and prohibited on the west side.



## Main Street

Formalizing on-street parking on Main Street is recommended. The following should be noted.

- The pavement width is approximately 23 feet.
- The right-of-way width is approximately 34 feet.
- Current Town regulations permit one-hour parking between 7:00am to 6:00pm.
- It is suggested that parking be permitted and marked on the west side and prohibited on the east side.



## Main Street – North of Walker

Formalizing on-street parking on Main Street is recommended. The following should be noted.

- The pavement width is approximately 23 feet.
- The right-of-way width is approximately 33 feet.
- Current Town regulations permit one-hour parking between 7:00am to 6:00pm.
- It is suggested that parking be permitted and marked on the west side and prohibited on the east side.



## Dame Street

Formalizing on-street parking on Dame Street is recommended. The following should be noted.

- The pavement width is approximately 21 feet.
- The right-of-way width is approximately 33 feet.
- Current Town regulations do not note parking regulations.
- It is suggested that parking be permitted and marked on the west side and prohibited on the east side.



## Jones Avenue – North of Walker

Formalizing on-street parking on Jones Avenue is recommended. The following should be noted.

- The pavement width is approximately 20 feet.
- The right-of-way width is approximately 37 feet.
- Current Town regulations permit one-hour parking between 7:00am to 6:00pm.
- It is suggested that parking be prohibited.



### 5.4 On-Street Parking Supply

In general, approximately 100 on-street parking spaces are available through design recommendations and the formalization of existing parking. This parking is distributed throughout the Study Area, and mitigates the parking perception problem. **Figure 39** depicts the location of on-street parking supply enhancement.

