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October 12, 2018

K. David Weidner, Ph.D.
Executive Director
The Pilgrim Monument and Provincetown Museum
1 High Pole Hill Road
Provincetown, MA 02657

RE: Pilgrim Monument Funicular
Traffic Evaluation

Dear Dr. Weidner:

McMahon Associates has conducted a comprehensive assessment of the potential traffic impacts associated with the proposed Pilgrim Monument and Provincetown Museum (PMPM) Funicular project located on Bradford Street in Provincetown, Massachusetts, as shown in Figure 1. The traffic assessment evaluates the existing study area intersection of Bradford Street and Ryder Street from a vehicular and pedestrian traffic perspective and provides recommendations to improve and manage the pedestrian environment at the existing study area intersection in relation to the proposed funicular project. This report documents the analysis and recommendations for improving the existing crosswalks with the proposed sidewalk bumpouts.

Existing Conditions

The proposed project includes the construction of a funicular adjacent to Bas Relief Park on Bradford Street to connect the downtown commercial area up to the PMPM. The funicular will provide an improved pedestrian link to the PMPM from the downtown area. Currently, to access the Pilgrim Monument from downtown, visitors can either drive or walk via Winslow Street and High Pole Hill Road. However, the existing walking environment to the PMPM is considered to be inaccessible due to the steep grades and the lack of a continuous sidewalk.

One of the key intersection crossings to access the funicular will be at Bradford Street at Ryder Street. This intersection currently provides marked crossings on each leg of the intersection; however, the crossings contain limited pedestrian waiting space at all four corners. Additionally, on-street parking on both Bradford Street and Ryder Street obstruct sight lines to the pedestrian waiting space on the southwest corner of the crossing. The crosswalks at the Bradford Street and Ryder Street intersection are heavily used by pedestrians in the area, particularly during the high season. These pedestrians have a range of destinations, a portion of which are destined to the PMPM.

Bradford Street

Bradford Street (MA-6A) generally runs in the southwest-northeast direction through the Town of Provincetown, Massachusetts. Bradford Street is classified as an urban minor arterial under town jurisdiction and generally provides one-lane of travel in each direction. Near the intersection with Ryder Street, Bradford Street provides approximately a 17.5-foot westbound lane and an 11-foot eastbound lane. There are sidewalks on both sides, approximately 5-feet wide, although the sidewalk on the northeast side of the intersection extends only approximately 40 feet past the eastern crosswalk and then there is no sidewalk. There is a posted speed limit of 25 miles per hour in the westbound direction and 20 miles per hour in the eastbound direction.

Ryder Street

Ryder Street is classified as a local road under town jurisdiction, and provides one lane of travel in each direction. At its intersection with Bradford Street, Ryder Street is approximately 20 feet wide, providing 10-foot wide travel lanes in each direction. Angled parking is provided on the west side of Ryder Street. There is an approximately 7-foot sidewalk on the west side of the street behind the angled parking. There is no posted speed limit on Ryder Street, however due to its short length and within a commercialized area with on-street parking, it is assumed 20 mph.

Speed

A speed study was performed on Bradford Street by McMahon Associates in March 2017 as part of the proposed CVS Pharmacy project at the Bradford Street and Standish Street intersection. Based on that study, average vehicle speeds of 21 mph in the eastbound direction and 22 mph in the west bound direction were recorded.

Traffic Counts

To assess peak hour traffic conditions, a Manual Turning Movement (MTM) count was performed at the intersection of Bradford Street and Ryder Street. A three-hour count of pedestrians, bicycles, and vehicles was performed on Saturday, September 29 2018 from 11:00 AM to 2:00 PM. Based on our prior knowledge from the CVS Pharmacy Traffic Impact Study, Saturday was found to have the highest vehicular volumes on Bradford Street and therefore was selected to be reviewed as part of the funicular project as Saturday is also likely a heavy visitation day at the Pilgrim Monument. The results of the counts are tabulated by 15-minute periods. The four highest consecutive 15-minute intervals during the Saturday midday count period constitute the peak hour of the intersection. Based on a review of the traffic count data, the Saturday midday peak hour for the study area intersection is between 12:45 PM and 1:45 PM for vehicles as well as for pedestrians. During the September Saturday midday peak hour, approximately 60 pedestrians were observed crossing each of the two Bradford Street crosswalks, while 132 pedestrians used the Ryder Street crosswalk. Additionally, previous high season weekday observations were conducted on August 10, 2018 from 11:45 AM to 12:15 PM. During the August observations, approximately 33 pedestrians and 11 pedestrians were observed crossing the

southernmost and northernmost Bradford Street crosswalks respectively, which represent peak hourly volumes of 66 and 22 pedestrians.

Seasonal Adjustment

In order to estimate vehicular and pedestrian traffic at the study area intersection during the high season period, the results of the MTM counts were compared to data collected as part of the CVS Pharmacy Traffic Impact Study and to Cape Cod Commission (CCC) count data on Bradford Street. The CVS Pharmacy study data was used to estimate weekday afternoon peak hour vehicle volumes on Bradford Street based on the counted Saturday midday volumes. The CCC count station data was then used to estimate an equivalent Average Daily Traffic (ADT) by comparing the estimated weekday afternoon peak hour volumes to peak hour and ADT volumes on Bradford Street collected during the months of July and August. This analysis found a seasonal adjustment factor of approximately 1.5 to adjust from the September 29th Saturday volumes to a typical peak high season period Saturday. The same adjustment factor was used to estimate the number of high season pedestrians.

Figure 2 provides a summary of the Saturday midday peak hour vehicular and pedestrian volumes for both a high season peak and off-season condition.

In comparison, the intersection of Bradford Street and Standish Street shows slightly higher pedestrian crossing volumes on Bradford Street based on the CVS Pharmacy Traffic Impact Study.

Crash Data

Recent MassDOT crash data was reviewed for the five-year period (2011 to 2015) and most crashes that occurred at the Bradford Street and Ryder Street intersection were noted to involve a parked car, most notably the angled spaces with vehicles backing onto Ryder Street. No bicycle crashes were reported and one crash involving a pedestrian was reported but did not result in an injury. Based on our review, pedestrian safety issues are not evident at this intersection. A detailed crash summary is shown below in Table 1.

