

A Citizen's Evaluation of the
MIG NM502 Corridor Study and Plan for Los Alamos:
Driving in Circles?

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More information available at www.wcmead.org

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Joyce Cady and Victor Gavron for getting our attention

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County Council for attention and consideration

Many others!

Roadmap

- Introduction
- Study goals
- 2-lane roadway?
- 1-lane roundabouts?
- Technical Q&A
- Safety analysis
- Data Status
- Examples
- 2-lane roundabouts?
- Wrap-up

Transportation Study Goals

MIG Study was guided by generally desirable goals

- Provide safety and comfort for all, especially the most vulnerable such as children and the elderly within the public right of way
 - Improve modes of travel for all street users
 - Support social and economic vitality in Los Alamos
- These are good criteria to consider, but there are pitfalls in applying them

NM 502 Study plan does not meet goals

- Provide safety and comfort for all, especially the most vulnerable such as children and the elderly within the public right of way
 - Roundabouts do not provide good crossing facilities for children and the elderly
- Improve modes of travel for all street users
 - Drastically cuts travel efficiency for motor vehicles, the largest class of NM 502 users by far
 - Roundabouts offer marginal service for pedestrians and bicycles
- Support social and economic vitality in Los Alamos
 - Choking traffic will not help people or businesses

The MIG Study gives low priority to one irreplaceable function

NM502 Corridor is a Vital Artery!

- One of only two public roadways from Los Alamos and the only major roadway from Townsite that doesn't cross Omega Bridge
 - to/from Santa Fe, Albuquerque, I-25
 - emergency response, evacuation
- Highest arterial priorities: move motor vehicles...
 - efficiently
 - reliably
 - safely

This role affects every man, woman, and child in Los Alamos

Two Lane Roadway for Trinity?

Reducing Trinity to 2 thru-traffic lanes would overload the street

- Trinity average utilization (v/c) is now 60-70% (Study, 4-lanes)
 - If cut from four to two lanes, utilization would be **120-140%**
- Trinity peak volumes exceed peak capacity for a 2-lane roadway
 - Ashley Pond (EB, Noon) 1300 veh/hr

Simple Model

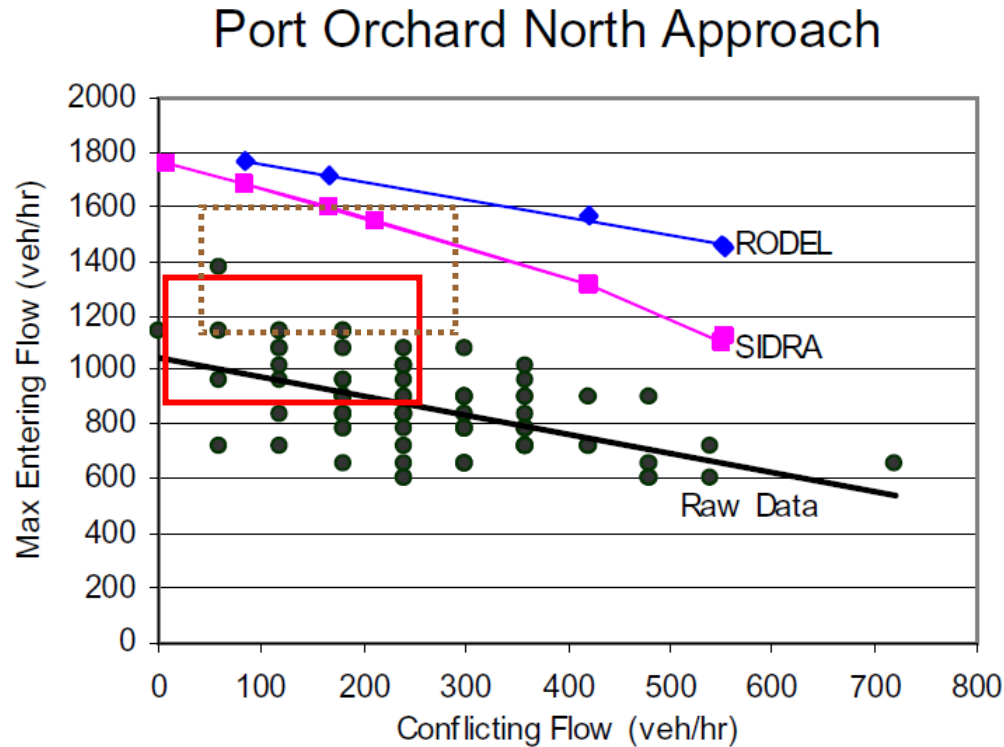
	12 mph	24 mph	36 mph
Capacity (cars/hr)	950	1060	1102
Volume to capacity ratio	137%	123%	115%

