AGENDA

PARKING and TRAFFIC SAFETY COMMITTEE

8:00 A.M. – February 7, 2019
City Hall – Conference Room A

ON-SITE COMMITTEE: Please meet on Wednesday, February 6th at 8:00 a.m. in the upper parking lot at City Hall, 1 Junkins Avenue, to view the following location:

- Portsmouth Middle School

I. CALL TO ORDER

II. ROLL CALL

III. ACCEPTANCE OF THE MINUTES

IV. FINANCIAL REPORT

V. PUBLIC COMMENT (15 MINUTES)
This is the time for all comments on any of the agenda items or non-agenda items.

VI. PRESENTATION
A. Downtown Traffic Model, by Erica Wygonik, RSG Inc.

VII. NEW BUSINESS
(No public comment during Committee discussion without Committee approval.)

A. Parrott Avenue and Rogers Street commercial traffic, school bus traffic and traffic congestion resulting from student drop off/pick up at the Middle School. **Sample Motion: Move to refer to staff for report back.**

VIII. OLD BUSINESS
A. Report back on 6-month trial closure of Turnpike exit ramp onto Echo Avenue. **Sample Motion: Move to keep closure in place.**

B. Report back on request for STOP sign and crosswalk on Bow Street at Chapel Street, by John Sherman.
Sample Motion: Move to place report on file.

C. Report back on Islington Street/Bartlett Street pedestrian signal questions.

D. Report back on request for parking space in bike lane buffer at 60 Lafayette Road, by Planning Director Juliet Walker.
Sample Motion: Move to table request.

E. Report back on Neighborhood Traffic Calming requests:
    1. Brackett Road
    2. Brackett Lane
    3. South Street

F. Edward Street closure, report back on proposed closure plan.

IX. INFORMATIONAL

A. Foundry Place Parking Garage usage and traffic volume update, by Parking Director Ben Fletcher.

B. Police grants, by Police Captain Frank Warchol.

C. "The Many Benefits of Making One-Way Streets to Two-Way," column by Eric Jaffe, CityLab (The Atlantic). https://www.citylab.com/solutions/2015/07/the-many-benefits-of-making-one-way-streets-two-way/398960/

D. Jeff Speck argues for two-way streets in Portsmouth (2015). https://tinyurl.com/speck2waystreets

E. Parking Workshop.

F. Cate Street connector public meeting, by Planning Director Juliet Walker.

G. PTS Open Action Items.

X. MISCELLANEOUS

XI. ADJOURNMENT

City of Portsmouth

Parking Related Revenues

Unaudited

Percentage of Fiscal Year Complete	Preliminary Totals Thru December 31, 2018
50.00%	

	Total	Budgeted	% of Budget
FY 19			
Parking Meter Fees	1,705,746.34	3,200,000.00	53%
Meter Space Rental	68,610.00	90,000.00	76%
Meter In Vehicle	63,392.00	110,000.00	58%
High Hanover Transient	1,289,800.01	2,400,000.00	54%
High HanoverPasses	772,710.00	1,645,500.00	47%
Foundry Place Transient	13,464.91	337,500.00	4%
Foundry Place Passes	46,670.00	126,700.00	37%
HH Pass Reinstatement	2,105.00	2,500.00	84%
Vaughan St Parking Facility	0.00	-	0%
Foundry Pass Reinstatement	330.00	-	0%
Parking Violations	377,132.55	727,742.00	52%
Immobilization Administration Fee	7,350.00	15,000.00	49%
Summons Admin Fee	225.00	3,000.00	8%
Total FY 19	4,347,535.81	8,657,942.00	50%

	BUDGETED	
	6,245,637	72% Transfer to Parking Fund
	2,412,305	28% Funds Remaining in Gen Fund

MEMO

TO:	Eric Eby, PE
FROM:	Erica Wygonik, PhD, PE; Austin Feula, PE, PTOE; Ben Swanson
DATE:	January 11, 2019
SUBJECT:	Portsmouth Traffic Model – Two-way Scenario Results

1.0 SUMMARY OF FINDINGS

RSG has examined the traffic impacts of converting a portion of the downtown Portsmouth State Street and Congress/Daniel Street one-way loop to two-way flow using a recently developed microsimulation model of downtown Portsmouth.

The following summarizes key findings based on the analysis presented in this memorandum:

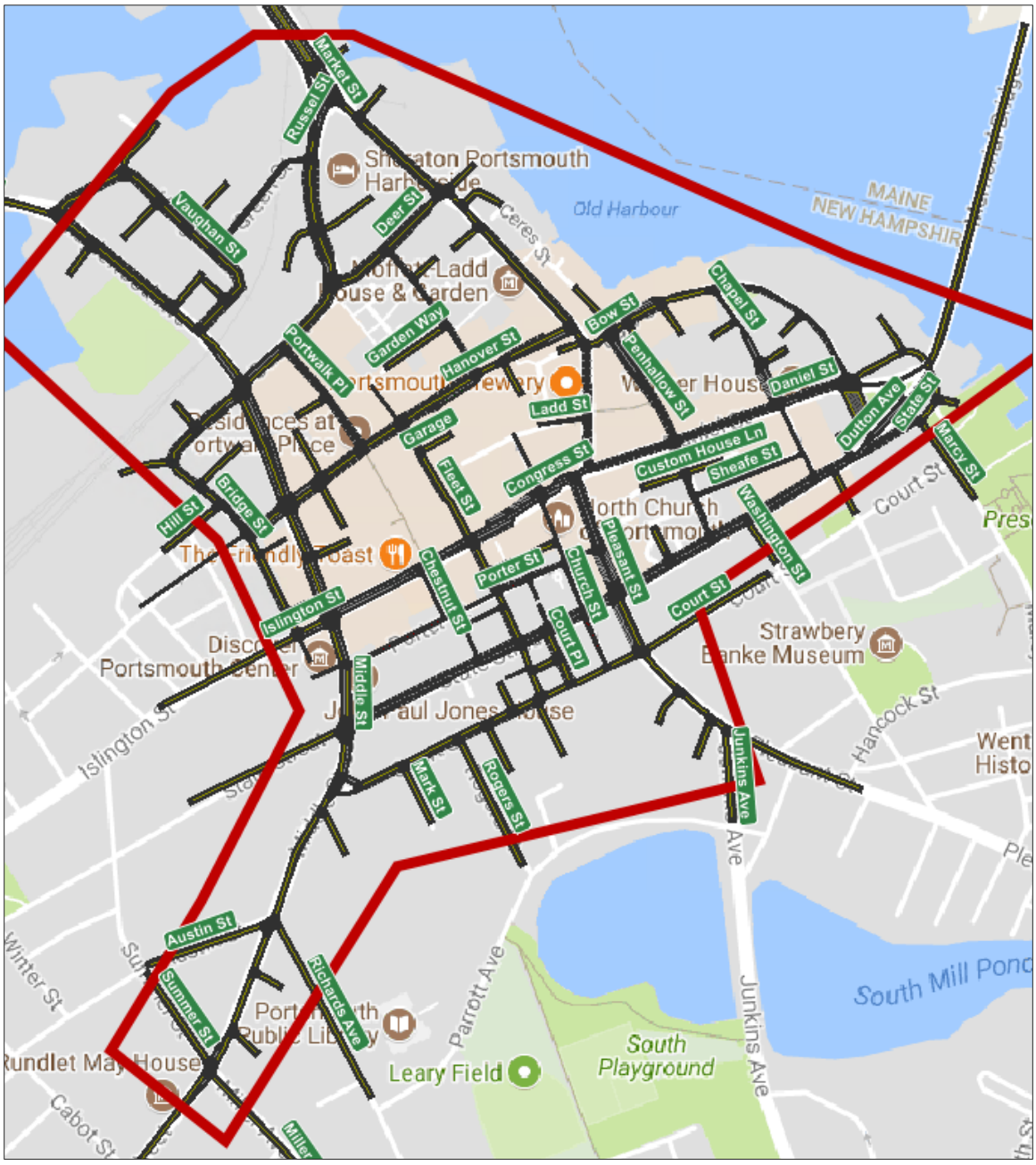
- The midweek 5:00 to 6:00 PM period was modeled as it corresponds with the highest combined vehicle and pedestrian volumes. Count volumes were adjusted to represent the busiest month of the year.
- For this scenario, the following locations were converted to two-way flow:
    - Congress Street
    - State Street west of Pleasant Street
    - Pleasant Street north of State Street
    - No changes to State Street east of Pleasant Street or along Daniel Street are made.
- Results were compared between the existing configuration and the proposed two-way configuration during a weekday PM peak hour with and without a Memorial Bridge drawbridge closure.
- The two-way scenario operates with acceptable levels of congestion during the PM peak hour.
- Overall there is slightly less traffic congestion with the existing one-way configuration than in the two-way scenario.
- With the conversion to two-way traffic flow, some on-street parking would shift from Congress Street to State Street, but there would be minimal change in the total number of spaces.
- Impacts on non-vehicular modes (bicyclists and pedestrians) were not examined at this time.

2.0 MODEL BACKGROUND

The Portsmouth Traffic Microsimulation model has been developed to support a comprehensive assessment of the transportation implications associated with potential future development, parking changes, or roadway configurations or orientations.

The model region covers the downtown core of Portsmouth, including, but not limited to, Maplewood Avenue, Market Street, and the Congress/Daniel and State Street one-way loop (Figure 1). The microsimulation model is calibrated to weekday PM peak design hour conditions (5:00 to 6:00 PM) for the peak month and is developed in the TransModeler software program.

FIGURE 1: TRAFFIC MICROSIMULATION MODEL EXTENT



The model includes detailed information on roadway classification, speeds, geometrics, intersection controls, signal timings, parking, pedestrians, and traffic volumes. A screenshot of the model at the Maplewood Avenue/Middle Street/Islington Street/Congress Street intersection is provided in Figure 2. The model is calibrated to 58 intersection turning movement counts. These counts were collected by RSG in June of 2017 and include counts provided by the City of Portsmouth (Figure 3). For more information on the calibration and specifics of this model, please see the Portsmouth Model Calibration Report.

