Working Group Meeting – August 23, 2017
Preliminary Draft Transportation Recommendations Summary

MAINEDOT ROUTE 103 PROJECT STATUS UPDATE

Conceptual Plans were submitted to the MaineDOT and the Town of Kittery in January of 2017. Following review of those plans, minor revisions were made and a Public Informational Meeting was held in late March, 2017. Since that time T.Y. Lin International (TYLI) has completed the following:

1. Researched and resolved potential issues posed at the informational meeting regarding the Library area (need for on-street parking, potential contaminated soils, historic status etc.)
2. Researched and determined the direction to proceed with regards to the drainage design
3. Reviewed access management at the ambulance drive
4. Prepared existing versus proposed parking space inventory, and
5. Researched the ability to place a sidewalk around the cork tree.

On August 1, 2017, T.Y. Lin (TYLI) met with MaineDOT to discuss the status of the project and any outstanding items. The following points were discussed:

1. TYLI told MaineDOT that the Draft Recommendations for the Foreside Land Use, Parking and Traffic Circulation Study (Foreside Study) were schedule to be submitted on the 17th of August and a working group meeting was scheduled for the 23rd of August to discuss them. MaineDOT and TYLI agreed that advancing the design of this project should wait until after the 23rd to avoid potential re-design should the work on this project end up not matching the recommendation put forth in the Foreside Study.
2. Based on the Town's endorsement, the Foreside Study will be recommending the Town's requested typical section on Wentworth Street. MaineDOT said that TYLI could start adding the Town's requested typical section for Wentworth Street to the plans and start developing a cost estimate. MaineDOT feels that the cost for this option will be more than originally anticipated for the project due to the addition of curb and drainage on the east side of the roadway. MaineDOT and the Town can then use this estimate to determine if existing funding is sufficient for the remainder of the project. At this time, TYLI has revised the plan views to reflect this typical section, which will be used in the near future to develop the cost estimate.
3. The information TYLI has obtained thus far from the Town indicates that the existing pipe system on Wentworth may not be large enough to handle the flow into the additional catch basins which would be needed along the east side of Wentworth Street. Upgrading this system may require work on the Shipyard property (where the current system outlets into the river) and would be a significant increase in both design and construction efforts.
4. While the cost estimate is being developed for Wentworth Street, the work on Walker Street will be included to confirm the original estimate.
5. **The Town had requested that, if possible, the proposed sidewalk on the east side of Wentworth Street be extended to the intersection of Walker and Wentworth Streets. As part of the Foreside Study, it appears that the Shipyard is opposed to banning right-turning trucks exiting the Shipyard roadway northbound onto Wentworth Street. This limits available improvements at this corner due to the historic Cork tree that is to be protected.**

6. **<u>The potential use of curb extensions ("bump outs") at the crosswalk locations have been discussed with the Town during development of this project and the Foreside Study. The Foreside Study expects a decision on whether or not to include these features prior to submission of the Draft Recommendations. The resulting configuration will be reflected in the Walker and Wentworth Street plans</u>.**
7. Previously the Town indicated that Unitil plans to extend their service along Wentworth Street from Whipple Street. MaineDOT will begin coordinating with Unitil on this issue soon.
8. After the Public Informational Meeting, the Library requested that the parallel parking spot in front of the property be preserved in the proposed design. This spot is used for deliveries and for handicap parking. MaineDOT indicated that TYLI should show an on-street parking area on the design plans, but because of the competing uses for this space the Town should determine how they want it signed (perhaps "Parking by Permission Only"). This space will be added to the plans soon.
9. **<u>As part of the Draft Recommendations, the Foreside Study will be recommending whether or not two lanes are required eastbound at the Walker Street/Wentworth Street intersection. The resulting configuration will be reflected in the Walker Street plans.</u>**
10. **<u>As part of the Draft Recommendations, the Foreside Study will be recommending the best locations for sidewalk connections between the residential streets north of Walker Street and Government Street. The resulting locations will be reflected in the Walker Street plans.</u>**
11. To facilitate further project planning MaineDOT and TYLI decided to develop an estimate of remaining design effort and a revised schedule for this project. In order to minimizing duplication of work both agreed these should be developed once the Foreside Study's recommendations were finalized.

