WRONG WAY DRIVER PROJECT

TxDOT San Antonio District – TransGuide
John Gianotti, P.E.
In Memory of Stephanie Brown

SAPD Officer Stephanie Brown (27 yrs old) killed by a WWD in the line of Duty March 15, 2011
WE KNOW THE PROBLEM  WWD on IH 35 at 3 am – 4/1/14
WWD on US 90 at 3:30 am – 4/19/14
WWD on US 281 at 2:42 am – 11/14/14
WWD on US 281 at 3:55 am – 2/1/15
US 281 Pilot Project – 2011 data

1. US 281 From IH 35 to Stone Oak
   Most Events on Any Corridor
Wrong Way Driver Reports by Hour of Day - 2016

Bars Close at 2 AM

Midnight | Noon | Midnight
---|---|---
15 | 1 | 9
21 | 19 | 12
25 | 25 | 11
10 | 13 | 12
4 | 4 | 11
1 | 1 | 10
0 | 1 | 9
1 | 3 | 8
3 | 3 | 7
1 | 1 | 6
2 | 2 | 5
1 | 2 | 4
2 | 2 | 3
4 | 4 | 2
9 | 9 | 1
11 | 11 | 0
2016 WWD Statistics Reports by Day of the Week

Wrong Way Driver Reports by Day of Week - 2016

Day of Week

- Monday: 8
- Tuesday: 10
- Wednesday: 13
- Thursday: 26
- Friday: 14
- Saturday: 41
- Sunday: 50

Lifesavers National Conference – March 27, 2017
## 2016 WWD Statistics Reports by Month of the Year

### Wrong Way Driver Reports by Month - 2016

<table>
<thead>
<tr>
<th>Month</th>
<th>Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>15</td>
</tr>
<tr>
<td>February</td>
<td>9</td>
</tr>
<tr>
<td>March</td>
<td>22</td>
</tr>
<tr>
<td>April</td>
<td>10</td>
</tr>
<tr>
<td>May</td>
<td>15</td>
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<tr>
<td>June</td>
<td>13</td>
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<td>July</td>
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<td>September</td>
<td>15</td>
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<tr>
<td>October</td>
<td>12</td>
</tr>
<tr>
<td>November</td>
<td>12</td>
</tr>
<tr>
<td>December</td>
<td>10</td>
</tr>
</tbody>
</table>
Wrong Way Driver Reports by Year: 2012-2016

Year | Reports
--- | ---
2012 | 269
2013 | 222
2014 | 164
2015 | 190
2016 | 162
HOW DO WE FIX IT? San Antonio Wrong Way Driving Task Force

Organized in the spring of 2011 to examine factors contributing to wrong way driving and to identify methods of addressing wrong way drivers

- Texas Dept. of Transportation
- San Antonio Police Department
- San Antonio Transportation and Capital Improvements (TCI)
- Bexar County Sheriff’s Office
- Federal Highway Administration
- Texas A&M Transportation Institute
Not with spikes...

- **Challenges**
  - Determining points of entry for WWDs
  - More than 400 exit ramps in San Antonio metro area
  - How to get the attention of drivers that are severely impaired
  - Manual of Uniform Traffic Control Devices compliance
  - Spike strips are not MUTCD compliant
Enhanced Static Signing & Pavement Markings

- Increased visibility of “WRONG WAY” and “DO NOT ENTER” signs shown to reduce wrong way driving
- TxDOT implemented measures recommended in a prior study:
  - Field Inspection of all ramps using 2004 TTI Study Checklist
  - Ensure all required signs, pavement markings and RPM’s are in place and visible

Wrong Way Arrows
TxDOT Standard Sheet FPM (1)-12
Enhanced Static Signing & Pavement Markings

- Recommend additional (supplemental) measures:
  - Add reflective tape on sign posts
  - Increased size of ONE WAY signs
  - Additional WRONG WAY & DO NOT ENTER signs at critical locations
  - Lowered sign heights*

* Note: TxDOT now allows a 3 ft lowered sign height
2012-14 TTI WWD Study – WRONG WAY Sign Findings

- Takes longer to find sign at BAC 0.12 then at BAC = 0.04 and 0.08
- No difference in the time to identify the sign
  - Among treatments
  - Between sign heights
- Preference data did reveal some differences

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Thought Difficult to Find Sign</th>
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<tbody>
<tr>
<td>Standard</td>
<td>31%</td>
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<tr>
<td>Oversize</td>
<td>17%</td>
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<tr>
<td>Tape</td>
<td>13%</td>
</tr>
<tr>
<td>LED</td>
<td>13%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Thought Caught Attention More</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oversize</td>
<td>92%</td>
</tr>
<tr>
<td>Tape</td>
<td>88%</td>
</tr>
<tr>
<td>LED</td>
<td>85%</td>
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<tr>
<td>2 FT</td>
<td>54%</td>
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</table>
Partnering with San Antonio Police Dept. (SAPD)
DMS Wrong Way Driver Warning Message – May 2011

- No lane instructions given
- Message displayed first, then operator searches for vehicle using cameras
- Displayed Until:
  1) WWD stopped,  2) Accident found,  or  3) SAPD cancels Alert
Recommended warning messages

![Warning Message]

> 15 characters per line

Activate beacons when warning message displayed
- Catch attention of motorists
- Distinguish from other messages

What if the sign does not have beacons?
- Can flash entire message
- Do not flash one line

Post when wrong way driver reported

Displayed in both directions of travel
DMS warning message - Nov. 2012 success story
Detection Technologies (Radar Sensors)

Radar on Exit Ramps
Exit Ramp Counter measures - TraffiCalm
Detection methods

- Single point radars have proven to be unreliable for detecting WWD – too many false positives.
- Dual radars or detection at two points seem to be more effective – TxDOT is just beginning to test the dual radar configuration.

New detection ideas or methods
- Video analytics
- Dual radars with a camera
- Three Radars with a camera
- Pods in the pavement for detection
- Loops in the pavement
Learn from others

Lifesavers National Conference – March 27, 2017
58 serious crashes have been prevented since 2011 by TRANSGUIDE OPERATORS, SAPD DISPATCHERS & OFFICERS

- David Rodrigues
- Ben Lopez
- Mando Rodriguez
- Louis Ugarte
- Crystal King
- Mike Barker
- Ishmael Trevino
- Jason Wells
- Christine Jauregui
- Michael Summers
- Stephanie Hovis
- Ashley Hard
- Dawn Campbell
- Scott Arnold
Thank you

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2015 National Roadway Safety Award Winner
TxDOT San Antonio District
TransGuide Office
Wrong Way Driver Program