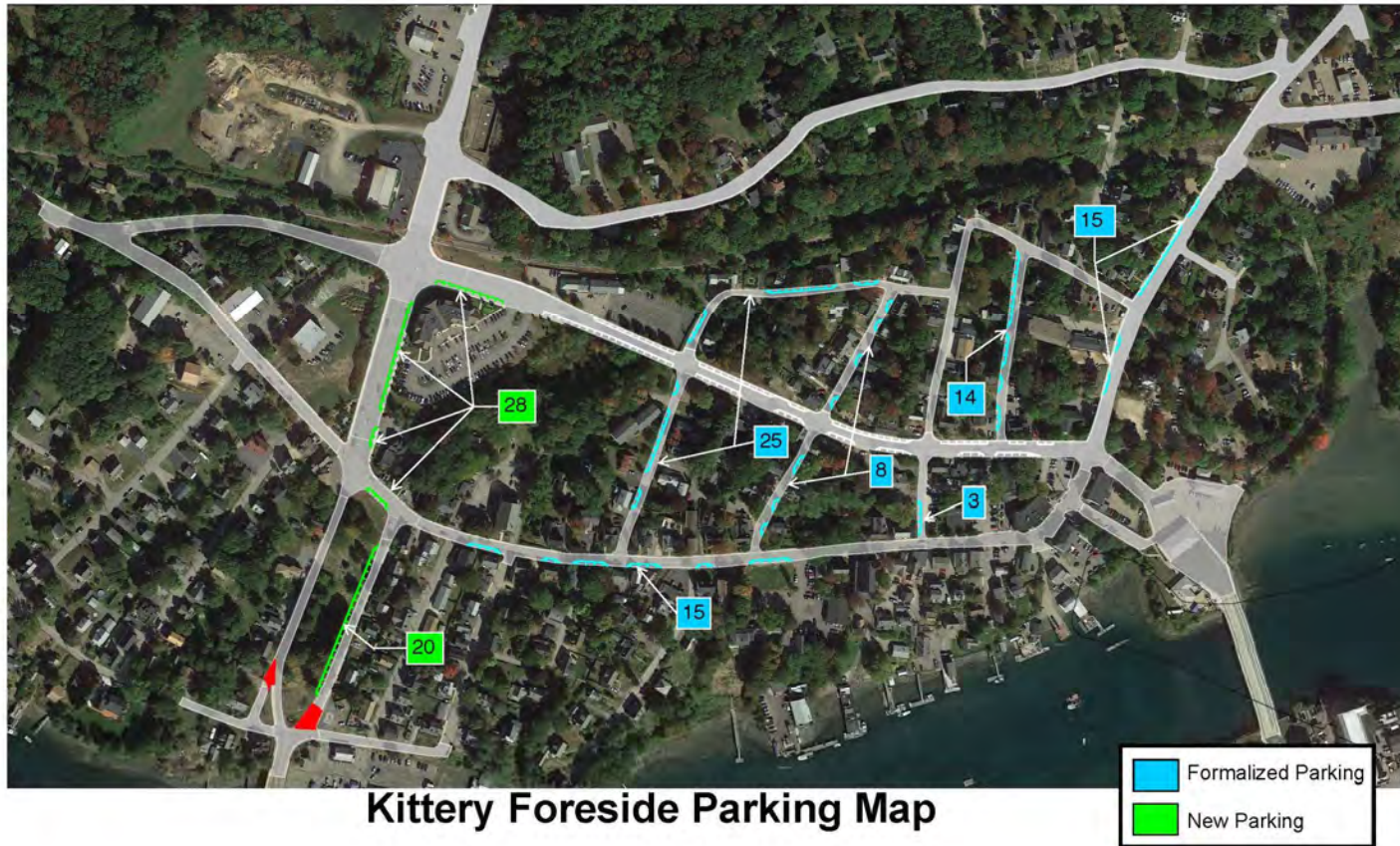


Figure 39 – On-street Parking Supply Enhancement

### 5.5 Off-Street Parking Supply

In summary, off-street parking strategies include: Off-hour shared parking, shared parking for abutting uses, create parking as an accessory use for new development, and coordinate with the Shipyard on off-island parking management strategies as shown on Figure 40.

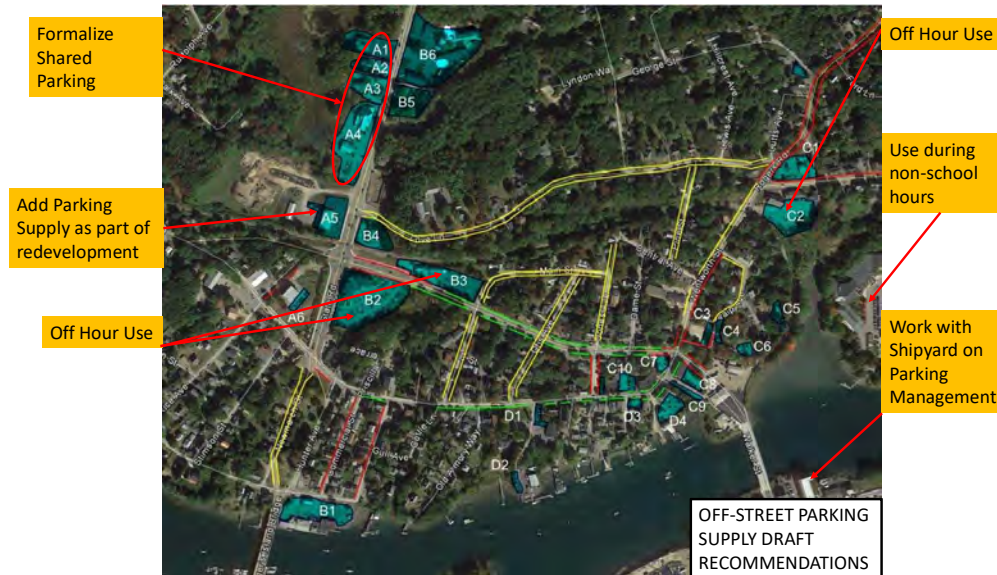


Figure 40 – On-street Parking Supply Enhancement

### Off Hour Shared Parking

- Coordinate with businesses that have large parking lots including York Hospital, Loco Coco, and Church. Consider using current supply that is underutilized.

### Shared Parking for Abutting Uses

- Develop a strategic plan for formalizing shared parking for Carl’s Meats, Golden Harvest, and Beach Pea. This would be conducted in conjunction with access management and sidewalk facility improvements.

### Create New Parking Supply with Redevelopment

- An example is the Water District parcel.

### Coordinate with the Shipyard on Parking Management Strategies

The Shipyard has identified the following strategies for improving traffic congestion and parking impacts in the Foreside area. No specific recommendations for implementation were identified, but the list of strategies included:

- Increase on-base parking supply by constructing a second garage.
- Identify a base wide non-exempt parking supply ceiling
- Gradually reduce the based wide non-exempt parking supply
- Create 2+ or 3+ Carpool Restriction
- Fee-based Parking
- Establish Permanent Public Transportation Services and routes to serve PNSY and Kittery
- Work with Kittery and nearby communities to create incentives for private owners of large existing parking areas to permit change-of-mode operations outside of PNSY
- Implement Additional Staggered or Flextime Work Schedules
- Develop Policies that increase bicycle circulation opportunities
- Modify Gate 2 intersection with Whipple Road
- Provide signal modifications to Walker Street at Wentworth Street. Government Street, and Gate 1
- Use of PNSY off-base rail access corridor for transit