Table 1
Crash Summary

	Bradford Street at Ryder Street
Year	
2011	2
2012	2
2013	1
2014	1
2015	0
Total	6
Type	
Angle	1
Rear-end	2
Sideswipe	1
Head-on	0
Other	2
Total	6
Severity	
Property Damage	5
Personal Injury	1
Fatality	0
Unknown	0
Total	6
Weather	
Clear	3
Cloudy	0
Rain	2
Snow	0
Ice	0
Sleet	0
Fog	0
Unknown	1
Total	6
Time	
7:00 AM to 9:00 AM	0
9:00 AM to 4:00 PM	6
4:00 PM to 6:00 PM	0
6:00 PM to 7:00 AM	0
Total	6

Source: MassDOT

Trip Generation

The trip generation of the PMPM was estimated in terms of vehicular traffic and pedestrian traffic, since these are the two most predominant modes of transportation accessing the site. Conventional methodologies to estimate trip generation are not conducive to this site for the following reasons:

- The land use of the site as a museum and monument is somewhat unique and the proposed addition of the funicular elevates the site's uniqueness. Typically, traffic trip generation rates are based upon data collected at similar sites or using trip generation estimates provided by the Institute of Transportation Engineers (ITE). However, in this case, there is no applicable ITE data nor are there comparable sites nearby for the funicular.

- The proposed build condition involves the addition of a funicular. The museum and monument are already existing on the site. The funicular is being constructed to improve pedestrian access to the site. Currently when pedestrians reach the site via Bradford Street, they encounter a fairly steep upgrade from Bradford Street to the monument and museum via Winslow Street or High Pole Hill Road. The funicular will carry these pedestrians up and down the hill between the site buildings and Bradford Street. However, the uniqueness of the funicular, particularly at the onset, may draw additional pedestrian traffic, as people may want to experience the funicular. Also, the funicular presents the opportunity for patrons who arrived at the site by vehicle to explore the surrounding area as a pedestrian without having to move their vehicles. As such, we have accounted for an increase in pedestrian traffic to and from the site.

The funicular trip generation has been developed using historical admission and parking lot data from the PMPM. Annual admissions to the PMPM have remained fairly steady in the past three years, with annual differences of less than two percent. The 2017 annual total admission of 102,716 patrons was used for the trip generation. Acknowledging the seasonal nature of the area and accounting for the fluctuation in tourists by season, 75% of the admissions are assumed to occur between May and September, which is referred to as the "high season," and 25% is expected to occur between October and April, which is referred to as the "low season."

Interestingly, the number of vehicles parked at the PMPM has declined over the past three years. The annual parking lot data for 2017 shows that 20,371 vehicles parked at the site. This is a 19% decrease from the 2015 data. The trend of steady admissions with a declining number of parked cars indicates that the site is experiencing a change in the mode split of arriving users and that more users are arriving as pedestrians than as motorists on site. The same logic of seasonal fluctuation was applied to the vehicular trips as was described above for the pedestrian trips. Also, based upon the type of land use, an average vehicle occupancy rate of 1.5 persons per vehicle was applied to the vehicular site trips. Using the logic described, the daily admission data for the high and low seasons was then estimated by mode of travel. The travel modes were limited to pedestrian and vehicular traffic. Although we acknowledge that some patrons are arriving at the site via bicycle, for the purpose of this study, the

bicycle traffic is assumed to reach the site similar to a vehicle, using the travel lanes of the existing street system and the site parking lot access.

To understand the traffic operations in the peak periods of the day, the admission rates were next converted to hourly volumes. The daily and hourly volumes are shown in Table 2. The site is open from 9AM to 5PM. The "Hourly Average" rate represents an even influx of patrons at the site over the eight-hours of daily operation. Recognizing that more patrons are likely to arrive and depart in the middle of the day, we have assumed that 80% of the traffic arrives and departs in the prime "high hours" (likely 10 AM to 3PM) and 20% arrives and departs in the "low" hours (likely 9-10 AM and 3-5 PM). Lastly, the admission data for patrons arriving by vehicle was converted to vehicular trips by applying the vehicle occupancy rate of 1.5 persons per vehicle.

Table 2
Trip Generation Data Summary

Provincetown Funicular Pedestrian and Vehicle Trip Generation		
Admissions	High Season	Low Season
Total Admissions:		
Daily	507	121
Hourly average	63	15
Hourly- High hours	81	19
Hourly- Low Hours	34	8
Admissions arriving as Peds:		
Daily	356	85
Hourly average	44	11
Hourly- High hours	57	14
Hourly- Low Hours	24	6
Admissions arriving in Vehicles:		
Daily	151	36
Hourly average	19	4
Hourly- High hours	24	6
Hourly- Low Hours	10	2
Vehicle Trips Based on 1.5 persons per vehicle)		
Daily	100	24
Hourly average	13	3
Hourly- High hours	16	4
Hourly- Low Hours	7	2

In a conservative measure, we have applied a 20% growth to the pedestrian traffic accessing the site for the "Build" peak hour condition traffic analysis. Figure 3 summarizes the Saturday midday peak hour Build condition volumes during both the high and low seasons. No additional vehicles are expected to arrive at the site due to the funicular. The parking lot data by year reveals a trend of declining vehicles at the site. However, to remain conservative in the traffic analysis, we have not taken additional credit for declining vehicular trips to and from the site. Also, the funicular presents the opportunity to remove vehicle trips from the study area by allowing patrons to visit the downtown Commercial Street area and the PMPM without requiring to move their vehicle.

Traffic Operations

In previous sections of this report, the quantity of traffic on the study area roadways was described. The following section describes the quality of traffic flow at the study area intersections for the given travel demands. As a basis for this assessment, intersection capacity analyses were conducted using Synchro capacity analysis software for the study area intersection under the 2018 Existing and 2018 Build peak hour traffic conditions for each the Low Season and High Season volumes. This analysis is based on procedures contained in the 2010 Highway Capacity Manual (HCM). Based on the traffic counts, the Saturday midday peak hour of the adjacent street traffic occurs between 12:45 PM and 1:45 PM. The overall results of the intersection capacity analysis for the study area intersections are presented in Table 3 below and the detailed capacity analysis is attached.

Table 3: Saturday Midday Capacity Analysis Summary

		Low Season						High Season					
		2018 Existing			2018 Build			2018 Existing			2018 Build		
Intersection	Movement	LOS[1]	Delay[2]	V/C[3]	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C
Bradford Street (Route 6A)	WB LR	D	28.9	0.55	D	29.5	0.56	F	399.2	1.72	F	447.0	1.82
at Ryder Street	NB TR	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00
	SB LT	A	1.5	0.07	A	1.5	0.07	A	1.8	0.13	A	1.8	0.13

1 Level-of-Service

2 Average vehicle delay in seconds

3 Volume to capacity ratio

Existing

The capacity analysis shows the stop-controlled westbound Ryder Street approach as currently operating at LOS D under Low Season conditions, and as operating at LOS F and over capacity under High Season conditions. During either season, existing vehicle delays on Bradford Street in both directions on Bradford Street are shown to be minimal with the presence of pedestrians in the crosswalks. As expected, longer vehicle delays exist on the stop controlled Ryder Street approach at its intersection with Bradford Street, however, this condition is a typical scenario for many of the other stop controlled approaches in Provincetown during the high season. In reality, traffic operations may be overstated with our capacity analysis software as courtesy gaps are a likely occurrence and are not reflected in the traffic model.

