Implementation of Wrong-Way Driving Countermeasures for Arterials and Freeways

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Outline

➢ Wrong-Way Driving (WWD) Initiative
  ▪ Timeline
  ▪ FDOT Research
  ▪ Wrong Way Vehicle Detection System (WWVDS)
  ▪ Freeway Deployments
  ▪ WWD Dashboard
  ▪ Success Stories

➢ FDOT Arterial Research
FDOT’s Wrong-Way Driving (WWD) Initiative

FDOT’s Vision Zero target

FDOT’s Vital Few

Countermeasures

Research

Education

Safety
Mobility
Innovation
Workforce
FDOT’s WWD Timeline & Initiatives

**SEPTEMBER 2014**
Request to Experiment (RTE) - D3 Red Internally Illuminated Raised Pavement Markings

**OCTOBER 2014**
RTE - D7 Red Rectangular Rapid Flashing Beacon (RFB)

**APRIL 2015**
Statewide Wrong Way Crash Study

**NOVEMBER 2015**
(FSU) - Driving Simulator Studies on Human Factor

**APRIL 2015**
Bulletin - Signing and Pavement Marking at Ramp Intersections

**MARCH 2016**
RTE - Florida Turnpike Red - RRFB

**MARCH 2017**
(CUTR) - Comparing Seven Countermeasures

**NOVEMBER 2018**
(CUTR) - Testing and Evaluation Video Detection Systems for Freeway Mainlines

**MARCH 2017**
(FIU) - Data-Driven Approach for Identifying Hotspots

**NOVEMBER 2018**
(FIU) - Strategies to Mitigate Wrong-way Driving Incidents on Arterials

**JULY 2019**
Bulletin – Implement LED highlighted WRONG WAY signs at exit ramps

**JUNE 2021**
Bulletin – Countermeasures for Arterials and Collectors

**NOVEMBER 2019**
(FIU) - Strategies to Mitigate Wrong-way Driving Incidents on Arterials

**November 2021**
2022 FDM Published with Traffic Design Ch. 230 S&PM Updated

**JUNE 2021**
Bulletin – Countermeasures for Arterials and Collectors

**Request to Experiment**

**Bulletin**

**Research Projects**
Countermeasures Evaluated

- Updated Signing and Pavement Marking
- Red Rectangular Rapid Flashing Beacons
- Internally Illuminated Raised Pavement Markers
- Light-Emitting Diode (LED) Highlight WRONG WAY signs
- Blank-out signs that flash “WRONG WAY
- Delineators along exit ramps
- Wig-wag Flashing Beacons
Video Analytics - WWD Detection on Freeway Mainlines

- Completed research on video analytics for detecting WWD vehicles
- FDOT tested best performed system on the Howard Frankland bridge in the Tampa Bay Area

Correct Driving Direction is B to A, WWD Direction is A to B
660-2.2.1.4 Wrong Way Vehicle Detection Systems

- Produces an alarm
- One or more detection zones
- Mainline or Ramps
- Must include shoulder monitoring

660-2.2.1.4 Wrong Way Vehicle Detection Systems: Wrong way vehicle detection systems produce an alarm output when a vehicle is detected traveling in the wrong direction and may consist of more than one detection zone and may use any of the technology types. For both mainline and ramp installations, the detection system must monitor all lanes for one direction, including shoulders. The wrong way detection system must not interfere with other vehicle presence or traffic data detection systems.
Reasons for Partnership with Roadway Design

➢ Arterial research identified roadway characteristics we could target to mitigate large portion of crashes

➢ Research identified crashes occur very close to point of entry so if we can correct the point of entry, wrong-way driving may be largely reduced

WWD Freeway:
  ➢ Draw more media attention
  ➢ Often involve more vehicles
  ➢ Can cause extended closures
  ➢ Result in more fatalities per crash

WWD Arterial:
  ➢ WWD crashes are more frequent on arterial streets than freeways
Thank You!

Freeway Dynamic Message Signs

Wrong-Way Driving Initiative Video

https://www.youtube.com/watch?v=c8BAMdHT6GE