Traffic Solutions
William J. Bray, P.E.
235 Bancroft Street
Portland, ME 04102
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trafficsolutions@maine.rr.com

March 1, 2017

Thomas A. Errico, P.E.
Senior Associate
Traffic Engineering Director
T.Y. Lin International
12 Northbrook Drive
Falmouth, ME 04105

RE: Baxter Academy for Technology and Science – Traffic Movement Permit (TMP)

Dear Tom:

Please find attached copies of the two documents you requested at the TMP Scoping Meeting on Thursday, February 23, 2017 and the results of a vehicle sight distance evaluation completed for the existing parking lot driveway entrance onto Lancaster Street. The two documents attached are:

1. January 15, 2014 report from Baxter Academy to the City of Portland that provides an overview of bus and parent loading/unloading conditions at the 54 York Street site. This report was a requirement of the Planning Board in their approval of the current Baxter Academy site.
2. Conformation of the Notice of Intent to File advertisement in the local newspaper.

You will recall the City has directed that the curb line directly fronting the existing surface parking lot on Lancaster Street be reconstructed as part of the proposed Baxter Academy project. I am attaching a copy of the latest improvement plan for your information and file. You will note the proposed plan provides a protected parking lane (six-foot in depth) framed on both ends with extensions of the curb line. The proposed curb extension closest to the existing exit driveway entrance restricts vehicle parking within 13-feet of the existing parking lot entrance. The proposed curb improvement meets and exceeds the City's driveway "No-Parking" zone requirement [Chapter 28-53(b)] of 5-feet. Sightlines "*left*" from the existing driveway entrance meet the City's driveway entrance standard; the sightline "*right*" from the driveway entrance meets the standard for a posted speed of 25mph based upon current on-street parking regulations.

Additional traffic and parking documents will be forwarded for your review separately.

Please call me at 400-6890 with questions or additional informational needs.

Very truly yours,

William J. Bray, P.E.

Baxter Academy
for Technology and Science

January 15, 2014

City of Portland

To Whom It May Concern:

As required by the planning board report, 05-2013, I am submitting a report for Baxter Academy, located at 54 York Street in Portland.

The report states in section VII iib:

The bus and parent loading/unloading conditions shall be monitored within three months following the opening of the school and a report shall be provided to the City summarizing existing conditions. Adjustments to the Plan may be required following this monitoring exercise. Additional annual monitoring shall be required in conjunction with the TDM plan.

As the chief operating officer, I have overseen the loading and unloading conditions at 54 York Street during the first three months of operation and in an ongoing basis. I am submitting background information, observations, anecdotes, and my thoughts for your review.

Background

Baxter Academy has contracted with Luce Transportation to provide bus service along three routes extending from Baxter Academy to Topsham, Lewiston, and Kennebunk.

Parents were notified on September 2, 2013 of protocol for dropping off and picking up students at 54 York Street. Specifically, these points were communicated:

When dropping off or picking up your student from Baxter Academy, 54 York Street, you must use Maple Street, which is next to our building. For safety reasons, please DO NOT park on York Street (directly in front of our Main Entrance) for drop-off or pick-up.
Please be aware that buses will be arriving at approximately 8:25 am and departing at 3:30 pm. It would be preferable if you did not compete with the buses. Also, please urge your student to use marked crosswalks near the building if crossing the street.
Baxter staff will be on York and Maple street each morning and afternoon during bus and parent drop off and pickup.

The first day of school for Baxter Academy was September 4, 2013. However, we were not at 54 York Street for this day. Instead, all drop off and pick up activity occurred at Fort Williams State Park in Cape Elizabeth.

Originally, bus drop off was scheduled for 8:25 am and pick-up at 3:30 pm. As of October 21, 2013, our afternoon pick-up for buses changed to 3:10 pm.

Baxter Academy staff members are present on the sidewalk each morning and afternoon to ensure safe drop off and pick up. Specifically, they reinforce that crosswalks are to be used at all times and keep students on the sidewalk and out of the streets while waiting for buses.

Baxter Academy
for Technology and Science

Observations

Parent Drop Off and Pick Up
Parents begin dropping their children off as early as 7:30 am, which is in accordance with agreements we have with them. The majority of parent drop off is complete by 8:20 am.

In the first weeks of school, we reinforced that parents needed to drop off students by pulling onto Maple Street, rather than unloading on York Street. However, due to construction on the hotel at the corner of Maple and Commercial, and construction vehicles constantly being parked in the 15-minute parking spots on Maple Street lining our building, a bottleneck quickly surfaced. Without a constant and reliable place for unloading in such a way that would enable students to exit the vehicle onto a sidewalk, we could not continue to ask parents to pull onto Maple Street. Doing so would require them to let their children out in the middle of the street.

As a result, drop off points for parents have become diversified depending on the parents' line of travel. Currently some parents are using Maple Street and the 30-minute parking spots on either side of York Street (running north and south) to briefly stop and let their students out. This seems to work particularly well because students generally exit their vehicles onto the sidewalk and then either use the crosswalk (for cars parked on the southbound side) or walk directly onto the sidewalk from the northbound side.

Occasionally, parents will pull in front of the school's main entrance to drop off their student. This is regularly discouraged by staff, however is happening with greater frequency now that snow has arrived. Occasionally, parents will also park directly in front of the main entrance to wait for their student to come out for pick up; this generally occurs only after the buses have departed.

In the afternoons, there are fewer parent pickups than drop offs. If students are picked up, it is generally before the school day ends. Parents park in an appropriate on-street spot (Maple Street or York Street), use a crosswalk if necessary, and enter the school building. They sign their student out while they wait for the student to come to the front office. They then return to their parked car and leave. This process typically takes about 5 minutes.

My Thoughts
Due to the construction on Maple Street, the plan for parent drop off to occur solely on Maple Street is untenable during this period. Both construction activity (e.g. construction vehicles blocking Maple Street), and vehicles belonging to workers at the construction site being parked in the 15-Minute Parking on Maple Street, have thwarted this plan.

Parents have found reasonable alternatives that are generally safer than drop off or pick up on Maple Street. Using on-street parking on either side of York Street has caused no negative reports of which I am aware. Traffic is stopped only while a student uses a crosswalk, which is to be expected in any scenario.

Buses
Buses arrive to the school one by one beginning at approximately 8:20 am and ending at 8:25 am most days. The buses use their yellow and red flashers as required and appropriate. Traffic back up behind a bus is generally between one (1) and six (6) vehicles and lasts no more than two minutes. To date I have not heard of one complaint - nothing ranging from a honk to a letter. Students leave the buses and enter directly into the school. We have not had a single incident of concern during this time.

For afternoon pick up, buses arrive together in a line and stop in front of the school main entrance on York Street (northbound). They use their yellow and red flashers as is required. Students are both inside and outside the

building at this time. The students line up and board the buses in an orderly fashion, usually taking about 1.5 minutes. At this time, normally no more than one (1) to six (6) vehicles are stopped behind the buses.

My Thoughts
Bus drop off and pick up has gone as smoothly as I could imagine. I have received no complaints about the impact of having the buses stop in front of the school. In fact, I most commonly hear that people are very happy and pleasantly surprised that our drop off and pick up has had no impact on their driving in the area. These reports come primarily from people who work on York Street in buildings owned by J. B. Brown.

Bicycles
We have numerous bicycle stands installed along Maple Street. Students and faculty use these daily. I have heard no reports of trouble from people in the area, nor from the students and faculty. Currently, there is still room for more bicycles to be locked up on the existing stands. As the temperature decreases, I expect our bicycle rider numbers to dwindle. We will observe whether the numbers increase in the Spring of 2014, and if we adequately have stands at that time. I expect that we will for this school year.

Summary

To date, drop off and pick up at 54 York Street has been going smoothly. There have been no complaints brought to our attention.

Hotel construction adjacent to our building has complicated original plans for parent drop off and pick up to occur exclusively on Maple Street. Parents have adapted by using existing on-street parking spots on York Street, which has not caused a problem to date either from a pedestrian perspective or from a parking perspective. In regards to the latter, parents are parking for less than 5 minutes on average.

Once hotel construction is complete, we can determine if parents need to be redirected to drop off and pick up solely on Maple Street, or if some blended approach, as is currently the situation, can continue to work.

Concern

The one concern I do have (and it is shared by others in the Baxter Academy community) is that this area is not marked as a school zone with a reduced speed limit. Vehicle speeds on York Street often seem faster than the speed limit. We would like to have appropriate signage installed on York Street, at the appropriate distances, in order to inform drivers that this is now a school zone and they should slow their speeds accordingly. Preferably flashing signs like those installed on Cumberland Ave. near Portland High School.

Please let me know if you have any questions. I look forward to continue working together to ensure that this area of Portland serves all members of the community well.

Sincerely,

Adam Burk

Portland Press Herald
Maine Sunday Telegram
pressherald.com

Payment Receipt

Traffic Solutions
Amy Bray

235 Bancroft St
Portland, ME 04102

Thank you for placing your advertisement in Portland Press Herald.

PAYMENT INFORMATION:

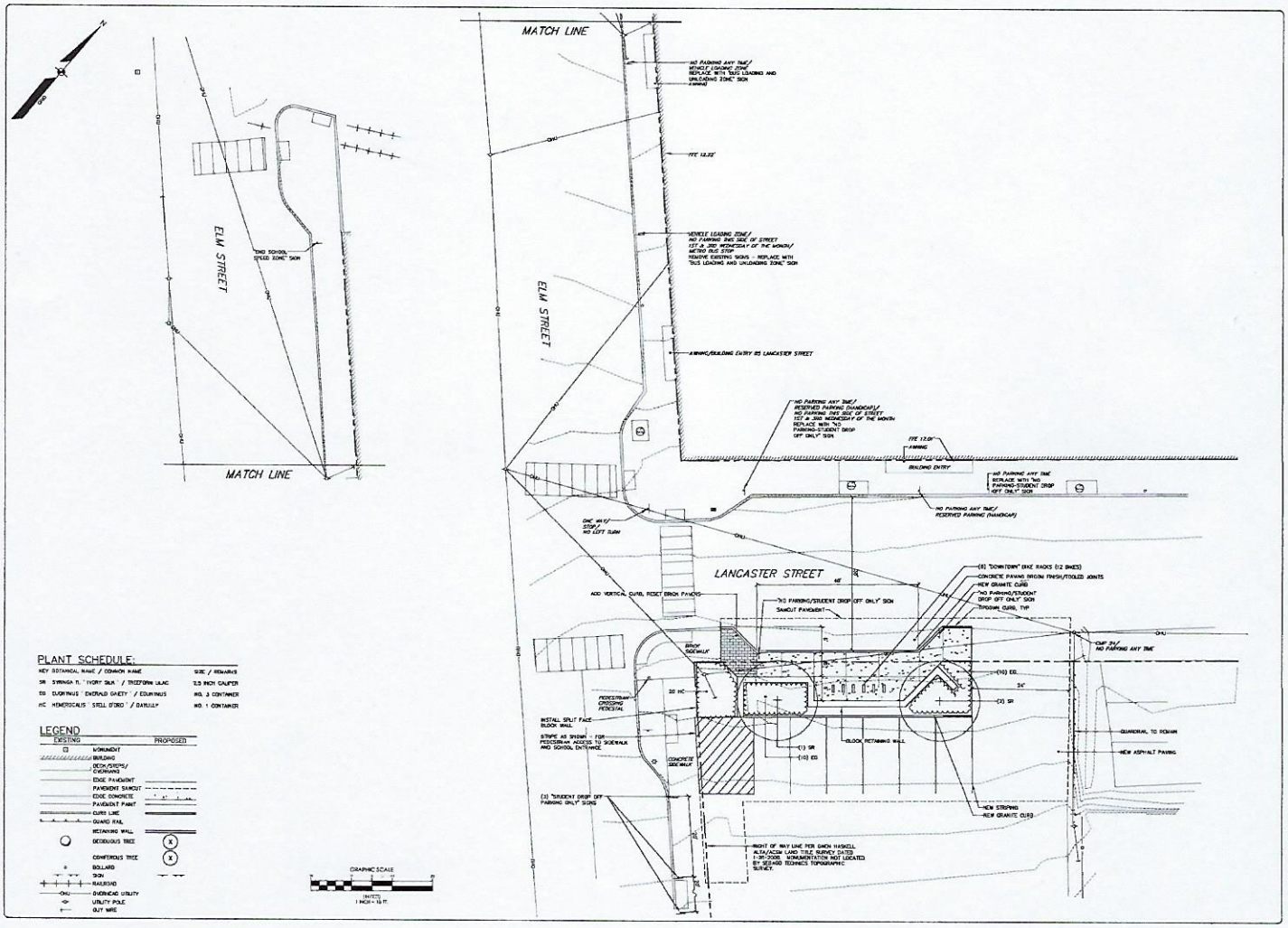
Total Order Price: $351.28

Payment Amount: 351.28
Payment Method: Credit Card

Thank you,
Classified Sales

207-791-6100 Monday - Friday, 8:00 a.m. - 5:00 p.m.
classified@pressherald.com

ORDER INFORMATION:		**Order Number:**	**172166**
Title:	Portland Press Herald	**Classification:**	1000 Legal Notices
Start date:	2/16/2017	**Number of Days:**	1
PO Number:	Baxter / Amy Bray		



