# Bicycle Coalition of Maine

# Report on Imagine People Here Demonstration Projects 2020

**February 8, 2021**

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BICYCLE COALITION OF MAINE

AARP Maine

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## Executive Summary

Despite the disruptions caused by the COVID-19 pandemic in 2020, the Bicycle Coalition of Maine (BCM), with support from AARPMaine and the MaineDOT, installed a series of traffic-calming demonstration projects in Bangor***º**, North Yarmouth*****, and Westbrook***º**, Maine. For all of these locations, staff collected information on the effects of the installations using radar speed studies and public surveys. In the case of Westbrook, a technique to assess yield rates was also applied. While public opinion regarding the projects' visual appeal and perceived safety varied, all were very positively received by persons walking, and had impacts that lowered motor vehicle speeds.

The cost for each individual crosswalk installation averaged about $500 for materials and paint. The BCM's average cost for each project in total, which generally involved multiple crosswalks, was approximately $2500 for materials and labor. North Yarmouth, which staged the most ambitious project, spent more than that amount.

BCM staff also provided extensive design and technical assistance on municipally initiated projects in Camdenº and Yarmouth*, as well as additional proposed projects in Augusta***º**, Hallowell***º**, Millinocket*****, Mount Vernon*****, and Rockland***º**. Some of these projects were interrupted by the pandemic, some bogged down in process, and others were intended for implementation in 2021. No additional information on these projects is included in this report.

(*Note: Towns/Cities designated with an asterisk [*****] are AARP Age-Friendly Communities. Towns/Cities designated with a degree symbol [**º**] are MaineDOT Heads Up Pedestrian Safety Initiative Focus Communities*)

# Implemented Demonstration Projects

## *Bangor*

On October 7, 2020, staff from the BCM collaborated with personnel from the City of Bangor and Bangor Walk-n-Roll to create crosswalk gateways and curb extensions at the intersections of State/Forest and State/Birch (indicated with yellow circles in Figure 1).

*Figure 1: installation locations in yellow, speed study site in red*

The project was reviewed and approved by both the City of Bangor and the MaineDOT regional engineer.

The team installed painted landings, striping, and delineators to increase the visibility of the crosswalks at the Forest and Birch crossings of State Street (see Figures 2 and 3).

*Figure 2: Installation at Forest and State*

*Figure 3: Installation at Birch and State (crosswalk was repainted after)*

Short speed studies conducted pre-installation on October 1 and with the installation in place on October 7 using a hand held radar at Parkview Street between the installation sites (indicated by red circle in Figure 1), suggest the installations had a measurable effect on reducing average speeds, 85th percentile speeds, and maximum speeds.

| **PRE-Installation** | **Date: 10.1.20** | | **DURING-Installation** | **Date: 10.7.20** |
|---|---|---|---|---|
| Average (mph): | 27.6 | | Average (mph): | 24.7 |
| Maximum (mph): | 40.3 | | Maximum (mph): | 33.4 |
| 85th Percentile (mph): | 30.6 | | 85th Percentile (mph): | 27.9 |

The CIty of Bangor helped distribute a survey to assess the public's reaction to the installation. A total of 39 people responded. Key takeaways from the survey include that:

- A majority of respondents (61.54%) felt the installation slowed traffic.
- 66.67% felt that the walking conditions had improved with the installation in place.
- A majority of respondents (56.41%) felt the installation made the roadway safer; 28.21% felt it did not, and 15.38% were not sure if the installation affected safety.
- A majority of drivers (71.8%) felt that the installation made the driving experience better (35.9%) or had no impact (35.9%). 17.95% of drivers said the installation made driving conditions worse, and an additional 10.26% had not driven on the road with the installation in place and had no opinion.
- A majority of pedestrians (51.28%) felt the installation made the walking experience better. 2.56% of pedestrians felt the installation made conditions worse, with 7.69% claiming it left conditions about the same. 38.46% had not walked on the street since the installation was put in.

