



Driveway Assistance Device

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THE PROBLEM

Circa 2011, TxDOT recognized the need to safely control driveway traffic in work zones in residential areas, while at the same time preventing delays and queues on the main traffic phase due to excessive cycle lengths.



THE PROBLEM

“ Quite often there are low-volume access points, such as residential driveways, within the temporary one-lane section of roadway. There is the potential for motorists entering the roadway from these access points to misunderstand the direction of traffic, enter the roadway going in the wrong direction, and collide with a vehicle travelling through the work zone. While these access points should be monitored, existing methods are not always feasible.”

-Texas A&M Transportation Institute Study



EXISTING METHOD #1

Flaggers

Positioning flaggers at each driveway is impractical, and an inefficient use of manpower.

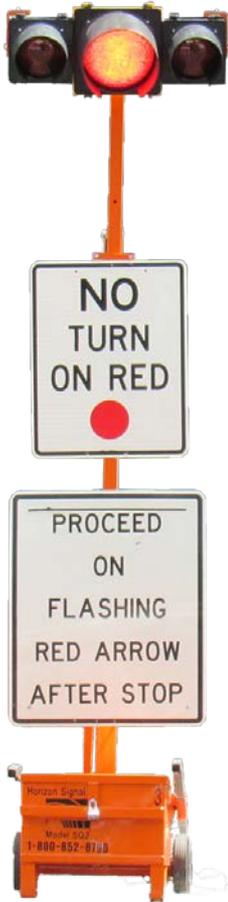




EXISTING METHOD #2

Temporary R-Y-G Traffic Signal

Traditional signals are inefficient due to lack of directional information, and cycle length issues.



The **Driveway Assistance Device**, or “DAD,” safely alerts motorists to the direction of traffic flow in one-lane, alternating workzones. It is designed specifically for residential driveway use, and improves traffic flow efficiency by keeping cycle lengths at a minimum without compromising safety.