Proposed

With the proposed funicular in place and an estimated 20% increase in pedestrians at this intersection, the stop-controlled Ryder Street approach is expected to continue to operate at LOS D under Low Season conditions for the majority of the year and continue to operate at LOS F under High Season conditions. During the Build low season condition, the Ryder Street approach is expected to experience an approximately half second of additional delay or a two-percent increase. During the Build high

season condition, the approach is expected to experience approximately 50 seconds of additional average vehicle delay or a 12-percent increase. Operations along Bradford Street are not projected to drastically change due to the proposed funicular pedestrian demands during either season. In reality there is already moderate pedestrian traffic at this intersection during the high season, as is the case with many other intersections in town, including the nearby Bradford Street and Standish Street intersection which was identified in the CVS Pharmacy Traffic Impact Study. These existing pedestrians are already stopping traffic and additional pedestrians will likely utilize the same gaps in traffic to cross with the existing groups of pedestrians that exist today. You will likely see larger groups of pedestrians crossing together under a future scenario.

Crosswalk Analysis

Currently the intersection of Bradford Road and Ryder Street contains marked crosswalks across all three legs. To determine the appropriateness of this treatment, the intersection was evaluated based on the following publications:

- Table 11 of the Federal Highway Administration (FHWA) publication *Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations*. This publication uses speed limits and Average Daily Traffic (ADT) in order to determine appropriate recommendations for installing marked crosswalks at uncontrolled locations.
- Table 1 of the Federal Highway Administration (FHWA) publication *Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations*. This publication uses speed limits, ADT, and roadway configuration to determine appropriate recommendations for installing marked crosswalks at uncontrolled locations,

The Cape Cod Commission Traffic Counting Report provides weekday ADT data from August 2016 for Bradford Street in between Ryder Street and Alden Street. The recorded high season ADT is 9,700 vehicles while the Annual Average Daily Traffic (AADT) is estimated at 7,400 vehicles.[1] Bradford Street and Ryder Street are both two-lane roadways with speeds of less than 30 mph. Based on our recent traffic counts, we also confirmed that the existing crosswalks meet the minimum recommended FHWA crosswalk utilization guideline of 20 pedestrian crossings per peak hour.

Based on these factors, the FHWA Table 11 recommends this intersection is a candidate site for marked crosswalks. In addition, based on these factors, the recommended pedestrian crash counter measures according to the FHWA Table 1: Application of pedestrian crash countermeasures by roadway feature include:

- Highly visible crosswalk markings
- Parking restriction on crosswalk approach
- Adequate nighttime lighting levels

Recommendations

[1] http://www.capecodcommission.org/resources/transportation/counts/pdf_count/procount.pdf

Based on a review of the FHWA guidelines, the existing crosswalks are adequately located at this existing intersection, however, there is an opportunity to improve the crossings to provide a more comfortable and safer experience. Similar to the proposed pedestrian improvements associated with the CVS Pharmacy development at the intersection of Bradford Street and Standish Street, sidewalk extensions and a bumpout are an appropriate mitigation for this intersection in conjunction with the funicular project, as seen in the enclosed conceptual graphic. The proposed sidewalk extension and the bumpout will provide greater visibility and shorten the crossing length and exposure time for pedestrians on Bradford Street. They will also allow for improved sight lines for pedestrians and vehicles to be aware of each other at the crosswalks. The sidewalk extension will also narrow the Bradford Street southbound travel lane from 17.5 feet to an 11 foot lane which will help reduce speeds and also deter parking or vehicle drop-off or stopping in the area. The sidewalks along the northern side of Bradford Street along the frontage of Bas Relief Park can be widen from 5 feet to 12 feet to provide a more comfortable experience for users of both the park and the funicular. Curb extensions or bumpouts are a FHWA recommended countermeasure for pedestrian enhancement. However, these proposed improvements will need to be coordinated and vetted with town officials as they occur with the existing Bradford Street right-of-way.

It is also recommended that pedestrian warning signage and additional "No Parking" or "No Stopping" signage be installed along the northern side of Bradford Street to deter this activity. It is recommended that the crosswalks also be restriped to a high visibility layout. Also, to address concerns with the visibility of the northernmost crosswalk on Bradford Street with right turning vehicles from Ryder Street, vegetation trimming is recommended. The existing hedge, which is partially located on town property, should be trimmed to a lower height and/or removed to improve visibility at this corner.

Mitigation items such as rectangular rapid flashing beacons (RRFB) or pedestrian traffic signals were considered and are not recommended because they are intended to provide protection for pedestrians in situations where the pedestrian demand is low and a vehicle does not typically encounter a pedestrian on a routine basis, such as high speed or high-volume roadways. There are warrants for pedestrian signals mandated by the FHWA. The pedestrian warrant is based upon the volume of vehicular and pedestrian traffic and the analysis is based upon the typical peak hour period and the typical 4-hour peak period. Based upon the available traffic count data cited above, the traffic volumes at the Bradford Street/Ryder Street intersection may meet the four-hour volume requirements on a high season weekend but not on a high season weekday. This is also likely true for other intersections in town, such as the Bradford Street and Standish Street intersection. The FHWA peak hour volume warrant is not met on a high season weekday or high season weekend day. During the low season, none of the volume requirements for the pedestrian signal warrant are met. As such, the intersection does not meet the volume requirements of the pedestrian signal warrant.

Additional pedestrian amenities were considered at the Bradford Street/Ryder Street intersection. Raised crosswalks are sometimes implemented to calm traffic and to bring motor vehicles to the

pedestrian level. In this situation, the vehicular travel speeds are not excessive and adequate sight lines can be achieved for the crosswalks by removing vegetation and providing the curb extensions. In addition, based on discussions with the Town of Provincetown Public Works Department, raised crosswalks may present issues with snow plowing operations and were not considered. The benefits of a raised crosswalk at this location are minimized and therefore, the implementation of a raised crosswalk is not warranted or recommended.

In addition, it is in the best interest of the PMPM to ensure adequate and safe pedestrian access will be provided to the funicular and not adversely impact Bradford Street. As such, staff will be positioned at the funicular and will be trained to monitor traffic at the study area intersection to deter drop-off activity and ensure pedestrian traffic can be accommodated. The PMPM will continue to be a good community partner and when warranted, will coordinate police traffic detail in conjunction with high season events at Bas Relief Park, such as Portuguese Festival. The PMPM will also coordinate with the Town on additional wayfinding and signage improvements for their existing parking lot and proposed funicular.