PLANT SCHEDULE:

KEY	BOTANICAL NAME / COMMON NAME	SIZE / REMARKS
SR	SYRINGA R. 'IVORY SILK' / TREEFORM LILAC	2.5 INCH CALIPER
EG	EUONYMUS 'EMERALD GAIETY' / EUONYMUS	MIN. 3 CONTAINER
HC	HEMEROCALIS 'STELLA D'ORO' / DAYLILY	MIN. 1 CONTAINER

LEGEND

EXISTING		PROPOSED
□	MONUMENT	
	BUILDING	
	DECK/STEPS/ OVERHANG	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	EDGE CONCRETE	
	PAVEMENT PAINT	
	CURB LINE	
	GUARD RAIL	
	RETAINING WALL	
○	DECIDUOUS TREE	⊗
	CONIFEROUS TREE	⊗
▫	BOLLARD	
	SIGN	
	RAILROAD	
-OHU-	OVERHEAD UTILITY	
	UTILITY POLE	
	GUY WIRE	

DESIGNED	CHECKED
WTC	WTC

6	WTC	3-8-07	CITY SUBMITTAL NO. 3
5	WTC	2-22-07	CITY SUBMITTAL NO. 2
4	WTC	2-21-07	CITY SUBMITTAL NO. 1
3	WTC	2-21-07	SITE PLAN REVIEW
NO.	BY	DATE	REVISIONS

THIS PLAN SHALL NOT BE MODIFIED EXCEPT WITH PERMISSION FROM SEBAGO TECHNICS, INC. AND ALTERATIONS, IF ANY, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
75 John Roberts Rd. Suite 1A
South Portland, ME 04106
Tel: 207-200-2100
238 Gateway Rd.
Suite 24243
Lewiston, ME 04240
Tel: 207-783-3434

SITE PLAN
OF
185 LANDSCASTER STREET
AND
185 ELM STREET
PORTLAND, MAINE

BOULOS ASSET MANAGEMENT
ONE CANAL PLAZA
PORTLAND, MAINE 04101

PROJECT NO.	SCALE
17046	1" = 10'

SHEET 3 OF 5

17046dwg, Sht 5

March 4, 2017

Baxter Academy for Technology and Science

TRANSPORTATION OPERATIONS and MANAGEMENT PLAN

Introduction

Baxter Academy for Technology and Science is fully committed to providing the necessary resources and services to maintain the highest level of student safety at its 185 Lancaster Street Campus. The Traffic Operations and Management plan provides both the administration and staff of Baxter Academy a "*blue-print*" of recommended operational principles and guidelines that, with implementation, ensures a safe environment for students, staff and the general public.

Proposed Transportation Operations and Management Plan

School Zone Safety Features: Baxter Academy will install a flashing school zone speed limit sign assembly on Elm Street in advance of the 185 Lancaster Street Campus. The flashing school light system will operate with a timer controlling time periods of operation. An "*End School Zone*" sign will be appropriately located on Elm Street just west of the designated school bus loading zone advising motorists that they are leaving the school zone area. Secondary school speed zone signage will also be installed on both approaches of Lancaster Street that informs approaching motorists they are entering a designated school zone.

Baxter Academy will augment the City's annual crosswalk re-striping program, re-painting each of the existing crosswalk markings early spring of each year at the Lancaster Street/Elm Street intersection.

Baxter Academy staff will serve as a pedestrian crossing guard at the Lancaster/Elm Streets intersection aiding students crossing the Elm Street approach. A portable "*school crossing*" sign will be appropriately located in the center of the intersection reinforcing the school zone area.

Recommended Actions

- Baxter Academy will consult with the City's Traffic Division in advance of the school calendar year to review hourly and daily timing inputs for the automated school flashing speed limit assembly.
- Baxter Academy will field review, annually during mid-summer, the operational status of all traffic signage and roadway striping amenities. Noted deficiencies will be appropriately reported to the City's Traffic Division.
- Baxter Academy will re-stripe the crosswalk markings at the Lancaster Street/Elm Street intersection as soon as practical in the spring of each year. Coordination with Public Works in completing this task is essential. Baxter Academy assumes that the City will re-stripe the intersection markings prior to the beginning of the school year consistent with their current practices at all other City school locations.

- Baxter Academy staff, serving as an intersection crossing guard, will be required to wear a reflectorized orange vest meeting the latest OSHA standards. They will direct traffic appropriately using a STOP paddle. Staff members performing this service should meet with City Officials annually, in advance of the start of the school year, to review the appropriate procedures serving as an adult crossing guard.

Charter School Bus Service: Baxter Academy provides charter school bus service from three service areas in Southern Maine; Lewiston, Windham and Topsham. Students will be picked up daily at a designated bus area in each of the three communities and scheduled to arrive on-campus at approximately ___ AM (Schedule to be established later). Each of the three buses will discharge the students and return to a daytime queuing location off-site. They will return to the Baxter Academy Campus in the afternoon at ___ PM (Schedule to be established later) picking students up for the return trip to each of the three service communities.

A "*bus loading and unloading*" zone will be established along the Elm Street frontage of the 185 Lancaster Street Campus of sufficient length to accommodate three full-size school buses. Baxter Academy will rigidly regulate and control the arrival and departure schedule of the charter school buses. Bus arrival times, both morning and afternoon, will purposely be delayed allowing private vehicle utilization of the Elm Street curb space for student drop-off and pick-up functions. Students traveling on the charter school buses in the afternoon will wait in the "great-room" and be released for boarding with arrival of the school buses.

Baxter Academy staff will have a strong presence in this area ensuring that all personal autos have cleared the bus loading area prior to the bus arrival time. Special traffic signage will be erected that establishes the designated dual-purpose parking area.

Baxter Academy has developed the basic tenants of a Student Policy (Refer to Appendix A) that clearly define the responsibilities and expectations of students and parents alike in the use of the designated passenger loading and unloading areas.

The charter school buses are fully equipped with all mandatory school bus safety features including school flashing lights systems, etc.

Recommended Actions

- Baxter Academy will meet with the City's Transportation Office, Police Department, and representatives of the Charter School Bus Company to prepare a bus routing plan for each of the three bus routes. The bus routing plan will be reviewed annually with the City offices and adjusted as deemed necessary. Baxter Academy will review the designated "*bus loading and unloading*" area annually at the start of the school year verifying that all bus zone signing exists, etc. Baxter Academy will meet with appropriate City staff to establish the required sign verbiage establishing the dual-purpose passenger loading zone.
- Baxter Academy staff will be assigned, as necessary, to monitor the Elm Street bus loading zone ensuring that all private autos have cleared the bus zone prior to the arrival of the charter buses.

- Baxter Academy will develop a final operations plan and review the content of that plan with appropriate City officials prior to the beginning of the school year.
- Each of the three charter school buses will operate their mandatory flashing school lights during all loading and unloading activities.
- Baxter Academy staff will supervise the loading and unloading of students from each bus ensuring orderly and safe passage of students and minimal disruption to through vehicle travel on Elm Street. Students will be ushered in an orderly fashion to/from the entrance door of the school.
- Baxter Academy staff will be required to wear a reflectorized orange vest meeting the latest OSHA standards.

Parent Drop-Offs: Three designated parent drop-off zones are proposed near the main school entrance on Lancaster Street. A total of eight vehicle spaces are provided. Three spaces are provided on Elm Street at Lancaster Street; two spaces in a proposed recessed parking area on the east side of Lancaster Street and, three spaces in front of the Campus. Eight additional parking spaces are provided, for short time periods, in the designated Elm Street bus loading zone for student drop-off and pick-up in private vehicles. Students will also be allowed to exit the school in the afternoon through doors directly onto Kennebec Street for pick-up.

Each of the three designated drop-off areas adjacent to the main Campus entrance will be signed for *"5-Minute Loading and Unloading Only"*. Baxter Academy staff will be assigned to monitor and control the student activities in the general area of the Campus to minimize the disruption to other motor vehicle operators and ensure the safety of the Baxter Students.

Recommended Actions

- Baxter Academy will send annually, prior to the beginning of the school year, an introductory letter to all parents reminding them to only drop-off and pick-up students in the designated pick-up/drop-off areas. Parents will also be encouraged, when feasible, to drive the student passenger(s) to their respective place of work with the student walking to/from the 185 Lancaster Street Campus.
- Baxter Academy staff will strategically locate reflectorized traffic cones in curb areas where the discharging or pick-up of students is both unsafe and undesirable.
- Baxter Academy staff will be required to wear a reflectorized orange vest meeting the latest OSHA standards.
- Baxter Academy staff will review annually, in advance of the school year, that all mandatory signage denoting each designated drop-off zone are in place. If upgrades or replacements are necessary, the City's Traffic Division should be notified.

Automobile Travel: Baxter Academy administration will encourage both staff and the student body to travel to/from the 185 Lancaster Street Campus using other modes of travel other than private vehicle. Baxter Academy will provide off-street parking accommodations to staff members in a 50-space, off-street parking lot adjacent to the Campus. Staff members will be issued a parking permit by the Administration for use of the parking lot. Two designated handicap parking zones (with two-plus spaces in each) located along Lancaster Street are available for use by both staff and students alike. Further, an off-site parking lot in the rear of the Campus is also available for handicap parking, as necessary.

Students electing to travel to/from Baxter Academy in a private auto will be directed to use public off-street parking areas located on Marginal Way versus on-street spaces located near the Campus.

Recommended Actions

- Baxter Academy administrators, annually before the commencement of the school year, will send a letter to all in-coming students and members of the staff encouraging other modal travel options versus personal auto travel.
- Students who choose to commute in their personal vehicle will be directed to use public parking lots found on Marginal Way in lieu of parking on-street nearby the 185 Street Campus.
- Baxter Academy will evaluate throughout the school year both the demand and viability of providing a shuttle service connecting the public parking lots with the Campus.

Other Transportation Modal Travel: Both students and staff members will be encouraged to avail themselves of other non-auto transportation services commuting to/from the 185 Lancaster Street campus. Current other modal services include: METRO bus service, both intra-city and the inter-municipal express *Breeze* bus route; Southern Maine *Zoom* and Shuttle bus service; The Lakes Region Explorer; Casco Bay Island Transit Service with connections to Casco Bay Islands; bicycle travel; walking; carpooling, etc.

All public bus transit routes connect directly and/or indirectly through the METRO's "*HUB*" located on Elm Street near Monument Square. A short walk down Elm Street to the Campus is provided along a well-maintained sidewalk system. Pedestrian "*Walk*" signals are provided at both Monument Square and Cumberland Avenue to aid the student/staff walker crossing both major streets.

Staff or students traveling to Baxter Academy riding a bicycle will be able to safely store their bikes in bike racks located immediately adjacent to the 185 Lancaster Street Campus.

Recommend Actions

- Baxter Academy administrators, annually before the commencement of the school year, will send a letter to all in-coming students and members of the staff encouraging other modal travel options versus personal auto travel.
- Schedules and contact information for each service provider will be in a highly visible place on Campus.
- Baxter Academy staff will travel on foot between Monument Square and the Campus prior to the school year evaluating if sidewalk and traffic signal deficiencies require attention. All noted defects will be reported to the City of Portland's Public Works Department.
- Baxter Academy staff will review annually the functional condition of the on-site bicycle racks ensuring their security and operation.

Other Baxter Academy Transportation Services: Visitors to the Baxter Academy Campus will be directed to use existing on-street parking spaces when visiting the Campus. Baxter Academy

Service vendors, whether scheduled or random, will also be directed to use on-street parking spaces located in the general vicinity of the 185 Lancaster Street Campus.

Baxter Academy will evaluate the daily parking demand of both Campus visitors and vendor service providers and evaluate if other parking arrangements are deemed warranted.

Recommended Actions

- Baxter Academy administrators will monitor daily the Campus parking needs of both Visitors and Service Vendors and adjust, as necessary, the accommodation of their parking needs.
- Service Vendors will be requested, when possible, to approach the Campus during time periods other than the "*peak*" arrival and departure times of the school.

Baxter Academy
for Technology and Science

DRAFT

Student Drop-Off and Pick-Up by Private Vehicle Policy

To ensure student safety and to promote smooth transportation flow around Baxter Academy, as required by the City of Portland, we require all parents and students to understand the rules for student drop-off and pick-up by private vehicle at 185 Lancaster Street. The following rules pertain to drop-off and pick-up schedules and procedures. **Please sign this form to attest that you have read, do understand, and will abide by our policy.** *A map of pick-up locations is appended to this document. Please keep it for reference during the school year.*

- Pick-up and drop-off locations for Baxter Academy will be located in the designated spaces on Elm Street and Lancaster Street.
- On Elm Street, parents have 150 feet of parking to quickly drop their students off in the morning before the buses arrive at _____.
- On Lancaster Street, parents have 8 designated spots to use for dropping students off in the morning.
- On Kennebec Street, parents can drop off and pick up students with monitored exits on that side of the building.