One-lane roundabouts

Roundabouts: general drawbacks

- Always slow traffic to 15-20 mph (always 1/2 red)
- Merge- and yield-rule intensive (worse for double-lane!)
- Heavily dependent on drivers' behavior
- Safety: poor for bicycles and motorcycles
- Performance is “cast in concrete”

Roundabouts depend heavily on driver behavior and are prone to random fluctuations



2004 data & calculations

- Ref. NHCRP 3-65,
"Highway Capacity and
Quality of Service", 2004.

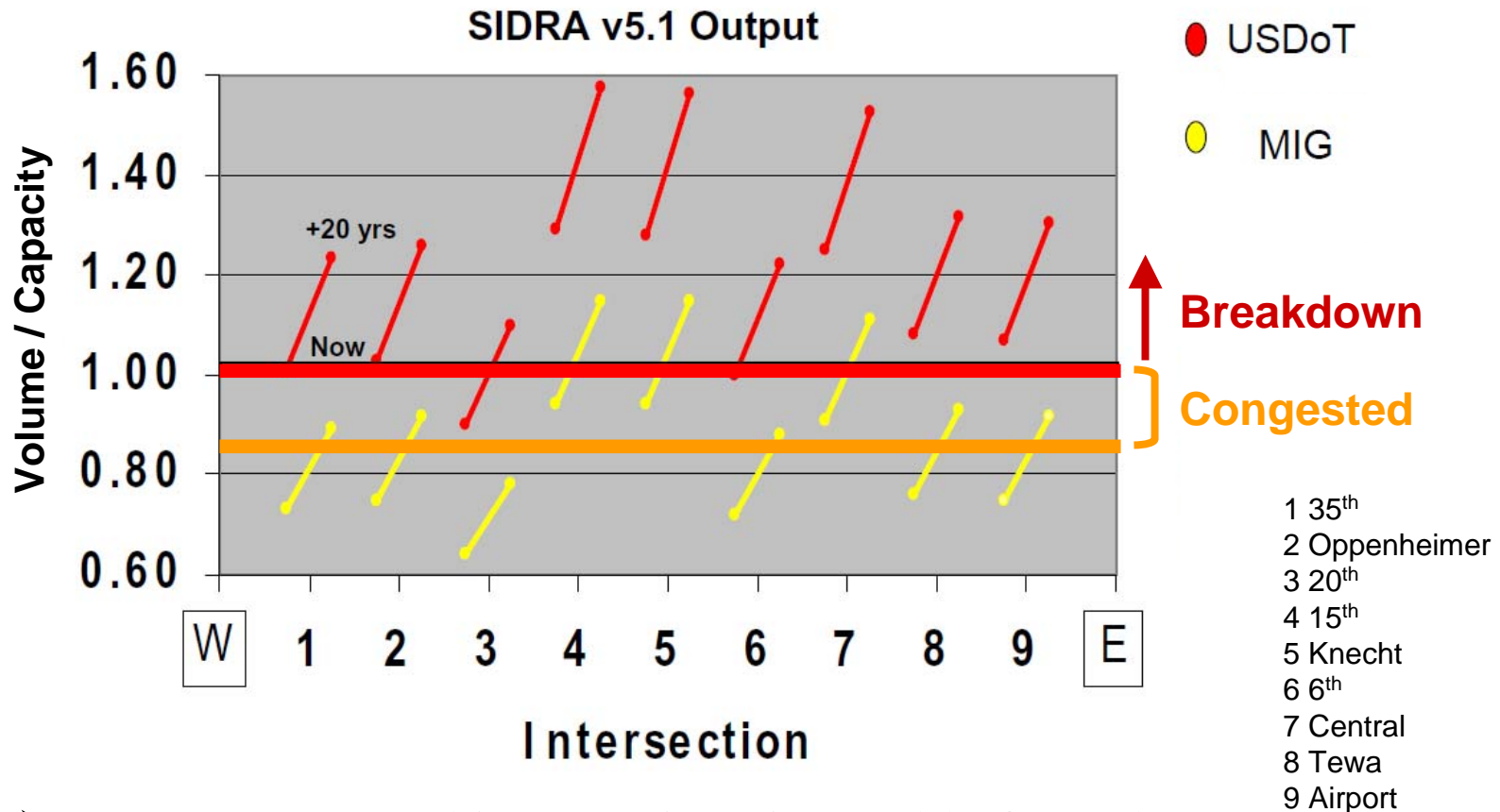
□ NM502, 2010, peak hours

□ NM502, 2030, peak hours

- Long, slow evolution of standards, codes, and design criteria
- Actual performance has not improved much over past several years

If the plan from the MIG Study were implemented, NM502 would be strangled for the life of the roadway

- Ref. Joel Williams, 2011



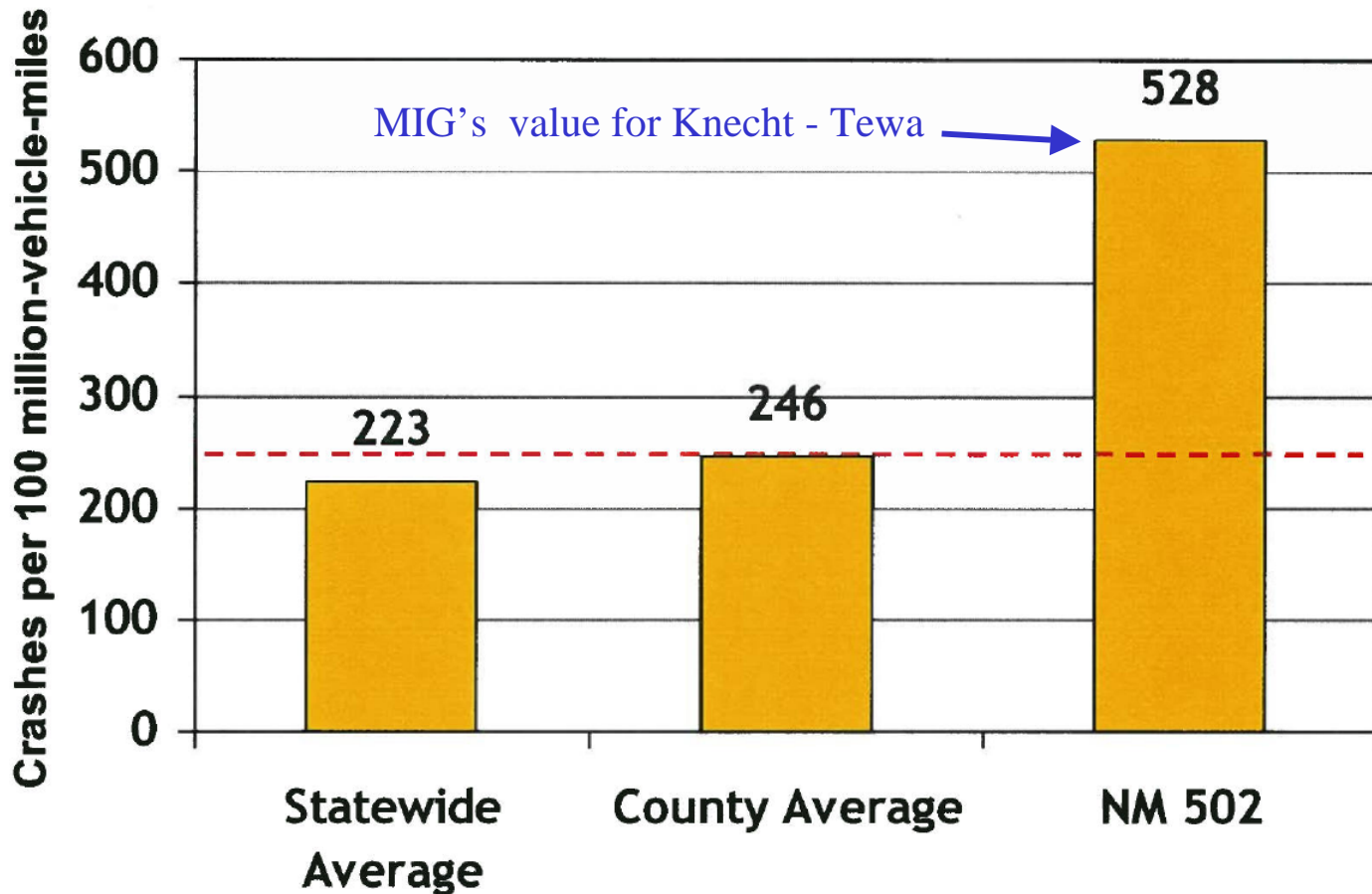
➤ Our 3 most-used intersections in trouble from day 1