FIGURE 2: MICROSIMULATION MODEL EXAMPLE INTERSECTION

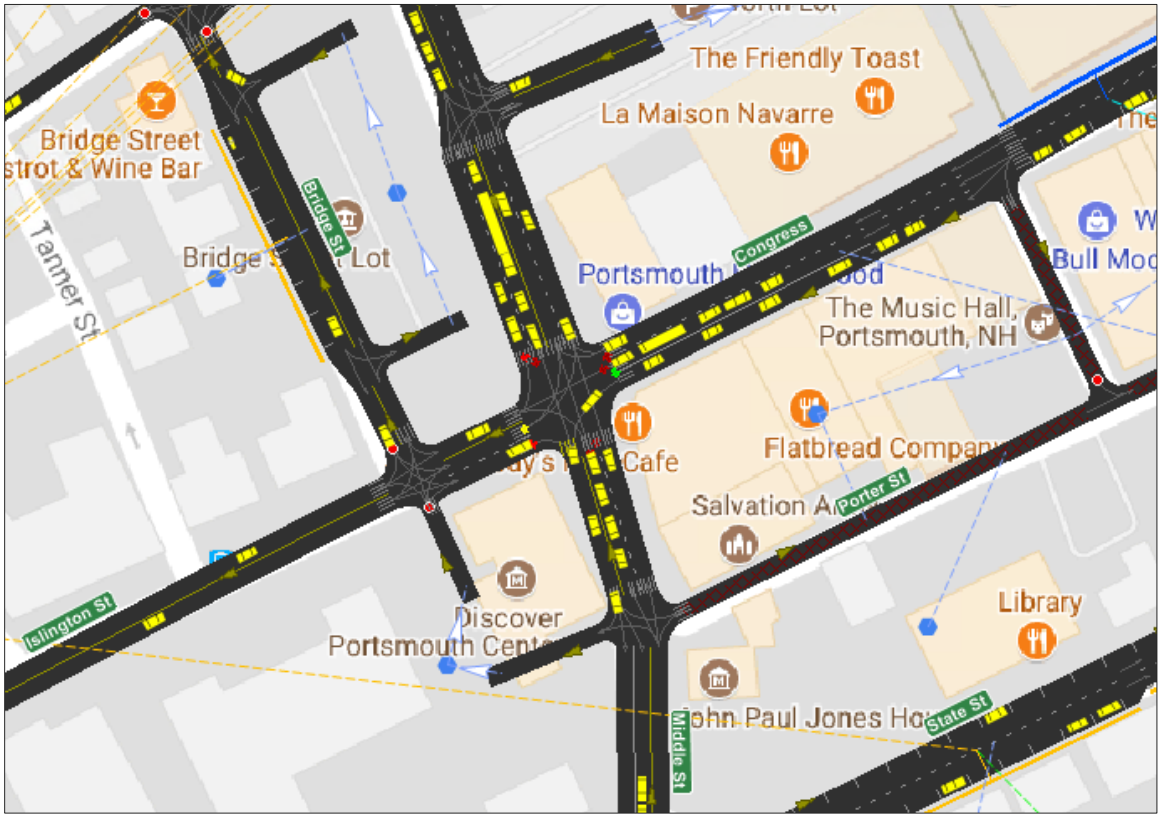


FIGURE 3: TURNING MOVEMENT COUNT LOCATIONS

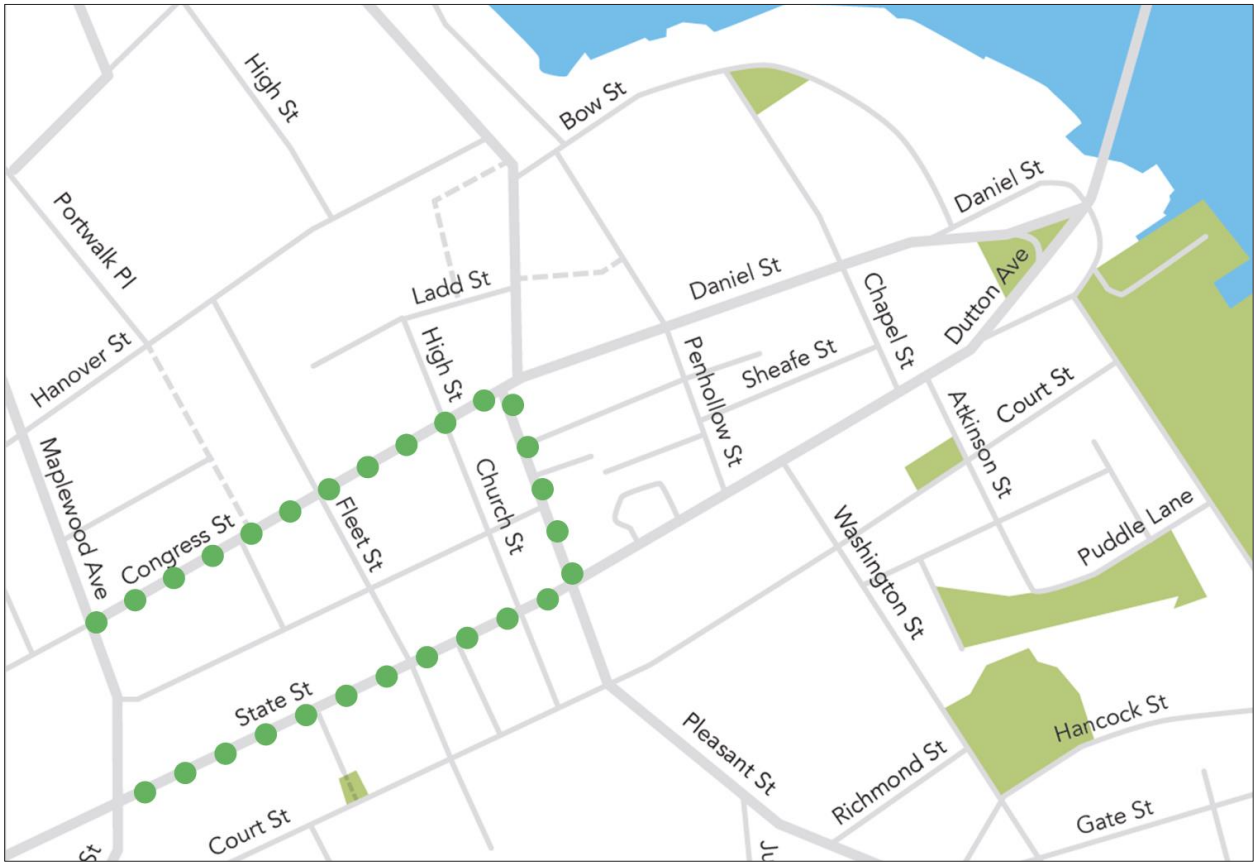
3.0 TWO-WAY SCENARIO

For this two-way scenario, the following locations were converted to two-way flow:

- Congress Street
- State Street west of Pleasant Street
- Pleasant Street north of State Street

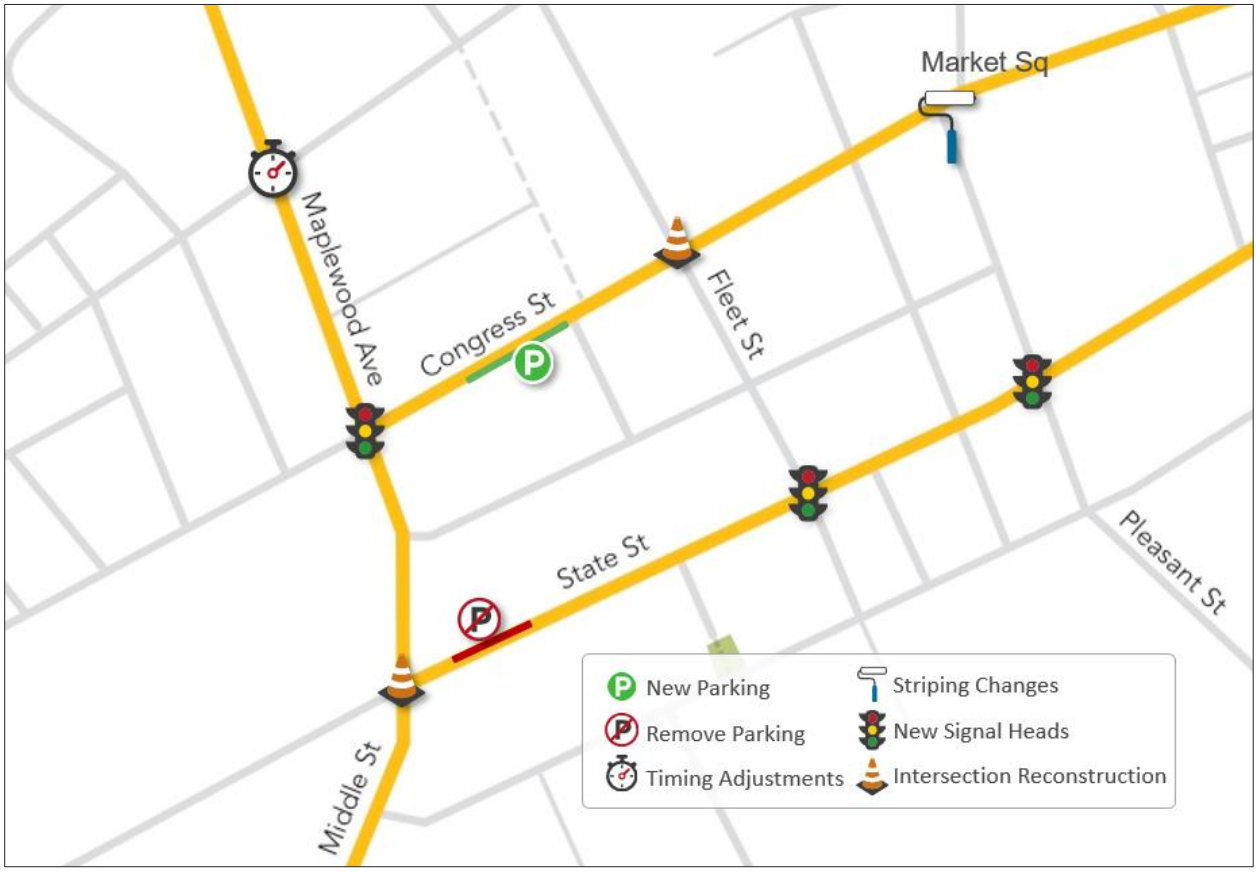
No changes to State Street east of Pleasant Street or along Daniel Street were made. The two-way conversion locations are shown below in Figure 4.

FIGURE 4: TWO-WAY CONVERSION SEGMENTS



In this two-way scenario, impacts to on-street parking and roadway cross-sections were minimized. Turn lanes were only included where absolutely necessary, and where necessary, their length was minimized to save as many on-street parking spaces as possible. While additional lanes, restricting pedestrian movements, or signalization could improve operations at Market Square, none of these changes were included to maintain the existing character of this location. Figure 5 presents the changes that would be required to support the two-way conversion. In the legend in Figure 5, "New Signal Heads" connotes the additional signal infrastructure necessary to support new movements at an intersection. This additional infrastructure may include new signal heads, new mast arms, additional detectors, or additional controller equipment. Similarly, "Intersection Reconstruction" reflects a comprehensive overhaul, which may include curbs, pavement, drainage modifications, changed lane alignments, signal heads, mast arms, detectors, new or additional controller equipment, or striping.

FIGURE 5: CHANGES REQUIRED TO SUPPORT TWO-WAY CONVERSION



4.0 CONGESTION ANALYSIS

4.1 | LEVEL-OF-SERVICE DEFINITION

Level-of-service (LOS) is a qualitative measure describing the operating conditions as perceived by motorists driving in a traffic stream. LOS is calculated using the procedures outlined in the 2010 Highway Capacity Manual.

The 2010 Highway Capacity Manual defines six qualitative grades to describe the level of service at an intersection. Level-of-service is based on the average control delay per vehicle. Figure 6 shows the various LOS grades and descriptions for signalized and unsignalized intersections.

FIGURE 6: LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED AND UNSIGNALIZED INTERSECTIONS

LOS	CHARACTERISTICS	UNSIGNALIZED TOTAL DELAY (SEC)	SIGNALIZED TOTAL DELAY (SEC)
A	Little or no delay	≤ 10.0	≤ 10.0
B	Short delays	10.1-15.0	10.1-20.0
C	Average delays	15.1-25.0	20.1-35.0
D	Long delays	25.1-35.0	35.1-55.0
E	Very long delays	35.1-50.0	55.1-80.0
F	Extreme delays	> 50.0	> 80.0

The delay thresholds for LOS at signalized and unsignalized intersections differ because of the driver's expectations of the operating efficiency for the respective traffic control conditions.

In a downtown environment like Portsmouth, longer delays and worse level of service are generally acceptable. Congestion and lower vehicle speeds can improve the environment for pedestrians and bicyclists.

4.2 | LEVEL-OF-SERVICE RESULTS

The delay and queuing reports within TransModeler (v5.0) were used to assess traffic congestion at the six intersections which would be directly affected by the two-way conversion. While other intersections within the study area see changes in traffic flows due the two-way conversion, impacts to congestion are minimal, and thus were not included in the analysis. Figure 7 and Figure 8 present level-of-service results for the current baseline conditions and the two-way scenario, respectively. The level-of-service is expected to decline at the following intersections:

- Middle Street & State Street
- Congress Street & Fleet Street
- Congress Street/Daniel Street, Market Street, & Pleasant Street (Market Square)

At the first two locations the change in delay is minimal and likely would not have a noticeable impact on operations. At Market Square the impacts would be more significant with the level of service degrading from LOS C to LOS F. This change would result in noticeable increases in queues and waiting time. A signal or roundabout would likely improve operation at Market Square in the two-way scenario but were not evaluated at this time.