FUTURE TRAFFIC VOLUME GROWTH ASSUMPTIONS

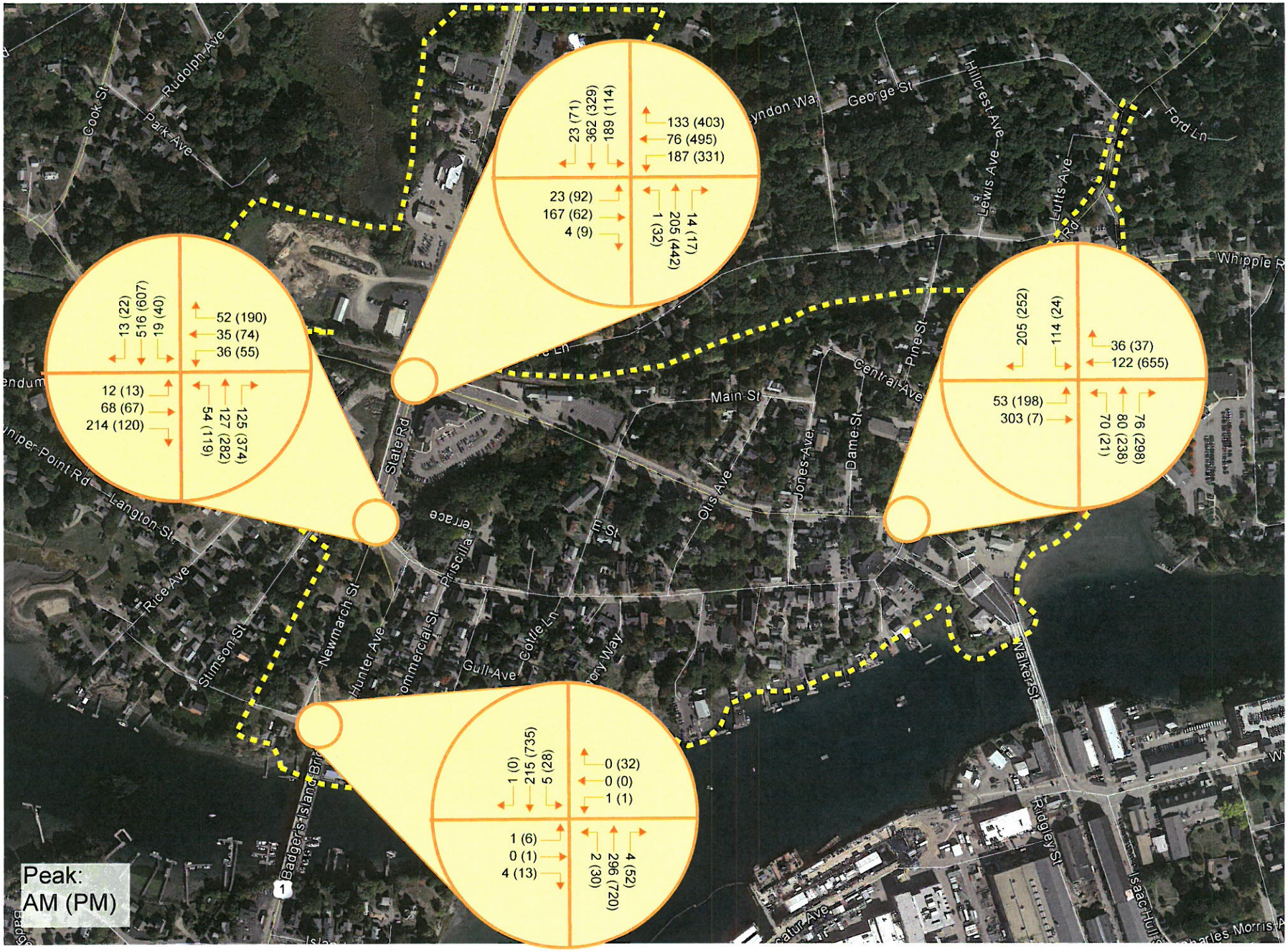
- Peak Hours
  - AM PNS Peak Hour: 6:00 AM
  - AM Foreside Peak Hour: 7:30 AM (8:00AM was used for Water Street)
  - PM PNS Peak Hour: 3:00 PM
  - PM Foreside Peak Hour: 4:00 PM
- Background Growth rate
  - 20% (1% per year) – guidance provided by MaineDOT as part of the Route 103 project
- 95 Homes (single family detached assumed)
- 15,000 Square Feet of General Office (710)
- 10,000 Square Feet of Specialty Retail (826)

The following tables summarizes the estimated additional traffic according to the ITE Trip Generation Manual.