Conclusions

The proposed funicular project is focused on improving pedestrian access to an existing cultural site in Provincetown. Currently, pedestrians accessing the site from Bradford Street encounter a steep incline to reach the monument and museum portion of the site and must choose to walk up steep inclines on Winslow Street or High Pole Hill Road. Pedestrian access to the PMPM has been identified as an area of concern for future improvement by the Cape Cod Commission, with one of their recommendations including a direct access from Bas Relief Park. This project provides a rare opportunity to elevate the pedestrians over vehicles in Provincetown. Similarly, other towns, such as Somerville and Cambridge, Massachusetts are taking the steps to improve accommodations for pedestrian and bicycle traffic over vehicular traffic. The funicular will provide an accessible and direct route to the visit the Pilgrim Monument and Provincetown Museum, which is an important and valuable site for the Provincetown community.

The project will not result in additional vehicular traffic to the site and vehicular drop-off activity will be managed by PMPM funicular staff and discouraged with proposed "No Stopping" and "No Parking" signage on Bradford Street. To account for a possible increase in PMPM admissions via the funicular, the traffic analysis accounts for a 20% increase in pedestrian patrons to the site, recognizing that additional pedestrians may now visit the site to ride the funicular. Also, patrons arriving by vehicle can utilize the funicular to visit the downtown as a pedestrians, without having to move their vehicle and thereby reducing vehicular traffic. Using admission data to calculate the added pedestrian trips, and adding this pedestrian traffic to the Bradford Street/Ryder Street intersection, traffic analyses were conducted based upon the midday peak hour on a high season Saturday, which represents the highest traffic conditions of the year. The analysis revealed that even if there were to be a 20% increase in admissions by pedestrians using the funicular, this increase would not significantly affect the overall

intersection operations at the Bradford Street and Ryder Street intersection. As seen from the existing traffic counts, a moderate number of pedestrians already use this intersection during the peak high season periods, as is the case with many other intersections in town. These existing pedestrians are already interrupting vehicular traffic flow, as is common in a downtown tourist area such as this. The additional pedestrians will primarily utilize the same gaps in traffic to cross the roadways with the existing groups of pedestrians that exist today. Larger groups of pedestrians will cross the intersection together under the future scenario. From a traffic operations perspective, delays at stopped controlled intersections are a typical scenario in town during the high season, match the expectations of motorists, and this situation will be continued with the proposed project.

The proposed funicular crosswalk improvements at the Bradford Street and Ryder Street intersection are appropriate traffic mitigation based on a review of FHWA guidance and will greatly improve the pedestrian environmental and safety of the crosswalks. These improvements would have to be vetted with town officials as they are proposed within the existing town right-of-way. Proposed improvements include:

- Curb bump-outs in the southeast corner of the Bradford Street/Ryder Street intersection to shorten pedestrian crossing distances, increase visibility of pedestrians, and provide traffic calming
- Highly visible crosswalk markings
- Parking restriction on crosswalk approach
- Pedestrian crossing signage to inform motorists of the pedestrian presence
- Widening of the sidewalk along the north side of Bradford Street along the site increasing the sidewalk width by as much as seven feet to provide a 12-foot sidewalk
- Curb ramps with detectable warning panels at crosswalks on Bradford Street at the project site
- "No stopping" signs along Bradford Street in front of the funicular site
- Vegetation trimming to improve sight lines at the Ryder Street approach to Bradford Street
- Future monitoring of traffic and pedestrian activity at the site

The proposed improvements are appropriate for the traffic flows in this area, are context sensitive to the surrounding area, provide safety enhancements to the study area, and elevate the presence of pedestrians.
Please do not hesitate to contact me with any questions.

Sincerely,

Colleen Medeiros

Colleen Medeiros, P.E.
Project Manager

Attachment

Figure 1
Site Location Map
Provincetown Funicular
Provincetown, MA

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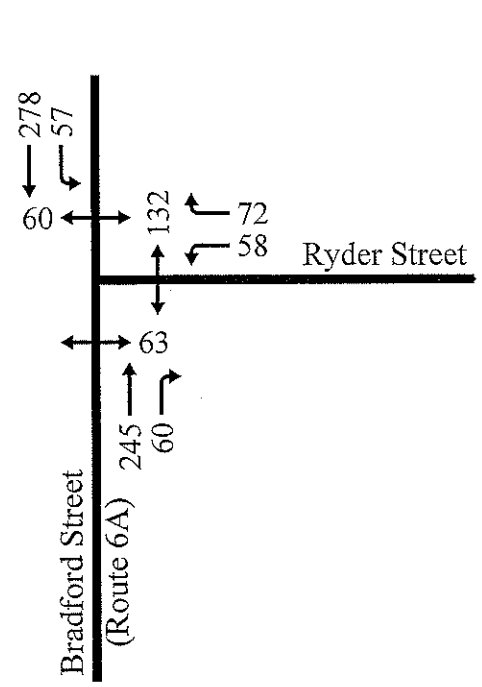
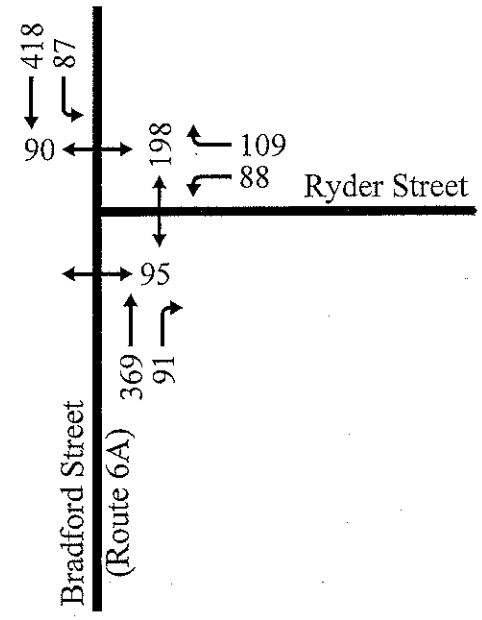


SCHEMATIC-
NOT TO SCALE

Low Season



High Season

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Figure 2
2018 Existing Saturday Midday
Peak Hour Traffic Volumes
Pilgrim Monument Funicular
Provincetown, Massachusetts