Safety Analysis

MIG's "Accident analysis" served as an important motivation for choosing roundabout approach

- Ref. MIG, "NM502 Final Presentation", 4/6/11, p.15

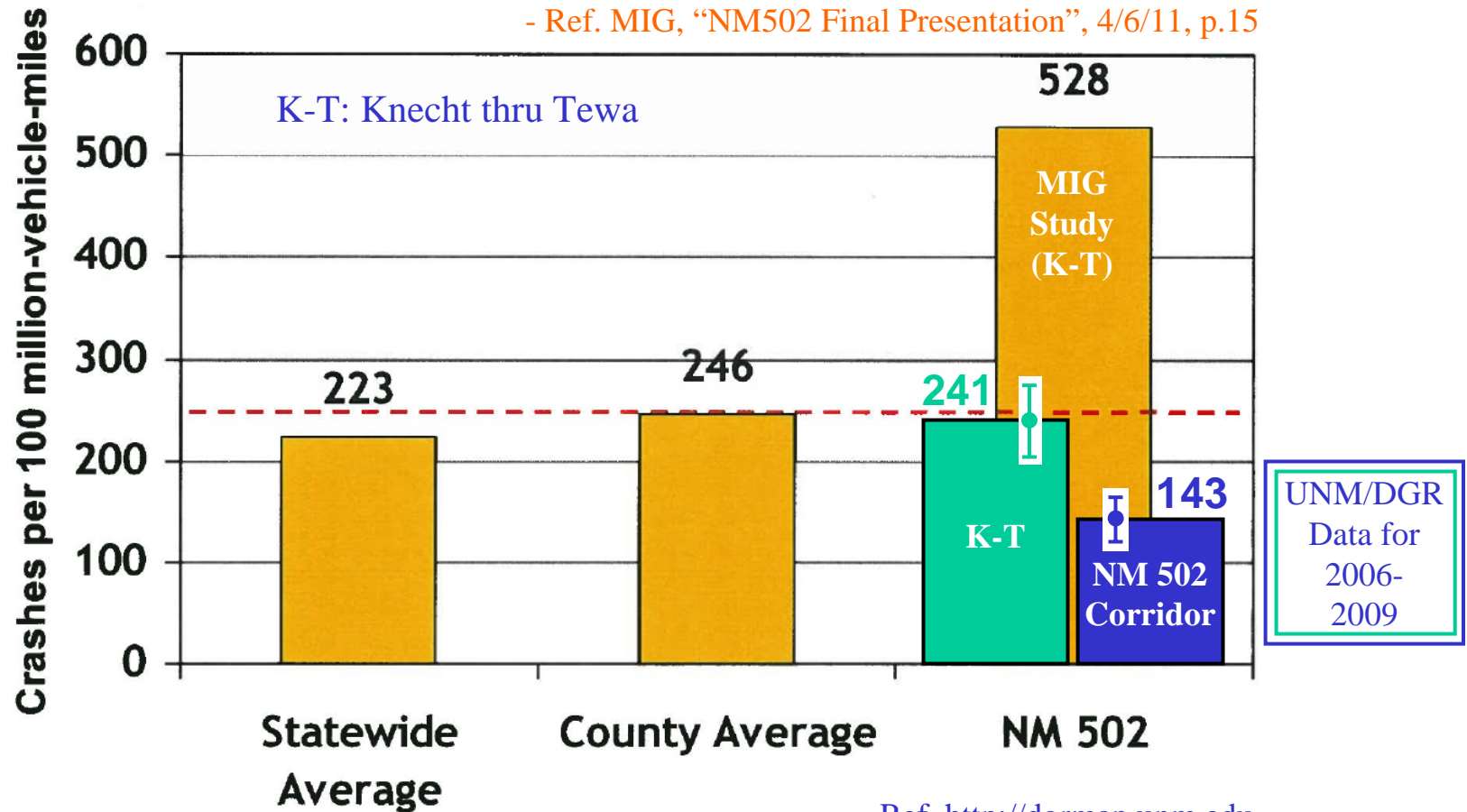
Accident / Crash Analysis



But, the info provided was bad: NM502 is *not* unsafe for autos

Accident / Crash Analysis

- Ref. MIG, "NM502 Final Presentation", 4/6/11, p.15



- Ref. <http://dgrmap.unm.edu>
- Incorporated LAC data

Safety for pedestrians is difficult to achieve when 2500 lb. metal automobiles are involved

- Single-lane roundabouts, while offering some safety advantages, do not “solve” walkers’ problems and pose risks of their own
- In a congested roundabout, pedestrians must negotiate two yields per crossing, while drivers are concentrating on avoiding other vehicles and getting through the intersection
- NCHRP Rpt. 672 guidance for roundabouts states (p. 215)

“The two populations at opposite ends of the age continuum—children and the elderly—and people with disabilities are particularly at risk at intersections. These pedestrians often find it more difficult