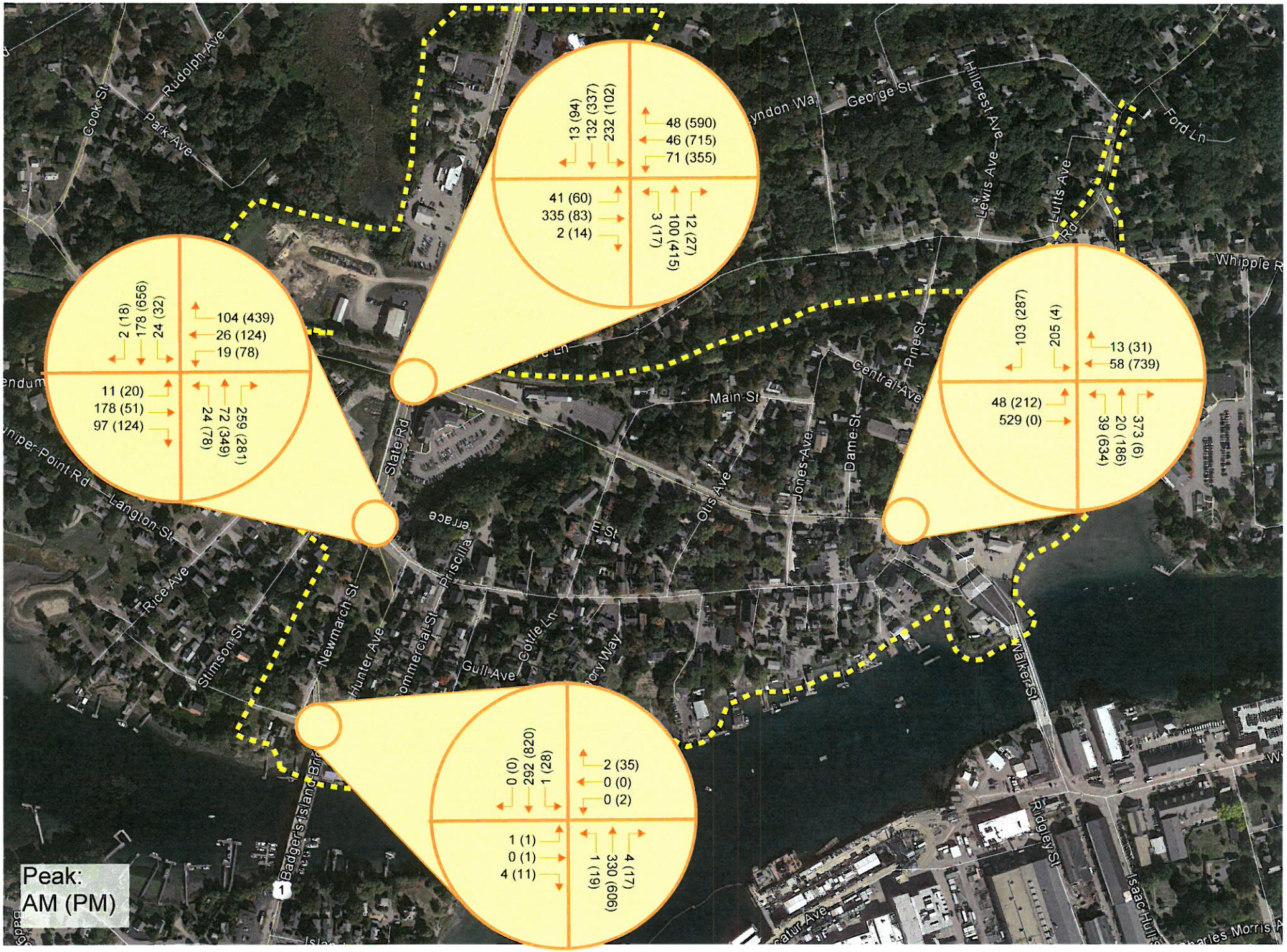
Trip Generation		Total	Entering	Exiting
Housing (210)	Weekday Total	953	476	477
	Weekday AM Peak Hour	73	18	55
	Weekday PM Peak Hour	96	60	36
Office (710)	Weekday Total	311	155	156
	Weekday AM Peak Hour	42	37	5
	Weekday PM Peak Hour	96	16	80
Retail (826)	Weekday Total	466	233	233
	Weekday AM Peak Hour	46	20	26
	Weekday PM Peak Hour	165	79	86
	Total AM Peak Hour	**161**	**75**	**86**
	Total PM Peak Hour	**357**	**155**	**202**

The following graphics present the 2036 Future Traffic volumes during the AM and PM peak hours during Shipyard and Non-Shipyard time periods.

2036 Future Volumes



2036 PNS Future Volumes



ROUTE 1/WALKER STREET INTERSECTION

Reduction in the number of lanes are proposed at this location. The attached graphic conceptually illustrates the recommendations, which include:

- Route 1 northbound will have one left lane and one through/right lane
- Route 1 southbound will have one left lane and one through/right lane
- Walker Street eastbound will have one left lane and one through/right lane
- Walker Street westbound will have one left lane and one through and one right lane
- Parking spaces will be added along the York Hospital frontage on Route 1 and Walker Street

2036 Future volume conditions with the reduce lane configuration will operate at acceptable levels of service and delay. As noted below acceptable levels of service will be provided in the future with development.

State Street (Route 1) and Walker Street														
			Walker (EB)			Walker (WB)			State (NB)			State (SB)			
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	All
Existing Geometry	2036 PNS AM Peak	LOS	B	C		C	B	A	B	B	B	B	B		C
		Delay (sec)	14	32		25	19	1	12	15	15	16	14		21
	2036 AM Peak	LOS	B	C		C	C	A	A	B	B	B	B		B
		Delay (sec)	15	30		25	20	5	0	16	16	13	14		17
	2036 PNS PM Peak	LOS	B	B		C	C	B	D	D	D	D	D		C
		Delay (sec)	15	15		21	33	15	37	47	47	38	51		32
	2036 PM Peak	LOS	B	B		B	C	B	C	D	D	C	D		C
		Delay (sec)	17	13		20	33	11	30	38	38	34	44		29
With Reduced Lanes	2036 PNS AM Peak	LOS	B	D		C	C	A	B	B	B	B	B		C
		Delay (sec)	15	36		34	22	5	12	18		18	15		23
	2036 AM Peak	LOS	C	D		D	C	A	B	B		B	B		C
		Delay (sec)	25	50		55	34	7	12	20		12	15		26
	2036 PNS PM Peak	LOS	D	B		C	D	C	C	D		D	D		D
		Delay (sec)	44	20		29	54	24	22	48		52	35		39
	2036 PM Peak	LOS	D	B		C	D	B	C	D		C	D		D
		Delay (sec)	35	19		24	41	17	29	55		31	43		37


State
Walker
State

ROUTE 1/GOVERNMENT STREET

An investigation into converting the Route 1 southerly one-way roadway to a two-way street was performed. Additionally, short-term improvements were identified if no changes to circulation was implemented.