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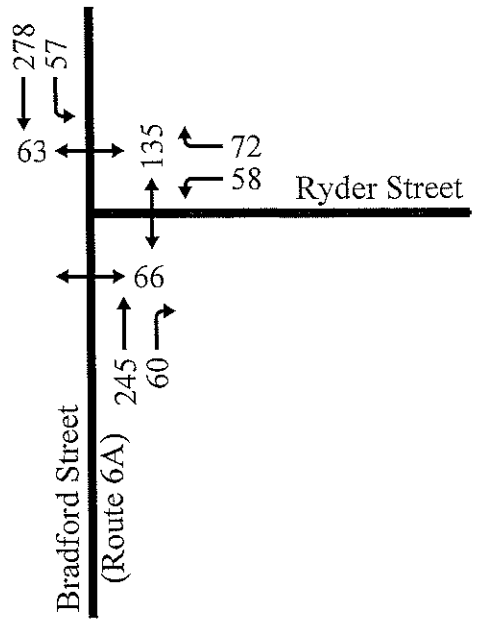

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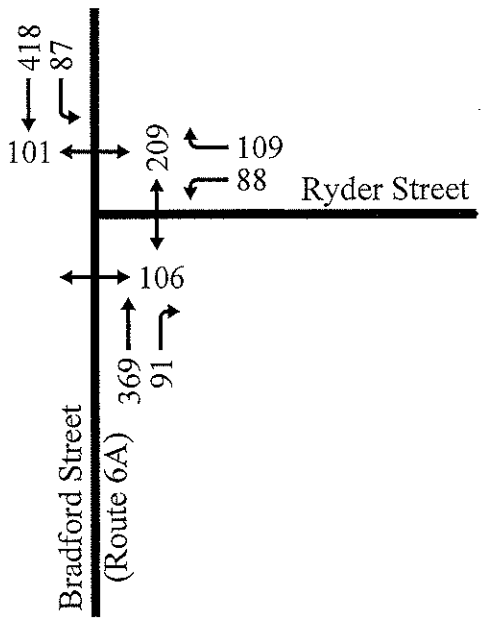
Low Season



High Season

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Figure 3
2018 Build Saturday Midday
Peak Hour Traffic Volumes
Pilgrim Monument Funicular
Provincetown, Massachusetts

Attachments

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350 Myles Standish Boulevard, Suite 103
Taunton, MA 02780
508-823-2245

N/S: Bradford Street (Route 6A)
E/W: Ryder Street
Provincetown, MA
Saturday Midday

File Name : tmc_2018-09-29
Site Code : 09291801
Start Date : 9/29/2018
Page No : 1

Groups Printed- Cars & Peds - Heavy Vehicles

	Bradford Street (Route 6A) From North				Ryder Street From East				Bradford Street (Route 6A) From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
11:00 AM	65	23	4	92	19	14	23	56	8	64	8	80	228
11:15 AM	71	13	3	87	15	15	28	58	9	57	16	82	227
11:30 AM	74	22	6	102	13	12	40	65	18	53	13	84	251
11:45 AM	43	14	6	63	17	11	37	65	16	62	12	90	218
Total	253	72	19	344	64	52	128	244	51	236	49	336	924
12:00 PM	67	12	10	89	16	18	34	68	14	56	10	80	237
12:15 PM	65	17	4	86	20	17	20	57	11	69	5	85	228
12:30 PM	62	20	2	84	13	18	35	66	10	64	19	93	243
12:45 PM	60	22	23	105	24	15	20	59	13	63	13	89	253
Total	254	71	39	364	73	68	109	250	48	252	47	347	961
01:00 PM	73	11	4	88	14	8	26	48	15	55	9	79	215
01:15 PM	70	5	17	92	15	9	36	60	14	64	15	93	245
01:30 PM	75	19	16	110	19	26	50	95	18	63	26	107	312
01:45 PM	76	8	1	85	18	17	25	60	13	63	24	100	245
Total	294	43	38	375	66	60	137	263	60	245	74	379	1017
Grand Total	801	186	96	1083	203	180	374	757	159	733	170	1062	2902
Apprch %	74	17.2	8.9		26.8	23.8	49.4		15	69	16		
Total %	27.6	6.4	3.3	37.3	7	6.2	12.9	26.1	5.5	25.3	5.9	36.6	
Cars & Peds	799	182	96	1077	193	173	374	740	159	727	170	1056	2873
% Cars & Peds	99.8	97.8	100	99.4	95.1	96.1	100	97.8	100	99.2	100	99.4	99
Heavy Vehicles	2	4	0	6	10	7	0	17	0	6	0	6	29
% Heavy Vehicles	0.2	2.2	0	0.6	4.9	3.9	0	2.2	0	0.8	0	0.6	1

	Bradford Street (Route 6A) From North				Ryder Street From East				Bradford Street (Route 6A) From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 12:45 PM													
12:45 PM	60	**22**	**23**	105	**24**	15	20	59	13	63	13	89	253
01:00 PM	73	11	4	88	14	8	26	48	15	55	9	79	215
01:15 PM	70	5	17	92	15	9	36	60	14	**64**	15	93	245
01:30 PM	**75**	19	16	**110**	19	**26**	**50**	**95**	**18**	63	**26**	**107**	**312**
Total Volume	278	57	60	395	72	58	132	262	60	245	63	368	1025
% App. Total	70.4	14.4	15.2		27.5	22.1	50.4		16.3	66.6	17.1		
PHF	.927	.648	.652	.898	.750	.558	.660	.689	.833	.957	.606	.860	.821
Cars & Peds	278	55	60	393	70	56	132	258	60	244	63	367	1018
% Cars & Peds	100	96.5	100	99.5	97.2	96.6	100	98.5	100	99.6	100	99.7	99.3
Heavy Vehicles	0	2	0	2	2	2	0	4	0	1	0	1	7
% Heavy Vehicles	0	3.5	0	0.5	2.8	3.4	0	1.5	0	0.4	0	0.3	0.7

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

350 Myles Standish Boulevard, Suite 103
Taunton, MA 02780
508-823-2245

N/S: Bradford Street (Route 6A)
E/W: Ryder Street
Provincetown, MA
Saturday Midday

File Name : tmc_2018-09-29
Site Code : 09291801
Start Date : 9/29/2018
Page No : 1

Groups Printed- Heavy Vehicles

	Bradford Street (Route 6A) From North				Ryder Street From East				Bradford Street (Route 6A) From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
11:00 AM	0	0	0	0	1	1	0	2	0	0	0	0	2
11:15 AM	0	0	0	0	1	1	0	2	0	1	0	1	3
11:30 AM	1	1	0	2	1	0	0	1	0	0	0	0	3
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	1	0	2	3	2	0	5	0	1	0	1	8
12:00 PM	1	0	0	1	2	1	0	3	0	0	0	0	4
12:15 PM	0	0	0	0	1	0	0	1	0	3	0	3	4
12:30 PM	0	1	0	1	1	1	0	2	0	1	0	1	4
12:45 PM	0	1	0	1	0	0	0	0	0	1	0	1	2
Total	1	2	0	3	4	2	0	6	0	5	0	5	14
01:00 PM	0	0	0	0	1	1	0	2	0	0	0	0	2
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	1	0	1	1	1	0	2	0	0	0	0	3
01:45 PM	0	0	0	0	1	1	0	2	0	0	0	0	2
Total	0	1	0	1	3	3	0	6	0	0	0	0	7
Grand Total	2	4	0	6	10	7	0	17	0	6	0	6	29
Apprch %	33.3	66.7	0		58.8	41.2	0		0	100	0		
Total %	6.9	13.8	0	20.7	34.5	24.1	0	58.6	0	20.7	0	20.7	