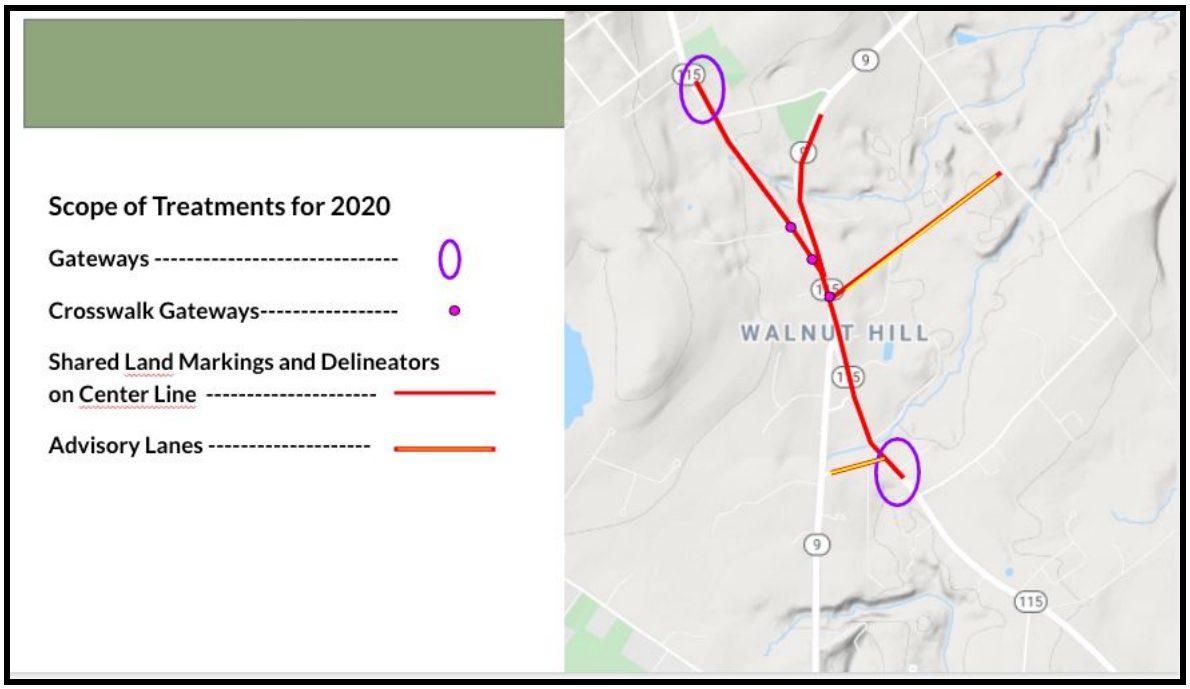
Overall, the speed study and public reaction suggest the installation had positive effects on calming traffic and improving the pedestrian experience at these crossings.

More information on the survey and speed study results is available upon request.

## *North Yarmouth*

The 2020 North Yarmouth project was largely designed and installed by municipal staff and contractors, with BCM staff primarily providing technical assistance and labor to paint nearly 50 shared lane markings. The installation consisted of delineator gateway treatments at the north and south end of the project area on Route 115 (indicated in Figure 4 by purple ovals), delineator gateway treatments at three crosswalks (indicated by magenta dots), shared lane markings and center line delineators spaced approximately 250 feet apart (indicated by red lines), and advisory lanes added to two side streets, Pea Lane and The Lane (indicated by yellow and red lines).

*Figure 4: Scope and type of installation*




Images of key elements of the installations can be seen in Figures 5 -7.

*Figure 5: Northern delineator gateway with bicycle rider*

*Figure 6: Crosswalk delineator gateway also showing SLM*

*Figure 7: Advisory lanes on The Lane*


Speed studies conducted by the town reveal that most treated locations had reductions in speed. At the southern end of the project area, however, near Fat Andy's Lumber store, both average and 85th percentile speeds increased somewhat.

| Location | Type of Installation | Posted Speed | Pre-Installation Average Speed | Pre-Installation 85th Percentile Speed | | During Installation Average Speed | During Installation 85th Percentile Speed |
|---|---|---|---|---|---|---|---|
| Rte 115 @ Fat Andy's | Delineators, gateways | 30 | 32 | 36 | | 35 | 40 |
| Rte 115 @ Fire Station | Delineators, gateways | 30 | 33 | 40 | | 25 | 30 |
| The Lane | Advisory Edge Lanes | unposted | 17 | 24 | | 11 | 15 |
| Pea Lane | Advisory Edge Lanes | unposted | 19 | 23 | | 18 | 22 |

The reason for the uptick in speeds is not known, although there is some evidence that a subset of users were unhappy with the installation and may have been deliberately driving aggressively. Town staff reported numerous incidents of drivers deliberately hitting delineators.