## SECTION 6.0 LAND USE RECOMMENDATIONS

### 6.1 Land Use Introduction

The land use and transportation recommendations in this Study are integrated in order to sustain palatable growth over the next 20 years. In general, after input from the community and careful review from the staff, few recommended changes are proposed for the Foreside. This area is envisioned, as called for in the Comprehensive Plan, as a stabilized neighborhood that absorbs change primarily through mixed use redevelopment of existing structures and infill development at the scale of a typical building in the area. Route 1 is identified as an area that should become more walkable and urban as the Foreside, but allow development with footprints greater than 1,500 SF. For example, York Hospital has a footprint of 12,000 SF +/- and the new mixed use building north of Love Lane has a footprint of 4,000 SF. Within the Foreside there are only a handful of existing buildings in the 4,000 to 6,000 SF range. These include, but are not limited to the fire station and the buildings in Wallingford Square. **Figure 41** shows the footprint of known buildings throughout the Study Area to help visualize scale – and opportunities.



Figure 41 – Existing Building Footprint Comparison

The Study Area is tight knit, pedestrian scaled, and walkable. As noted on **Figure 42**, not only can a pedestrian walk from any given point A to point B in ten minutes or less, but the organic grid of streets provides a diversity of routes.



Figure 42 – Study Area Pedestrian Sheds



## 6.2 Growth Scenarios

As noted above in Section 5.2, growth scenarios for the Study Area were based on establishing the existing baseline, a mid level of growth, and a high level of growth. These growth numbers were modeled to test the capacity of recommended street and intersection improvements.

**The transportation recommendations for streets and intersections accommodate mid and high-level growth scenarios over the next 20 years while providing road and intersection diets, and creating more urban and pedestrian-friendly streets.**

While maintaining surface parking lots as an accessory use to the primary use on a parcel, the mid level of growth can be absorbed across the Study Area at varying degrees of intensity. Most of the new development and housing will be located along parcels fronting Route 1, while redevelopment and infill will occur within the Foreside at a scale compatible with the fabric of the neighborhood and following existing zoning dimensional standards.

Existing	Mid	High
• Comm: 268,854 SF +/-	25,000 SF	90,000 SF
• Residential: 400 +/-	95 Units	200 Units
• Totals:	294,000 SF	359,000 SF
	495 Units	600 Units
• Additional Parking:	500 +/-	1,500 +/-
• Peak AM Trips:	121	294
• Peak PM Trips:	216	517

To help visualize a mid-growth scenario, several “opportunity sites” were selected throughout the Study Area as shown on **Figure 43**. In a few of the examples we compare what is currently allowed following current standards with increase in the scale of development to help the community both visualize what can happen – and what could occur if regulations allowed for more diverse scales of development. The illustrations are not intended to convey a preferred style, but scale, massing, and proximity to the street.

The following development illustrations (**Figures 44-53**) lead to the eventual consensus that growth in the Foreside should meet the following existing criteria (with parcels fronting Route 1 north of Government can have more flexibility in terms of building footprint):

- New development limited to a 1,500 SF footprint
- Redevelopment to not exceed existing footprint