A full delay and queuing summary by approach is provided in the appendix.

FIGURE 7: BASELINE - 2017 PM PEAK HOUR LEVEL-OF-SERVICE

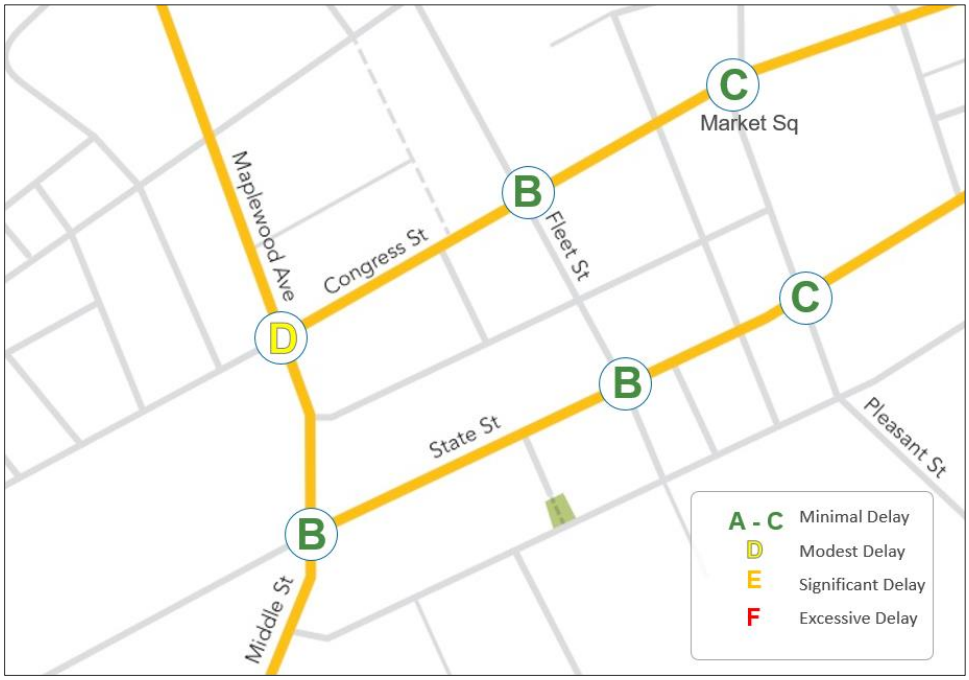
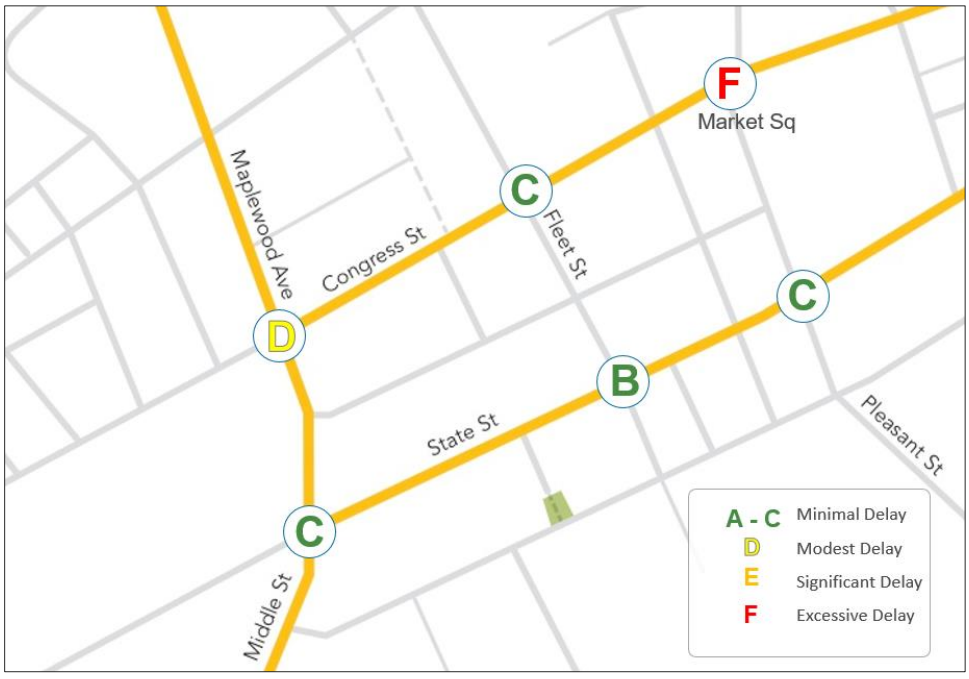


FIGURE 8: TWO-WAY SCENARIO - 2017 PM PEAK HOUR LEVEL-OF-SERVICE



4.3 | DRAWBRIDGE SCENARIO RESULTS

In addition to the base network, a scenario where the Memorial Bridge is temporarily closed due to a drawbridge opening during the PM peak hour was modeled. This occurrence results in significant queuing from the drawbridge closure along State Street, followed by a large surge of traffic along Daniel

Street into Market Square when the drawbridge opens. As drawbridge closures occur frequently, the two-way scenario needs to store and clear traffic efficiently during these closures to be a viable option.

Similar to the base network, level of service is slightly worse in the two-way scenario with a drawbridge closure. Specifically, the level of service is expected to decline at 5 of the 6 study intersections in the two-way conversion. Level-of-service results are presented below in Figure 9 and Figure 10.

FIGURE 9: BASELINE - 2017 PM PEAK HOUR LEVEL-OF-SERVICE (BRIDGE CLOSURE)

FIGURE 10: TWO-WAY SCENARIO - 2017 PM PEAK HOUR LEVEL-OF-SERVICE (BRIDGE CLOSURE)

All locations, excluding Market Square, fall within an acceptable level of service for a downtown environment like Portsmouth. While Market Square is projected to have long delays, these delays do not result in gridlock conditions or a breakdown of the system. The amount of delay projected for Market Square may be an acceptable trade-off to retaining its pedestrian-friendly environment.

The length of the queues is another important metric during a drawbridge closure as well as during the recovery period when a surge of traffic enters Portsmouth from the Memorial Bridge. As shown in Figure 11 and Figure 12, initial queues from the drawbridge closure and the secondary queues during the recovery period are slightly longer in the two-way scenario than with the existing one-way configuration.

FIGURE 11: DRAWBRIDGE SCENARIO – AVERAGE MAXIMUM QUEUES

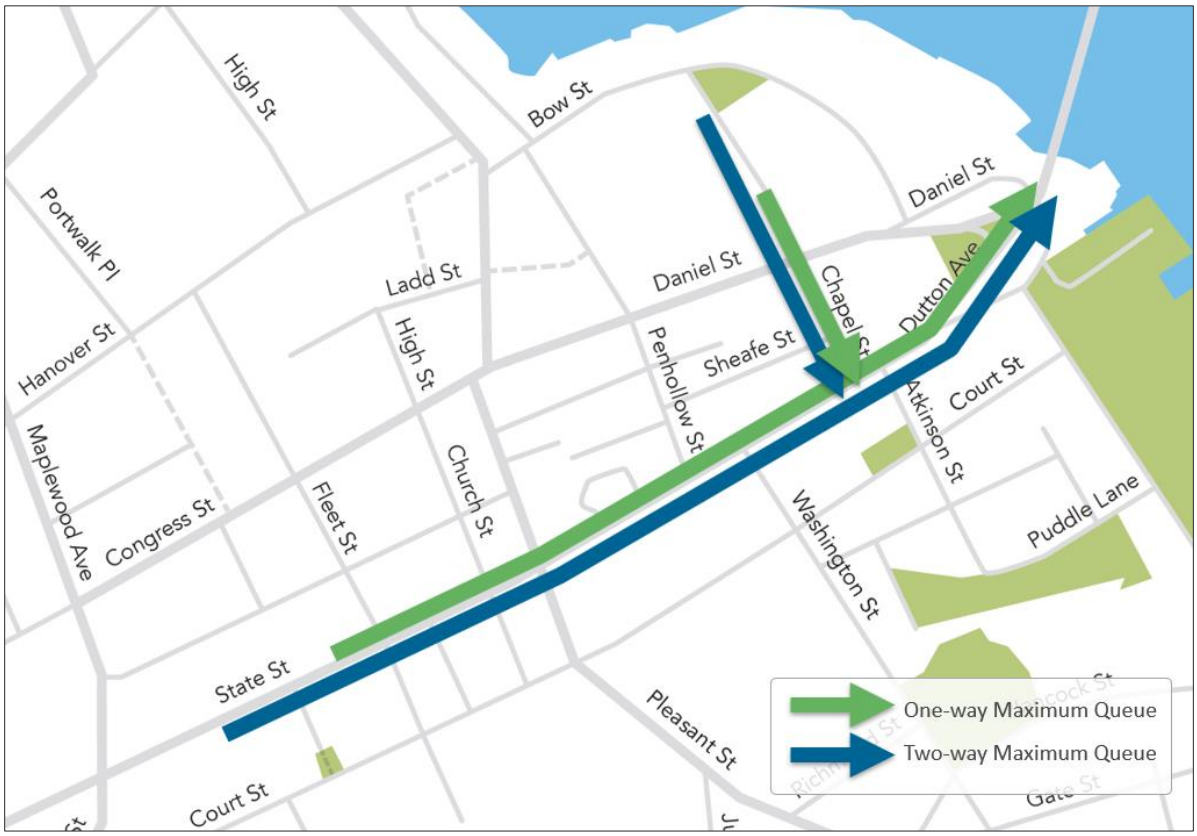
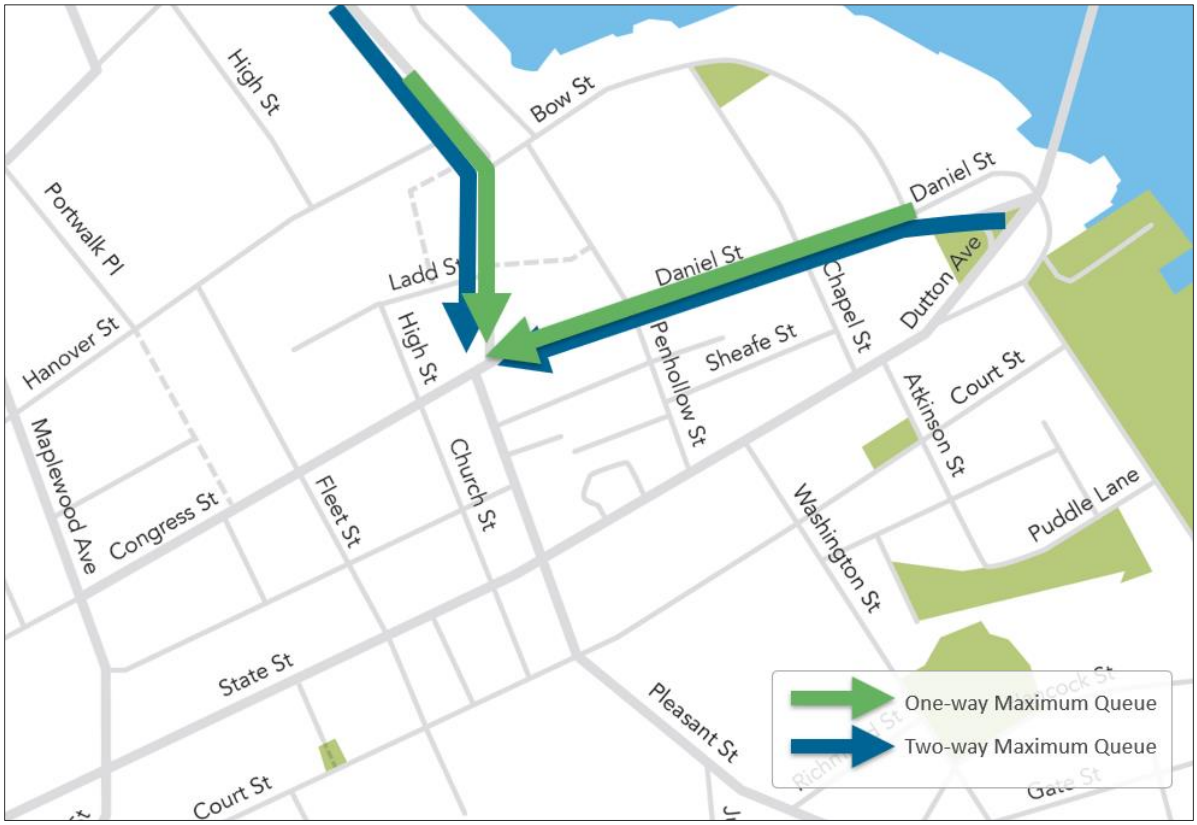


FIGURE 12: DRAWBRIDGE SCENARIO – SECONDARY QUEUES



5.0 CONCLUSIONS

RSG has examined the traffic impacts of converting a portion of the downtown Portsmouth State Street and Congress/Daniel Street one-way loop to two-way flow using a recently developed microsimulation model of downtown Portsmouth.