MORNING DROP OFF

- Students being dropped off at Baxter Academy are required to **exit the vehicle *on the curb side*** and enter the building as quickly as possible.
- If a bus approaches the bus loading zone on Elm Street, parents must make way for the bus to pull over and offload students.

AFTERNOON PICK UP

- Students who are walking, bicycling, using public transportation or being picked up by private vehicle will be dismissed first. ***Cars queuing on Elm Street to pick up these students will be required to depart quickly to make room for the school buses arriving at 3:__***.
- Pick up times for students will be between the times of _____ and _____, and will be strictly monitored by staff to ensure space is open for the buses.
- Students who take Baxter's school buses will wait in the great room until 3:15, and will not be allowed to leave the building until the buses arrive.
- Buses will arrive for student pick up at 3:15 p.m. sharp. Students will be dismissed to load the buses quickly.

Baxter Academy staff will enforce these rules on a daily basis. Please sign and return this form to signify that you will abide by these important rules.

Every student must have this document on file, even if drop off or pick up at the school will be a rare occurrence.

Student Name(s): _____ Grade(s):_____

Parent/Guardian Name: _____ Parent/Guardian Phone #: _____

Parent/Guardian Vehicle Make: _____ Model: _____ Plate #: _____

Additional Possible Drop-Off/Pick-Up Vehicle Make, Model, and Plate #:_____

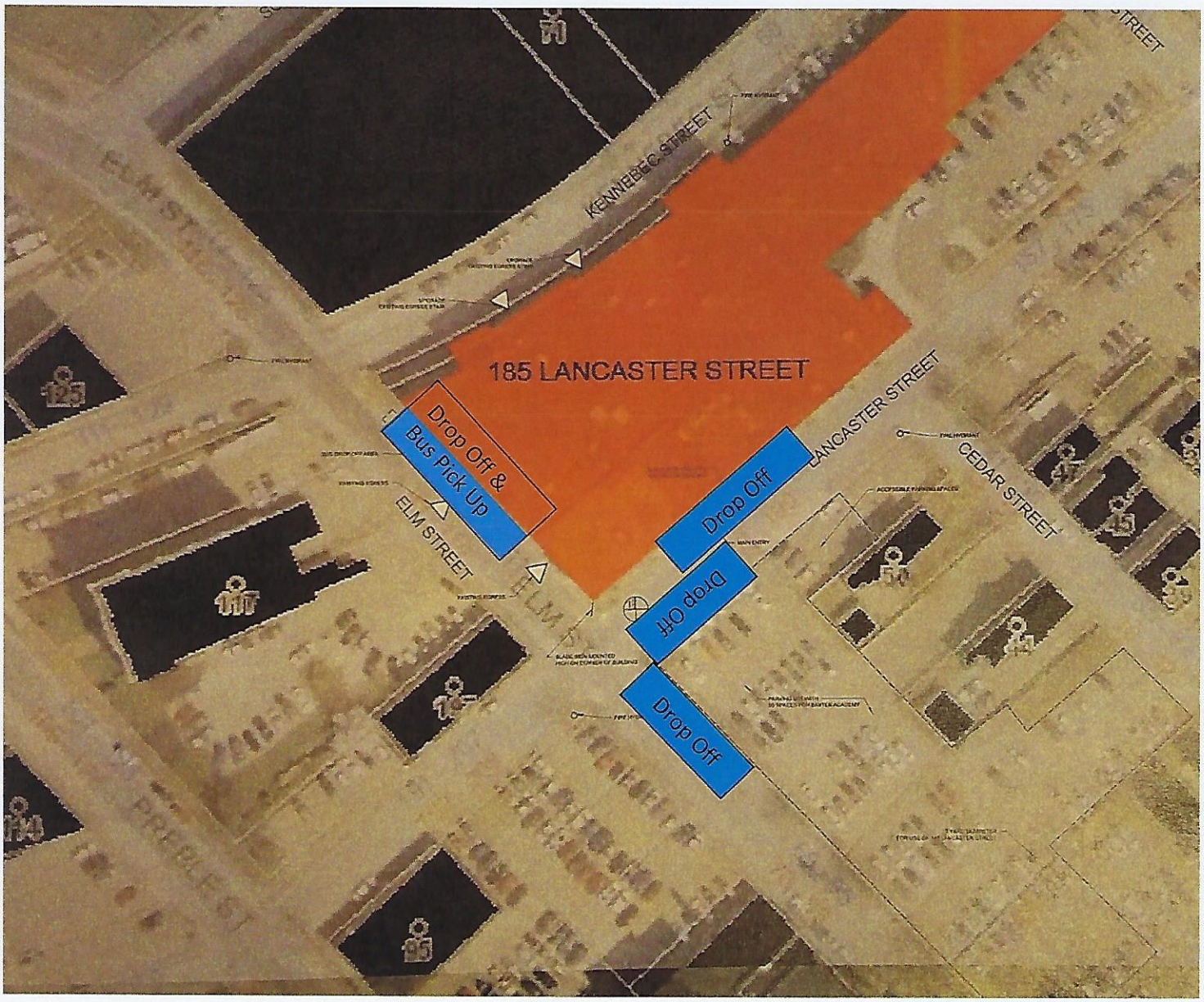
I have read the following guidelines and will adhere to them.

_____ _____

Student Signature Parent/Guardian signature

DRAFT

Drop off and Pick up Locations



Traffic Solutions
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(207) 400-6890 mobile
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March 4, 2017

Traffic Assessment

For Proposed
Baxter Academy for Technology and Science
Public Charter High School
Portland, Maine

INTRODUCTION

Baxter Academies of Maine are proposing to relocate and consolidate its public charter high school, known as Baxter Academy for Technology and Science, from its current facilities at 54 York Street and 561 Congress Street in Portland to an expanded facility at 185 Lancaster Street. The proposed site is an existing two-story building with a total floor area of approximately 92,561 square feet; Baxter Academies will lease and remodel 31,571 square feet of the building for the expanded charter high school project. Baxter Academies of Maine anticipates starting construction early spring with completion of the second floor expected in early fall prior to the commencement of the 2017-18 academic year and completion of the first floor expected around Thanksgiving.

This report provides an estimate of site trip generation for the proposed Baxter Academy public charter high school project generated during the critical AM peak hour; an assignment of the site trips to the adjacent street system; a review of existing roadway safety trends; a forecast of both 2017 pre- and post-development traffic conditions and, a technical evaluation of multi-way "Stop" control at the Lancaster Street/Chestnut Street intersection.

EXISTING CONDITIONS

Existing Design Hour Traffic: Manual turning movement counts were conducted at both the Chestnut Street/Lancaster Street and Elm Street/Lancaster Street intersections during the morning "*peak*" commuter hours of 7:00 to 9:00AM. Traffic data was collected at the former location on Tuesday, September 13, 2016 and traffic data at the Elm Street/Lancaster Street intersection was collected on Wednesday, February 15, 2017. All traffic entering and exiting both intersections was recorded in 15-minute intervals between the identified study times (A copy of the traffic data is attached as an appendix to the report). From a summary of the data, a peak hour of traffic (7:30 to 8:30AM) was determined for both intersections.

Traffic data collected during time periods other than the summer months of July and August require adjustment to reflect "*peak*" travel conditions. MaineDOT provides factors for adjusting traffic data collected during other periods of time. MaineDOT utilizes highway classifications of I, II, or III for all State and Local roadways. Group I roadways are defined as urban roadways or those roads that typically see commuter traffic and experience little fluctuation from week to week throughout the year. Group II roadways or arterial roads are those that see a

combination of commuter and recreational traffic and, therefore, experience moderate fluctuations during the year. Group III roads or recreational roadways are typically used for recreational purposes and experience significant seasonal fluctuations. MaineDOT has designated the intersecting roadways at both intersections Group I roadways, which require an adjustment of 1.03 for the September 2016 data and a factor of 1.15 for adjusting the February 2017 data. The Chestnut Street/Lancaster Street "*base*" intersection volumes were increased by an additional 1% to approximate 2017 travel conditions at the intersection. Figure 1 illustratively presents the estimated 2017 Design Hour Traffic forecasts for both study intersections.

Roadway Safety Trends: The Maine Department of Transportation's (MaineDOT) Accident Records Section provided three-year (2013 through 2015) safety records for the sections of the streets highlighted on the attached map, a combined distance of 0.86 miles. MaineDOT's report is presented as follows:

2013 - 2015 Accident Summary
Portions of Kennebec Street, Lancaster Street, Oxford Street,
Preble Street, Elm Street and Chestnut Street

Location	Number of Accidents	Critical Rate Factor
1. Elm Street @ Kennebec Street	7	2.55
2. Elm Street @ Lancaster Street	9	3.79
3. Preble Street @ Kennebec Street	12	4.22
4. Lancaster Street @ Preble Street	3	1.28
5. Oxford Street @ Preble Street	4	1.65
6. Elm Street @ Somerset Street	2	0.52
7. Chestnut Street @ Oxford Street	1	1.44
8. Chestnut Street @ Lancaster Street	3	4.69
9. Chestnut Street @ Kennebec Street	1	1.03
10. Somerset Street @ Chestnut Street	4	1.25
11. Kennebec Street btw. Elm Street and Chestnut Street	1	0.98
12. Lancaster Street btw. Chestnut Street and Cedar Street	1	5.38
13. Lancaster Street btw. Cedar Street and Elm Street	3	6.87
14. Lancaster Street btw. Elm Street and Preble Street	2	33.90
15. Oxford Street btw. Preble Street and Elm Street	3	10.01
16. Oxford Street btw. Cedar Street and Chestnut Street	2	4.26
17. Preble Street btw. Kennebec Street and Lancaster Street	1	0.53
18. Preble Street btw. Lancaster Street and Oxford Street	3	1.56
19. Elm Street btw. Somerset Street and Kennebec Street	1	0.76
20. Chestnut Street btw. Lancaster Street and Oxford Street	1	1.41
21. Chestnut Street btw. Kennebec Street and Lancaster Street	1	2.34
22. Chestnut Street btw. Somerset Street and Kennebec Street	1	2.71

The MaineDOT considers any roadway segment or intersection a high crash location if both of the following criteria are met:

- ***8 or more accidents***
- ***A Critical Rate Factor greater than 1.00***

As the data presented in the table shows (locations highlighted in red), two locations meet MaineDOT's criteria for a high crash location. A total of 9 crashes and a Critical Rate Factor (CRF) of 3.79 were reported for the Elm Street/Lancaster Street intersection. A total of 12 vehicle crashes with a Critical Rate Factor of 4.22 were reported for the second location at Preble Street and Kennebec Street. A more in-depth review (preparation of detailed vehicle collision diagrams) was prepared for both locations to determine if a clear pattern of accident is occurring (Copies of the Collision Diagrams are attached as an appendix to the report). The following two paragraphs summarize the detailed safety analysis conducted for both locations:

Location #2 – Elm Street at Lancaster Street: Six of the total crashes reported were "*angle*" collisions involving traffic (auto and/or bicycle) on either approach of Lancaster Street being struck by a thru vehicle traveling northerly on Elm Street. The remaining three crashes occurred more randomly in the intersection.

The City recently completed a very significant roadway/sidewalk reconstruction project along Elm Street, a one-way collector street that connects Portland's Downtown to Interstate 295 and western sections of the City. The improvement project narrowed pavement widths on Elm Street and widened sidewalks in an effort to reduce travel speeds in the corridor and improve overall pedestrian safety. The safety improvement project should help reduce the frequency of traffic accidents at the noted intersection.

Location #3 – Preble Street at Kennebec Street: The MaineDOT data for this location incorrectly included a vehicle crash occurring at an adjacent intersection; therefore, the total number of reported crashes is reduced to 11 crashes at the intersection. Eight of the 11 vehicle crashes involved motorists entering the intersection from both Kennebec Street approaches colliding with thru vehicles traveling southerly on Preble Street. Existing buildings in both northerly quadrants of the intersection limit vehicle sightlines of approaching vehicles. The City is currently developing preliminary design plans for extending Somerset Street to Hanover Street; the proposed project design also includes discontinuance of the west leg of Kennebec Street between Hanover and Preble Streets. This design feature should greatly reduce the frequency of vehicle crashes occurring within the Kennebec Street/Preble Street intersection.

SITE TRAFFIC

Site Trip Generation: The Institute of Transportation Engineers (ITE) 7th edition of the **TRIP GENERATION** manual provides an equation under Land-Use Code #530 - High School for estimating the volume of peak hour trips generated by a public high school during the morning commuter hour. The analysis was completed based upon a projected school enrollment of 400 students.

$$Ln(T) = 0.77Ln(X) + 0.69 \; [X = 400 \text{ students}]$$

Accordingly, the 400-student Baxter Academy public charter high school can be expected to generate a total of **200** vehicle trips during the weekday AM peak hour.