	Bradford Street (Route 6A) From North				Ryder Street From East				Bradford Street (Route 6A) From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 12:00 PM													
12:00 PM	**1**	0	0	**1**	**2**	**1**	0	**3**	0	0	0	0	**4**
12:15 PM	0	0	0	0	1	0	0	1	0	**3**	0	**3**	4
12:30 PM	0	**1**	0	1	1	1	0	2	0	1	0	1	4
12:45 PM	0	1	0	1	0	0	0	0	0	1	0	1	2
Total Volume	1	2	0	3	4	2	0	6	0	5	0	5	14
% App. Total	33.3	66.7	0		66.7	33.3	0		0	100	0		
PHF	.250	.500	.000	.750	.500	.500	.000	.500	.000	.417	.000	.417	.875

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

350 Myles Standish Boulevard, Suite 103
Taunton, MA 02780
508-823-2245

N/S: Bradford Street (Route 6A)
E/W: Ryder Street
Provincetown, MA
Saturday Midday

File Name : tmc_2018-09-29
Site Code : 09291801
Start Date : 9/29/2018
Page No : 1

Groups Printed- Bikes by Direction

	Bradford Street (Route 6A) From North				Ryder Street From East				Bradford Street (Route 6A) From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
11:00 AM	4	1	0	5	1	1	0	2	1	0	0	1	8
11:15 AM	3	0	0	3	3	1	0	4	5	1	0	6	13
11:30 AM	3	1	0	4	0	1	0	1	1	3	0	4	9
11:45 AM	4	10	0	14	3	0	0	3	2	2	0	4	21
Total	14	12	0	26	7	3	0	10	9	6	0	15	51
12:00 PM	9	1	0	10	1	0	0	1	1	4	0	5	16
12:15 PM	6	1	0	7	1	0	0	1	0	7	0	7	15
12:30 PM	3	0	0	3	3	2	0	5	3	5	0	8	16
12:45 PM	3	2	0	5	3	1	0	4	0	14	0	14	23
Total	21	4	0	25	8	3	0	11	4	30	0	34	70
01:00 PM	10	2	0	12	4	0	0	4	1	8	0	9	25
01:15 PM	9	4	0	13	0	0	0	0	2	5	0	7	20
01:30 PM	5	0	0	5	2	3	0	5	1	12	0	13	23
01:45 PM	4	1	0	5	1	0	0	1	2	4	0	6	12
Total	28	7	0	35	7	3	0	10	6	29	0	35	80
Grand Total	63	23	0	86	22	9	0	31	19	65	0	84	201
Apprch %	73.3	26.7	0		71	29	0		22.6	77.4	0		
Total %	31.3	11.4	0	42.8	10.9	4.5	0	15.4	9.5	32.3	0	41.8	

	Bradford Street (Route 6A) From North				Ryder Street From East				Bradford Street (Route 6A) From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 12:45 PM													
12:45 PM	3	2	0	5	3	1	0	4	0	**14**	0	**14**	23
01:00 PM	**10**	2	0	12	**4**	0	0	4	1	8	0	9	**25**
01:15 PM	9	**4**	0	**13**	0	0	0	0	**2**	5	0	7	20
01:30 PM	5	0	0	5	2	**3**	0	**5**	1	12	0	13	23
Total Volume	27	8	0	35	9	4	0	13	4	39	0	43	91
% App. Total	77.1	22.9	0		69.2	30.8	0		9.3	90.7	0		
PHF	.675	.500	.000	.673	.563	.333	.000	.650	.500	.696	.000	.768	.910

Intersection	
Int Delay, s/veh	6.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	58	72	245	60	57	278
Future Vol, veh/h	58	72	245	60	57	278
Conflicting Peds, #/hr	63	60	0	132	132	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	72	72	94	94	89	89
Heavy Vehicles, %	3	3	1	0	4	0
Mvmt Flow	81	100	261	64	64	312

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	928	485	0	0	457	0
Stage 1	425	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.14	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.236	-
Pot Cap-1 Maneuver	296	580	-	-	1093	-
Stage 1	657	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	230	490	-	-	973	-
Mov Cap-2 Maneuver	230	-	-	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	528	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28.9	0	1.5
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	326	973	-
HCM Lane V/C Ratio	-	-	0.554	0.066	-
HCM Control Delay (s)	-	-	28.9	9	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	3.2	0.2	-

Intersection	
Int Delay, s/veh	82.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	109	369	91	87	418
Future Vol, veh/h	88	109	369	91	87	418
Conflicting Peds, #/hr	95	90	0	198	198	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	72	72	94	94	89	89
Heavy Vehicles, %	3	3	1	0	4	0
Mvmt Flow	122	151	393	97	98	470

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1401	730	0	0	688	0
Stage 1	640	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.14	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.236	-
Pot Cap-1 Maneuver	154	421	-	-	897	-
Stage 1	523	-	-	-	-	-
Stage 2	459	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 97	325	-	-	749	-
Mov Cap-2 Maneuver	~ 97	-	-	-	-	-
Stage 1	437	-	-	-	-	-
Stage 2	348	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 399.2	0	1.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	159	749	-
HCM Lane V/C Ratio	-	-	1.721	0.131	-
HCM Control Delay (s)	-	-	$ 399.2	10.5	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	19.6	0.4	-

Notes				
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	6.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	58	72	245	60	57	278
Future Vol, veh/h	58	72	245	60	57	278
Conflicting Peds, #/hr	66	63	0	135	135	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	72	72	94	94	89	89
Heavy Vehicles, %	3	3	1	0	4	0
Mvmt Flow	81	100	261	64	64	312

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	934	491	0	0	460	0
Stage 1	428	-	-	-	-	-
Stage 2	506	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.14	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.236	-
Pot Cap-1 Maneuver	294	575	-	-	1091	-
Stage 1	655	-	-	-	-	-
Stage 2	603	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	227	484	-	-	968	-
Mov Cap-2 Maneuver	227	-	-	-	-	-
Stage 1	582	-	-	-	-	-
Stage 2	524	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29.5	0	1.5
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	322	968	-
HCM Lane V/C Ratio	-	-	0.561	0.066	-
HCM Control Delay (s)	-	-	29.5	9	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	3.2	0.2	-