Figure 43 – Opportunity Sites

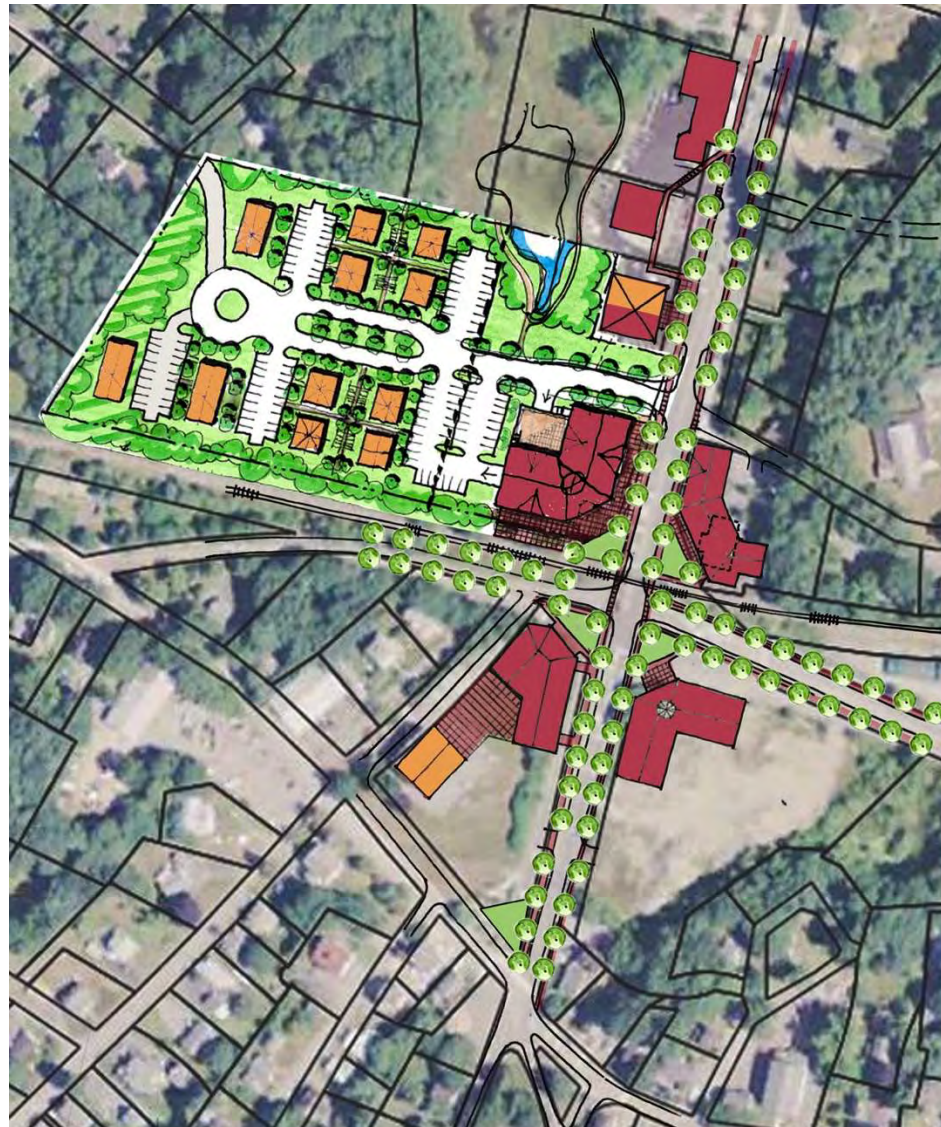


Figure 44 – The Water District Site and the Walker / Route 1 Intersection (courtesy Sustain Southern Maine)



Figure 45 – Existing Conditions: Route 1 Opportunity Site Across from York Hospital Site



Figure 46 – Proposed Conditions Meeting Code: Route 1 Opportunity Site Across from York Hospital Site



Figure 47 – Existing Conditions: Government Street



Figure 48 – Proposed Condition: Government Street Meeting Code at 1,500 SF



Figure 49 – Proposed Infill Development on Government Street Not Meeting Zoning by Exceeding 1,500 SF (4,000 SF shown)





Figure 50 – Existing Conditions Firehouse on Walker



Figure 51 – Proposed Redevelopment at the Firehouse on Walker (meets zoning in terms of size and placement, but has a flat roof)



Figure 52 – Existing Conditions at Wentworth and Whipple



Figure 53 – Proposed Infill / Redevelopment at Whipple and Wentworth to Code

### 6.3 Land Use and Zoning Recommendations

After the process of visualizing growth in the Foreside and along Route 1, the consensus was that the three current zones comprising the Study Area (**Figure 54**) should be combined into one zone to encourage safety, walkability, stabilization of the historic neighborhood, while encouraging larger development on parcels fronting Route 1. The existing design standards for the MU-KF Zone (not including building footprint limitations) should be extended throughout the BL-1 and BL Zones as shown on **Figure 55**.