The following summarizes key findings based on the analysis presented in this memorandum:

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VII.A. Parrott Avenue and Rogers Street commercial traffic, school bus traffic and traffic congestion resulting from student drop off/pick up at the Middle School

From: Bill Hess via FormMail.com
Sent: Friday, January 18, 2019 5:59 AM
To: CC - Doug Roberts; Copy Sent to City Email Folder
Subject: Traffic

Below is the result of your feedback form. It was submitted by
Bill Hess (jbahw5@gmail.com) on Friday, January 18, 2019 at 04:59:51
---

address: 54 Rogers St

comments: I am writing about my concern with the amount of commercial and school bus traffic on Rogers Street. Over the years the amount of commercial traffic has increased and while it is my understanding that buses are not to use Rogers Street to access the middle school I do see school buses and activity buses using this street on a regular basis. The street is narrow and there are two signs at the corner of Rogers and Court prohibiting commercial traffic. It seems that the enforcement of the regulation is the problem and it is impractical for a continuous enforcement presence but is there a method that could be implemented that would remove/reduce commercial and bus activity from the street.

Engage: Submit

REMOTE_ADDR: 71.232.211.167

VII.A. Parrott Avenue and Rogers Street commercial traffic, school bus traffic and traffic congestion resulting from student drop off/pick up at the Middle School

Safe Routes to School Guide

Student Drop-off and Pick-up

Created February 2007

Pedestrian and Bicycle Information Center

NHTSA www.nhtsa.gov

U.S. Department of Transportation Federal Highway Administration

CDC Centers for Disease Control and Prevention

ite

SafeRoutes National Center for Safe Routes to School

This guide was developed by the Pedestrian and Bicycle Information Center (PBIC) with support from the National Highway Traffic Safety Administration (NHTSA), Federal Highway Administration (FHWA), Centers for Disease Control and Prevention (CDC) and Institute of Transportation Engineers (ITE). This guide is maintained by the National Center for Safe Routes to School at www.saferoutesinfo.org.

Contents

Student Drop-off and Pick-up

Overview

The purpose of a Safe Routes to School (SRTS) program is to encourage and enable more children to walk and bicycle to school safely. Communities tailor a combination of engineering, enforcement, education and encouragement strategies to address the specific needs of their schools. This includes the walk or bicycle journey to and from school as well as the drop-off and pick-up process of children at school who are transported by motor vehicle. The drop-off and pick-up process must be safe and efficient for students and parents arriving by bus or private motor vehicle, as well as those who arrive on foot and bicycle.

Some parents are reluctant to allow their children to walk or bicycle to school due to the traffic congestion and perceived traffic danger during student arrival and dismissal. This often results in more parents driving their children to school which adds to the extra congestion and safety problems at the school, creating an increasing cycle of more traffic problems and less walking. By improving the drop-off and pick-up process, traffic conditions become safer for all, including pedestrians and bicyclists. Better organized and safer traffic conditions will ease the concerns of parents, and make them more willing to allow their children to walk or bicycle.

This chapter will help readers identify problems associated with the drop off and pick up of students at school, and identify engineering, enforcement, education and encouragement solutions to these problems. The purpose of improving the drop-off and pick-up process is to increase the safety and attractiveness of traveling to and from school on foot or by bicycle. The drop-off and pick-up process, as with all components of a SRTS program, requires coordination with local government officials, law enforcement, school officials, parents and the general public.

Improving the drop-off and pick-up process will:

- Increase safety for everyone in route to and from school, as well as on school grounds.
- Employ engineering, enforcement, education and encouragement strategies.
- Require a site-specific application of strategies; each school will have its own set of limitations and opportunities.

Casselberry, Florida.

Mike Cynecki

Orangewood Elementary School, Phoenix, Arizona.

David Parisi

Rogers Elementary School, California.

What's Wrong With This Picture?

There are many ways that a drop-off and pick-up zone can become dangerous for children. The next several images illustrate a variety of situations that are chaotic and potentially unsafe.

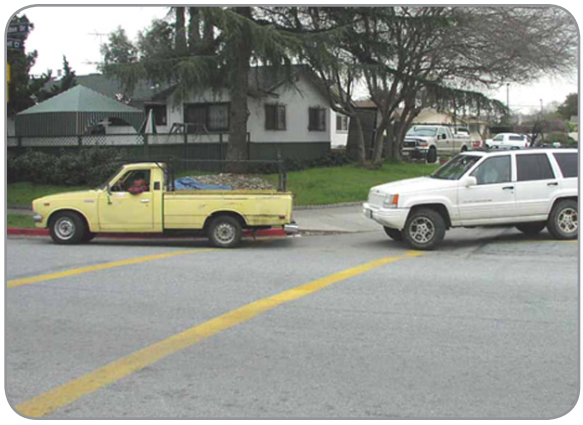
what's wrong with these pictures?

David Parisi

David Parisi

This drop-off and pick-up site employs some useful strategies including striping, signs and enforcement, but it is not working. The pictures show the chaos along the curb and in the street. Note the double parking, erratic behavior and dangerous mix of pedestrians and motor vehicles.

what's wrong with this picture?



David Parisi

Motor vehicles are parked in the school crosswalk.

what's wrong with this picture?

David Parisi

Motor vehicles are driving in the wrong direction. Children are exiting motor vehicles in the middle of the street.

what's wrong with this picture?

David Parisi

This small child is running across a busy parking lot unaccompanied.

what's wrong with this picture?

David Parisi

The driver of this motor vehicle is making a U-turn in the school drop-off and pick-up zone.

what's wrong with this picture?

David Parisi

Motor vehicles are parked along the NO STOPPING zone when they should not be.

what's wrong with this picture?

David Parisi

The school utilizes orange cones to mark the drop-off and pick-up lanes and a driver still performs an illegal U-turn.

Student Drop-off and Pick-up Tools

When assessing the drop-off and pick-up process, activity on school grounds (on-site), as well as activity in the area surrounding the school (off-site), must be considered. These images depict an on-site drop-off and pick-up process that is orderly; motor vehicles are approaching single file and releasing students directly to the sidewalk in the designated drop-off zone.

David Parisi

David Parisi

But off-site, on a street near the same school, the process is chaotic. Notice the backed-up street, delaying commercial vehicles, school buses and parents wishing to drop off children. Such situations are often accompanied by unsafe driving behavior as everyone rushes to beat the morning bell or get to work on time. Developing safe routes to schools requires an orderly process for dropping off and picking up children, both on and off the school campus.

David Parisi

David Parisi

Numerous tools can be used to improve the safety and efficiency of the drop-off and pick-up process at schools including:

- Encouraging walking, bicycling and carpooling.
- Curb striping and other pavement markings.
- Signage.
- Separating motor vehicles from pedestrians and bicyclists.
- Adding a drop-off and pick-up lane.
- Assistants to help students exit and enter motor vehicles.
- Adding an off-site queuing lane.
- Temporary street closures and one-way streets.
- Temporary use of school grounds as a drop-off and pick-up zone.
- Education, including maps and frequent reminders using school announcements and newsletters.
- Monitoring and enforcement of drop-off and pick-up policies.

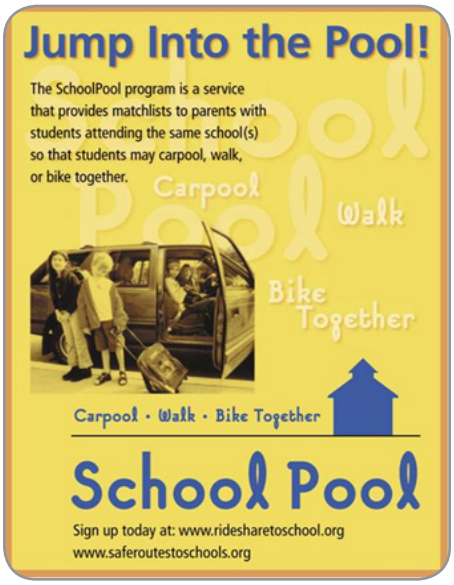
Encouraging Walking, Bicycling and Carpooling

Naturally, a Safe Routes to School (SRTS) Program encourages students to bicycle and walk to school. But, some students simply live too far from their school to walk or bicycle, and are not provided with bus service. For those parents who must drive their children to school, several strategies can reduce traffic congestion at the school and in the adjacent streets, including park and walk and carpool programs. A park and walk program makes use of an off-site location (such as a nearby church or park) as a parking area for parents who then walk their child to school or join a regularly scheduled walking school bus to complete their journey. The Encouragement chapter of this guide describes park and walk and walking school bus programs in detail.

Families that have no alternative to driving their children to school can also carpool to reduce traffic congestion at the school.

Communities such as Charlottesville, Virginia (www.rideshareinfo.org/schoolPool.asp), Fort Collins, Colorado (www.fcgoc.com/transportation/schoolpool.php), and Santa Cruz, California (www.commutesolutions.org/schoolpool.html), have developed "school pool" programs in which a voluntary group of parents share the responsibility of getting children to and from school safely. This can include walking, bicycling, carpooling or taking the bus, and whether done on a daily basis, occasionally or in case of an emergency, school pools help communities address child safety and reduce traffic congestion.

Many larger metropolitan areas around the nation have free programs that assist people with forming carpools. These programs are now extending their reach to include school related trips. The school pool program, for example, is a service that provides "matchlists" to parents with students attending the same school so that students may carpool, walk or bicycle together. In some cases, participating schools provide student rosters containing names, addresses and phone numbers to the agency, which then provides the computer matching. In other cases, parents sign up individually and are matched with parents at the same school. After parents receive a matchlist of other parents it is up to them to make the arrangements they prefer.



This flier from the Marin County, California, Safe Routes to School program advertises their School Pool program that promotes walking, bicycling and carpooling.

Families that have no alternative to driving their children to school can also carpool.

David Parisi

Carpoolers have preferred drop-off and pick-up lanes at St. Marks School in San Rafael, California.

The Mid-America Regional Council runs the RIDESHARE program for the greater Kansas City Region. School Pool is a service of RIDESHARE a free commuter matching services. Visit www.marc.org/rideshare/schoolpool.htm to learn more about how this program works. RIDES for the San Francisco Bay Area operate a similar program. Bay Area Commuters, Inc. is a nonprofit organization promoting commute alternatives to driving alone to school or work.