to cross unprotected road crossings, walk at slower speeds than other pedestrians, and generally prefer larger gaps in the traffic stream. Children lack traffic experience, are impulsive, and have less developed cognitive abilities, and their small size limits their visibility. The elderly may have physical limitations including reduced visual acuity, hearing, and mobility.”
- In 2006-2010, 1 pedestrian accident, each, on Trinity and Central

Bicyclists and motorcyclists face hazards in automobile traffic, even in roundabouts

- Under the MIG proposal, at each roundabout, bicyclists are forced to either
 - merge with automobile traffic or
 - dismount and walk in pedestrian crosswalks



Grand Junction, CO

As in the design for NM502, bike lanes end abruptly at roundabout

K. Spencer- Best approach for bikers on arterial roads is riding competence!

-Ref. Khal Spencer, LA Bikers blog, 4/8/11

<http://labikes.blogspot.com/2011/04/trinity-design-and-bicycling.html>

Traffic Data Status

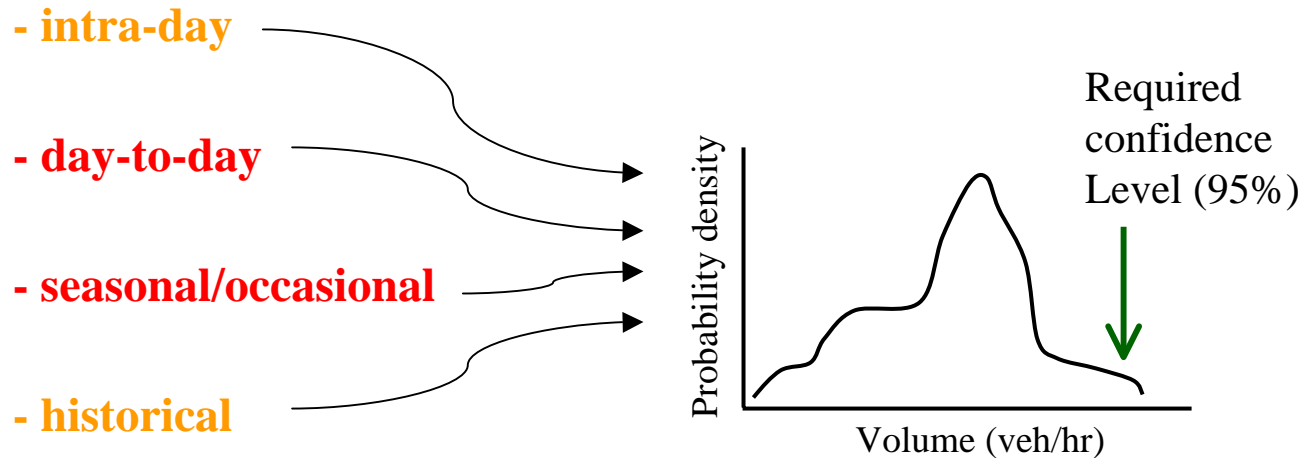
Traffic data is the “foundation” of roadway design