Site Trip Assignment: Baxter Academy for Technology and Science recently conducted a survey of their existing student population to determine transportation modal choice of students traveling to/from the 54 York Street site. The results of the survey (copy of survey results attached) are presented as follows:

- 38% Charted School Bus Service
- 25% Commute with an Adult (1)
- 18% Public Transportation (METRO, Zoom Bus, Casco Bay Transit, Other)
- 9% Drive personal vehicle
- 6% Carpool with another student
- 3% Walk
- 1% Bike

Total = 100%

(1) NOTE: Multiple students are being driven by one adult and/or travel to the work site of the adult and walk to the school.

A trip assignment model, prepared for all site trips impacting the street system immediately adjacent to the proposed project site, was developed based upon the following assumptions and considerations:

400 students and 60 staff		
40% of students (152) ride 3 chartered buses	=	*3 trips*
25% of students (100) commute with an adult:		
○ *40 students travel as a single occupant in vehicle with adult*	=	*80 trips*
○ *20 students travel with a second student and adult*	=	*20 trips*
○ *15 students travel with two other students and adult*	=	*10 trips*
○ *25 students travel with adult to work site and walk to school*	=	*0 trips*
18% of students (72) use public transportation	=	*0 trips*
9% of students (36) drive personal auto and park off-site	=	*0 trips* (1)
6% of students (24) car pool with fellow student and park off-site	=	*0 trips* (1)
3% of students (12) walk	=	*0 trips*
1% of students (4) bike	=	*0 trips*
85% of staff (51) will drive to site and park in Lancaster Street parking lot	=	*51 trips* (1)
15% of staff (9) will use other modes of transportation	=	*0 trips*
Total Trips Impacting Street System	=	*164 trips*

(1) NOTE: A total of 50 on-site parking spaces are provided in an adjacent off-street parking lot for employees only. No student parking is provided.

Approximately, 109 of the 164 peak hour trips are expected to arrive at the 185 Lancaster Street site and the remaining 55 trips are parents leaving after dropping-off student(s).

Figure 2 illustratively presents the assignment of the site trips to the street system immediately adjacent to the proposed 185 Lancaster Street site.

2017 POST-DEVELOPMENT TRAFFIC FORECAST

Other Development Traffic: Traffic generated by projects that have been approved by the local Planning Board and/or the Maine Department of Transportation, yet are not open, must be included in the estimate of post-development traffic. Peak hour trips generated by the following projects were appropriately assigned to the study intersections:

- *191 Marginal Way Re-Development Project*
- *Mid-Town Development*
- *Bayside Bowl*
- *89 Anderson Street*
- *Schlotterback & Foss Building*
- *#443 Congress Street*
- *Westerlea View Lofts*

Figure 3 is a "*line-diagram*" plan that depicts the Other Development trip assignment to both study intersections.

2017 Post-Development Traffic – AM Peak Hour: 2017 Post-Development traffic forecasts were prepared for both study intersections combining peak hour trips generated by the Baxter Academy project (Refer to Figure 2) with Other Development trips highlighted on Figure 3 with 2017 Design Hour Traffic as illustrated on Figure 1. Figure 4 graphically presents the 2017 Post-Development Traffic Conditions for both study intersections during the AM peak hour.

LANCASTER STREET/CHESTNUT STREET – MULTI-WAY "STOP" CONTROL EVALUATION

The Chestnut Street/Lancaster Street intersection presently operates as a two-way STOP controlled intersection with both Lancaster Street approaches under STOP control. A detailed evaluation was completed in 2016 to determine if projected traffic conditions at that time warranted a modification of the traffic control at the

intersection. The earlier study, which was based upon existing 2016 travel conditions measured at the intersection, concluded that traffic conditions at the intersection failed to satisfy the minimum warrants for "*multi-way*" STOP control.

The proposed Baxter Academy for Technology and Science project is forecast to moderately increase peak hour traffic volumes traveling through the subject intersection, especially during the "*morning*" peak hour. The traffic projections estimate an increased volume of 73 trips will travel through the subject intersection in the AM peak hour. It is anticipated that lower residual volumes of traffic generated by the school project will travel through the intersection throughout a typical weekday. A decision to modify traffic control at the intersection should be based upon actual travel conditions measured at the intersection versus estimated travel patterns of multiple development projects impacting the intersection. It is the recommendation of this report that further study of the intersection should be deferred until the Baxter Academy site is fully functional.

STUDENT "DROP-OFF" PARKING SPACE DEMAND

Approximately twenty-five percent (25%) of the existing student enrollment commute with an adult to and from the existing Baxter Academy site at 54 York Street. Short-term on-street parking spaces located on the south side of Maple Street is the primary "drop-off/pick-up" area for students traveling via this mode. Other curbside parking areas used include the west side of York Street opposite the school entrance and the 1-hour parking spaces located on the north side of Maple Street (York Street to Commercial Street). Existing student "drop-off/pick-up" practices were observed on Monday, February 27, 2017 during both the morning arrival and afternoon departure time periods. Vehicle trips were recorded in 5-minute increments between 7:40 and 8:25AM and, again, between 2:30 and 3:00PM. The following tables summarize that effort:

Parent "Drop-Off" Trips

Survey Start Time	Total Vehicle Trips
7:40 to 7:45 AM	5
7:45 to 7:50 AM	5
7:50 to 7:55 AM	4
7:55 to 8:00 AM	6
8:00 to 8:05 AM	8
8:05 to 8:10 AM	7
8:10 to 8:15 AM	9
8:15 to 8:20 AM	6
8:20 to 8:25 AM	9

Parent "Pick-Ups" Parking Space Trends

Survey Start Time	Number of Vehicles *"Waiting"*
2:30 to 2:35 PM	7
2:35 to 2:40 PM	8
2:40 to 2:45 PM	8
2:45 to 2:50 PM	10
2:50 to 2:55 PM	13
2:55 to 3:00 PM	15

A total of fifty-nine (59) "*drop-off*" trips were recorded during the morning arrival period; with a peak value of 9 trips occurring during two separate time periods. A separate tally of vehicle duration was not maintained, although, the length of stay very seldom exceeded 30 to 60 seconds in length. The afternoon survey process focused on the "*length of stay*" for each motorist versus "*total trips*" as was the case used in the morning survey. Motorists in the afternoon were observed arriving early on-site, well in advance of the school dismissal time,

parking in the available on-street parking spaces located near the 54 York Street site. As shown in the chart, the "*peak*" number of vehicles parked curb-side was 15, which occurred just prior to the school dismissal time of 3:00PM. The survey stopped at 3:00 PM concurrent with the end of the school day. It is reasonable to assume that the actual "*peak*" number of vehicles queued waiting for a student may have exceeded 15 vehicles, just after dismissal time but the duration was very short.

The student capacity of the proposed 185 Lancaster Street site is 400 students, representing an increase of 57 students when compared to the existing York Street site. Accordingly, it is reasonable to assume that the drop-off parking needs of the new school site will increase proportionally resulting in a student "*drop-off*" parking demand of 18 vehicle spaces. A parking space demand of 11 spaces is determined for the morning peak hour.

SUMMARY

1. The proposed Baxter Academy for Technology and Science public charter high school can be expected to generate approximately 200 vehicle trips during the "*busiest*" single hourly time period of the day; the AM peak hour. Roughly 80% percent of the trips (164 trips) impact the street system immediately adjacent to the proposed site at 185 Lancaster Street. The remaining site trips (36-trips) are generated by students traveling to school in a private vehicle parking off-site in public parking lots or curb-side on nearby streets.

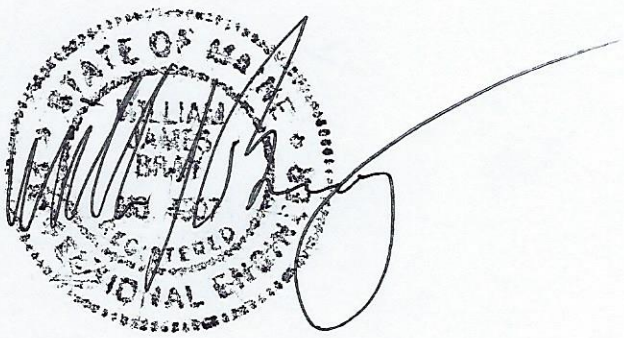
2. MaineDOT's Traffic Safety Bureau's latest three-year safety report (2013 through 2015) for the segments of streets and intersections highlighted on the attached City map identified two locations as High Crash Locations (HCL). Detailed vehicle collision diagrams were prepared for both locations to better determine if a clear pattern of accident is occurring at either location.

   Location #2: Elm Street at Lancaster Street, had a reported total of 9 vehicle crashes and a Critical Rate Factor of 3.79. The predominate crash pattern were "*angle*" crashes, which accounted for six of the 9 reported vehicle crashes. A detailed review of each traffic crash report suggests travel speed and roadway conditions were likely contributing factors causing the crash. The City's most recent street re-construction project on Elm Street, which narrowed travel lanes on Elm Street, should help immensely in reducing vehicle speeds on the Elm Street approach to the intersection.

   Location #3: Preble Street at Kennebec Street, had a reported total of 12 vehicle crashes and a Critical Rate Factor of 4.22. A review of the vehicle crash reports provided by MaineDOT shows that one vehicle accident report was incorrectly coded occurring at an adjacent intersection. Eight of the 11 vehicle accidents were "*angle*" crashes involving motorists on both Kennebec Street approaches striking thru vehicles traveling southerly on Preble Street. The west approach of Kennebec Street is proposed to be closed with the extension of Somerset Street to Hanover Street. Six of the 8 "angle" crashes involved motorists from this approach colliding with thru Preble Street traffic. Completion of the proposed, federally funded project should greatly reduce the frequency of traffic crashes reported at the intersection.

3. The proposed Baxter Academy school project is expected to increase, somewhat moderately, the volume of traffic traveling through the Chestnut Street/Lancaster Street intersection during two time periods of the day; the morning and afternoon peak hours. Measured traffic impacts during the remaining hours will be very minor. A detailed traffic safety evaluation report was completed in 2016 of the intersection to determine if the current traffic control measures were both appropriate and safe. The report specifically evaluated whether prevailing traffic volumes warranted multi-way STOP control at the intersection. The traffic safety report concluded that existing traffic conditions found at the intersection do not meet the minimum requirements for "*multi-way*" STOP control. It would be the recommendation of this report that the City may want to re-assess traffic conditions at the intersection in the near future to determine if prevailing conditions have changed.

4. Baxter Academy has determined that approximately 25% of their students travel to/from school with another adult and are dropped-off and/or picked-up curb side in the immediate area of the school site. The number of parking spaces required, albeit for short periods of time, to accommodate the drop-off/pick-up needs of the new school site is critical. To most accurately assess the parking space needs, existing field measurements were conducted at the existing 54 York Street school site. All student drop-off and pick-up occurrences were recorded in 5-minute increments between 7:40 and 8:25 AM and, again, between 2:30 and 3:00 PM. The peak number of occupied parking spaces in the morning peak hour was 11 and the peak parking space utilization value in the afternoon was 15. The student capacity of the proposed 185 Lancaster Street site is 400 students, representing an increase of 57 students when compared to the existing York Street site. Accordingly, it is reasonable to assume that the drop-off parking needs of the new school site will increase proportionally resulting in a student "*drop-off*" parking demand of 18 vehicle spaces for the afternoon dismissal time and a much lower parking space requirement of 11 spaces in the morning arrival period.



Portland: Lancaster & Chestnut
Tuesday September 13, 2016
Sunny
Count By: Dawn-Marie Fahey

File Name : Portland Lancaster & Chestnut 091316
Site Code : 00091316
Start Date : 9/13/2016
Page No : 5

	Chestnut From North				Lancaster From East				Chestnut From South				Lancaster From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**15**	36	7	58	2	10	2	14	**3**	**9**	1	**13**	5	**8**	1	14	99
07:45 AM	11	**58**	**10**	**79**	2	**12**	**3**	**17**	0	5	**2**	7	**9**	8	3	**20**	**123**
08:00 AM	9	37	5	51	**7**	7	3	17	3	9	1	13	4	7	**5**	16	97
08:15 AM	10	33	4	47	4	5	3	12	1	3	2	6	5	4	1	10	75
Total Volume	45	164	26	235	15	34	11	60	7	26	6	39	23	27	10	60	394
% App. Total	19.1	69.8	11.1		25	56.7	18.3		17.9	66.7	15.4		38.3	45	16.7		
PHF	.750	.707	.650	.744	.536	.708	.917	.882	.583	.722	.750	.750	.639	.844	.500	.750	.801

Portland: Elm & Lancaster
Wednesday February 15, 2017
Clear
Count By: Dawn-Marie Fahey