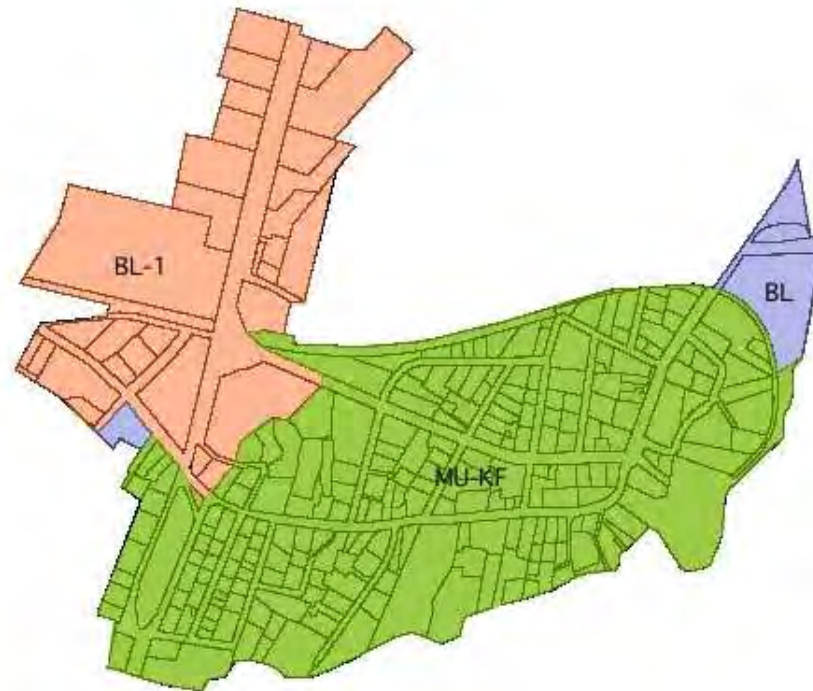


Figure 54 – Study Area Existing Zoning

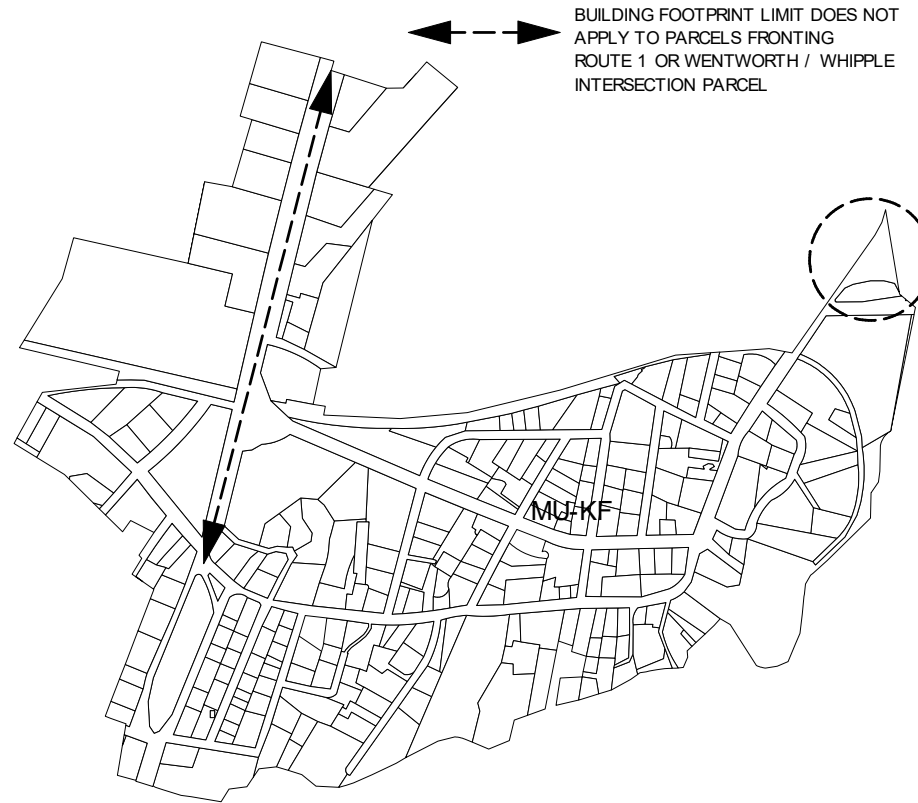


Figure 55 – Study Area Proposed Zoning

### 6.3.1: Key Zoning / Design Strategies

1. Extend walkability and character of the Foreside to Route 1
2. Create a more uniform, village like, safe, and attractive Route 1 from the river north through Gourmet Alley
3. Reconcile uses between MU-KF, BL-1, and BL and grandfather/sunset certain uses:
  - Mass Transit
  - Building Materials
  - Garden Supply
  - Conference Center
  - Funeral Home
  - Gas Station
  - Mechanical Service
  - Parking Lots as Primary Use
  - DO NOT allow drive-thru facilities anywhere in the new zone
4. Reconcile standards between MU-KF and BL-1 (extend MU-KF standards to Route 1). Allow for greater densities, increased net residential densities, lot coverage, relaxed parking ratios, and 0' front setbacks in what is now zoned BL-1.
5. Allow larger buildings on parcels with frontage on the Route 1 corridor north of the Government Street intersection
6. Allow smaller buildings (development/redevelopment) east of Route 1 following current zoning: 1,000 to 4,500 +/-
7. Coordinate short-term and long-term implementation of parking, mobility, and zoning recommendations to encourage growth while promoting walkability and “Streets and Squares” placemaking
8. Design and zone for what the community wants for the future, not only for what exists today (this is most applicable to Route 1 north of the park through Gourmet Alley).
9. Where feasible, require on-street parking, street trees, street lights, and sidewalks on Walker, Government, Whipple and Route 1.
10. Allow flat roofs on buildings that are a minimum of two occupied floors. Building massing shall be articulated with a cornice.