Alternative 1 – Route 1 Two-Way on west side of park (Newmarch Street)

This intersection is recommended to be reconfigured to a standard four-way intersection. The attached graphic conceptually illustrates the recommendations, which include (a refined plan will be provided next week):

- Government Street eastbound will have a single approach lane
- Government Street westbound will have one left lane and one through/right lane
- Route 1 northbound (Newmarch Street converted to two-way) will have one left lane and one through/right lane
- Route 1 southbound will have one left lane and one through/right lane
- A southbound bike lane will be included. Northbound bikes will be routed to a shared use path on the east side of the park.
- Crosswalks will be provided on all intersection approaches and will allow a safe route to and from the park.
- Hunter Avenue will become a local access driveway and dead-end before Water Street. It will be STOP controlled at Government.

Acceptable 2036 Future levels of service and delay with the reduce lane configuration will be provided. A summary table is provided below.

State Street (Route 1) and Government Street															
			Government St (EB)			Government St (WB)			Route 1 NB (State)			Route 1 SB (State)			All
			Eastbound			Westbound			Northbound			Southbound			
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Build	2036 PNS AM Peak	LOS	C			B			A			A	A		B
		Delay (sec)	33			14			7			6	7		15
	2036 PNS PM Peak	LOS	C			D			C			A	A		C
		Delay (sec)	24			46			33			6	9		26

Alternative 2 – Maintain Existing Circulation

The intersection will remain unchanged from a traffic configuration and control perspective with the following details:

- Tighten park corner (which will reduce crossing distance and provide space for ADA ramp) and add crosswalks on all approaches to signalized intersection. Implement an exclusive pedestrian phase.
- Implement access management on southwest corner.
- Install a crosswalk on Hunter Street approach.
- Newmarch Street is approximately 20 feet wide. A formal 5-foot bicycle lane should be marked with a 13-foot travel lane and a 2-foot offset to the park side curb. As an option, provide 5-foot bicycle lane, 3-foot buffer area, 11-foot travel lane and 1 foot offset to curb.
- Hunter Street is approximately 19 feet wide. A formal 5-foot bicycle lane should be marked with a 12-foot travel lane and a 2-foot offset to the park side curb. As an option, provide 5-foot bicycle lane, 2-foot buffer area, 11-foot travel lane and 1 foot offset to curb.
- Town regulations currently permit one-hour parking on Newmarch Street between 7:00am to 6:00pm. Parking would need to be prohibited to accommodate the bicycle lane. Town regulations prohibit parking on Hunter Avenue.
- Provide shared right-lane/bike lane on Hunter Street approaching Government Street (an example will be provided next week).
- Restripe Government Street to three 11-foot travel lanes and a 5-foot bicycle lane on the northern side.

ROUTE 1/WATER STREET

Alternative 1 – Route 1 Two-Way on west side of park

This intersection is recommended to be reconfigured to a standard four-way intersection. The attached graphic (a refined plan will be provided next week) conceptually illustrates the recommendations, which include:

- Water Street eastbound will have a single approach lane
- Water Street westbound will have a single approach lane
- Route 1 northbound will have a single approach lane
- Route 1 southbound will have a single approach lane
- Crosswalks
- North of the intersection, a southbound bike lane will be provided and northbound bikes will be routed to a shared use path.
- Hunter Avenue will become a local access driveway and dead-end before Water Street.
- Water Street movements will be STOP controlled.