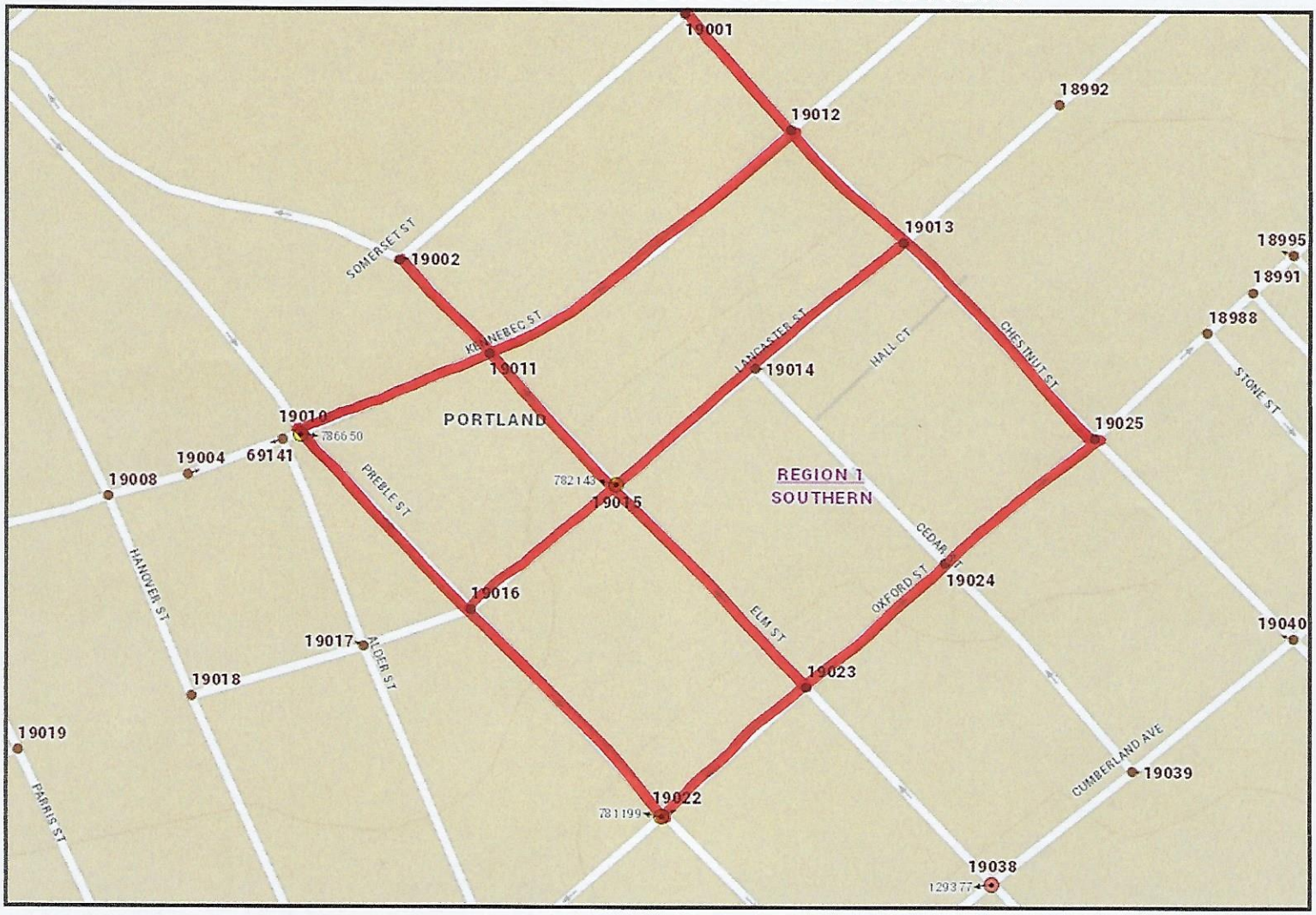
File Name : Portland Elm & Lancaster AM 021517
Site Code : 00021517
Start Date : 2/15/2017
Page No : 5

	Elm St From North				Lancaster From East				Elm St From South				Lancaster From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	14	**18**	0	32	3	**24**	2	29	0	11	3	14	75
07:45 AM	0	0	0	0	**18**	16	0	**34**	6	**54**	2	**62**	0	**22**	5	27	**123**
08:00 AM	0	0	0	0	7	17	0	24	**8**	37	**3**	48	0	21	7	**28**	100
08:15 AM	0	0	0	0	13	12	0	25	6	36	2	44	0	11	**11**	22	91
Total Volume	0	0	0	0	52	63	0	115	23	151	9	183	0	65	26	91	389
% App. Total	0	0	0		45.2	54.8	0		12.6	82.5	4.9		0	71.4	28.6		
PHF	.000	.000	.000	.000	.722	.875	.000	.846	.719	.699	.750	.738	.000	.739	.591	.813	.791

60 72 26 174 10 75 30

Seasonal traffic adjustment 1.01 ÷ 0.88 = 1.15

DEFAULT TITLE FROM MAP DOCUMENT



0.06 Miles

1 inch = 0.04 miles

Date: 2/8/2017
Time: 9:24:25 AM

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☑ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☐ 1320 Summary

REPORT DESCRIPTION

Preble St Chestnut St area in Portland

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: **0560414**	Start Node: **19012**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19010**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560426**	Start Node: **19013**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19016**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560560**	Start Node: **19022**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19025**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560597**	Start Node: **19010**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **19022**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560252**	Start Node: **19023**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19015**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560252**	Start Node: **19015**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19011**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560252**	Start Node: **19011**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19002**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560135**	Start Node: **19025**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **19001**	End Offset: **0**	☐ **Exclude Last Node**

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
19011	0560414 - 0.21	Int of ELM ST KENNEBEC ST	2	7	0	0	0	0	7	0.0	1.910	1.22	0.48	2.55
												Statewide Crash Rate:	0.15	
19014	0560426 - 0.15	Int of CEDAR ST LANCASTER ST	2	0	0	0	0	0	0	0.0	0.341	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	
19015	0560426 - 0.20	Int of ELM ST LANCASTER ST	2	9	0	1	2	1	5	44.4	1.572	1.91	0.50	3.79
												Statewide Crash Rate:	0.15	
19023	0560560 - 0.12	Int of ELM ST OXFORD ST	2	0	0	0	0	0	0	0.0	1.359	0.00	0.52	0.00
												Statewide Crash Rate:	0.15	
19024	0560560 - 0.17	0509444 POR,OXFORD,CEDAR ST.	2	0	0	0	0	0	0	0.0	0.347	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	
19010	0560597 - 0.13	Int of KENNEBEC ST PREBLE ST	2	12	0	1	0	3	8	33.3	2.001	2.00	0.47	4.22
												Statewide Crash Rate:	0.15	
19016	0560597 - 0.19	Int of LANCASTER ST PREBLE ST	2	3	0	0	0	0	3	0.0	1.544	0.65	0.51	1.28
												Statewide Crash Rate:	0.15	
19022	0560597 - 0.26	Int of OXFORD ST PREBLE ST	2	4	0	0	0	1	3	25.0	1.618	0.82	0.50	1.65
												Statewide Crash Rate:	0.15	
19002	0560252 - 0.32	Int of ELM ST SOMERSET ST	2	2	0	0	0	1	1	50.0	3.074	0.22	0.42	0.00
												Statewide Crash Rate:	0.15	
19025	0560135 - 0.16	0509445 POR,CHESTNUT,OXFORD ST.	2	1	0	1	0	0	0	100.0	0.383	0.87	0.60	1.44
												Statewide Crash Rate:	0.14	
19013	0560135 - 0.24	Int of CHESTNUT ST LANCASTER ST	2	3	0	0	0	1	2	33.3	0.353	2.84	0.60	4.69
												Statewide Crash Rate:	0.14	
19012	0560135 - 0.28	0509432 POR,CHESTNUT,KENNEBEC ST.	2	1	0	0	0	0	1	0.0	0.549	0.61	0.59	1.03
												Statewide Crash Rate:	0.14	
19001	0560135 - 0.31	0509421 POR,SOMERSET,CHESTNUT ST.	2	4	0	0	0	1	3	25.0	2.500	0.53	0.43	1.25
												Statewide Crash Rate:	0.14	
Study Years: 3.00		**NODE TOTALS:**		46	0	3	2	8	33	28.3	17.551	0.87	0.27	3.18

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
19011	19012	194707	0 - 0.10	0560414 - 0.11	0.10	2	1	0	0	0	0	0	0.0	0.00021	1574.56	1598.97	0.00
Int of ELM ST KENNEBEC ST				RD INV 05 60414											Statewide Crash Rate: 383.78		
19010	19011	194704	0 - 0.05	0560414 - 0.21	0.05	2	0	0	0	0	0	0	0.0	0.00016	0.00	1644.70	0.00
Int of KENNEBEC ST PREBLE ST				RD INV 05 60414											Statewide Crash Rate: 383.78		
19013	19014	194710	0 - 0.04	0560426 - 0.11	0.04	2	1	0	0	0	0	1	0.0	0.00005	6486.09	1204.97	5.38
Int of CHESTNUT ST LANCASTER ST				RD INV 05 60426											Statewide Crash Rate: 383.78		
19014	19015	194712	0 - 0.05	0560426 - 0.15	0.05	2	3	0	0	0	0	3	0.0	0.00009	11025.05	1605.53	6.87
Int of CEDAR ST LANCASTER ST				RD INV 05 60426											Statewide Crash Rate: 383.78		
19015	19016	194714	0 - 0.04	0560426 - 0.20	0.04	2	2	0	0	0	0	2	0.0	0.00004	18946.93	558.86	33.90
Int of ELM ST LANCASTER ST				RD INV 05 60426											Statewide Crash Rate: 383.78		
19022	19023	3122298	0 - 0.05	0560560 - 0.07	0.05	2	3	0	0	1	0	1	50.0	0.00016	6101.84	609.36	10.01
Int of OXFORD ST PREBLE ST				RD INV 05 60560											Statewide Crash Rate: 159.43		
19023	19024	194730	0 - 0.05	0560560 - 0.12	0.05	2	0	0	0	0	0	0	0.0	0.00011	0.00	1642.73	0.00
Int of ELM ST OXFORD ST				RD INV 05 60560											Statewide Crash Rate: 383.78		
19024	19025	194732	0 - 0.05	0560560 - 0.17	0.05	2	2	0	0	0	0	2	0.0	0.00010	6918.50	1622.25	4.26
0509444 POR,OXFORD,CEDAR ST.				RD INV 05 60560											Statewide Crash Rate: 383.78		
19010	19016	3106835	0 - 0.06	0560597 - 0.13	0.06	2	1	0	0	0	0	1	0.0	0.00088	379.95	715.35	0.00
Int of KENNEBEC ST PREBLE ST				RD INV 05 60597											Statewide Crash Rate: 198.28		
19016	19022	3106836	0 - 0.07	0560597 - 0.19	0.07	2	3	0	0	0	1	2	33.3	0.00090	1107.50	710.64	1.56
Int of LANCASTER ST PREBLE ST				RD INV 05 60597											Statewide Crash Rate: 198.28		
19015	19023	3123553	0 - 0.07	0560252 - 0.17	0.07	2	0	0	0	0	0	0	0.0	0.00101	0.00	692.86	0.00
Int of ELM ST LANCASTER ST				RD INV 05 60252											Statewide Crash Rate: 198.28		
19011	19015	3119283	0 - 0.05	0560252 - 0.24	0.05	2	0	0	0	0	0	0	0.0	0.00087	0.00	715.87	0.00
Int of ELM ST KENNEBEC ST				RD INV 05 60252											Statewide Crash Rate: 198.28		
19002	19011	3129301	0 - 0.03	0560252 - 0.29	0.03	2	1	0	0	0	0	1	0.0	0.00056	593.28	785.16	0.00
Int of ELM ST SOMERSET ST				RD INV 05 60252											Statewide Crash Rate: 198.28		
19013	19025	194711	0 - 0.08	0560135 - 0.16	0.08	2	1	0	0	0	0	1	0.0	0.00014	2324.95	1654.59	1.41
Int of CHESTNUT ST LANCASTER ST				RD INV 05 60135											Statewide Crash Rate: 383.78		
19012	19013	194709	0 - 0.04	0560135 - 0.24	0.04	2	1	0	0	0	0	1	0.0	0.00009	3742.80	1599.73	2.34
0509432 POR,CHESTNUT,KENNEBEC ST.				RD INV 05 60135											Statewide Crash Rate: 383.78		
19001	19012	194692	0 - 0.03	0560135 - 0.28	0.03	2	1	0	0	0	0	1	0.0	0.00008	4204.61	1553.75	2.71
0509421 POR,SOMERSET,CHESTNUT ST.				RD INV 05 60135											Statewide Crash Rate: 383.78		
Study Years: 3.00				**Section Totals:**	0.86		20	0	0	1	1	16	10.0	0.00545	1222.83	510.47	2.40
				Grand Totals:	0.86		66	0	3	3	9	49	22.7	0.00545	4035.35	669.73	6.03

