WRONG WAY DRIVER INITIATIVE

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San Antonio District - TransGuide
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San Antonio Wrong Way Driver Task Force

- March 15, 2011 – SAPD Officer Stephanie Brown (27 yrs old) – killed in the line of duty by a wrong way driver on IH 35 on N side of Downtown San Antonio.

- WWD Task Force was organized in the spring of 2011 to examine factors contributing to wrong way driving in San Antonio, and to identify methods of addressing wrong way drivers.

- Agencies Participating:
  - Texas Department of Transportation
  - The San Antonio Police Department
  - City of San Antonio Department of Public Works
  - The Bexar County Sheriff’s Department
  - The Federal Highway Administration
  - The Texas Transportation Institute
San Antonio Wrong Way Driver Task Force

- **August 2010** – San Antonio Police Dept. (SAPD) - Implemented E-Tone WWD notification for its radio network
- **January 2011** – SAPD: Implemented code in Computer Aided Dispatch (CAD) system identifying WWD events
- **May 2011** – TxDOT: TransGuide operators authorized to display WWD warning message on DMS when SAPD issued E-Tone for WWD alert. Previously operators verified the WWD, and then placed the messages.
- **January 2013** – TxDOT: IH 35 project N of San Antonio lets – first construction project to install LED illuminated WWD signs and radar
- **March 2013** – TxDOT: Activation of first WWD radar on US 281 SB exit ramp @ Josephine St
San Antonio Wrong Way Driver Task Force

- **Goals**
  - Identify high risk locations
  - Investigate prior WWD related research
  - Investigate WWD Counter Measures implemented elsewhere
  - Identify potential WWD Counter Measures
  - Identify funding for implementation of WWD Countermeasures
San Antonio Wrong Way Driver Task Force

- Challenges
  - Determining points of entry for WWDs
  - Number of ramps:
    + 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

![Wrong Way Driver Prevention Devices](image1.png)
![Manual of Uniform Traffic Control Devices](image2.png)
<table>
<thead>
<tr>
<th>Event Description</th>
<th>Count</th>
</tr>
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<tbody>
<tr>
<td>Total WWD Events logged by TransGuide Operators</td>
<td>222</td>
</tr>
<tr>
<td>WWD not apprehended, no crash (90%)</td>
<td>199</td>
</tr>
<tr>
<td>Total crashes documented (6%)</td>
<td>14</td>
</tr>
<tr>
<td>9 Crashes with serious injuries or fatalities</td>
<td></td>
</tr>
<tr>
<td>- 8 Crashes with serious injuries or fatalities (10), Driver DWI</td>
<td></td>
</tr>
<tr>
<td>- 1 Crash with serious injuries or fatalities, Driver not DWI</td>
<td></td>
</tr>
<tr>
<td>7 No Crash, WWD apprehended, Driver DWI (3%)</td>
<td></td>
</tr>
<tr>
<td>2 No Crash, WWD Disoriented due to medical condition (1%)</td>
<td></td>
</tr>
</tbody>
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Wrong Way Driver Reports by Hour of Day - 2013

Bars Close at 2 AM

| Midnight | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|          | 15  | 14  | 27  | 20  | 8   | 5   | 4   | 2   | 1   | 1   | 1   | 4   | 4   | 5   | 0   | 2   | 3   | 7   | 6   | 16  | 13  | 15  |     |     |     |

2014 Traffic Safety Conference
2011, 2012 & 2013 GIS Density Maps

2011
June - Dec

2012

2013
Countermeasures Identified

- Active/Illuminated Signing
- Enhanced Static Signing & Pavement Markings
- Detection Technologies (Radar Sensors)
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
Active/Illuminated Signing: LED & Blank-out Wrong Way Signs

- 72% of the wrong way driver events occur at night
- The flashing LED lights will be visible from a greater distance
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 on 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 is not implementing lowered sign heights at this time
Detection Technologies (Radar Sensors)

Exit Ramps – TAPCO Radar

Mainlanes – Wavetronix Radar
Exit Ramp Countermeasures

Existing Signs

New LED WW signs
Mainlane Countermeasures

- LED & Blank-Out Wrong Way Signs Activated by Contact Closure Radio Link
- WAVETRONIX Radar on OVB Used for WWD Detection
Mainlane & Exit Ramp countermeasures

Mainlane

Exit Ramp
**Budget for WWD Active Countermeasures**

- **Exit Ramps**
  - TAPCO LED WW sign w/solar panel = $1,988
  - LED WW sign w/Radar & solar panel = $5,340
  - Prices are for existing sign mounts.
  - Labor & misc. electronic parts - $6,500
  - **Typical ramp installation = $14,000**

- **Mainlane System**
  - 2 TAPCO LED WW signs Sign = $3,996
  - 2 SES Blank Out Signs = $16,400
  - 1 Wavetronix Radar Detector = $6,400
  - 1 contact closure radio link = $3,800
  - Additional electronic components - $1,430
  - Labor - $9,600
  - **Typical mainlane system = $42,000**
US 281 Pilot Project

1. US 281 From IH 35 to Stone Oak
   Most Events on Any Corridor
US 281 Pilot Project

15 Miles

28 Exit Ramps
- 2 LED Illuminated Wrong Way Signs
- 1 Radar Detection Unit

4 Mainlane Locations (future)
- 2 LED Illuminated Wrong Way & 2 LED Blank Out Signs installed on both shoulders
- 1 Radar Detection Unit

- Installation began Jan 2012
- All LED Illuminated Wrong Way Signs have been installed
- 16 Radar Units Installed
- Mainlane System tested and waiting installation
- Budget $500,000
## US 281 Pilot Project - 18 Month Results

<table>
<thead>
<tr>
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<th>July 2012 to December 2013</th>
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<tr>
<td>Reduction in Avg. Rate of WWD Events</td>
<td>28.11%</td>
</tr>
<tr>
<td>TransGuide Logs</td>
<td>(thru March 2014)</td>
</tr>
<tr>
<td>Reduction in Avg. Rate of WWD Events</td>
<td>27.29%</td>
</tr>
<tr>
<td>SAPD 911 Logs</td>
<td></td>
</tr>
<tr>
<td>Project Cost</td>
<td>$377,605</td>
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<tr>
<td>Annual Cost Savings</td>
<td></td>
</tr>
<tr>
<td>Avg. of SAPD &amp; TxDOT data</td>
<td>$235,946</td>
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<tr>
<td>Benefit - Cost ratio</td>
<td>12.5 : 1</td>
</tr>
<tr>
<td>Cost Recovery Time (yrs)</td>
<td>1.6</td>
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2011 & 2013 GIS Density Maps

2011: June - December

2013: January - December
How are we doing?

Construction Projects
How are we doing? WWD on IH 410 - 2/12/14

- Seen on camera at Ingram Rd.
- First report at Vance Jackson
- WWD apprehended by SAPD at Medina Base Rd.
- Approx. 13.5 miles, 14 minutes
WWD on IH 410 – 2/12/14  (Caught on camera by Ben Lopez – TransGuide)
WWD on IH 35 at 1:30 am – 3/31/14
WWD on US 90 at 3:30 am – 4/19/14
How are we doing? Nov. 2012 success story
WRONG WAY DRIVER INITIATIVE

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