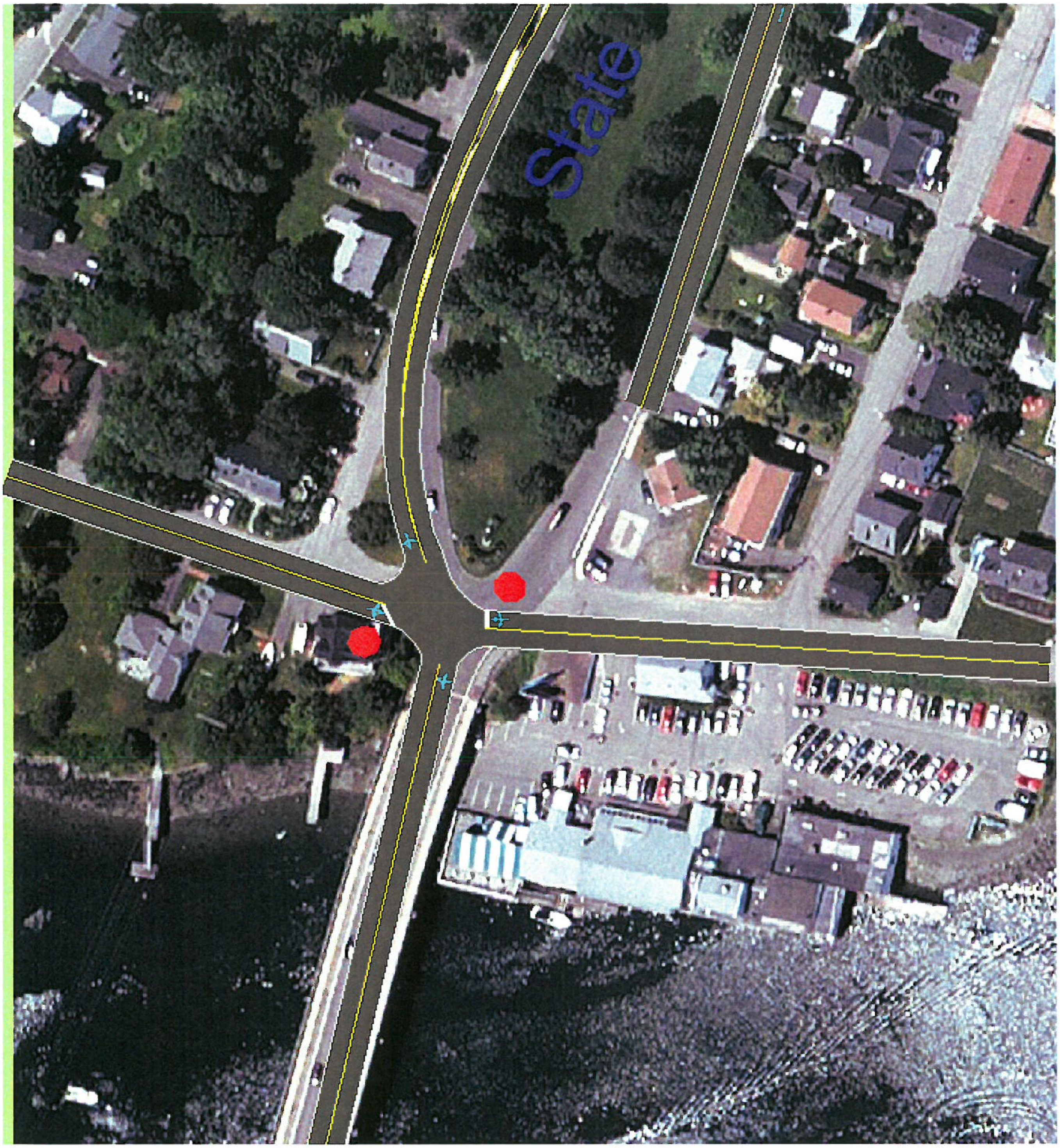
Acceptable 2036 future levels of service and delay with the reduce lane configuration will be provided, although long delays are estimated for Water Street movements, which is similar to existing conditions.

State Street (Route 1) and Water Street														
			Water St (EB)			Water St (WB)			Route 1 NB (State)			Route 1 SB (State)			All
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Build	2036 PNS AM Peak	LOS	A			B			A			A	A		A
		Delay (sec)	10			11			0			0	0		0
	2036 PNS PM Peak	LOS	E			C			A			A	A		A
		Delay (sec)	40			17			1			10	0		1

Alternative 2 – Maintain Existing Circulation

MaineDOT conducted a safety Audit for the location with the goal of improving both pedestrian and bicycle safety. Specific recommendations are pending, but may include the following:

- Installing a crosswalk on the south side of the intersection (near bridge)
- Installing crosswalks to the park
- Restricting movements from bridge to Water Street westbound
- Enhancing bicycle lanes/shoulders


State

WALKER STREET/WENTWORTH STREET/GOVERNMENT/SHIPYARD

Eliminate One approach lane on Walker Street

An evaluation of eliminating one approach lane on Walker Street was performed. Currently there are two approach lanes, a left lane and a through lane. During afternoon shipyard employee release time periods, only left turn movements onto Wentworth Street are permitted. The elimination of a lane will allow for additional on-street parking (particularly under long-term redevelopment of the corner parking lot where the existing driveway may be eliminated) and/or sidewalk expansion/curb extension.

Some long delays are estimated during the afternoon shipyard time period with the elimination of the suggested lane. A summary table is provided below.