The Town of North Yarmouth helped distribute a survey to assess the public's reaction to the installation. A total of 224 people responded. Key takeaways from the survey include:

- A majority of respondents (61.61%) felt the installation slowed traffic.
- A majority of respondents (60.27%) had not walked on the road with the installations in place. Of those who had, 13.39% felt that conditions were worse, while 26.34% felt that conditions had improved or were about the same.
- 26.79% of respondents felt the installation made the roadway safer, with 61.61% saying they felt it was less safe. 11.61% were not sure.
- 42.21% of respondents felt the installation made crossing the roadway safer (but 18.59% of that group felt it could still be better), 44.22% said it "always felt safe," and 13.57% said it still feels unsafe.
- A majority of drivers (53.13%) felt that the installation made the driving experience worse, 24.55% felt it was better, and 21.43% said it felt about the same.
- 26.34% of respondents felt the installation made the walking experience better or unchanged. 13.39% felt the installation made conditions worse. A majority of respondents (60.27%) had not walked on the street since the installation was put in.
- While a majority of respondents (70.54%) had not ridden a bicycle on the road with the installation in place, of the remainder, 20.98% felt conditions were worse, 4.91% felt it was better, and 3.57% felt the conditions were about the same.

All respondents included verbal comments. A sentiment analysis of these comments found that 92 respondents (41%) made positive comments, 56 respondents (25%) made neutral comments, and 76 respondents (34%) made negative comments about the installations.

The survey comments also reinforced that some bicycle riders did not like the installation, and felt that it interfered with the road position they preferred to take when riding. This information will drive changes in how similar projects are conducted in the future, as well as more public education regarding how bicycle riders can best negotiate such projects.

Overall, the speed study and the public reaction indicate that the installation had mixed but generally positive effects on calming traffic and improving the pedestrian experience at these crossings.

More information on the survey and speed study results is available upon request.

## *Westbrook*

On September 3, 2020, BCM staff collaborated with City of Westbrook staff, community volunteers from the Age Friendly Community group, and the Discover Downtown Westbrook design group to create crosswalk gateways and curb extensions at:

- The crossing at the Riverside Park access road.
- The crossing at Giles Street
- The crossing at Dunn Street
- The crossing at Stroudwater Street
- The crossing at Pleasant Street (see Figure 8, right to left)

*Figure 8: yellow circles indicate installation locations*

The team installed painted landings, striping, and delineators to increase the visibility of the crosswalks at the five crossings (Figures 9-14, north to south).

*Figure 9: Crosswalk gateway at the Riverside Park access road.*

*Figure 10: Crosswalk gateway at Giles Street*

*Figure 11: Crosswalk gateway at Dunn Street*

Figure 12: Crosswalk gateway at Stroudwater Street

*Figure 13: Crosswalk gateway at Pleasant Street*

The posted speed limit on Main Street is 25 mph. 24 hour-long speed studies conducted by the Westbrook police department using a radar device on Main Street located near Stroudwater Street revealed the following:

| **PRE-Installation** | **Date: 6.1.20** | | **DURING-Installation** | **Date: 9.15.20** |
|---|---|---|---|---|
| Average (mph): | 25 | | Average (mph): | 24 |
| Maximum (mph): | 59 | | Maximum (mph): | 50 |
| 85th Percentile (mph): | 31 | | 85th Percentile (mph): | 30 |

The data shows modest reductions in all compared speeds. It is worth noting that the traffic volume increased by about 2,000 vehicles—from 7,948 in June to 10,503 by the time of the September study—as the increase in traffic likely affected free-flow traffic conditions.

The percentage of vehicles complying with the speed limit increased markedly between the two studies: more than 60% of drivers exceeded the speed limit in June, while only 50% were speeding during the study in September. (Note that we consider 50% of drivers speeding on any roadway to be a sign that a speeding problem exists!) While we cannot absolutely attribute the reductions in speed to the gateway installations, their presence during the second speed study was one element in the overall constellation of factors that affected driver behavior.