This approach to unifying the Study Area into one zone combined with right sizing streets and intersections leads to an overall urban design/primary street network/wayfinding squares noted on **Figure 56**.

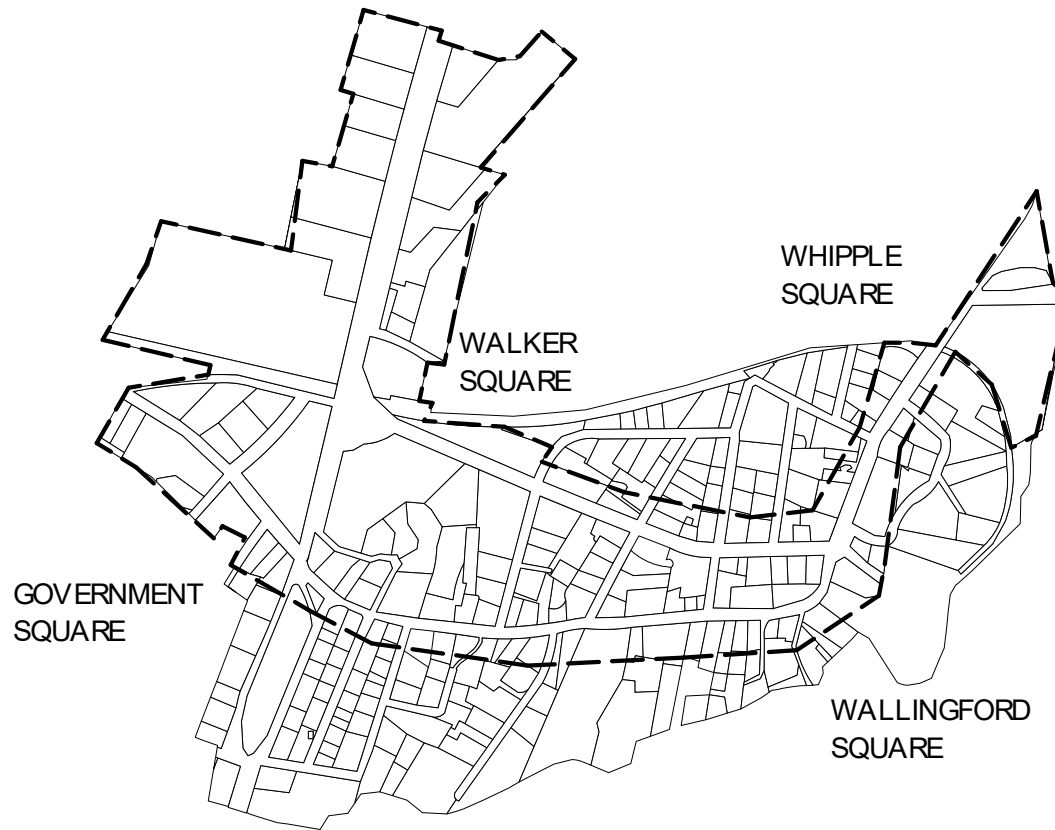


Figure 56 – “Four Square” Placemaking Diagram Resulting by Integrating Transportation and Land Use Recommendations



### 6.4 Open Space and Connectivity Opportunities

Throughout the course of the Study, the community asked for opportunities to increase connectivity and open space throughout the Study Area. The following recommendations are included in this Study and noted on **Figure 57**:

- Utilize a Complete Streets methodology to designing or redesigning streets
- Create access to John Paul Jones Park
- Improve walkability through streetscapes, sidewalks, crosswalks, bump outs, and right sizing intersections
- Create a multi-use path greenway on the 70' wide rail corridor running from Route 1 to Wentworth and finally to the location of the old pedestrian bridge crossing the estuary. The greenway can then connect to Traip Academy and the public boat launch at Traip. The pedestrian bridge between Traip Academy and the rail corridor will allow for future shared use of the Traip parking to serve Wallingford Square – an approximate six-minute walk with the reconstruction of the historic footbridge as shown on **Figures 58-59**.
- Create a public boardwalk park at Wallingford Square on the river, just downstream from the Town Landing as show on **Figure 60**.
- Identify small infill park locations throughout the Study Area where swings and other play equipment cab be located. These pocket playgrounds should be no more than an eight-minute walk from each other.



