

Vermont Agency of Transportation

Work Zone Safety: Lighted Paddles

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Lighted Paddles Pilot

- 2020 Legislation – Act 149 requires the Agency of Transportation to pilot the use of STOP/SLOW paddle signaling devices modified to improve conspicuity by incorporating flashing lights on the faces consistent with the standards detailed in the Manual on Uniform Traffic Control Devices (MUTCD)
- Timeline for Pilot
 - Identify projects on or before September 1, 2020
 - Collect data on the effectiveness, reliability and availability during the 2021 and 2022 construction seasons
 - File written report with House and Senate Committees on Transportation on or before December 1, 2022 covering the selected projects and an evaluation of lighted paddle signaling devices



Lighted Flagger Paddles

SPECIFICATION

Standard Drawing T-30

Part 6E.03 of the Manual Uniform on Traffic Control Devices (MUTCD)

Special Provision

PROJECT LIST

Chosen to represent a typical cross section of project types and settings in Vermont

- Paving
- Intersection reconfiguration
- Bridge rehab and replacement
- Urban/Suburban
- Rural
- Day work
- Night Work

Pilot Projects

| | Bid Ad Date | Bid Opening | Contract Award | Completion Date* | Contractor |
|--|-------------|-------------|----------------|------------------|---------------------------------|
| Craftsbury-Irasburg, STP FPAV(32) and Eden, STP FPAV(29) | 9/2/2020 | 10/6/2020 | 10/9/2020 | 8/20/2021 | Pike Industries, Inc. |
| Williston, STP 5500(7) | 9/2/2020 | 10/9/2020 | 10/22/2020 | 10/13/2023 | Engineers Construction, Inc. |
| Chester, BF 0134(50) | 10/14/2020 | 11/6/2020 | 11/30/2020 | 10/13/2021 | Bazin Brothers Trucking, Inc. |
| Essex, BF 5400(9) | 10/21/2020 | 11/13/2020 | 12/3/2020 | 10/1/2021 | Engineers Construction, Inc. |
| Calais, BHF 037-2(10) (11) and (12) | 9/9/2020 | 11/20/2020 | 12/14/2020 | 10/14/2022 | A.L. St. Onge Contractor, Inc. |
| Chester-Springfield, STP 2942(1), PS19(4) and Springfield, STP PS19(5) | 10/28/2020 | 11/20/2020 | 12/7/2020 | 8/1/2022 | Pike Industries, Inc. |
| Enosburgh, BF 0283(42) and Berkshire, STP SCRP(23) | 11/18/2020 | 12/11/2020 | 12/29/2020 | 10/29/2021 | A. L. St. Onge Contractor, Inc. |
| Springfield, BF 0134(43) and (45) | 1/13/2021 | 2/5/2021 | 2/22/2021 | 11/30/2021 | Cold River Bridges, LLC |
| Wilmington-Brattleboro, NH 2971(1) | 1/27/2021 | 4/16/2021 | 5/3/2021 | 8/11/2023 | Pike Industries, Inc. |
| Montgomery, STP DECK(40) and (47) | | | | | |

*Completion Date is Substantial Completion for projects that have achieved that milestone, and anticipated completion for those that have not.



Evaluation - ongoing

Evaluation of the effectiveness is a challenge because of the small number of serious incidents- it's difficult quantify how effective the paddles are since most projects do not experience a serious incident.

Questionnaire developed to collect relevant quantitative and qualitative data including:

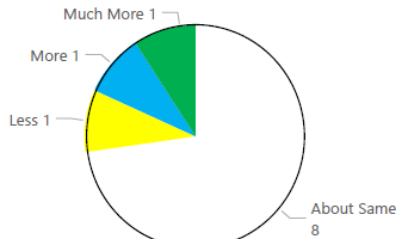
- Project and site information
- Procurement issues and cost
- Battery life and replacement frequency
- Durability
- Opinions about effectiveness compared to traditional paddles
- Other comments from field staff, including State inspectors, Flaggers and Contractor superintendents



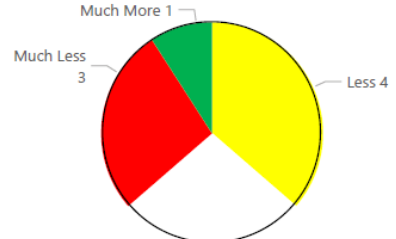
Preliminary Findings



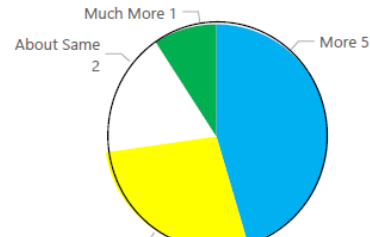
Durability



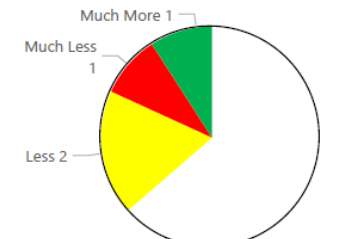
Effectiveness



Functionality



Visibility



Notice to Bidders

- Much More
- More
- About the Same
- Less
- Much Less

SLOW / STOP Paddle Survey Results

Average Battery Life (Hours)

3.25

Average Number of Battery Changes Per Shift

2.93

Average Purchase Price

\$301.00



Preliminary Findings

- Average purchase price: \$301
- Average battery life: 3.25 hours
- Average battery changes per shift: 2.93
- Durability was a concern- lighted paddles are more fragile than traditional paddles
- Day-to-day operation (functionality) was perceived to be more difficult than traditional paddles
- Visibility was generally perceived to be better
- Effectiveness was generally perceived to be about the same as traditional paddles



Questions

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