- If your data is inadequate,
your road could be “degraded”

To choose design capacity, data must determine peak traffic volume reliably

- Variations and semi-random fluctuations make this a difficult task



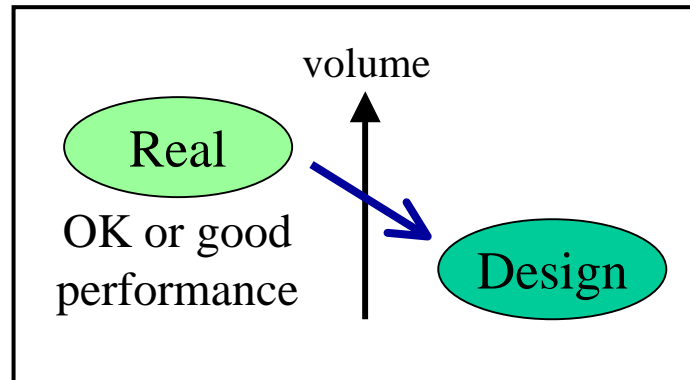
- More extensive (expensive!) projects require better determination
- MIG's NM502 Study doesn't begin to address this requirement
- Problem worsened by designing “optimistically”

Learning from Examples

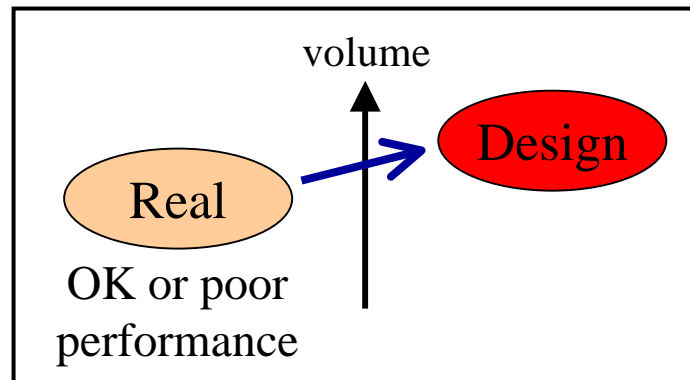
What roundabout examples are most informative?

- Correct number of lanes : 1
- Representative drivers: USA (but where?), Los Alamos (best)
- Necessary data available

- To infer success



- To infer failure



MIG offered four examples to indicate probable success, but each fails one or more of the relevance criteria

- Ref. Howard Cady, MIG Q&A, 7/7/11

- Correct number of lanes : 1

Golden, CO : 2-lanes

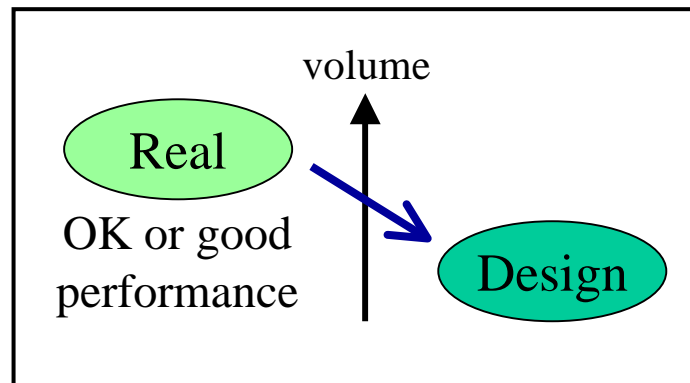
- Representative drivers: USA

- Necessary data available

Bird Rock, CA : traffic count data before construction only

- To infer success

Sedona, AZ:
Traffic volume only
75% of NM502



San Ildefonso roundabout: useful benchmark to evaluate applications to Trinity/East