Walking school buses and bicycle trains can be loosely structured or highly organized. For example, walking buses or bicycle trains can be as simple as neighborhood families deciding to walk or bicycle together. More formal, organized walking school buses and bicycle have a coordinator who recruits volunteers and participants, creates a schedule and designs a walking route. While requiring more effort, more structured walking school buses and bicycle trains offer the opportunity to involve more children.

Tool: Encouraging Walking, Bicycling and Carpooling

What is it and how does it work?

Urge students and parents to walk and bicycle to school, and when not possible, to ride the bus or carpool.

Benefits strategy provides

- Decrease traffic at school.
- Reduce vehicle emissions.
- Increase physical activity levels.

Key factors to consider

- Develop encouragement activities to reflect specific situation at each school and within each community.

Putting It Into Practice: "25 or Less" Campaign

Morton Way Public School, Brampton, Ontario, Canada

Morton Way Public School in Brampton, Ontario, Canada, has 877 students in junior kindergarten through grade five. Approximately 50 students travel to school by school bus, and the rest of the students live within walking distance of the school. During the past four years Morton Way has sustained a successful walk to school program with between 83 and 92 percent of students walking or bicycling to school on specific days.

Despite the success of the program, the Morton Way community still felt there were too many private vehicles dropping off students. They recently implemented a new initiative to reduce the amount of motor vehicles at the school through a "25 [Cars] or Less" campaign. A "thermometer" is displayed to alert drivers how many vehicles dropped off students the day before and school PA announcements update the students of progress. There are also signs displayed around the school promoting the 25 or Less campaign.

See the Encouragement chapter for a description of other Morton Way Safe Routes to School activities.

Curb Striping and Other Pavement Markings

Curb striping or painting is used in drop-off and pick-up zones to clarify parking and other curb use rules. The color painted on curbs means:

White (or no color)
Parking allowed, unless restricted or limited by signs.

Blue
Parking for the disabled only. Drivers must have a disabled person parking placard (typically hanging on the rear view mirror) or disabled person or disabled veteran license plate.

Green
Parking allowed for a short time. The time is usually shown on a sign next to the green zone, or it may be painted on the curb. Green curb can also be used for student loading zones if accompanied by the appropriate signs.

Yellow
Stop only long enough to load or unload passengers. Drivers are usually required to stay with their vehicle.

Red
No parking. Red curb may also be used in NO STOPPING or NO STANDING zones in conjunction with the appropriate signs. A bus may stop at a red zone marked for buses. Red is also used to designate fire lanes at schools.

In some cases it may be helpful to stripe out the loading area, both for the driver and for the waiting students. Some schools stripe the path the drivers are supposed to use for drop off and pick up, and some schools use pavement arrows and pavement stencils to designate circulation patterns and where loading is to occur.

Mike Cynecki

Pavement stencil at Monroe Elementary School in Utah.

Mike Cynecki

The blue line used by the Deer Valley School District in the Phoenix, Arizona, metropolitan area designates parent drop-off circulation for school parking lots. This sign corresponds to the blue pavement markings used by the Deer Valley School District in Phoenix, Arizona.

David Parisi

The combined use of signs and striping on a residential street adjacent to school property clarifies the intended curb use. The white curb marking indicates an area in which drop-off and pick-up of passengers is permissible. Santee, California.

Mike Cynecki

This is part of an on-site drop-off and pick-up zone with highly visible red striping. The loading and unloading occurs in a specially marked area beyond the red curb. Orangewood Elementary School, Phoenix, Arizona.

Tool: Curb Striping

What is it and how does it work?

Delineate zones and intended use with paint.

Benefits strategy provides

- Low cost.
- Provides continuous explanation of zone.

Key factors to consider

- Maintain paint.
- Use standard colors.
- Educate parents and students on proper use.
- Use in conjunction with signing to clarify purpose.

Signs

Signs help define areas in drop-off and pick-up zones and explain their proper use. Signs should be standard, highly visible, properly installed and well-maintained.

Some signs can be confusing if improperly placed or poorly worded. Signs with fewer words are easier to read and understand. Standard signs should be used on school property and in the surrounding area for regulating and guiding traffic. A local traffic engineer can recommend appropriate signs and their placement. See the Engineering chapter for more information on signing.

Separating Motor Vehicles From Pedestrians and Bicyclists

Separating or eliminating conflicts between students arriving on foot or bicycle from those arriving by buses and motor vehicles is highly recommended. Adequate physical space should be provided for each mode by which students arrive at school. Also, the route provided for each mode should be separate from other modes. Provision of sidewalks and bikeways that are separate from lanes dedicated to buses and lanes dedicated to motor vehicles will reduce a student's exposure to traffic. Students walking or riding to school should not have to cross busy driveways or roadways to access the campus. If they do, an adult school crossing guard or older student should be placed at the crossing to assist students safely across.

David Parisi

Nonstandard signs are not always understood by drivers. This sign is often hit by motor vehicles and leads some drivers to believe the entire street, and not just the crosswalk, is off-limits to parking.

Mike Cynecki

When worded properly and when parents are educated properly, some nonstandard signs can be quite helpful in regulating drop-off zones. Orangewood Elementary School (left) and Roadrunner Elementary School (right), Phoenix, Arizona.

Tool: Signing

What is it and how does it work?

Clearly indicates intended use of zone.

Benefits strategy provides

- Low cost.
- Provides continuous explanation of zone.

Key factors to consider

- Use standard signs.
- Install signs properly.
- Maintain signs.

It may be appropriate to provide a separate travel lane for buses, a separate lane for private motor vehicles and specific routes for pedestrians and bicyclists. Separate bus zones can be established either on the school site, or on the adjacent street, wherever sufficient room exists. Preferably, the bus zone is not immediately adjacent to the private motor vehicle area to ensure that there is no spillover from the motor vehicles into the bus area.

A separation of arrival and departure times may also be useful. Staggered bell times for groups of students help to disperse the traffic peak at schools during the relatively short drop-off and pick-up periods. Staggered release or bell times for walkers and bicyclists, and bus riders and carpoolers can help reduce pedestrian or bicyclist exposure to, and minimize conflicts with, motor vehicles. Conflicts often occur when private motor vehicles and buses arrive at the same time and in the same location. For example, buses may use a drop-off and pick-up lane at a certain time, followed by private motor vehicle use at a later time. Staggered bell times are most applicable for schools with a large student population or when two or more schools are in close proximity to one another.

To further reduce conflicts, school facilities can be arranged to eliminate or reduce the number of children walking through parking lots. Children should walk around parking lots on dedicated walkways or sidewalks. If this is not possible, clearly marked walkways through parking lots with adult or older student monitors should be used, and speed calming treatments, such as humps or bumps, should be employed in the parking lots.

School bus loading areas should be separated from parent drop-off and pick-up areas if at all possible. Signs, pavement markings, gates or orange cones may be used to provide this separation, but some education and enforcement will also be needed.

Tool: Separating Vehicles From Pedestrians and Bicyclists

What is it and how does it work?

Provide different school access points in space or time for various student travel modes.

Benefits strategy provides

- Provide efficient and safe flow of all modes with minimal mixing.

Key factors to consider

- Can be costly if construction is needed.
- New schools and rebuilt or modernized schools should be carefully reviewed to ensure that separation is present.

Mike Cynecki

Phoenix, Arizona.

Mike Cynecki

Traffic cones can be used to keep parents from entering the bus loading area at Monroe Elementary School in Utah.

David Parisi

Mill Valley, California.

Drop-off and Pick-up Lane

A drop-off and pick-up lane is an area on a street adjacent to school grounds or directly on the school grounds that is dedicated to the loading and unloading of students by private motor vehicles.

This school created a drop-off and pick-up lane on the street adjacent to school grounds. The picture to the left shows a corral where children wait to be picked up. Motor vehicles with identification tags that correspond to an individual student line up in the yellow-lined area. When the motor vehicle progresses to the white-striped loading area, the appropriate child exits or enters the vehicle. Signs, such as the one in the picture to the right, can remind drivers to follow the established process.

David Parisi

Marin Horizon School, Mill Valley, California.

An on-site drop-off and pick-up lane can employ the same general technique as in the on-street drop-off and pick-up lane. The system illustrated in the pictures to the right uses two lanes rather than one, and the lanes are actually on school grounds. Several motor vehicles in one lane progress to the unloading zone, release the children simultaneously and move out when all the children have cleared the street. The next group of motor vehicles moves into the loading zone from the other line of queued vehicles and repeats the process. Curb striping delineates the areas, signs further explain their proper use, orange cones mark the lanes and school personnel orchestrate the entire process.

Tool: On-street and On-site Drop-off and Pick-up Lane

What is it and how does it work?

- A lane designated for drop off and pick up of students from private motor vehicles only.
- May be on school grounds or on street adjacent to school.

Benefits strategy provides

- Speeds up and provides order to the drop-off and pick-up process.

Key factors to consider

- Clearly delineate zone and define process.
- The student loading area should be at the far end of the lane to maximize vehicle storage. In some cases two storage lanes may be used.
- Unload or load three or four motor vehicles at a time.
- Do not create a process that negatively impacts students arriving on foot or bicycle, and do not encourage more parents to drive students to school.

David Parisi

Monta Vista School, Santa Barbara, California.

Assistants to Help Students In and Out of Vehicles

Providing curb-side assistants in drop-off and pick-up zones to help students exit and enter motor vehicles can provide order to the process and decrease its time.

Parents, school personnel, safety patrol or older students can serve as valets and open curb-side doors for students to enter and exit motor vehicles and remove bags or other items. This speeds up the drop-off and pick-up process by eliminating the need for the parents to get out of the vehicle and ensures students are directly accessing designated locations. These assistants should wear safety vests or belts, and the loading area should be designated by signs or paint and be located at the far end of the lane. It is best to have enough assistants to help load three or four vehicles at a time to speed up the process in a safe manner.

Richman Elementary School, Fullerton School District

Tool: Assistants to Help Students In and Out of Vehicles

What is it and how does it work?

Person opens and closes curb-side motor vehicle door for students entering and exiting vehicles. Parents stay in vehicle and leave immediately after the child exits.

Benefits strategy provides

- Speeds up drop-off and pick-up process.
- Channels students directly from motor vehicle to pedestrian zone or from pedestrian zone to motor vehicle.

Key factors to consider

- Parents, school personnel and safety patrol can all participate.
- Need to educate parents and children on the process.
- Assistants should wear safety belts or bright vests.

Off-site Queuing Lane

Another strategy to improve the safety and efficiency of the drop-off and pick-up process is the use of off-site queuing lanes.

The street in this photograph is a major collector. During arrival and departure of students, the right lane is marked no parking and the motor vehicles line up for drop off and pick up. As students are loaded or unloaded from the motor vehicles at the drop-off and pick-up zone the vehicles in the queue advance. Off-site queuing lanes, in conjunction with drop-off and pick-up lanes and assistants to help students enter and exit motor vehicles, can speed up and improve the safety of the loading and unloading process.

In some instances, striping a center turn lane on a collector street can provide a queuing area for left-turning drivers waiting to enter the school drop-off and pick-up area, without blocking other traffic using the street.

Tool: Off-site Queuing Lane

What is it and how does it work?

Orderly line of vehicles on street adjacent to school waiting to pull into the drop-off and pick-up zone.

Benefits strategy provides

- Reduces conflict with non-school traffic.
- Speeds up and provides order to the drop-off and pick-up process.

Key factors to consider

- Clearly delineate queue.
- Do not block non-school traffic with queue.
- Does the public right-of-way provide sufficient space for the vehicles, or does the needed width infringe on private property?
- Do not extend the motor vehicle queue through a student crosswalk.

Temporary Street Closures and One-way Streets

Temporary street closures during student arrival and departure times can improve the efficiency and safety of the drop off and pick up of students at school. Temporary street closures eliminate motor vehicles in areas congested with pedestrians, bicyclists and perhaps buses. Another similar technique is to designate a street as one-way during drop-off and pick-up times. Signs are essential for this method.