Walker Street and Wentworth Street/Government Street/PNSY Gate 1													
			Walker Street		PNSY Gate 1		Government Street			Wentworth Street		
			Eastbound		Westbound		Northbound			Southbound		
			Left	Through	Through	Right	Left	Through	Right	Left	Right	All
Existing Geometry	2036 PNS AM Peak	LOS	C	C	B		B	A		D	A	B
		Delay (sec)	31	24	15		11	9		40	5	20
	2036 AM Peak	LOS	B	B	A		A	A		B	A	B
		Delay (sec)	11	17	10		9	6		11	3	11
	2036 PNS PM Peak	LOS	F	A	F		F	D		C	A	F
		Delay (sec)	145	0	122		91	32		27	4	91
	2036 PM Peak	LOS	F	A	B		C	C		C	A	C
		Delay (sec)	86	7	18		32	24		18	9	26
With Reduced Lane	2036 PNS AM Peak	LOS	C		A		A	B		D	A	C
		Delay (sec)	33		9		10	11		40	6	23
	2036 AM Peak	LOS	C		A		B	A		B	A	B
		Delay (sec)	22		9		10	7		12	3	13
	2036 PNS PM Peak	LOS	F		F		F	D		C	A	F
		Delay (sec)	145		122		91	32		27	4	91
	2036 PM Peak	LOS	F		C		C	C		B	A	C
		Delay (sec)	91		21		27	21		16	9	27

ROUTE 1 NORTH

The following graphic provide suggestions on improvements to Route 1 north of Walker Street.

Access Management

It is suggested that the following driveway changes be considered:

- Close the southerly driveway at Carl's Meat Market and provide additional parking.
- Reconfigure the main driveway between Carl's Meat Market and Golden Harvest. Provide two exit lanes and an entry lane. Design to accommodate truck deliveries.
- Close northerly Golden Harvest driveway.
- Narrow southerly Beach Pea driveway to allow for an improved crosswalk landing area.
- Consider a vehicle connection between Beach Pea and Golden Harvest.

Sidewalks

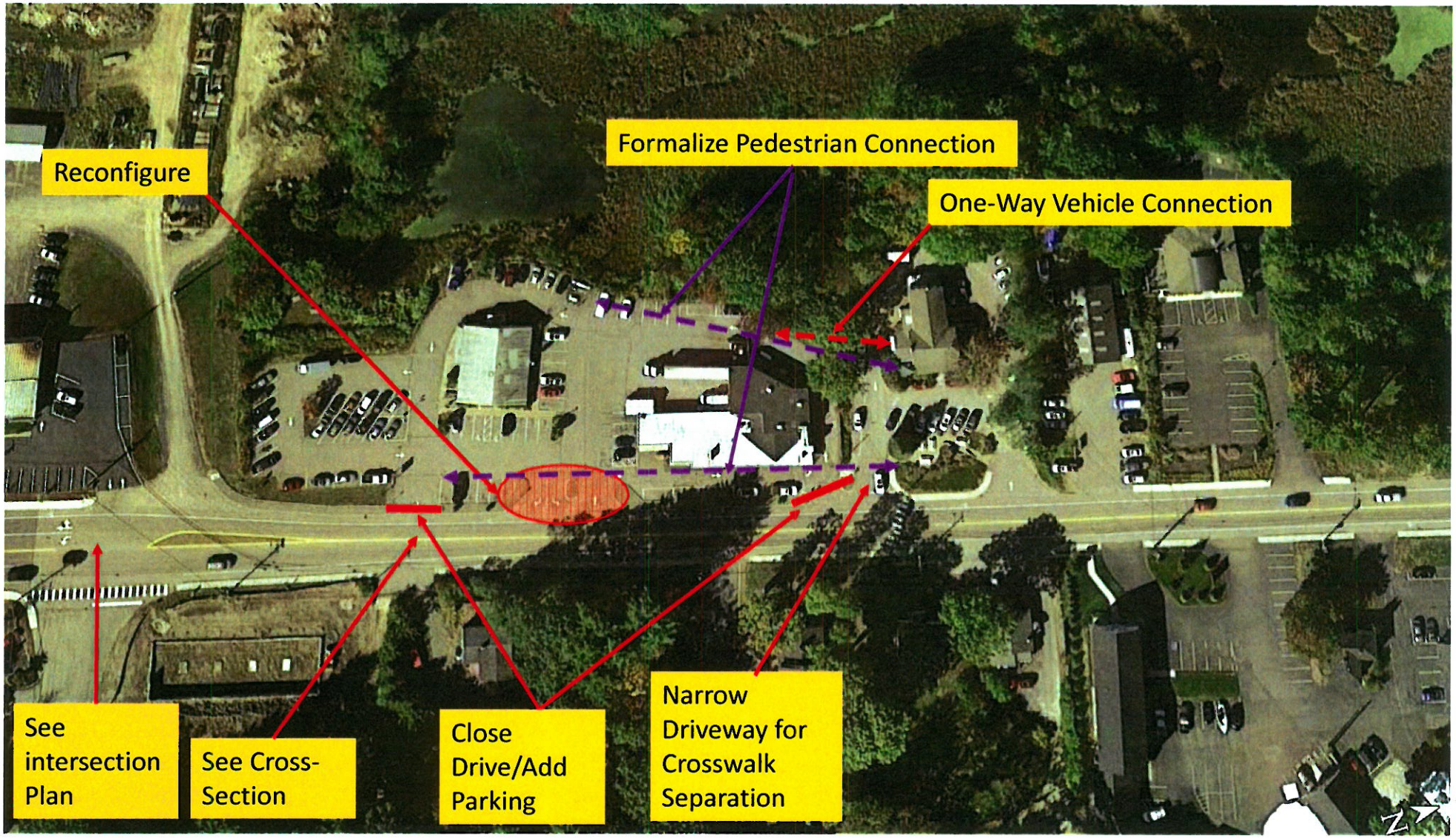
- Provide a continuous sidewalk along Route 1 that is ADA compliant.
- Consider a formal pedestrian facility along the back of the businesses

Roadway

- Provide a 11-foot travel lane in each direction
- Provide a 5-foot bicycle lane in each direction
- Transition cross-section to the three-lane section approaching the Walker Street intersection.