Figure 57 – Parks and Connectivity in the Study Area

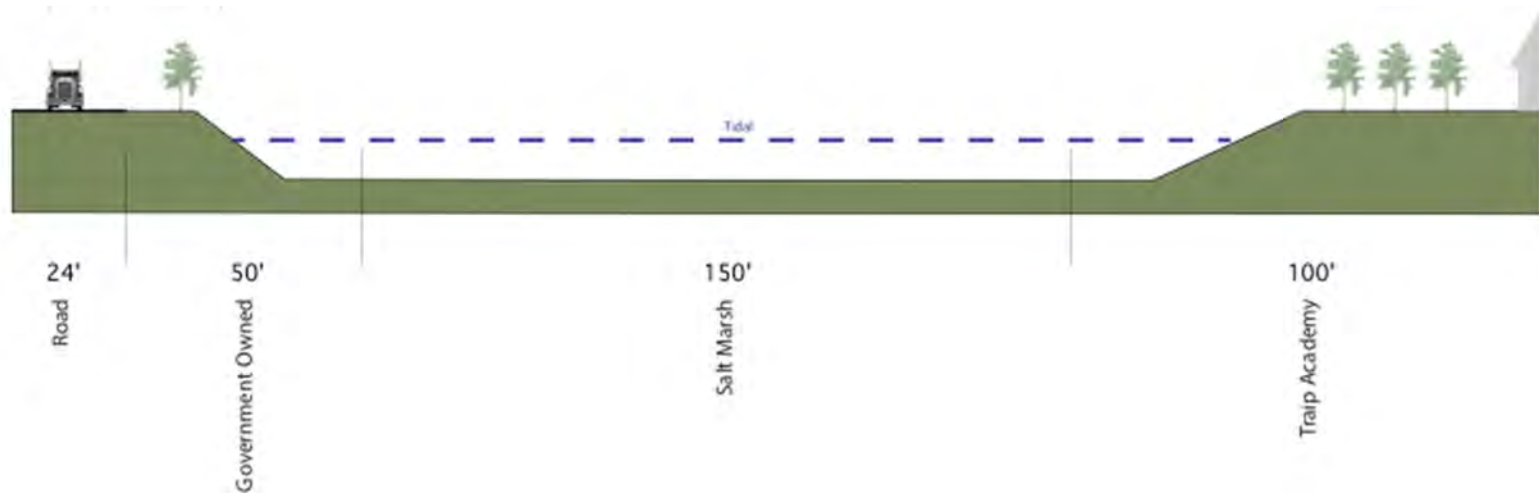


Figure 58 – Existing Conditions between the Proposed Greenway and Traip Academy at the Estuary

