US 41 Safety Improvements at Freelandville Road and Old US 41

David Pluckebaum, PE – Corradino LLC
David Cleveland, PE – Corradino LLC
Josh Cooks, PE - HNTB

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Project Locations

- US 41 at Old US 41
- US 41 at Freelandville Road

Purpose and Need:

- The purpose of the project is to improve safety at the two intersections.
- The need is driven by the extensive accident history and large number of right-angle collisions.
US 41 at Freelandville Road

- **Traffic Data**
  - US 41 Traffic
    - 8720 vehicles per day
    - 22% Trucks
  - Freelandville
    - 850 vehicles per day

- **Accident Data (2003 to 2015)**
  - 61 Accidents
  - 93% Failure to Yield
  - 28 Injuries (last 5 years)
  - 1 Fatality (last 5 years)
US 41 at Freelandville Road

- Accident Concerns
  - Severity of accidents due to US 41 speeds
  - Severity of accidents due to type of impacts

- Accident Details (past 2 years)
  - 12 Failure to Yield Accidents (16 injuries)
  - No Impaired Drivers
  - Weather – 10 of 12 Dry Pavement
  - Light – 11 of 12 Daytime
  - 4 Commercial Vehicles (none at fault)
US 41 at Old US 41

• Traffic Data
  • US 41 Traffic
    • 8410 vehicles per day
    • 22% Trucks
  • Freelandville
    • ~500 vehicles per day

• Accident Data (2003 to 2015)
  • 25 Accidents
  • 64% Failure to Yield
  • 9 Injuries (last 5 years)
  • 6 Fatality (last 5 years)
  • 2 Fatalities since Study Conducted
US 41 at Old US 41

- Accident Concerns
  - Severity of accidents due to US 41 speeds
  - Severity of accidents due to type of impacts

- Accident Details (past 2 years)
  - 3 Failure to Yield Accidents (7 injuries/4 fatalities)
  - 1 Impaired Driver
  - Weather – 3 of 3 Dry Pavement
  - Light – 2 of 3 Daytime
  - 0 Commercial Vehicles
US 41 at Old US 41
Studies

- Abbreviated Engineering Review for Traffic Safety; Parsons Brinkerhoff 2014
- Technical Memorandum; Intersection Improvements on US 41; Corradino 2017
Alternatives Considered

- Install Additional Traffic Control; signage, pavement markings, warning lights, etc.
- Police Enforcement
- Lengthen Turn Lanes
- Realign Intersection (Old US 41)
- Close Median Openings
- Install Street Lighting
- Install Traffic Signal
- Construct Median U-turn Options
- No Action
What is a Median U-turn Intersection?

Median U-turn Intersection

- 6 Crossing
- 8 Merge
- 6 Diverge

Existing Intersection

- 24 Crossing
- 10 Merge
- 8 Diverge
What is a Median U-turn Intersection?

• How does it work? Northbound US 41
What is a Median U-turn Intersection?

• How does it work? Southbound US 41
What is a Median U-turn Intersection?

• How does it work? Westbound Freelandville Road
What is a Median U-turn Intersection?

• How does it work? Eastbound Maple Avenue
Does the Median U-turn Intersection improve safety?

**YES**

<table>
<thead>
<tr>
<th>North Carolina Case Studies Collision Summary by Type</th>
<th>Before</th>
<th>After</th>
<th>%Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rear End</td>
<td>13</td>
<td>8</td>
<td>-38%</td>
</tr>
<tr>
<td>Angle</td>
<td>47</td>
<td>0</td>
<td>-100%</td>
</tr>
<tr>
<td>Turning</td>
<td>32</td>
<td>10</td>
<td>-69%</td>
</tr>
<tr>
<td>Sideswipe</td>
<td>8</td>
<td>3</td>
<td>-63%</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>100</strong></td>
<td><strong>21</strong></td>
<td><strong>-79%</strong></td>
</tr>
</tbody>
</table>

Source

“Spot Safety Project Evaluation”, #02-00-208/02-00-209 #11-99-210 #14-97-018 NCDOT Safety Evaluation Group, 2005 and 2006
Does the Median U-turn Intersection improve safety?

• **YES**

### North Carolina Case Studies Collision Summary by Severity

<table>
<thead>
<tr>
<th></th>
<th>Before</th>
<th>After</th>
<th>%Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injury</td>
<td>56</td>
<td>10</td>
<td>-82%</td>
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<tr>
<td>Fatality</td>
<td>2</td>
<td>1</td>
<td>-50%</td>
</tr>
</tbody>
</table>

**Source**

“Spot Safety Project Evaluation”, #02-00-208/02-00-209
#11-99-210
#14-97-018
NCDOT Safety Evaluation Group, 2005 and 2006
Does the Median U-turn Intersection improve safety?

- **YES**

### Minnesota Case Studies Collision Summary by Type

<table>
<thead>
<tr>
<th></th>
<th># of Accidents</th>
<th>Fatality</th>
<th>Serious Injury</th>
<th>Moderate Injury</th>
<th>Minor Injury</th>
<th>No Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Median U-turn</td>
<td>81</td>
<td>4</td>
<td>3</td>
<td>22</td>
<td>17</td>
<td>35</td>
</tr>
<tr>
<td>Post-Median U-turn</td>
<td>71</td>
<td>0</td>
<td>1</td>
<td>8</td>
<td>16</td>
<td>46</td>
</tr>
<tr>
<td>% Change</td>
<td>-12%</td>
<td>-100%</td>
<td>-67%</td>
<td>-64%</td>
<td>-6%</td>
<td>+31%</td>
</tr>
</tbody>
</table>

**Source**

“A Study of the Traffic Safety at Reduced Conflict Intersections in Minnesota”, MnDOT Office of Traffic, Safety and Technology 2017

- They studied 6 Median U-turn intersections
- 19 Site-years
- 135 million vehicles
Median U-turn at US 41 and Freelandville Road
Median U-turn at US 41 and Freelandville Road
Median U-turn Signing

SOUTH | WEST
---|---
231  | 62
Owensboro

NORTH | EAST
---|---
231  | 62
Dale
Huntingburg
Jasper
Questions?

David Pluckebaum, PE
Corradino LLC
dpluckebaum@corradino.com