On-Street Parking

- Provide on-street parking in the southbound direction south of Beach Pea.


Reconfigure
Formalize Pedestrian Connection
One-Way Vehicle Connection
See intersection Plan
See Cross-Section
Close Drive/Add Parking
Narrow Driveway for Crosswalk Separation

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 disrupt vehicle flow (See attached sheet)
- One-way restriction (See attached sheet)
- Vertical devices (speed humps) are not recommended due to noise impacts.

One-Way/Full Closure Restrictions

Improvement Type

- ☐ Geometric
- ☑ Signage
- ☑ Pavement Markings
- ☐ ITS Device

Problem-Area Target

- ☑ Speed
- ☑ Cut-Through Volume
- ☑ Truck Traffic
- ☑ Safety
- ☐ Multi-Modal Accommodations

Photo Source: City of Cambridge, MA

Design Considerations

- ✓ May inconvenience accessibility for local residents and businesses.
- ✓ Extensive coordination required with affected residents and businesses prior to implementation.
- ✓ Can create circuitous traffic patterns and increase traffic on nearby streets.
- ✓ Generally requires a one-way couplet and will shift traffic volumes other adjacent streets.
- ✓ Midblock vehicle speeds could increase if physical measures are not implemented.
- ✓ Low cost to implement.

Typical Context

- ☑ Central Business District
- ☐ Village/Town Center
- ☑ High Density Suburban
- ☑ Low Density Suburban
- ☑ Residential
- ☑ Natural/Rural Open Space

Typical Roadway Type

- ☐ Arterial
- ☐ Collector
- ☑ Local Roads and Street

Additional Resources

1. Federal Highway Administration, *Manual on Uniform Traffic Control Devices (MUTCD)*, Washington, DC, 2009, as amended.
2. Pedestrian Safety Guide and Countermeasure Selection System (PEDSAFE), *(pedbikesafe.org)*

Chicanes

Improvement Type

- ☑ Geometric
- ☐ Signage
- ☐ Pavement Markings
- ☐ ITS Device

Problem-Area Target

- ☑ Speed
- ☑ Cut-Through Volume
- ☑ Truck Traffic
- ☑ Safety
- ☑ Multi-Modal Accommodations

Photo Credit: City of Austin, TX

Design Considerations

- ✓ Definition: alternating raised curbs or landscape islands to provide horizontal deflection and curved path through an otherwise straight section of roadway.
- ✓ Drainage and stormwater runoff: minimum gaps of 1-2 foot should be provided to address drainage issues
- ✓ Truck volumes: Emergency vehicles and bus operations may be impacted if traffic volume is heavy.
- ✓ Bicycle Lane and Parking: may result in loss of bicycle lane and on-street parking. Chicanes may be designed with cut-through or bypass lane for bicycles.
- ✓ Visibility: landscape islands, object markers and center line marking improve visibility.

Typical Context

- ☐ Central Business District
- ☑ Village/Town Center
- ☑ High Density Suburban
- ☑ Low Density Suburban
- ☑ Residential
- ☐ Natural/Rural Open Space

Typical Roadway Type

- ☐ Arterial
- ☑ Collector
- ☑ Local Roads and Street

Additional Resources

1. National Association of City Transportation Officials, Urban Street Design Guide, 2013
2. Safe Routes To School Guide http://guide.saferoutesinfo.org/engineering/chokers_and_chicanes.cfm
3. Ewing, Reid and Brown, Steven J., US Traffic Calming Manual, American Planning Association, 2009

JONES AVENUE – WALKER TO GOVERNMENT

Jones Avenue between Walker Street and Government Street serves as an important vehicle circulation connection (due to one-way Government Street) and given its proximity to the commercial core of the Foreside, an important pedestrian link. Given the importance of circulating to Government Street, it is recommended that Jones Avenue be restricted to one-way flow towards Government Street. The following should be noted:

- Current Town regulations designate Jones Avenue as one-way in southerly direction from the bank exit 105 feet to Government Street.
- The right-of –way is approximately 30 feet.
- A sidewalk is recommended along the west side of the street. Construction of the sidewalk will need to consider the building on the corner of Government Street.
- The current pavement width is approximately 20 feet wide.
- 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.

OTIS AVENUE/MAIN STREET – WALKER TO GOVERNMENT

Otis Avenue

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.

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.

LOCAL STREETS NORTH OF WALKER STREET

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

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.