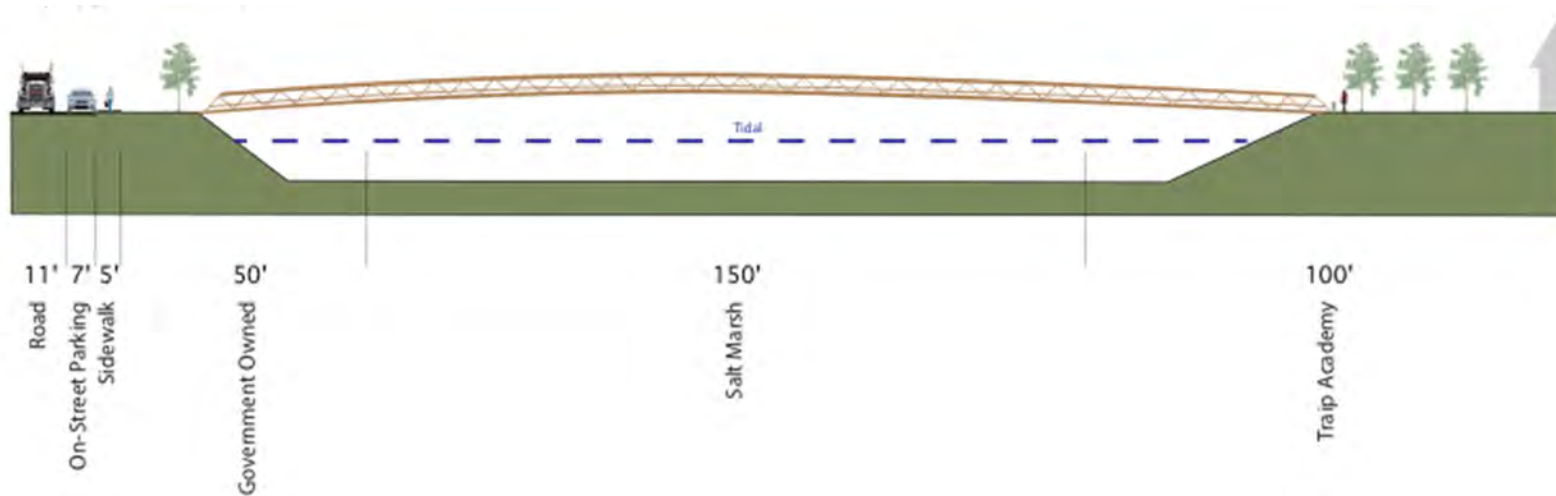


Figure 59 – Proposed Reconstruction of the Historic Footbridge between the Greenway and Traip Academy at the Estuary

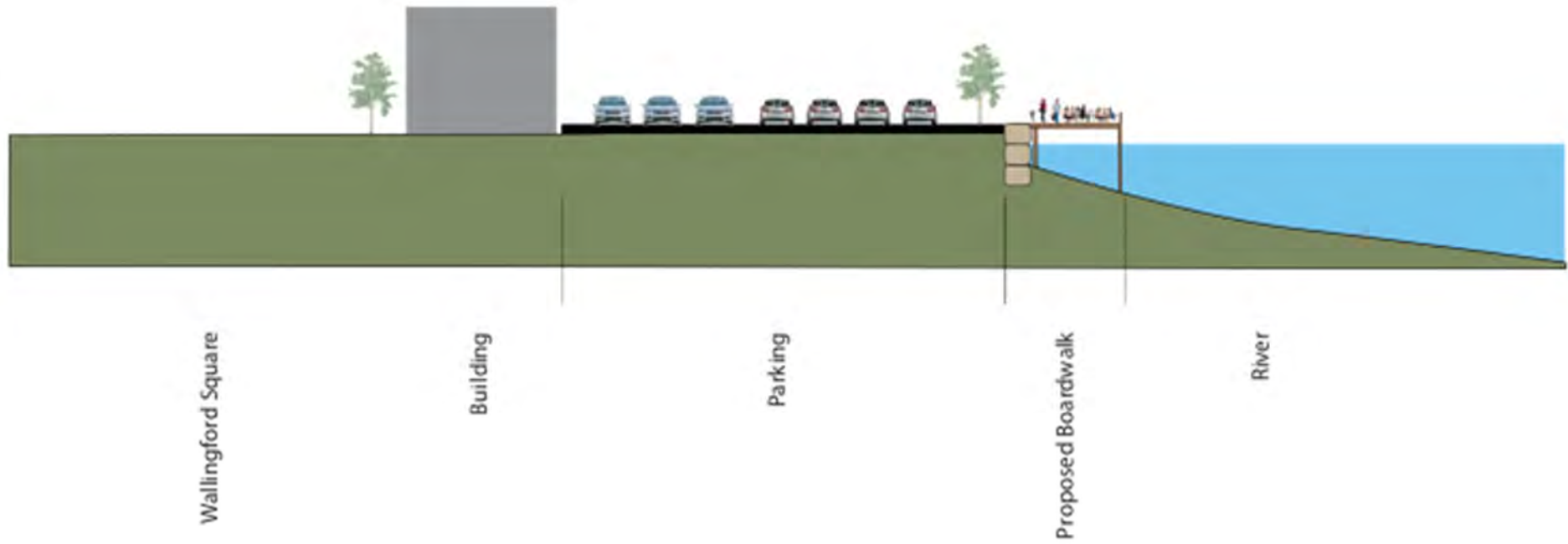


Figure 60 – Concept Boardwalk/Park at Wallingford Square

## SECTION 7.0 PUBLIC OUTREACH

- Staff Kick-Off Meeting – January 10, 2017
- Public #1 Kick-Off Meeting – February 8, 2017
- Kick-Off Working Group Meeting #1 Site Walk – March 6, 2017
- Working Group Meeting #2 to Review Existing Conditions – May 3, 2017
- Public Meeting #2 Listening Session and Design Workshop – June 15, 2017
- Working Group Meeting #4 to Review Draft Recommendations– August 23, 2017
- Working Group Meeting # to Review Draft Recommendations – October 2, 2017
- Public Meeting #3 – October 25, 2017
- Present Draft Recommendations to Planning Board – November 9, 2017
- Present Draft Recommendations to Town Council – December 2017
- Present Final Draft Recommendations to Working Group – December 2017