Both temporary street closures and temporary use of one-way streets can work well in densely developed neighborhood schools. Any proposed street closures must be approved by the appropriate local transportation agency and must be coordinated closely with neighbors. It is also important to ensure that employing either of these techniques does not create traffic problems on other streets. Remember that all of these techniques should improve the safety of the overall process, and not simply relocate the chaos.

Tool: Temporary Street Closures and One-way Streets

What is it and how does it work?

Officially close street to traffic, or create a one-way street only during drop-off and pick-up times.

Benefits strategy provides

- Decreases traffic and chaos at drop-off and pick-up times with minimal cost.

Key factors to consider

- Coordination with local government and adjacent property owners is necessary.
- School officials may have to place and remove barricades and maintain them during the street closure.
- Do not relocate traffic problems to adjacent neighborhood streets by employing this strategy.

David Parisi

These images illustrate the temporary closures of neighborhood streets adjacent to schools in Seven Trees, California, (right) and Monroe Middle School, California (left). The closures are marked by the use of movable barricades.

Temporary Use of School Grounds as a Drop-off and Pick-up Zone

A section of the school grounds, such as a play area or parking lot, can be used as a dedicated drop-off and pick-up zone only when children are arriving at, or leaving, school. Temporary drop-off and pick-up zones can be useful in older, urban schools that were built without student loading areas when most children walked to school rather than being driven to school.

Some schools have received permission from their fire department or fire marshal to use a gated fire lane that encircles the school building as a parent pick-up and drop-off zone. This use requires parents to always stay in their vehicle, and to use a circulation pattern so that students load on the building side of the vehicle. At other times this area is closed to motor vehicle traffic.

Tool: Temporary Use of School Grounds as a Drop-off and Pick-up Zone

What is it and how does it work?

Use school play area, parking lot or other area as a drop-off and pick-up zone.

Benefits strategy provides

- Provides a separate space for drop-off and pick-up by motor vehicle.

Key factors to consider

- Useful in schools in densely developed areas with space constraints.
- Education of parents and students is important.
- Need good sign and paint plan; cones may be helpful.
- To use a fire lane as a drop-off or pick-up zone, schools need to obtain approval from the fire department beforehand.

Education

Educating parents and students on proper drop-off and pick-up procedure is essential in developing a safe and efficient system.

Regular reminders of drop-off and pick-up procedure from school officials to students and parents is one way to keep parents informed. Information provided to parents should be clearly stated, provide consistent messages and be delivered regularly throughout the school year. Maps of the drop-off and pick-up area with traffic flow patterns are very helpful. It is often good to begin a new drop-off plan at the start of a new school year or after a break, and after sufficient notice has been given to parents and students about the new plan.

Some schools hold traffic safety days to provide students and parents with useful information. Drivers are reminded of traffic safety principles and school drop-off and pick-up policies and processes. At this time children can be recognized and rewarded for walking or bicycling to school. Drivers who are not following proper process can receive warnings from school personnel, parents or law enforcement officers. Giving small rewards, such as stickers or pencils, to students whose parents follow proper process may be more beneficial in correcting bad habits than punishing poorly behaved parents.

Communities with a large non-English speaking population may benefit from multi-lingual educational literature, parking lot monitors and events.

David Parisi

David Parisi

Monitoring and Enforcement of Drop-off and Pick-up Policies

Enforcement of drop-off and pick-up rules is essential in creating a safe drop-off and pick-up environment. Enforcement as it applies to the entire Safe Routes to School program is discussed in detail in the Enforcement chapter, so it will be mentioned just briefly here.

Enforcement of drop-off and pick-up policies and process can be performed by a variety of people. Schools around the country have had success utilizing law enforcement officers, school personnel or parent volunteers. When new drop-off and pick-up plans are implemented assistance may be requested from law enforcement officers to make sure traffic flows smoothly during the first few days. Implementing a new plan may also require more volunteers or monitors to regulate parent activity in the first few days.

This notice is placed on a vehicle windshield to inform the driver that they have illegally parked in a drop-off and pick-up zone for buses.

Tool: Monitoring and Enforcement of Drop-off and Pick-up

What is it and how does it work?

Inform and remind the school community of drop-off and pick-up policies and process.

Benefits strategy provides

- May be the only additional activity necessary to keep drop-off and pick-up safe and efficient.

Key factors to consider

- Regular reminders and consistent application of rules are necessary.
- Reward students if their parents follow the process.
- Police assistance may be requested when implementing a new plan.

Enforcement of drop-off and pick-up rules is essential in creating a safe drop-off and pick-up environment.

City of Portsmouth

Department of Public Works

MEMORANDUM

TO: John P. Bohenko, City Manager

FROM: Eric Eby, P.E., Parking and Transportation Engineer

DATE: January 23, 2019

SUBJECT: Report Back, Echo Avenue 6 Month Trial Closure

The Parking and Traffic Safety Committee voted to approve the closure of Echo Avenue at its exit ramp from the Spaulding Turnpike as a pilot project, with a report back after six-months of the closure. The Echo Avenue exit ramp was closed in the early morning hours on Friday, July 20, 2018. The six month trial period expired as of January 20, 2019.

One of the biggest concerns at the time of the closure was whether the traffic that used to exit onto Echo Avenue from the Turnpike would divert onto Farm Lane, the next closest residential street that connects the Turnpike with Woodbury Avenue. To determine if the closure has resulted in substantial increases in traffic on Farm Lane, City staff has monitored traffic volumes on Farm Lane at various times since the closure of Echo Avenue. The traffic data has shown no significant increase in traffic volumes on Farm Lane since the closure. Some days have had slightly higher volumes, and some days have had slightly lower volumes than before the closure of Echo Avenue. If the 360 vehicles per day that previously exited from the Turnpike onto Echo Avenue were using Farm Lane, the volume on Farm Lane would be in the range of 750 – 800 vehicles per day, or nearly double the volume before the closure. However, the volume on Farm Lane has consistently been recorded at 410 to 560 vehicles per day since the closure.

In addition, there have been no complaints or concerns from the residents of Farm Lane regarding any substantial increase in traffic on their street since the closure. For these reasons, City staff recommends that the closure of Echo Avenue remain in place and that the City work with the NHDOT to pursue a permanent closure of the Echo Avenue exit ramp from the Turnpike.

Department of Public Works
680 Peverly Hill Road
Portsmouth, New Hampshire 03801

City of Portsmouth

Department of Public Works

MEMORANDUM

TO: John P. Bohenko, City Manager

FROM: Eric Eby, P.E., Parking and Transportation Engineer EE

DATE: January 23, 2019

SUBJECT: Report Back, Request for Crosswalk on Bow Street at Chapel Street

In response to a request for a crosswalk across Bow Street at its intersection with Chapel Street, City staff has collected data on pedestrian and vehicular volumes, as well as vehicle speeds at the intersection. In addition, sight line measurements were recorded on Bow Street.

The sight line measurements indicate that a stopping sight distance of 88 feet is available on Bow Street at its intersection with Chapel Street. This is sufficient for vehicle speeds of up to 16 mph on Bow Street. However, the 85th percentile vehicle speeds were recorded at 18 mph. Therefore, a large percentage of vehicles would not be able to safely stop in time to avoid a pedestrian in a crosswalk at this location. The addition of crosswalk lines will not improve the sight distance at this location.

Based on video observations, there were never more than a few pedestrians per hour crossing Bow Street at the requested location of the crosswalk. This is understandable, due to the lack of a sidewalk on the church side of the street, and the poor sight lines on Bow Street. Generally, crosswalks are not recommended at locations where the peak hour volume of pedestrians is less than 15 to 20 per hour.

It was noticed on the video that during one hour, close to 40 pedestrians crossed Bow Street to the west of Chapel Street, at Martingale Wharf. This location has better sight lines, with a stopping sight distance of 115 feet, which is sufficient for speeds of up to 20 mph. This location may be a better location for a crosswalk. However, grades are a concern at this location, and tip down ramps would need to be constructed to accommodate a new crosswalk. Trucks also frequently park in this location, as it is the loading zone for the many restaurants in the area. Further study of this location is needed to determine if it could be a feasible crosswalk location.

City staff also looked into the matter of the double yellow center line on Bow Street as it turns into Chapel Street. According to state RSA 265:22, vehicles are allowed to turn left from a street to a

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680 Peverly Hill Road
Portsmouth, New Hampshire 03801

side street, even if a double yellow line is present. The double yellow line does not need to be broken to allow the left turns.

Also, City staff has researched the history of the ordinance that prohibited left turns at this location. In 1994 the Traffic and Safety Committee voted to prohibit left turns from Bow Street onto Chapel Street due to trucks hitting the wall when turning, and concerns regarding sight lines. In 2002, the Committee reviewed the left turn restriction and voted to keep it in place. In 2008, the Committee voted to remove the left turn restriction from the ordinances. In 2011, the Committee voted to keep the intersection as is. The matter has not been brought up since.

It is the recommendation of City staff that a crosswalk not be provided on Bow Street at its intersection with Chapel Street due to the limited sight lines and the lack of a sidewalk on the south side of Bow Street.

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680 Peverly Hill Road
Portsmouth, New Hampshire 03801

Excerpt from New Hampshire Drivers Manual
-Part Five, Rules of the Road, page 29

TRAFFIC LIGHTS

Traffic lights control vehicles at major intersections.

Red

Stop before the stop line or crosswalk. Remain stopped until the light turns green and the intersection is clear. **EXCEPTION:** You may make a right turn on a red signal only if: there is no sign prohibiting a right turn on red and (if the intersection is equipped) a steady DON'T WALK signal is being displayed. Then, you may make a right turn after yielding to pedestrians and other traffic in, or approaching, the intersection.

NOTE: It is a violation of the law to make a right turn on red when a steady or flashing walk signal is being displayed even if there are no pedestrians in the crosswalk.

Yellow

Caution. The lights are about to change to red. The purpose of the yellow light is to allow vehicles already in the intersection to clear the intersection safely. Do not try to "beat the light" if you have not already entered the intersection.

Green

Go when safe to do so. You must yield to pedestrians and vehicles in the intersection.

Red arrow

You cannot turn left on a red arrow. You can turn right on a red arrow after stopping if you follow the EXCEPTION rule under RED LIGHTS.

Green arrow

You may turn in the direction of the arrow after yielding to traffic and pedestrians.

Flashing red

You must come to a full stop and not go until it is safe to do so. This means the same as a stop sign.

Flashing yellow

Go with caution.

City of Portsmouth

Department of Public Works

MEMORANDUM

TO: John P. Bohenko, City Manager

FROM: Eric Eby, P.E., Parking and Transportation Engineer EE

DATE: November 29, 2018

SUBJECT: Report Back, Traffic Calming Program Request, Brackett Road

Residents of Brackett Road have submitted an application to have their street included in the Neighborhood Traffic Calming Program. City staff has collected data on vehicle volumes and speeds, as well as pedestrian volumes. The final step consists of staff assessment of the data and roadway conditions. This memo summarizes the staff assessment and recommended level of traffic calming measures.

Vehicle speeds were measured on Brackett Road between Brackett Lane and Clough Drive over a 5-day period in September. Average speeds were recorded at 20-21 mph, with 85th percentile speeds of 23-24 mph. The legal speed limit on Brackett Road is 30 mph.

The video data revealed that there were no children walking on this portion of Brackett Road on their way to or from the Little Harbor School. Most students walk via Haven Road or the other end of Clough Drive.

Daily traffic volumes on Brackett Road are 550 vehicles on school days, and 150 vehicles on weekends. The surge of traffic during school drop-off and pick-up times is very noticeable due to the very low traffic volumes at all other times of the day and week. However, the vehicle speeds, volumes and pedestrian data do not reveal a speeding problem. The issue of vehicle speeds is more of a quality-of-life issue for the residents of the neighborhood, as they must walk in the street with traffic, where no sidewalks exist.