Otis Avenue

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 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.

ON-STREET PARKING

Additional or Formalize Supply

The following graphic depicts locations where an increase in on-street parking is feasible. We have identified two types of new on-street parking spaces. One type is an actual new parking space that is currently prohibited by Town Ordinance. The second type are parking spaces that are permitted by Town Ordinance, but do not get full utilization due to motorists uncertainty of the location being a legal space.

On-Street Regulations

The following recommendations are suggested:

- Add three (3) 15-Minute parking spaces in Wallingford Square
- Change regulations on Walker Street west of Main Street to long-term permit parking for employees and other low turnover uses. To avoid use by Shipyard employees, permits may be necessary.

OFF-STREET PARKING SUPPLY

The following graphic provide suggestions on improvements to off-street parking supply

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

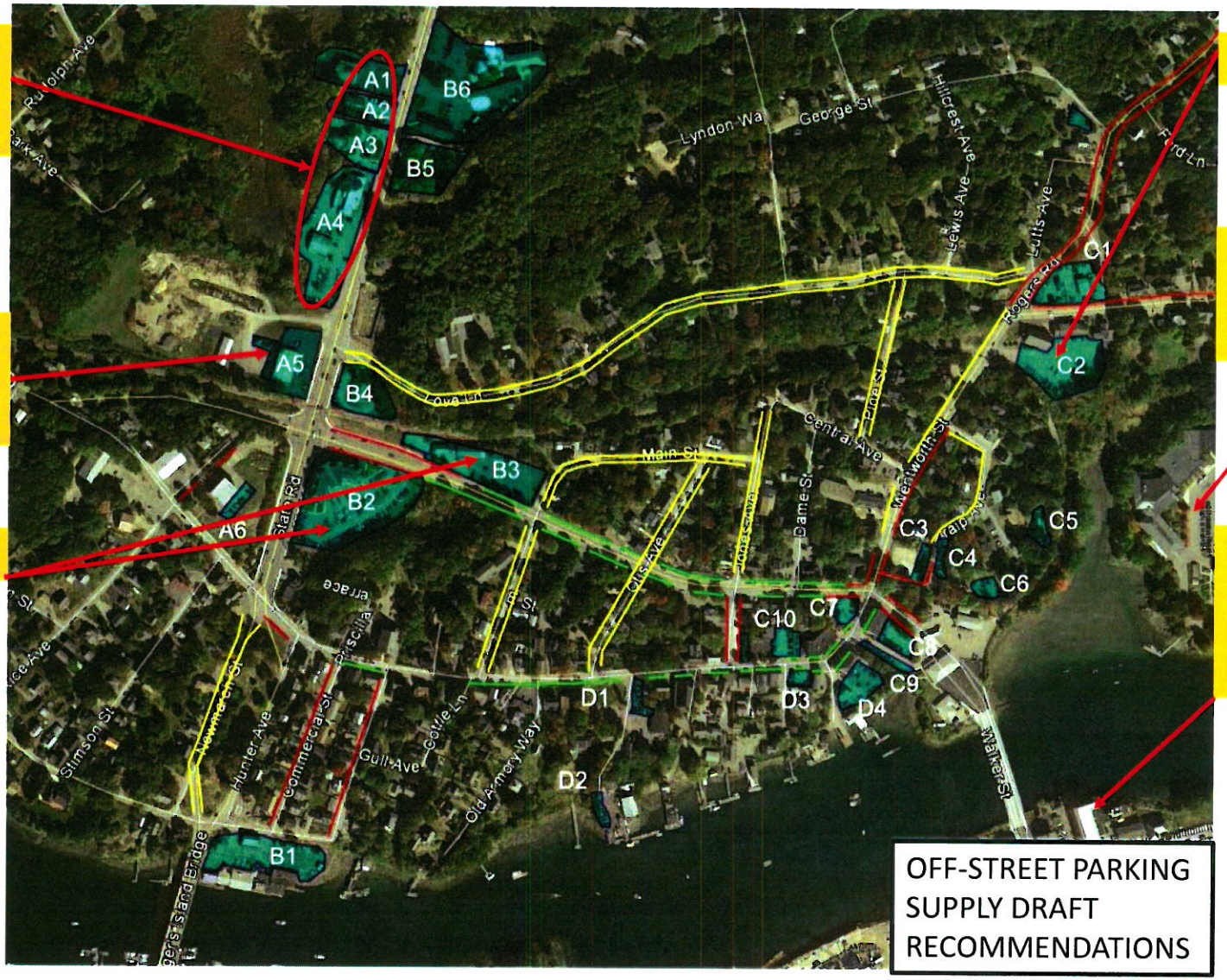
The Shipyard has identified the following strategies for improving traffic congestion and parking impacts in the Foreside area. No specific recommendations for implementation were identified, but the list of strategies included:

- 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 of 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

Formalize Shared Parking

Add Parking Supply as part of redevelopment

Off Hour Use



Off Hour Use

Use during non-school hours

Work with Shipyard on Parking Management

OFF-STREET PARKING SUPPLY DRAFT RECOMMENDATIONS