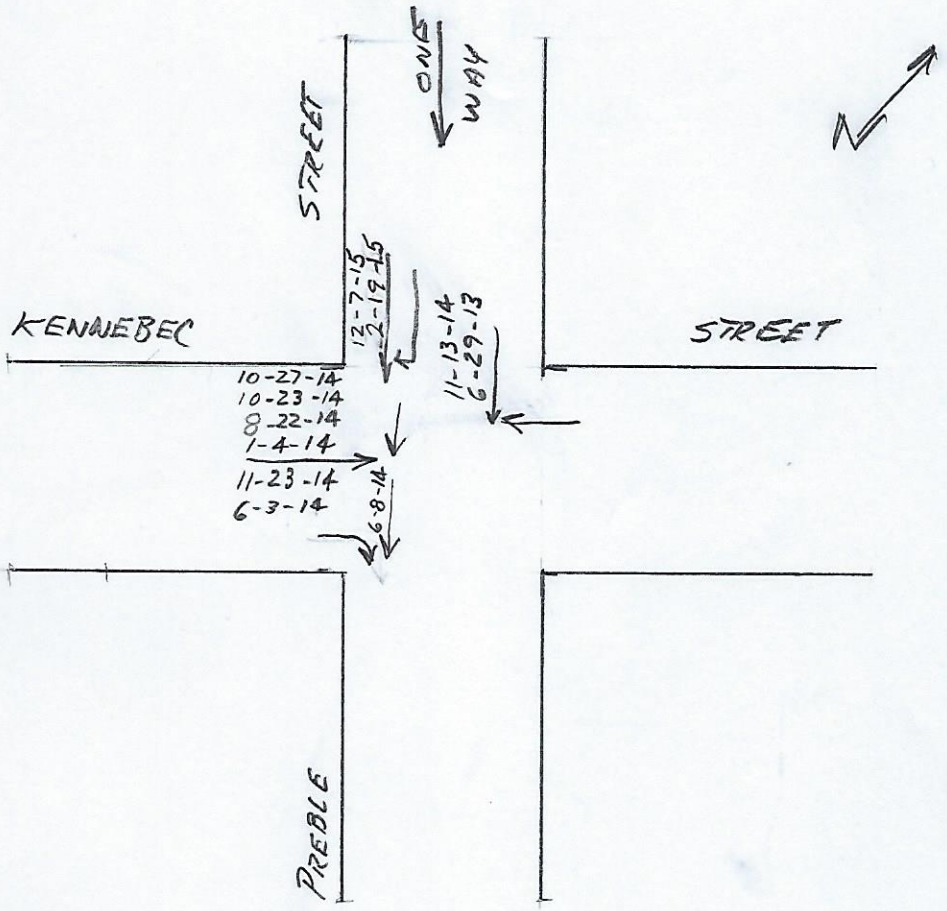
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION PREBLE ST. @ KENNEBEC STS.

TOWN PORTLAND NODE NO(S) 19010

YEARS REVIEWED 2013 - 2015 DATE PREPARED 2-17-2017



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT

1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE

1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN

1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS
19. VISION OBSCURED-SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR

41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE [B], ANIMAL [A], SLED [S]

WEATHER

C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES

K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

S:/SHEETS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

LOCATION PREBLE ST. @ KENNEBEC ST.

TOWN PORTLAND NODE NO(S) 19010

YEARS REVIEWED 2013 - 2015 DATE PREPARED 2-17-2017

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-1851	6-29-13	11:24					2	1	2	
15-857	2-19-15	7:30					2	SNOW	8	
14-069	1-4-14	10:08					2	SNOW	2	
14-2456	8-22-14	15:00					2	1	2	
14-3134	10-23-14	12:53					2	2	2	
14-3458	11-23-14	14:09					2	1	2, 14	
14-1631	6-3-14	19:32					2	1	2	
14-1764	6-18-14	8:45					2	1	2	
14-3178	10-27-14	10:35				1	2	1	2	
14-3346	11-13-14	12:36		1		3	2	1	2	
15-4085	12-7-15	13:30					2	1	8	

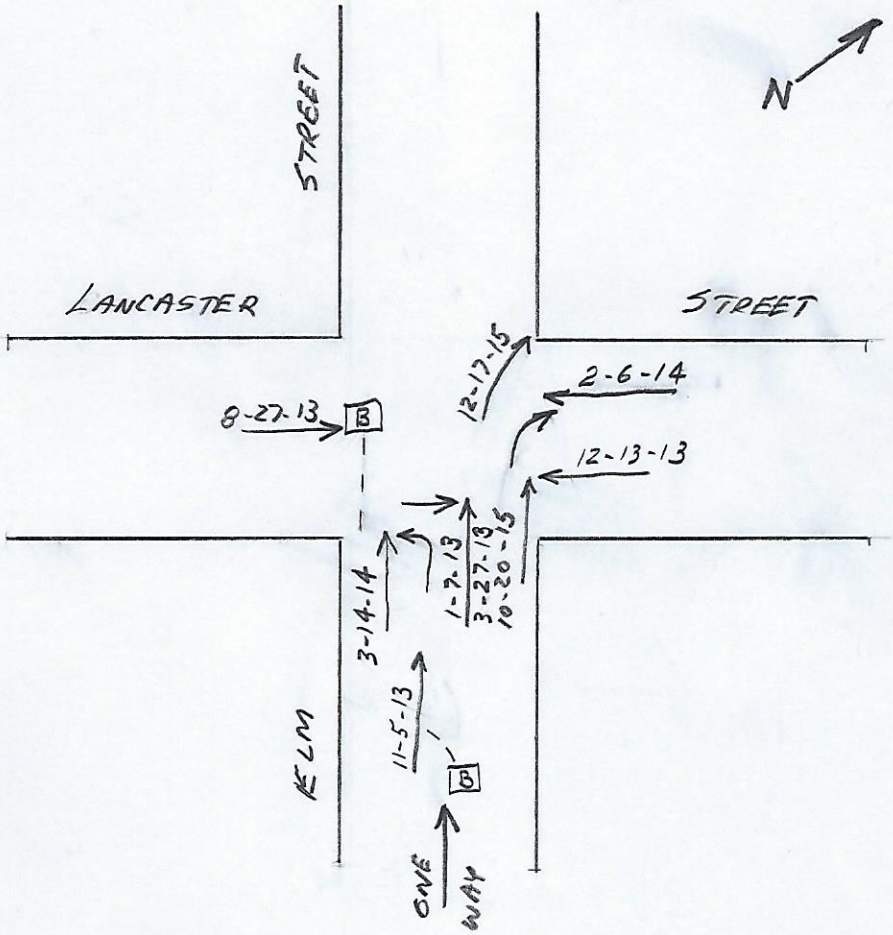
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION ELM ST. @ LANCASTER ST.

TOWN PORTLAND NODE NO(S) 19015

YEARS REVIEWED 2013 - 2015 DATE PREPARED 2-17-2017



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT

1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE

1. DRY 2. WET 3. SNOW/SLUSH–SANDED
4. ICE/PACKED SNOW–SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH–NOT SANDED 9. ICE–PKD. SNOW–NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS – HUMAN

1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER–NO PASSING 7. IMPROPER PASS–OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION–DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED–WINDSHIELD GLASS
19. VISION OBSCURED–SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

– VEHICULAR

41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, PEDESTRIAN (P), FATAL ACCIDENT
BACKING, REAR END
FIXED OBJECT, SIDE SWIPE, VEHICLE (MOVING)
HEAD ON, TURNING MOVE, BICYCLE (B)
OVERTURN, CHANGE LANE, ANIMAL (A)
PARKED VEHICLE, OUT OF CONTROL, SLED (S)

WEATHER

C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES

K = FATAL B = NON–INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

S:/SHEETS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

SHEET 2 OF 2

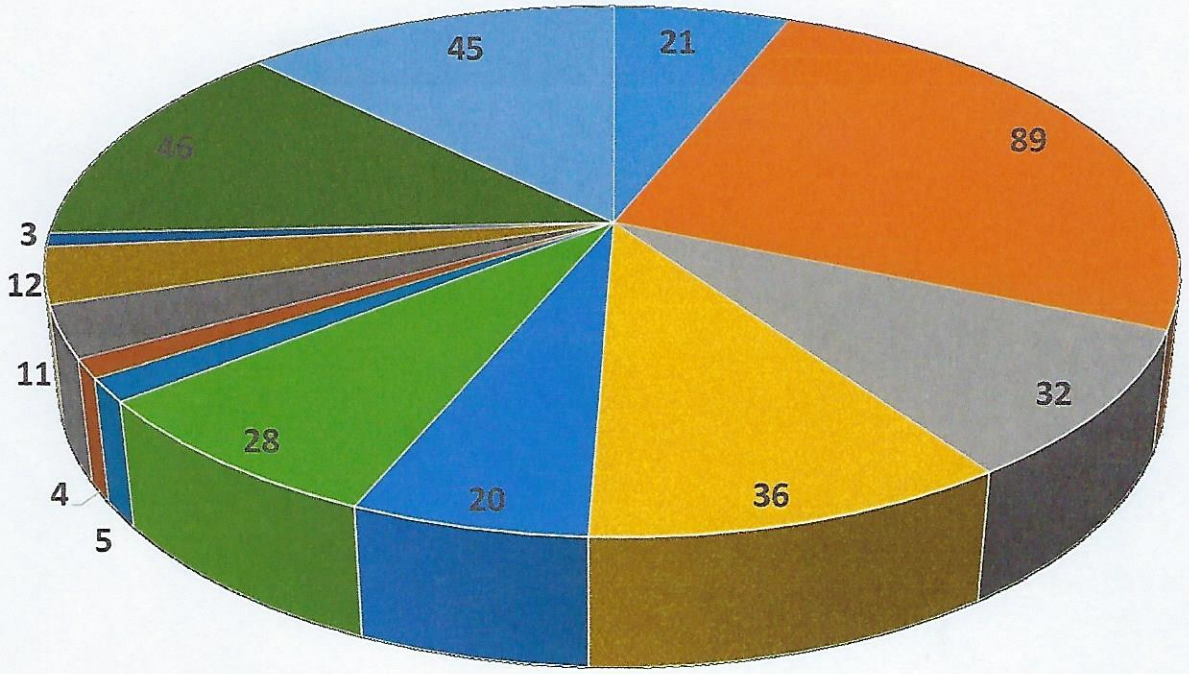
LOCATION ELM ST. @ LANCASTER ST.

TOWN PORTLAND NODE NO(S) 19015

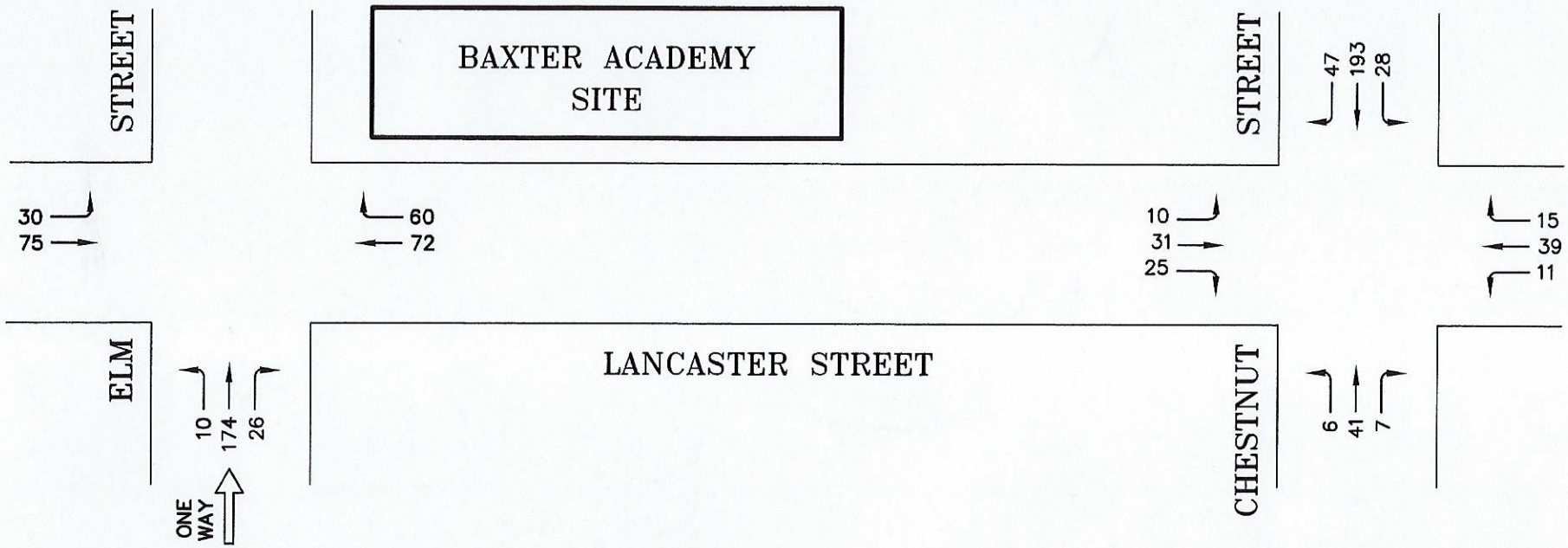
YEARS REVIEWED 2013 - 2015 DATE PREPARED 2-17-2017

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
14-0437	2-6-14	9:35					2	SNOW	3	
14-0942	3-14-14	18:10					2	1	8	
15-4228	12-17-15	19:40					5	2	51	
13-0210	1-7-13	9:40					2	2	2	
13-1038	3-27-13	16:00			1		1	2	51	
13-2436	8-27-13	19:28			1		2	1	2	
13-3146	11-5-13	18:11			1		4	1	8	
13-3604	12-13-13	11:15		1			2	1	5	Ran Stop Sign
15-3532	10-20-15	19:28					4	1	5	Ran Stop Sign