Staff assessment of the roadway is that traffic calming measures are not necessary along this section of Brackett Road.

Department of Public Works
680 Peverly Hill Road
Portsmouth, New Hampshire 03801

City of Portsmouth

Department of Public Works

MEMORANDUM

TO: John P. Bohenko, City Manager

FROM: Eric Eby, P.E., Parking and Transportation Engineer EE

DATE: November 29, 2018

SUBJECT: Report Back, Traffic Calming Program Request, Brackett Lane at South Street

Residents using the Brackett Lane and South Street intersection have submitted an application to have South Street included in the Neighborhood Traffic Calming Program. City staff has collected data on vehicle volumes and speeds at the intersection. The final step consists of staff assessment of the data and roadway conditions. This memo summarizes the staff assessment and recommended level of traffic calming measures.

Vehicle speeds were measured on South Street at Brackett Lane over a 5-day period in September. Average speeds were recorded at 22-23 mph, with 85th percentile speeds of 25-26 mph. The posted speed limit on South Street is 20 mph.

Sight line measurements were also conducted at the intersection. The stopping sight distance was measured at 248 feet for vehicles approaching the intersection from the direction of Haven Road, sufficient for speeds of up to 35 mph on South Street. For vehicles exiting from Brackett Lane, their sight line is slightly less, at 214 feet, which is sufficient for speeds of up to 31 mph on South Street. Only 1.5 percent of the traffic on South Street is traveling at greater than 30 mph. Therefore, the sight lines exceed the minimum requirements for safety at the intersection. The vehicle speeds, volumes and pedestrian data do not reveal a speeding problem.

Staff assessment of the roadway is that traffic calming measures are not necessary along this section of South Street. However, the City will look to replace the old overhead flashing beacon at this location, with one that is larger and brighter. Intersection warning sign could also be added on the South Street approach to the intersection.

Department of Public Works
680 Peverly Hill Road
Portsmouth, New Hampshire 03801

City of Portsmouth

Department of Public Works

MEMORANDUM

TO: John P. Bohenko, City Manager

FROM: Eric Eby, P.E., Parking and Transportation Engineer EE

DATE: December 13, 2018

SUBJECT: Report Back, Traffic Calming Program Request, South Street at Monroe Street

Residents of South Street in the area between Lafayette Road and Middle Road have submitted an application to have their section of the street included in the Neighborhood Traffic Calming Program. City staff has collected data on vehicle volumes and speeds. The next step consists of staff assessment of the data and roadway conditions. This memo summarizes the staff assessment and recommended level of traffic calming measures.

Vehicle speeds were measured on South Street between at Monroe Street over a 5-day period in September. Average speeds were recorded at 28 mph, with 85th percentile speeds of 31 mph. The posted speed limit on South Street at this location is 30 mph. Traffic volumes are approximately 5,000 to 6,000 vehicles per day. It was noted during the site visit that the visibility of the traffic signal at Lafayette Road and South Street was obscured by tree branches. At the Middle Road end of South Street, South Street is controlled by a STOP sign. A sidewalk is provided along the entire length of the north side of South Street between Middle Road and Lafayette Road. Parking is allowed along the south side of South Street in this area.

The vehicle speeds do not reveal a speeding problem. They are right in line with the posted speed limit. South Street is classified as a Neighborhood Connector street in the City's Complete Streets Design Guidelines, with a target speed of 30 mph. The issue of vehicle speeds is more of a quality-of-life issue for the residents of the neighborhood, as they must walk in the street with traffic on the south side of the road, where no sidewalk exists. And it can be difficult to back out of a driveway due to vegetation on private property that limits sight lines. However, sight lines along South Street are adequate for the speed of traffic.

Staff assessment of the roadway is that traffic calming measures are not necessary along this section of South Street. To help with safety, City crews trimmed the branches of the tree to ensure visibility of the traffic signal. Residents could also park vehicles along South Street to make the roadway feel narrower, which can help to slow traffic.

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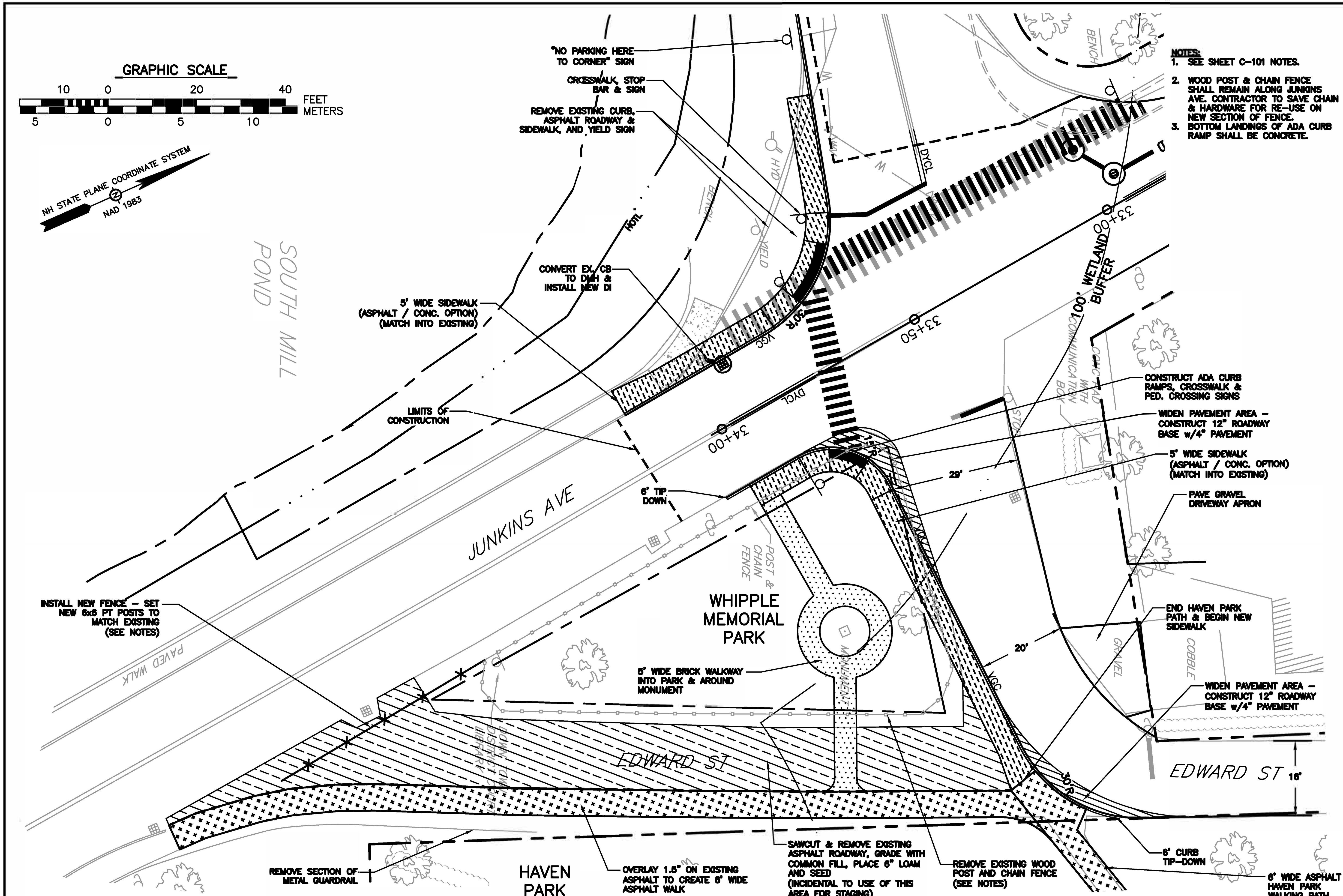
680 Peverly Hill Road
Portsmouth, New Hampshire 03801



GRAPHIC SCALE
10 0 20 40 FEET
METERS
5 0 5 10
NH STATE PLANE COORDINATE SYSTEM
NAD 1983
SOUTH MILL POND
"NO PARKING HERE TO CORNER" SIGN
CROSSWALK, STOP BAR & SIGN
REMOVE EXISTING CURB, ASPHALT ROADWAY & SIDEWALK, AND YIELD SIGN
CONVERT EX. CB TO DMH & INSTALL NEW DI
5' WIDE SIDEWALK (ASPHALT / CONC. OPTION) (MATCH INTO EXISTING)
LIMITS OF CONSTRUCTION
6' TIP DOWN
JUNKINS AVE
INSTALL NEW FENCE – SET NEW 6x6 PT POSTS TO MATCH EXISTING (SEE NOTES)
PAVED WALK
WHIPPLE MEMORIAL PARK
POST & CHAIN FENCE
5' WIDE BRICK WALKWAY INTO PARK & AROUND MONUMENT
MONUMENT
EDWARD ST
REMOVE SECTION OF METAL GUARDRAIL
HAVEN PARK
OVERLAY 1.5" ON EXISTING ASPHALT TO CREATE 6' WIDE ASPHALT WALK
SAWCUT & REMOVE EXISTING ASPHALT ROADWAY, GRADE WITH COMMON FILL, PLACE 6" LOAM AND SEED (INCIDENTAL TO USE OF THIS AREA FOR STAGING)
REMOVE EXISTING WOOD POST AND CHAIN FENCE (SEE NOTES)
6' CURB TIP–DOWN
6' WIDE ASPHALT HAVEN PARK WALKING PATH
WIDEN PAVEMENT AREA – CONSTRUCT 12" ROADWAY BASE w/4" PAVEMENT
END HAVEN PARK PATH & BEGIN NEW SIDEWALK
PAVE GRAVEL DRIVEWAY APRON
5' WIDE SIDEWALK (ASPHALT / CONC. OPTION) (MATCH INTO EXISTING)
WIDEN PAVEMENT AREA – CONSTRUCT 12" ROADWAY BASE w/4" PAVEMENT
CONSTRUCT ADA CURB RAMPS, CROSSWALK & PED. CROSSING SIGNS
100' WETLAND BUFFER
CONC. PAD WITH COMMUNICATION BOX
33+00
33+50
34+00
30'R
29'
20'
16'
HYD
YIELD
BENCH
VGC
DYCL
STOP
GRAVEL
COBBLE
EDWARD ST
NOTES:
1. SEE SHEET C–101 NOTES.
2. WOOD POST & CHAIN FENCE SHALL REMAIN ALONG JUNKINS AVE. CONTRACTOR TO SAVE CHAIN & HARDWARE FOR RE-USE ON NEW SECTION OF FENCE.
3. BOTTOM LANDINGS OF ADA CURB RAMP SHALL BE CONCRETE.