Unique to this Westbrook Imagine People Here project was the use of a technique to quantify the yield behavior of drivers. By applying the basic methodology described in Federal Highway's *USDOT Report No. FHWA-RD-00-103,* BCM staff were able to quantify the percentage of crossing attempts for which the first car approaching a crosswalk stopped for a pedestrian showing intent to cross.

| Percentage of "First Car Yields" at Crossings | Pre-Installation | | During Installation |
|---|---|---|---|
| | 7.15.20 | | 10.7.20 |
| Riverbank and Main | 20% | | 58% |
| Giles and Main | 55% | | 40% |
| Dunn and Main | 14% | | 42% |
| Stroudwater and Main | 18% | | 58% |
| Pleasant and Main | 18% | | 58% |

These results are very promising, and suggest that the presence of the enhanced visibility treatments at the crosswalks may have helped drivers be more aware of pedestrians seeking to cross. More studies on the effect of visibility enhancements on yield rates at crosswalks are planned for the summer of 2021.

The City of Westbrook helped distribute a survey to assess the public's reaction to the installation. A total of 30 people responded. Key takeaways from the survey include that:

- A majority of respondents (83.3%) felt the installation slowed traffic.
- A majority of respondents (50%) had not walked on the road with the installations in place. Of those who had, 3.3% felt that conditions were worse, while 46.67% felt that conditions had either improved (26.67%) or were about the same (20%).
- 63.33% of respondents felt the installation made the roadway safer, with 16.67% saying they felt it was less safe. 20% were unsure.
- 46.42% of respondents felt the installation made crossing the roadway safer, 18.59% felt conditions were improved but could still be better; 10.17% said it "always felt safe," and 14.29% said it still feels unsafe.
- 3.3% felt that the installation made the driving experience worse, 43.33% felt it was better, and 46.67% said it felt about the same. 6.67% of respondents had not driven on the road with the installation in place.
- 46.67% of respondents felt the installation made the walking experience better (26.67%) or unchanged (20%). 3.3% felt the installation made conditions worse. A majority of respondents (50%) had not walked on the street since the installation was put in.
- While a majority of respondents (66.74%) had not ridden a bicycle on the road with the installation in place, of the remainder: 6.67% felt conditions were worse, 20% felt it was better, and 6.67% felt the conditions were about the same.

One goal of the installations was to discourage people from parking within 20 feet of marked crosswalks. The team used paint and delineators to clarify where the no parking zones were (see Figure 14).

*Figure 14: Giles Street installation*

The importance and effectiveness of using the delineators to prevent parking within 20 feet of crosswalks is illustrated by this image (Figure 15) of the Giles Street crossing after the delineators had been removed. Cars can be seen parking in the white hash-marked no parking areas, which reduces the visibility of any pedestrian seeking to cross at this location.

*Figure 15: Parking too close to the crosswalks resumed once the delineators were removed*

More information on data collected is available upon request.

## Conclusion

As motor vehicle speeds directly correlate to the severity of traffic crashes, techniques to slow traffic can have a strong impact on safety outcomes. The demonstration projects discussed in this report suggest that it is possible to measurably slow motor vehicle traffic and improve yield rates using low cost materials. The cost for each crosswalk installation averaged about $500 for materials and paint, and BCM's cost for each project in total averaged approximately $2500--a small fraction of the cost of a permanent hardscaped installation.

These demonstration projects, executed by the BCM's "Imagine People Here" program, indicate that it is possible to calm traffic and improve safety, at least seasonally, at costs that do not bust town budgets. These temporary installations help to test designs and build support for more permanent changes that calm traffic and improve safety. More studies using demonstration projects are recommended.

## Acknowledgements

The Imagine People Here 2020 projects were made possible by the generous support of the AARP and Bicycle Coalition of Maine members. We would also like to thank the Maine Department of Transportation for their support of this and other education efforts. The project team would like to extend a special thanks to the town officials and local community partners of Bangor, North Yarmouth, and Westbrook, whose support and partnership made these projects possible.

# Project Team

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