October 29, 2012

Hurricane Sandy





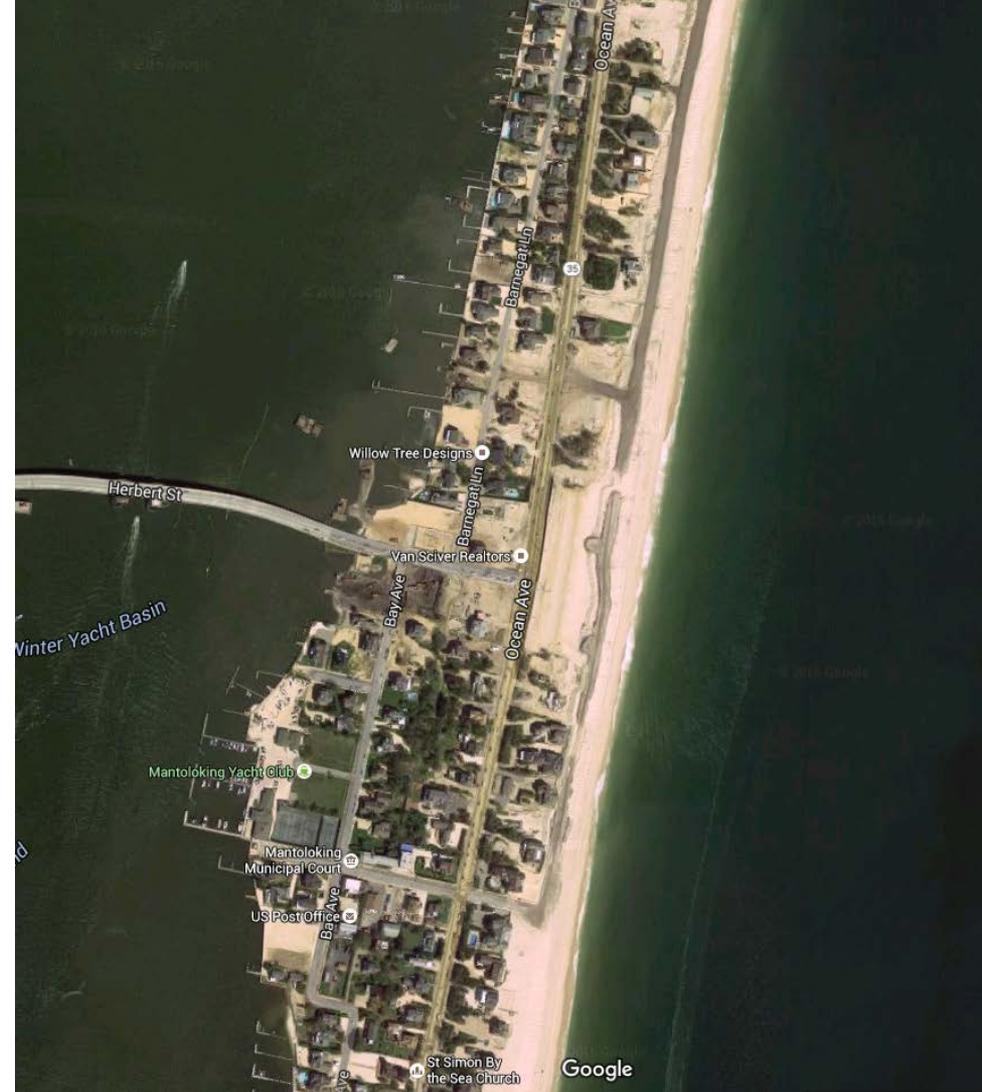






NJ RT 35

High traffic area was heavily damaged, and in some areas completely gone. Areas that survived the storm were to be reduced to a single lane following initial cleanup.







N JDOT QUESTIONS

QUANTITY

Dozens of residential driveways within the work area.

CYCLE LENGTH

Overall work area of approx. 1 mile could casue ling queues of not handled properly.

COMPLIANCE

Private construction vehicles and residents used the driveways many times daily.



DESIGN

The device features a 12-inch circular red, with 8-inch turn arrows on either side. Only one indication is active at any time (per NJDOT).



POWER

Signals on NJ 35 were in operation during winter months and required regular charging. Solar panels were later added to prolong battery life.





TRAILER VERSION

Provides larger batter bank and increased solar capacity, as well as easy maneuverability.