Intersection	
Int Delay, s/veh	92.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	109	369	91	87	418
Future Vol, veh/h	88	109	369	91	87	418
Conflicting Peds, #/hr	106	101	0	209	209	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	72	72	94	94	89	89
Heavy Vehicles, %	3	3	1	0	4	0
Mvmt Flow	122	151	393	97	98	470

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1423	752	0	0	699	0
Stage 1	651	-	-	-	-	-
Stage 2	772	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.14	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.236	-
Pot Cap-1 Maneuver	149	409	-	-	888	-
Stage 1	517	-	-	-	-	-
Stage 2	454	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 92	309	-	-	733	-
Mov Cap-2 Maneuver	~ 92	-	-	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	339	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 447	0	1.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	150	733	-
HCM Lane V/C Ratio	-	-	1.824	0.133	-
HCM Control Delay (s)	-	-	$ 447	10.7	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	20.5	0.5	-

Notes			
~ Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Table 1. Application of pedestrian crash countermeasures by roadway feature.

Roadway Configuration	Speed Limit								
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
2 lanes*	❶ 2 3 4 5 6	❶ ❸ 5 6 7	❶ ❸ 5 6 ❼	❶ 3 4 5 6	❶ ❸ 5 6 7	❶ ❸ 5 6 ❼	❶ 3 4 5 6 7	❶ ❸ 5 6 7	❶ ❸ 5 6 ❼
3 lanes with raised median*	❶ 2 3 4 5	❶ ❸ 5 7	❶ ❸ 5 ❼	❶ 3 4 5 7	❶ ❸ 5 ❼	❶ ❸ 5 ❼	❶ ❸ 4 5 7	❶ ❸ 5 ❼	❶ ❸ 5 ❼
3 lanes w/o raised median†	❶ 2 3 4 5 6 7	❶ ❸ 5 6 7	❶ ❸ 5 6 ❼	❶ 3 4 5 6 7	❶ ❸ 5 6 ❼	❶ ❸ 5 6 ❼	❶ ❸ 4 5 6 7	❶ ❸ 5 6 ❼	❶ ❸ 5 6 ❼
4+ lanes with raised median‡	❶ ❸ 5	❶ ❸ 5 7	❶ ❸ 5 ❼	❶ ❸ 5 7	❶ ❸ 5 ❼	❶ ❸ 5 ❼	❶ ❸ 5 ❼	❶ ❸ 5 ❼	❶ ❸ 5 ❼
4+ lanes w/o raised median‡	❶ ❸ 5 6 7 8	❶ ❸ 5 ❻ 7 8	❶ ❸ 5 ❻ ❼ 8	❶ ❸ 5 ❻ 7 8	❶ ❸ 5 ❻ ❼ 8	❶ ❸ 5 ❻ ❼ 8	❶ ❸ 5 ❻ ❼ 8	❶ ❸ 5 ❻ ❼ 8	❶ ❸ 5 ❻ ❼ 8

*One lane in each direction †One lane in each direction with two-way left-turn lane ‡Two or more lanes in each direction

Given the set of conditions in a cell,

❶ Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.

\# Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

1 High-visibility crosswalk markings, parking restriction on crosswalk approach, adequate nighttime lighting levels
2 Raised crosswalk
3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
4 In-Street Pedestrian Crossing sign
5 Curb extension
6 Pedestrian refuge island
7 Pedestrian Hybrid Beacon
8 Road Diet

This table was developed using information from: Zegeer, C. V., Stewart, J. R., Huang, H. H., Lagerwey, P. A., Feaganes, J., & Campbell, B. J. (2005), Safety effects of marked versus unmarked crosswalks at uncontrolled locations: Final report and recommended guidelines (No. FHWA-HRT-04-100); Manual on Uniform Traffic Control Devices, 2009 Edition, Chapter 4F. Pedestrian Hybrid Beacons; the Crash Modification Factors (CMF) Clearinghouse website (http://www.cmfclearinghouse.org/); and the Pedestrian Safety Guide and Countermeasure Selection System (PEDSAFE) website (http://www.pedbikesafe.org/PEDSAFE/).

Table 11. Recommendations for installing marked crosswalks and other needed pedestrian improvements at uncontrolled locations.*

Roadway Type (Number of Travel Lanes and Median Type)	Vehicle ADT ≤ 9,000			Vehicle ADT >9,000 to 12,000			Vehicle ADT >12,000–15,000			Vehicle ADT > 15,000		
	Speed Limit**											
	≤ 48.3 km/h (30 mi/h)	56.4 km/h (35 mi/h)	64.4 km/h (40 mi/h)	≤ 48.3 km/h (30 mi/h)	56.4 km/h (35 mi/h)	64.4 km/h (40 mi/h)	≤ 48.3 km/h (30 mi/h)	56.4 km/h (35 mi/h)	64.4 km/h (40 mi/h)	≤ 48.3 km/h (30 mi/h)	56.4 km/h (35 mi/h)	64.4 km/h (40 mi/h)
Two lanes	C	C	P	C	C	P	C	C	N	C	P	N
Three lanes	C	C	P	C	P	P	P	P	N	P	N	N
Multilane (four or more lanes) with raised median***	C	C	P	C	P	N	P	P	N	N	N	N
Multilane (four or more lanes) without raised median	C	P	N	P	P	N	N	N	N	N	N	N

* These guidelines include intersection and midblock locations with no traffic signals or stop signs on the approach to the crossing. They do not apply to school crossings. A two-way center turn lane is not considered a median. Crosswalks should not be installed at locations that could present an increased safety risk to pedestrians, such as where there is poor sight distance, complex or confusing designs, a substantial volume of heavy trucks, or other dangers, without first providing adequate design features and/or traffic control devices. Adding crosswalks alone will not make crossings safer, nor will they necessarily result in more vehicles stopping for pedestrians. Whether or not marked crosswalks are installed, it is important to consider other pedestrian facility enhancements (e.g., raised median, traffic signal, roadway narrowing, enhanced overhead lighting, traffic-calming measures, curb extensions), as needed, to improve the safety of the crossing. These are general recommendations; good engineering judgment should be used in individual cases for deciding where to install crosswalks.

** Where the speed limit exceeds 64.4 km/h (40 mi/h), marked crosswalks alone should not be used at unsignalized locations.

*** The raised median or crossing island must be at least 1.2 m (4 ft) wide and 1.8 m (6 ft) long to serve adequately as a refuge area for pedestrians, in accordance with MUTCD and American Association of State Highway and Transportation Officials (AASHTO) guidelines.