How our students get to school 2016-2017



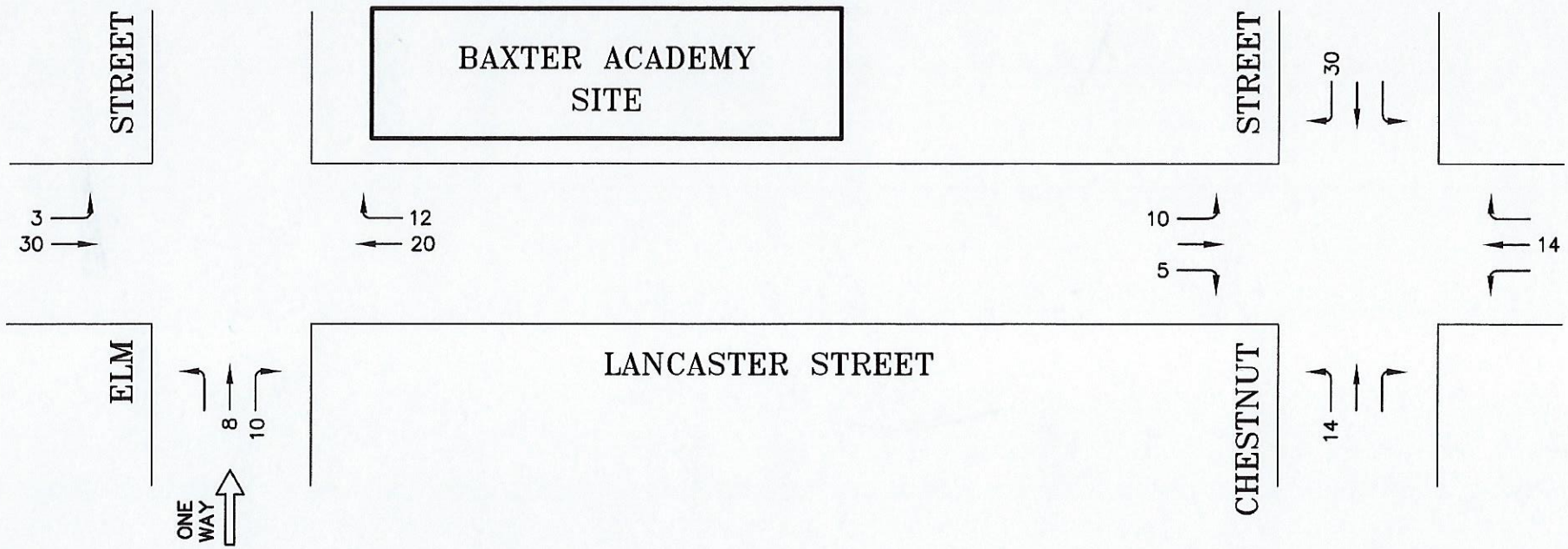
- Carpool -21
- Commute with Adult - 89
- Drive own car- 32
- Luce Transportation - Lewiston -36
- METRO - Breeze - 20
- METRO - Local - 28
- Ride Bike - 5
- Lakes Region Bus - 4
- Walk - 11
- Zoom Bus - 12
- Boat - 3
- Luce Transportation - Topsham - 46
- Luce Transportation - Windham - 45



2017 DESIGN HOUR TRAFFIC
AM PEAK HOUR
FIGURE 1

E:\LAND PROJECTS\34000\344399 TRAFFIC SOLUTIONS\BAXTER ACADEMY\PLANSET\BAXTER ACADEMY 3-2-17.DWG

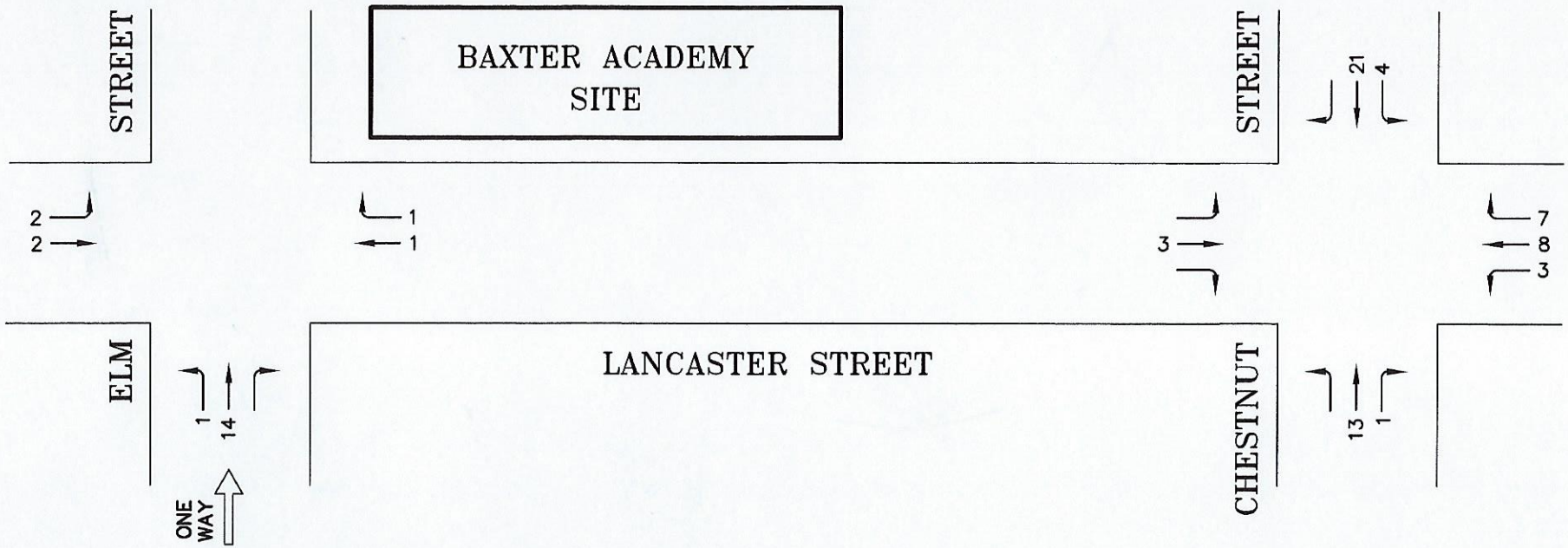
Project Name and Location: BAXTER ACADEMY, 185 LANCASTER STREET, PORTLAND, MAINE	TRAFFIC SOLUTIONS, 235 BANCROFT STREET, PORTLAND, MAINE 04102-1730
DATE: FEBRUARY, 2017	FIGURE: 1



SITE TRAFFIC ASSIGNMENT
AM PEAK HOUR
FIGURE 2

E:\LAND PROJECTS\34000\344399 TRAFFIC SOLUTIONS\BAXTER ACADEMY\PLANSET\BAXTER ACADEMY 3-2-17.DWG

Project Name and Location: BAXTER ACADEMY, 185 LANCASTER STREET, PORTLAND, MAINE	TRAFFIC SOLUTIONS, 235 BANCROFT STREET, PORTLAND, MAINE 04102-1730
DATE: FEBRUARY, 2017	FIGURE: 2



OTHER DEVELOPMENT TRAFFIC
AM PEAK HOUR
FIGURE 3

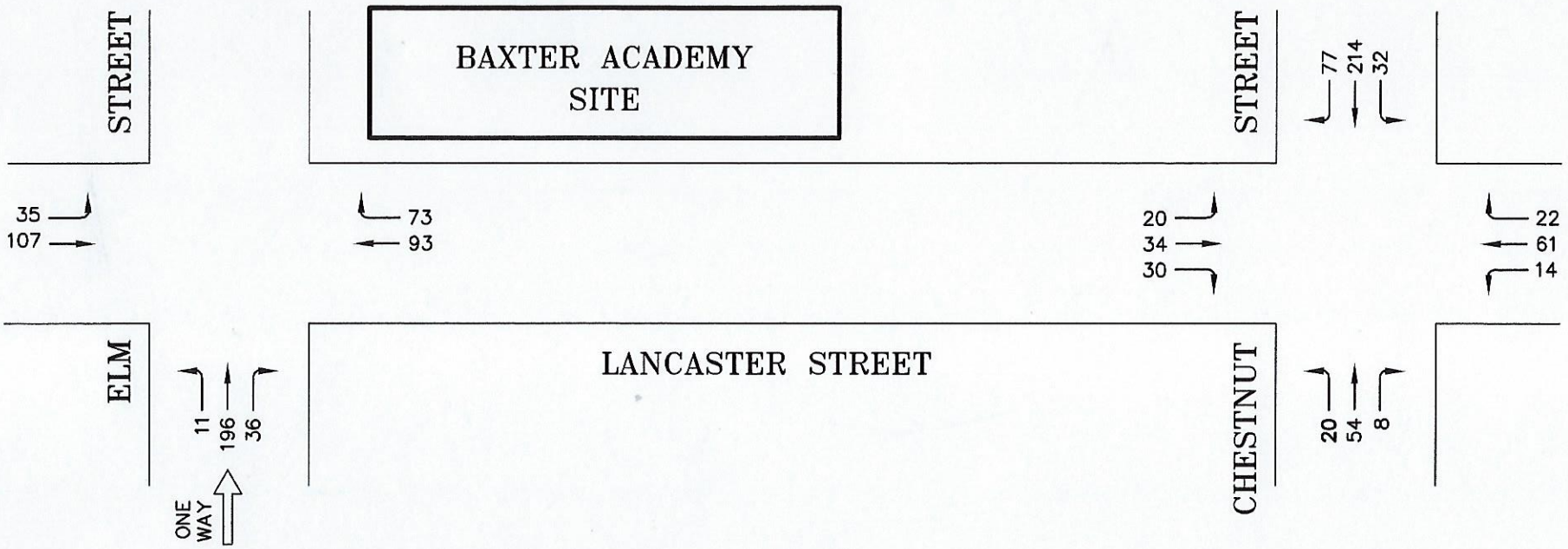
E:\LAND PROJECTS\34000\344399 TRAFFIC SOLUTIONS\BAXTER ACADEMY\PLANSET\BAXTER ACADEMY 3-2-17.DWG

Project Name and Location
BAXTER ACADEMY
185 LANCASTER STREET, PORTLAND, MAINE

DATE: FEBRUARY, 2017

FIGURE: 3

TRAFFIC SOLUTIONS
235 BANCROFT STREET, PORTLAND, MAINE 04102-1730



2017 POST-DEVELOPMENT TRAFFIC
AM PEAK HOUR
FIGURE 4

E:\LAND PROJECTS\34000\344399 TRAFFIC SOLUTIONS\BAXTER ACADEMY\PLANSET\BAXTER ACADEMY 3-2-17.DWG

Project Name and Location:
BAXTER ACADEMY
185 LANCASTER STREET, PORTLAND, MAINE

DATE: FEBRUARY, 2017

FIGURE: 4

TRAFFIC SOLUTIONS
235 BANCROFT STREET, PORTLAND, MAINE 04102-1730

Cushman Transportation Consulting, LLC
94 Beckett Street, 2nd Floor, Portland, ME 04101 · (207) 200-1910 · www.sarahcushman.com

Transportation Demand Management (TDM) Plan
Baxter Academy for Technology and Science
March 8, 2017

Baxter Academies of Maine provides this Transportation Demand Management (TDM) Plan for the relocated and consolidated Baxter Academy of Science and Technology at 185 Lancaster Street. This public charter high school has a strong cultural commitment to continuing and furthering its robust TDM work to encourage and enable the use of public transportation, carpooling, bicycling and walking at this new location. It does this in support of both its own and the City of Portland's transportation, liveability, and sustainability goals.

A. Site Transportation Overview & Context

Baxter Academy has operated under a Transportation Demand Management (TDM) Plan at its present York and Congress Street sites since the school's inception in September 2013 and has successfully implemented key TDM strategies to mitigate costs and meet the school's various transportation challenges. Baxter is free to Maine students and current pupils come from 57 municipalities based in the Southern, Central, and Midcoast regions - drawing from as far away as Owls Head, Norway, Windsor, and Berwick. In addition, the student body geographical make-up shifts each year with students entering and leaving the school. Families have been strongly motivated to utilize the school's busing and carpooling opportunities to make it possible for their children to attend the school and to free themselves from costs and travel time associated with transporting their students themselves.

Seventy-nine percent of students use public or charter transportation, walk or bike, or carpool with at least one other student. As stated in the City of Portland's draft 2017 Comprehensive Plan, "The 1993 *A Time of Change: Portland Transportation Plan* called for reducing the share of single occupancy vehicle trips City-wide to 50%, just under the share briefly achieved following the oil crisis of the late 1970s, while at the same time increasing the share of trips by other modes." Thus, Baxter Academy's student multi-modal rate far surpasses this standard.

The staff is also diverse, with individuals commuting from 19 municipalities, including as remote as the Waterville area. Only 30% of Baxter employees drive alone for every trip to the campus; all of these drivers indicate that they are conscious of seeking alternatives, but this is the only current viable option. For example, one staff member mentioned that she is hoping to use the proposed Metro public transportation route from Gorham. Other faculty often

travel with students and/or with a spouse/partner. Local staff consistently commute on foot and by bicycle. Public transit use is reimbursable by the school and when applicable, staff have availed themselves of this benefit.