NO.	DESCRIPTION	APP'D	DATE
D	FOR REVIEW	MRB	1/4/19
C	FOR REVIEW	MRB	12/18/18
B	FOR REVIEW	MRB	11/16/18
A	FOR REVIEW	MRB	11/13/18

REVISIONS

DATE: January 8, 2018
SCALE: 1:20
PROJECT NO.: CoP-006

MARC R. BATCHELDER, PE
ENGINEER OF RECORD

FOR: Pleasant Street Utility & Roadway Improvements Portsmouth, NH

Seaport Engineering, LLC
PORTSMOUTH, NH
(603) 498-8449
www.seaporteng.com

TITLE: EDWARD STREET and WHIPPLE PARK LAYOUT

SK-010

Foundry Garage Transient Collections: November 2018 - December 2018

November		December		% Change
Total Collections	**4,854.00**	**Total Collections**	**9,966.00**	**105.32% Increase**
Weekdays	3,018.00	**Weekdays**	4,999.00	**65.64% Increase**
Weekday Avg	137.18	Weekday Avg	249.95	**82.20% Increase**
Weekends	1,836.00	**Weekends**	4,967.00	**170.53% Increase**
Weekend Avg	229.50	Weekend Avg	496.70	**116.43% Increase**

Foundry Monthly Contracts: 12.31.18

Total	Resident
206	38%
	Non-Resident
	62%

Holiday Event Figures-Foundry

Halloween Parade	520
Holiday Parade	600
First Night	300

CITYLAB
www.citylab.com

The Many Benefits of Making One-Way Streets Two-Way

ERIC JAFFE JUL 20, 2015

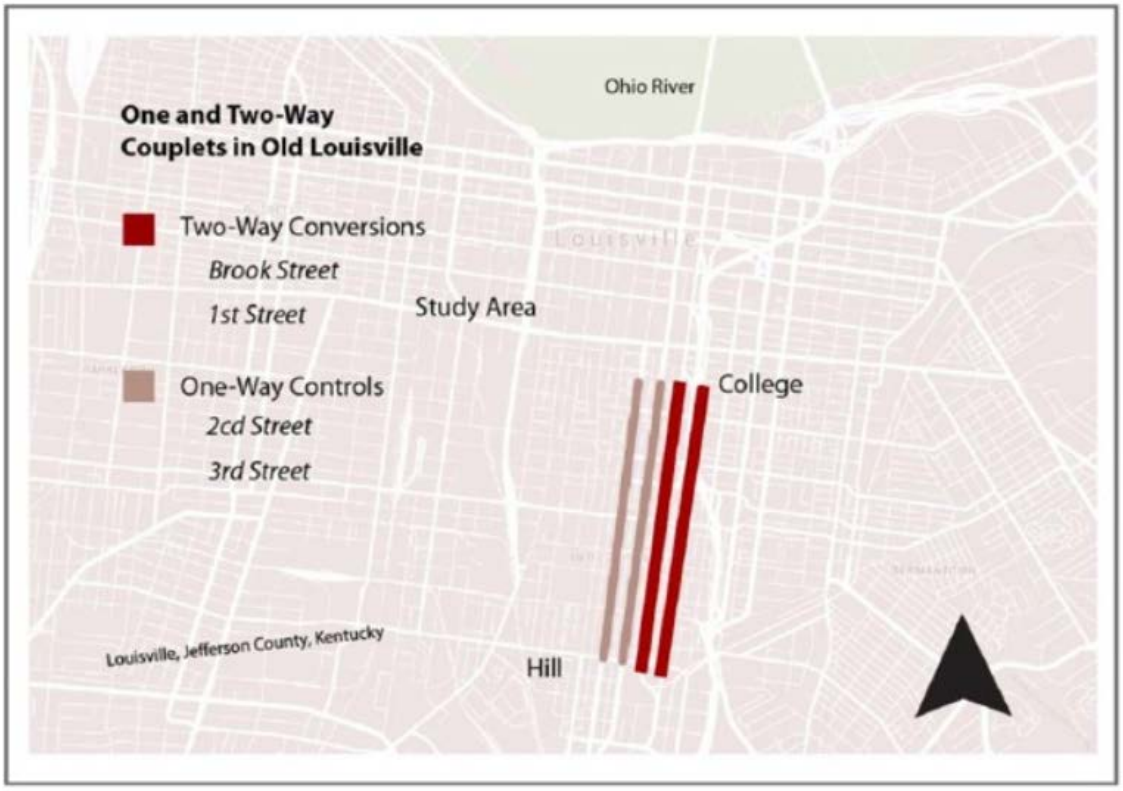
Safer traffic, for one thing.

From a traffic engineering perspective, one-way streets are all about speed. Without the danger of oncoming traffic, one-way streets can feel like an invitation to hit the gas. But swift traffic flow isn't the only factor by which progressive cities judge their streets, and as safety and livability become more important, a number of metros have found the case for converting one-way streets into two-way streets a compelling one.

Count Louisville among the believers. In 2011, the city converted two one-way streets (Brook and 1st) in the Old Louisville part of town. Though originally designed as two-way streets, Brook and 1st became one-way after World War II, in keeping with the car-first engineering of the time. In championing the change, local official David James cited the need for calmer streets and economic development.

A pair of planning scholars has evaluated just how well the safety and economic claims held up following the street conversions. In a word: *very*. William Riggs of California Polytechnic State University and John Gilderbloom of the University of Louisville report that compared with nearby, parallel streets that remained one-way (2nd and 3rd), Brook and 1st experienced fewer collisions, less crime, and higher property valuations.

Let's take a closer look at some of the key findings, via the *Journal of Planning Education and Research*.



(Via *Journal of Planning Education and Research*)

Traffic safety

Riggs and Gilderbloom tracked traffic collisions on Brook, 1st, 2nd, and 3rd for five years leading up to the conversion, and two years after. In the first year following the change, both Brook and 1st had big drops in collisions per month, while those on 2nd and 3rd increased. At the two-year mark, the per-month averages on Brook and 1st were down 36 and 60 percent, respectively; meanwhile those on 2nd were up a lot (23 percent) and those on 3rd were only down slightly (7 percent).

What makes the finding even more impressive is that traffic safety improved on Brook and 1st even though traffic volume *increased* on these streets—13 and 40 percent, respectively. Over the same period, traffic volume on 2nd and 3rd dropped. In apparent real-world confirmation of theoretical traffic models, drivers seemed to accept the slower speeds in exchange for more direct access to their destination; here's Riggs and Gilderbloom:

> It is also one of our more surprising findings since traffic engineers typically claim that two-ways reduce maximum capacity of a road, making it inefficient use of tax payer money and resources…

Brook Street in Louisville (top) was converted to two-way traffic in 2011; parallel 2nd Street (bottom) remains one-way (via Google Maps).

Crime

On criminal measures of safety, the converted Brook and 1st performed as good or better than 2nd and 3rd streets, too. After the change, the number of total crimes per month declined on both Brook (15 percent) and 1st (30 percent). Crime on 3rd also fell (16 percent), but crime on 2nd increased (16 percent) and crime across the Louisville metro increased 5 percent during this period.

Riggs and Gilderbloom found a particularly impressive dip in two specific crimes. Auto thefts fell on Brook (33 percent) and 1st (23 percent), even as they rose on the comparison streets. Robberies also fell on Brook (33 percent) and 1st (50 percent)—a greater decline than on 2nd and 3rd (13 and 10 percent, respectively). The researchers don't have a terribly compelling theory for the change, but suspect that slower getaway speeds could play some role. It's also possible the traffic increases mean there are just more proverbial eyes on the streets.

Property values

On property values, the same improvement story held true. Examining property sales before and after the conversion, Riggs and Gilderbloom report that houses on Brook and 1st both appreciated, with an average increase of 11.6 and 2.8 percent, respectively. Those on 2nd and 3rd, meanwhile, depreciated roughly .4 percent over the same period. The latter cases are representative of the larger Louisville real estate market, which declined slightly during this time.

Again, the source of the improvement here isn't entirely clear, but the researchers suspect that people simply prefer to live on a street with slower traffic, less crime, and better mobility.

No panacea, but lots of promise

The researchers recognize some limitations in their analysis. The process of neighborhood improvement is a very complex one with lots of variables. The statistics used here can't quite show that the street conversion itself caused the changes, though the inclusion of very reasonable control streets does lend more support to that idea. And these conversions aren't cheap: in this case, $250,000 for the pair of 1.25-mile segments.

But as more evidence emerges about the safety and economic value of one-way street conversions, those cost may start to seem well worth the greater good; Riggs and Gilderbloom conclude:

> Though there is no panacea for improving neighborhoods, our case shows a clear example of road diets and traffic calming as ways to change the character of a neighborhood and that one-way to two-way street conversions can assist in redeveloping a community.

About the Author

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Eric Jaffe is the former New York bureau chief for CityLab. He is the author of *A Curious Madness* and *The King's Best Highway*.

PTS OPEN ACTION ITEMS

PTS Meeting Date	Action Item	Vote	Next Step / Report Back Date
1/10/2019	Traffic Calming Program: Brackett Road, Brackett Lane and South Street	Tabled to the February meeting.	02/07/19
1/10/2019	Request for STOP sign and crosswalk on Bow Street at Chapel Street.	VOTED to refer to staff for report back. Clarification on left turns from Bow Street to Chapel Street in report back.	02/07/19
12/6/2018	Request for parking space in bike lane buffer at 60 Lafayette Road.	VOTED to refer to staff for report back.	02/07/19
1/10/2019	Right Turn on Red	Discussion at January meeting during VII.C. (Islington / Bartlett pedestrian signal concerns). Chairman asked for clarification and report back at future meeting.	02/07/19
11/1/2018	Request to remove 10 metered parking spaces on Deer Street between Bridge Street and Maplewood Avenue, to accommodate anticipated traffic from new Foundry Place parking garage.	VOTED to table request to allow time for staff to observe traffic operations along Deer Street after the opening of the garage.	Tabled until new parking garage is generating more traffic
9/6/2018	Request to install curbing and trees along Madison Street near the intersection with Austin Street.	VOTED to have staff collect data, evaluate and report back on parking and traffic on Madison Street.	Future Meeting
6/7/2018 5/3/2018	Request for a loading zone between the hours of 9 am and 5 pm, 7 days a week, on Vaughan Street at 3S Artspace.	6/7/18 - VOTED to make no change at this time and revisit after hotel construction is complete. 5/3/18 - VOTED to refer to staff for report back at the next meeting, if possible.	Revisit after hotel construction is complete
2/1/2018	Request to eliminate 2-hour time limit on Islington Street between Cornwall Street and Rockingham Street.	VOTED to table the action item until the new parking garage is operational.	Tabled until new parking garage is operational
12/17/2017	Request for 15-minute space at 33 Deer Street (associated with this action item)	VOTED to review 15-minute spaces to determine the appropriate length of time for short-term spaces.	Will be using traffic cameras to monitor parking when weather permits
11/2/2017	Concerns regarding traffic not yielding to pedestrians in crosswalk on Middle Road at Essex Avenue.	12/7/17 VOTED to increase the visibility of the crosswalk by repainting and lengthening the existing 6 ft. stripes to 8 ft. to make it appear larger to approaching motorists. 11/2/17 VOTED to have staff collect data, evaluate & report back at the next meeting.	When weather permits (2019 project)
10/5/2017	Request to eliminate access to Echo Avenue from Spaulding Turnpike, by Charles McMahon Frank Jones Neighborhood Turnpike connections (Echo Ave & Farm Lane)	5/3/18 - VOTED to fully close Echo Ave at the Turnpike as a pilot project for six months. 5/3/18 - VOTED to postpone action on Farm Lane until the pilot project on Echo Avenue is completed and results evaluated. 2/1/18 - VOTED to schedule public meeting 11/30/17 - Neighborhood Meeting - sent notice to members 10/5/17 VOTED to have staff work with neighborhood, to determine desirability and report back with next steps in process. 10/6/17 - Echo Ave action item by Dave Palumbo	Echo Ave Closure Pilot Project 6 months Farm Lane action postponed until pilot project completed & evaluated
9/7/2017	Request for crosswalk on Grafton Drive at Sherburne Road	10/5/17 - VOTED to have City staff work with PDA to implement pedestrian crossing at intersection of Grafton Drive and Sherburne Road. 9/7/17 VOTED to have staff collect data, evaluate, and report back with a recommendation at next month's meeting. (October Meeting)	Pending PDA funding for project

PTS OPEN ACTION ITEMS

PTS Meeting Date	Action Item	Vote	Next Step / Report Back Date
4/6/2017	Request for Valet Service license on Pleasant Street near Court Street	VOTED to direct staff to report back at a future meeting.	On hold pending site development
1/5/2017	Rick Chellman Presentation	VOTED staff to report back on recommendations presented by Mr. Chellman at a later date.	Reviewing recommendations to implement
5/5/2016	Rock Street, request to include in Residential Parking Zone	VOTED to table action item until comprehensive residential parking program is implemented.	Residential parking program