C = Candidate sites for marked crosswalks. Marked crosswalks must be installed carefully and selectively. Before installing new marked crosswalks, an engineering study is needed to determine whether the location is suitable for a marked crosswalk. For an engineering study, a site review may be sufficient at some locations, while a more indepth study of pedestrian volume, vehicle speed, sight distance, vehicle mix, and other factors may be needed at other sites. It is recommended that a minimum utilization of 20 pedestrian crossings per peak hour (or 15 or more elderly and/or child pedestrians) be confirmed at a location before placing a high priority on the installation of a marked crosswalk alone.

P = Possible increase in pedestrian crash risk may occur if crosswalks are added without other pedestrian facility enhancements. These locations should be closely monitored and enhanced with other pedestrian crossing improvements, if necessary, before adding a marked crosswalk.

N = Marked crosswalks alone are insufficient, since pedestrian crash risk may be increased by providing marked crosswalks alone. Consider using other treatments, such as traffic-calming treatments, traffic signals with pedestrian signals where warranted, or other substantial crossing improvement to improve crossing safety for pedestrians.

PMPM Total Admissions

2015 =	102,408
2016 =	103,125
2017 =	102,716
2018 to date = (10/10/2018)	83,828

PMPM Total Cars Parked

2015 =	25,245
2016 =	19,811
2017 =	20,371
2018 to date = (10/10/2018)	18,105

PROPOSED
W11-2 (30" X 30")
W16-9P (24" X 12")

AHEAD

PROPOSED
R7-4 (12" X 18")

NO
STOPPING

PROPOSED DETECTABLE
WARNING PANEL (TYP)

PROPOSED
W11-2 (30" X 30")
W16-7P (24" X 12")

PROPOSED
R7-4a (12" X 18")

NO
PARKING
THIS
SIDE

PROPOSED DETECTABLE
WARNING PANEL

PROPOSED
W11-2 (30" X 30")
W16-7P (24" X 12")

MAINTAIN EXISTING
BRICK SIDEWALK

PROPOSED RE-STRIPING

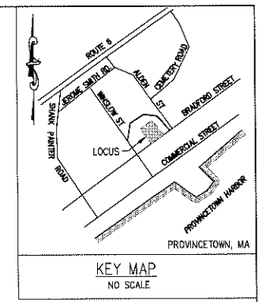
11'

8' (TYP)

STREET

RYDER STREET

BRADFORD



KEY MAP
NO SCALE

PLAN

20 10 0 20 60

1 inch = 20 ft.

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PROJECT #:
DATE:
DESIGNER:
DRAFTER:
REVIEWER:

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CONCEPT PLAN
CAPE COD PILGRIM MEMORIAL FUNICULAR
RYDER STREET AT BRADFORD STREET
PROVINCETOWN, MA

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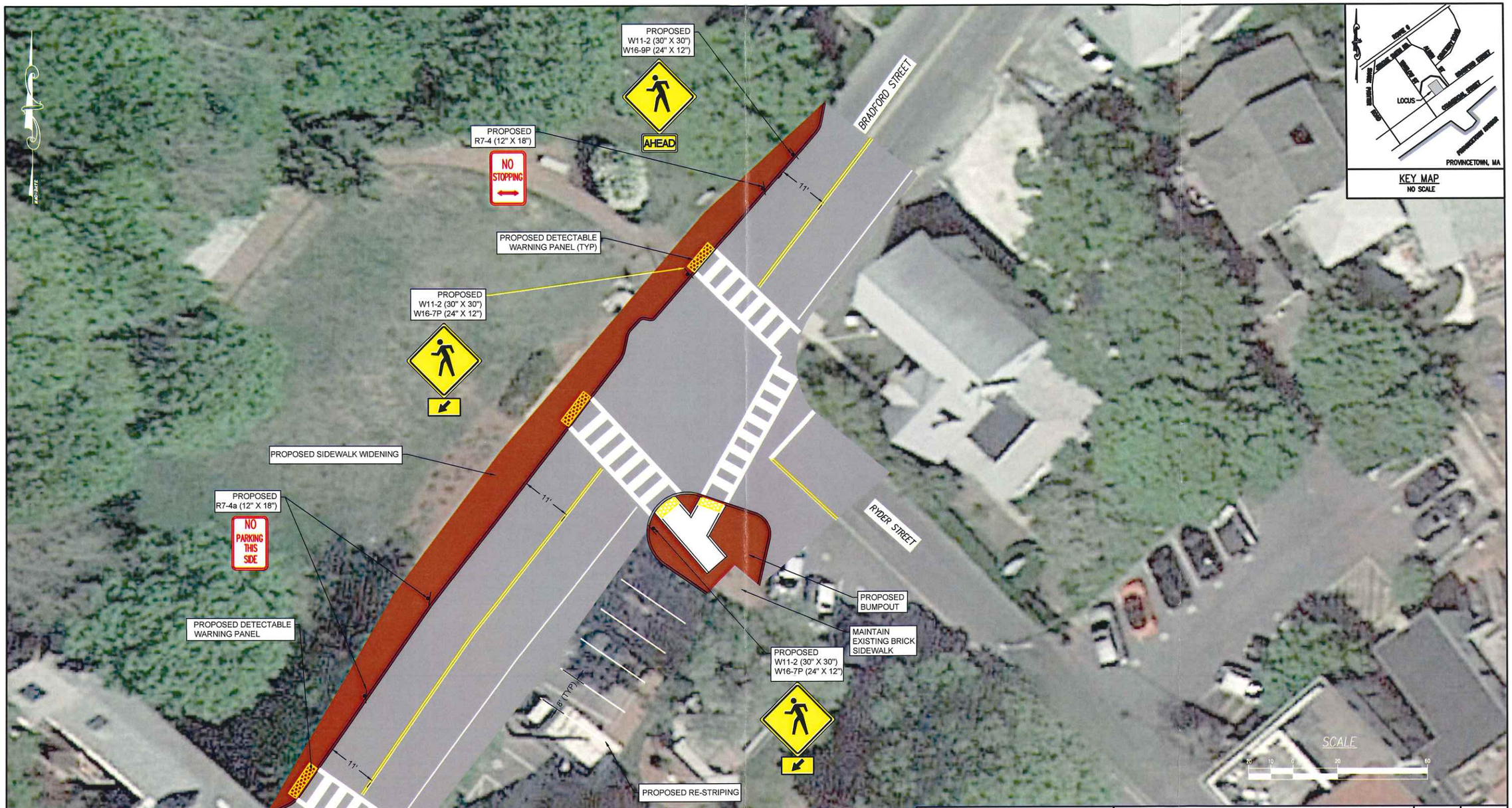

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GRAPHIC PLAN
CAPE COD PILGRIM MEMORIAL FUNICULAR
RYDER STREET AT BRADFORD STREET
PROVINCETOWN, MA

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