FIXING BROKEN ROUNDBOUTS

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THANK YOU!

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INTRODUCTION

• Correctly designed have roundabouts proven safety record
• Avoid problems associated with traffic signals such as knockdowns
• Work well IF designed and built to guidelines in NCHRP 672/MUTCD
• EIGHT case studies included in this presentation
• Case studies selected because of known problems
• Two are ones that were fixed by a team of experts
• Objective is to have audience identify what was causing the problems
• Audience to identify the fixes to correct the problems
WARNING – THIS IS AN INTERACTIVE PRESENTATION

• Members of the Audience - Be Ready to Answer Questions About Fixing Broken Roundabouts!

• Moderator will select up to four members of the audience to provide comments/observations for each case study until time runs out!

• Goal will be to review all roundabout case studies with known problems and learn from what went wrong!
Case Study No. 1
Jefferson Street and Avenue 52
La Quinta, CA
Problems with Roundabout

- Constructed in 2002
- Many citizen complaints of side swipe conflicts
- 105 crashes in 10 years – more than 70% were drivers running into roundabout
- Signing changes by designer did not work
- Pedestrians and bicyclists hate it!
- City discusses many options - improvements in 2015
What are the design flaws here?
And here?
Rumble Strips

10 -14 collisions per year before – only 1 - 3 per year after improvements completed
14' x 8'
Diagrammatic Sign for Two Lane Roundabout

This has a better size – 30% smaller
Jurassic Roadrunner with lighting helps with conspicuity - some agencies increasingly concerned about clear zone/distraction issues. Fire Departments complain about visibility issues.
Case Study No. 2
SR 246 at La Purisima Road
Lompoc, CA
Here is What a Local Tow Truck Company Reported:

- Collisions occur mostly at night
- Involve mostly just one vehicle
- Involve serious vehicle damage and have to be towed
- Involve mostly eastbound/westbound traffic (SR 246)
- 20+ vehicles per year ended up in the roundabout
- Fire truck crashed into the roundabout on its way to fire emergency at Vandenberg Airforce Base on September 21, 2016 at 6.15 am. Sun rises at 6.50 am.
VIDEO: Ventura firefighter dies in roundabout crash

Sep 21, 2016

What clues are the drivers leaving behind that all is not well with the design of the roundabout?
What are the design flaws here that might have caused the fire truck fatality?
Case Study No. 3
Avenida Montezuma at Avenida Navarro
La Quinta, CA
How many design flaws are there here?
Roundabout Before Rebuild

Contra flow by pass lane
City sued designer – settled for $250,000 - spent $450,000 to fix
Contra Flow By Pass Road Removed

Raised Center Island

Raised Splitter Islands

LEGEND

- REMOVED CURB
- PROPOSED CURB
- PROPOSED STRIPING
- PROPOSED LANDSCAPING
- CONSTRUCT P.C.C. SIDEWALK
- DECORATIVE PATTERN TRUCK APRON

EXHIBIT 2: FINAL CONCEPT PLAN
Case Study No. 4
Interchange on Interstate 82
Yakima, WA
Comments Made By Drivers During Site Visit

• Waste of time

• Dangerous

• Waste of money

• Put it back the way it was

• Who is going to pay for the repairs for the damaged curbs?

• Can you get this project stopped?
Project Still Under Construction
What is Wrong Here?
And Here?
Truck Path With Gore Striping (NCHRP 672)

Gore striping is one option for accommodating large design vehicles.

Source: New York State Department of Transportation (11)
Yield sign is too far to the right

Chevron is too small

Two sided sign in splitter island is best option in FYG
Case Study No. 5
Interstate 10 at Cabazon
What’s wrong here (several design errors)?
What is the most frequent problem at this freeway on ramp?

Interstate 10 on ramp
What critical signage is missing here considering this is a freeway interchange off ramp?
Case Study No. 6
SR 138
Palmdale, CA
Drivers taking wrong exit
Despite diagrammatic sign
Marks are a clue
What is broken here?
Case Study No. 7
US 89 at US 64
Cameron, Arizona
Observation During Site Visit

- The roundabout curb has severely damaged curb and skid mark
- Roundabout appears out of nowhere after driving for 40 miles at 65 miles per hour without any interruptions on US 89 from Flagstaff.
- Advance warning appears minimal – no flashers, diagrammatic signs, rumble strips
- Roundabout warning signs that are present appear small
What is broken about this roundabout?
Case Study No. 8
Petaluma, CA
City Requested Review

- Something is wrong with the roundabout
- Bus driver is complaining
- Bus passengers are complaining
- Skid marks show problems
- What went wrong?
- What should be changed?
What is wrong here?
And here?
Rear Wheels Mount the 2” High Truck Apron

Video at www.traffexengineers.com
QUESTIONS ?