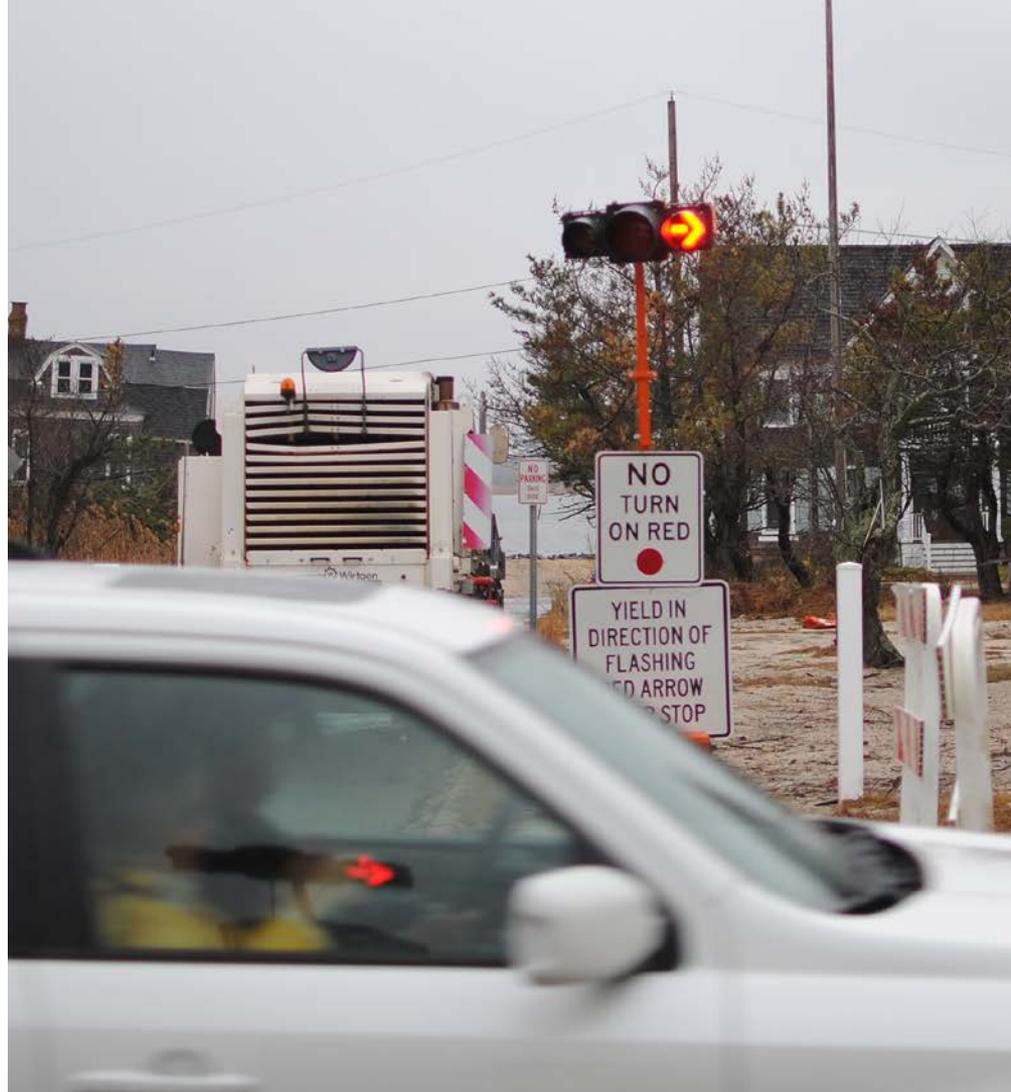
NO
TURN
ON RED

WED
DIRECTION OF
TRAVEL
RED ARROW
OTHER SIDE

DEERE

PROJECT DETAILS

- *Community outreach:* NJDOT notified residents prior to deployment
- *Duration:* December 2013 – Jan 2015
- *31 DADS at peak*
- *Zero reported incidents/ accidents*





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U39·AYX



NO
TURN
ON RED

YIELD IN
DIRECTION OF
FLASHING
RED ARROW
AFTER STOP





HOW IT WORKS

Each DAD is activated by a PTS on the main traffic phase. All arrows flash in the direction of traffic flow, allowing driveway vehicles to join or follow the queue out of the zone.







HOW IT WORKS

DADs are all wirelessly interconnected, with no limit to the number of devices used.





NO
TURN
ON RED

YIELD IN
DIRECTION OF
FLASHING
RED LIGHT

ROAD CLOSED
TO
THRU TRAFFIC

RECENT DEPLOYMENTS



NO
TURN
ON RED


YIELD IN
DIRECTION OF
FLASHING
RED ARROW
AFTER STOP





NO
TURN
ON RED



PROCEED
ON
FLASHING
RED ARROW
AFTER STOP



GIVE 'EM A
BRAKE
SAFETY
616-531-8705





NO
TURN
ON RED



PROCEED
ON
FLASHING
RED ARROW
AFTER STOP



STOP
HERE ON
RED





ROAD CLOSED
AHEAD

ROAD CLOSED
AHEAD

SPEED LIMIT
55







Three circular traffic signal lights. The rightmost light is illuminated with a red arrow pointing to the right.

Horizon Signal
Model 503
1-800-852-8700









NO
TURN
ON RED

PROG
O
FLA
RED
AFT

Alro delivers...everyday

Dynalor
659304



Alro Steel

Metals • Industrial Supplies • Plastics

alro.com

USDOT 300210



NO
TURN
ON RED



PROCEED



APPROVALS

The Driveway Assistance Device is not included in the current MUTCD





FHWA APPROVALS

MUTCD Section 1A.10.02

Continuing advances in technology will produce changes in the highway, vehicle, and road user proficiency; therefore, portions of the system of traffic control devices in this Manual will require updating. In addition, unique situations often arise for device applications that might require interpretation or clarification of this Manual. *It is important to have a procedure for recognizing these developments and for introducing new ideas and modifications into the system.*



APPROVALS

- Several State DOT's have recognized the need for a device to control residential driveways within a one lane, bidirectional work zone.
- Massachusetts DOT has requested permission from the FHWA to experiment with the DAD
- Iowa, Michigan, Texas have all used DADs in various projects

Questions?

Thank You!

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