Baxter Academy is leasing and remodeling 31,571 square feet of the existing two-story 92,561 square foot building at 185 Lancaster Street. Total enrollment at the new site is expected to be 400 students, with 60 employed staff. The adaptive reuse of the structure at this location, in the heart of the Bayside neighborhood, supports the multi-modal objectives of the B-7 zone in which it stands – where dense urban form, mixed-uses, and the utilization of transportation beyond the automobile are strongly encouraged. The school and its multi-modal initiatives are part of Bayside's continued renaissance and align with the goals of *A New Vision for Bayside* and the *Bayside Master Transportation Plan*.

The new school site is pedestrian and bicycle-friendly, located within the strong sidewalk network and lower-speed street grid of the Portland Peninsula - and just a block and a half from the Bayside Trail. The location is served by the Metro Route #8, and perhaps most importantly, it is just three short blocks from the hub of Greater Portland's transit services at the Elm Street Pulse and Monument Square. Current students use all of the area's transit providers - Metro local buses and the Breez, Casco Bay Lines ferry service, the South Portland Bus Service, the Lakes Region Explorer, and Shuttlebus-Zoom. The school pays 100% of the students' fares.

The site will also include a 150-foot drop-off zone on Elm Street to support the use of the school's three charter buses. These collect additional students in Lewiston, Windham, and Topsham who come from there and nearby municipalities. The school's lease at 185 Lancaster Street includes access to 50 parking spaces in an off-street lot across from the school, which will be used for staff and visitors.

B. TDM Coordinator

The two most vital characteristics of highly successful TDM programs are: (1) they are dynamic - piloting strategies, assessing impacts, and modifying tactics as needed, and (2) they are managed by committed and enthusiastic staff who are responsible for overseeing, promoting and sustaining the program.

Tia Wilson, Operations & Admissions Manager, serves as Baxter Academy's TDM Coordinator and will continue in this role at the school's new location. Ms. Wilson is a problem-solver who works to educate and connect students, families, and staff with public transportation and carpool options. She conducts an electronic survey of the student body annually before the school year begins to remind families of the school's multi-modal goals, inform them regarding transportation options, and gain a better understanding of which transportation mode(s) will benefit them the most**.**

At 185 Lancaster Street, the TDM Coordinator will implement a more comprehensive survey of students and staff to meet the City's TDM Plan surveying requirements (see Section C). Ms. Wilson will continue to explore and help implement additional TDM strategies to reduce single-occupancy and low-occupancy vehicle trips to the school. She also will assist the school to continue its pedestrian safety training with students and encourage bicycle commuting and safety education for local students and staff. The Coordinator's contact information is: Tia Wilson, Baxter Academy, 54 York Street, Portland, ME 04101; (207) 699-5500.

C. Employee and Student Survey

Per the City of Portland's Technical Standards regarding TDM Plans, Baxter Academy will employ a comprehensive survey of staff and student families at the 185 Lancaster Street site. The survey will be conducted annually in electronic form to educate faculty and families regarding their transportation options, record mode share, and assist employees and students to find carpool matches.

In addition, the survey will identify barriers to the use of public transit, the school charter bus system, carpooling, and bicycling and walking for more local students and staff. Staff and students may also be asked to offer additional ideas and strategies for reducing single occupancy and low-occupancy private vehicle trips. The survey will produce comparable data from year to year and be available for compilation with other sites' commute data by a third party, such as the City.

D. Trip Generation and Parking Demand Targets

On behalf of Baxter Academy, Traffic Solutions has produced ITE trip generation and parking demand projections to establish the impact of the new school location. Total forecasted trips during the "morning" peak hour are 200 and the parking demand using the 85th percentile is projected to be 52 spaces for staff, students, and visitors.

Baxter Academy is committed to continuing its work to reduce single-occupancy and low-occupancy trips to the campus - to improve multi-modal safety at and near the site, ease traffic congestion, and be a sustainable and liveable presence in downtown Portland and the Bayside neighborhood. The school's trip and parking reduction goals are based on the fact that the school has already done a tremendous amount of work to provide collective transportation options for its students (via public transportation, charter buses, and carpooling) and encourage walking and bicycling for more local students and staff. These existing TDM efforts limit the amount of additional peak hour trip and parking reductions still possible. However, potential reductions might be made in two areas: the single-occupancy vehicle trips and parking impacts of staff (51) and students (36) and the low-occupancy trips of a single student being dropped off by an adult (80).

Trip Reduction Target

Balancing the school's new setting and multi-modal accessibility, its current TDM practices and high multi-modal rates, and student and staff originating locations, an achievable trip reduction target is 2% over the first two years after opening for both faculty and pupils. This means a target trip generation of 50 staff trips and 78 one student/one adult trips during the AM peak hour by 2019.

Parking Reduction Target

As stated in the initial narrative above, Baxter Academy's policy will be to continue to provide only a limited number of off-site parking spaces for its staff and none for its students. The school will use parking permits to manage shared employee use of the lot. Baxter will also reserve a small portion of the parking area for rotating visitors who come to do school business (nurses, psychologists, consultants, board members, legal team, etc.).

Students electing to travel to or from Baxter Academy by private automobile will be directed to use public off-street parking areas located on Marginal Way, versus on-street spaces located near the campus. The Bayside Trail will facilitate their walk to the school. This will be made clear in the school's registration materials and its annual communications with families before the school year begins. Students will continue to be issued registration forms that collect a copy of their license, car make and model, plate number and where they park in Portland.

E. Trip/Parking Reduction Strategies & Incentives

Baxter Academy will take up its current comprehensive trip reduction strategies again at the new location, including:

- Providing charter buses for outlying communities
- Encouraging the use of public transit within the urban core with 100% funding of student and staff trips; the school's closer proximity to the Elm St. Pulse may help reduce some current parent drop-off vehicle trips
- Encouraging and facilitating carpooling/ridesharing among families and staff
- Encouraging bicycling through the provision of on-site bike racks
- Encouraging walking both as a primary mode for local students and staff and also from transit hubs and remote parking sites; additionally, providing students with hands-on pedestrian safety training

The following are other avenues for the school to explore to meet trip reduction targets.

Commuter Assistance

Baxter Academy is encouraged to engage Go Maine, the statewide commuter assistance program, in order to sign up participating staff who walk, bike, carpool, and use public transit for:

- the Emergency Ride Home benefit
- NuRide trip rewards
- expanding ride-matching possibilities to include additional downtown Portland employees.

Carpooling for school staff is a challenge because of their geographic spread and diverse schedules both at the school and in their home lives. However, some staff do carpool when possible. One or more vanpools, utilizing vRide, may also become an option if a number of staff from a particular municipality enter the school's employ.

Baxter can also partner with Go Maine and other local multi-modal groups, such as the Bicycle Coalition of Maine, to provide staff with educational materials regarding active transportation and to offer "commute coaching" at the beginning of each school year.

The school can further encourage adults driving an individual pupil to school to match up with additional students to carpool. The school will continue to explore various carpooling apps such as groupcarpool.com and share these resources with parents. As the student body grows, the school may wish to develop a customized SchoolPool website interface for students and families looking to find a carpool directly. Confidentiality concerns can be ameliorated with an "opt out" form for parents, while still ensuring a higher participation rate than an "opt-in" program.

Facilitating Walking Trips to and from the School Site

The school will continue its staff-led hands-on pedestrian safety training for students walking in and around downtown. Many students need to walk to and from the school site for daytime activities and to reach public transportation stops and remote parking areas like the Marginal Way Park & Ride. In addition, families dropping off student(s) will be encouraged, when feasible, to drive the student passenger(s) to their respective place of work with the students walking to/from the 185 Lancaster Street Campus.

To address any concerns about personal safety, the school and student leadership can also foster the informal formation of WalkPools, peer walking groups originating at the school or at transit stops and remote parking locations to enable students to walk together.

Flextime

When possible, staff who do not need to be at the school during the morning peak hour should be encouraged to arrive at a later time and offered a flextime work schedule.

UHaulCarShare & Informal Bikeshare

Baxter Academy has an account with UHaulCarShare that the school's employees can access. Some Baxter Academy staff bring their vehicles to school because they need a car available for trips during the work day. Concerted education of staff and encouragement to use this benefit could alleviate this need.

UHaulCarShare is available in Portland and South Portland, currently providing access to a total of nine vehicles on an hourly or daily basis. One of these is located at 26 Elm Street, just three blocks from the school. At one time there were two UhaulCarShare vehicles on Elm Street and, if the demand is strong enough, the school can negotiate with the company for additional available vehicles.

Similarly, for shorter staff trips, the school could maintain one or more shared bicycles and associated gear such as helmets and locks available for use at the site.

Other Incentives

Campus Campaigns: Baxter could organize an incentive campaign where users of public and charter buses, carpools with at least two students, and registered walkers and bicyclists are entered into a monthly raffle for gift cards, movie passes, and other benefits. Alternately, the school could consider an internal competition between classes or students and staff - with the winners earning a special celebration, such as a field trip to a favorite destination or a class party.

F. Education & Promotion

Baxter Academy administrators will carry on with their strong multi-modal education and promotion efforts at the 185 Lancaster Street site. This includes:

- Conducting the annual transportation survey of all in-coming students and members of the staff and encouraging other modal travel options versus personal auto travel.
- Communicating regularly, via email and open houses, the school's goal to shift as many students as possible to public transportation via the 100% subsidy, as well as other modes of transportation.
- Facilitating student and staff carpool matching

Per the City of Portland's Technical Standards regarding TDM Plans, Baxter Academy will also:

- produce a multi-modal page for the school's website (currently under development) and will actively maintain both it and a highly visible TDM bulletin board at the school. Both will provide:
  - Transit provider maps and schedules
  - Go Maine (and Emergency Ride Home Guarantee) and vRide vanpool service information
  - Internal information sharing about things such as: desired carpools, transit or bicycle commuting mentoring, and the results of student and staff transportation surveys
  - Information about specific incentives offered by the school (e.g. the 100% transit subsidy)
  - Information on walking and bicycling routes, school parking policies and locations, etc.
- Periodically recognize individual students and staff whose multi-modal activities reduce the traffic impact of the school - through newsletter, email, bulletin board, or other announcements.

Additional promotional suggestions for the school to explore, in order to reach trip reduction targets, are:

- Develop a Multimodal Access Map that is posted on the school's website and TDM bulletin board kiosk, identifying the walk zone, common walk routes and times, bike lanes and trails, and transit stops and routes. With the new site, students and staff may not realize how short walk and bike times are to particular downtown locations and this may encourage fewer auto trips.
- Form a student committee/subcommittee to advise the school's TDM work and develop peer-led campaigns that encourage active transportation and reduce the appeal of driving to school.

G. Monitoring

Baxter Academy's TDM Plan will be monitored by its TDM Coordinator. This effort will include:

- Annual family surveys regarding school transportation preferences
- Ridership figures on the school-sponsored charter buses
- Public transit usage through subsidy information
- The number of families participating in the school's ride-share/matching program
- The number of students biking to school
- The number of students registering their private vehicles with the school and where they park in town

- The number of staff utilizing school-leased parking
- The number of staff utilizing public transportation or other travel options
- Evaluating the daily parking demand of both campus visitors and vendor service providers and evaluate if other parking arrangements are deemed warranted
- Site traffic observations to cross-reference with the annual survey

This data will be compiled and compared against the parking and vehicle trip generation goals contained in Section D above. A summary report will be produced annually and submitted to the City's TDM planning office for review and comment.

H. Project Specific Standards

Infrastructure

School Zone Safety Features: Baxter Academy will install a flashing school zone speed limit sign assembly on Elm Street in advance of the 185 Lancaster Street Campus. An "*End School Zone*" sign will be appropriately located on Elm Street just west of the designated school bus loading zone advising motorists that they are leaving the school zone area. Secondary school speed zone signage will also be installed on both approaches of Lancaster Street that informs approaching motorists they are entering a designated school zone.

Baxter Academy will augment the City's annual crosswalk re-striping program, re-painting each of the existing crosswalk markings early spring of each year at the Lancaster Street/Elm Street intersection.

School staff will serve as a pedestrian crossing guard at the Lancaster/Elm Streets intersection aiding students crossing the Elm Street approach. A portable "*school crossing*" sign will be appropriately located in the center of the intersection reinforcing the school zone area.

Sidewalk Improvements: The City recently made sidewalk improvements on Elm Street and the Baxter Academy relocation will fund additional sidewalk expansion on Lancaster Street, along the frontage of the staff parking area.

Bicycle Parking: A total of 6 downtown "lollipop" bike racks are being installed for parking 12 bicycles as part of the school's Site Plan. If demand warrants additional facilities, the school is committed to providing them.

TDM Bulletin Board: In addition to the school's website transportation page, the school will erect a transportation bulletin board in a prominent location with information on various transportation options. This will include commuter assistance, public transportation, and ride matching.