➤ Working roundabout, relevant to NM502 Study proposal

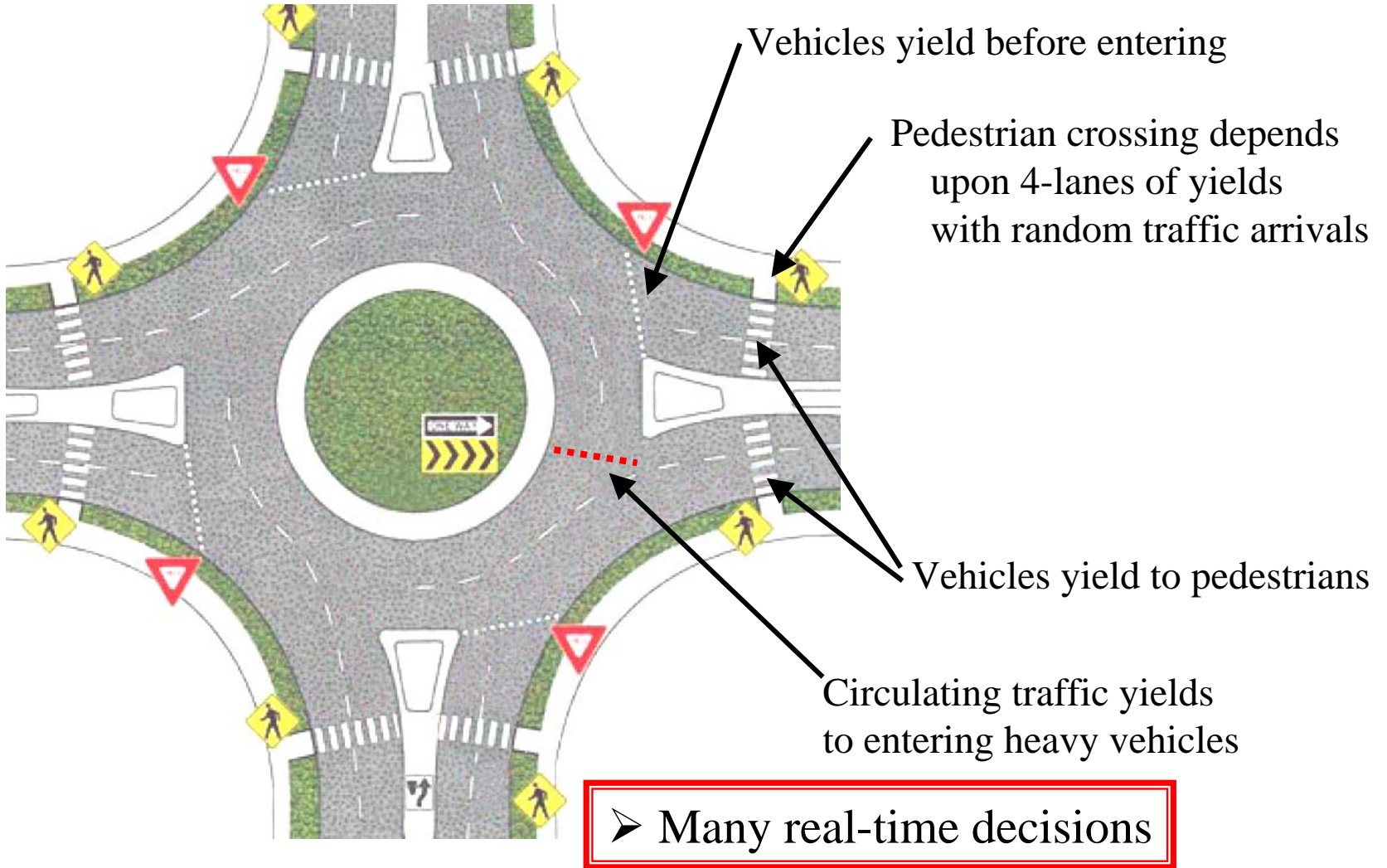
- Develops queues at peak times
- Some main-flow vehicles wait 20-55 sec to complete a left turn
- Out of 26 vehicles from side entrance, 15 stopped for 10-33 sec



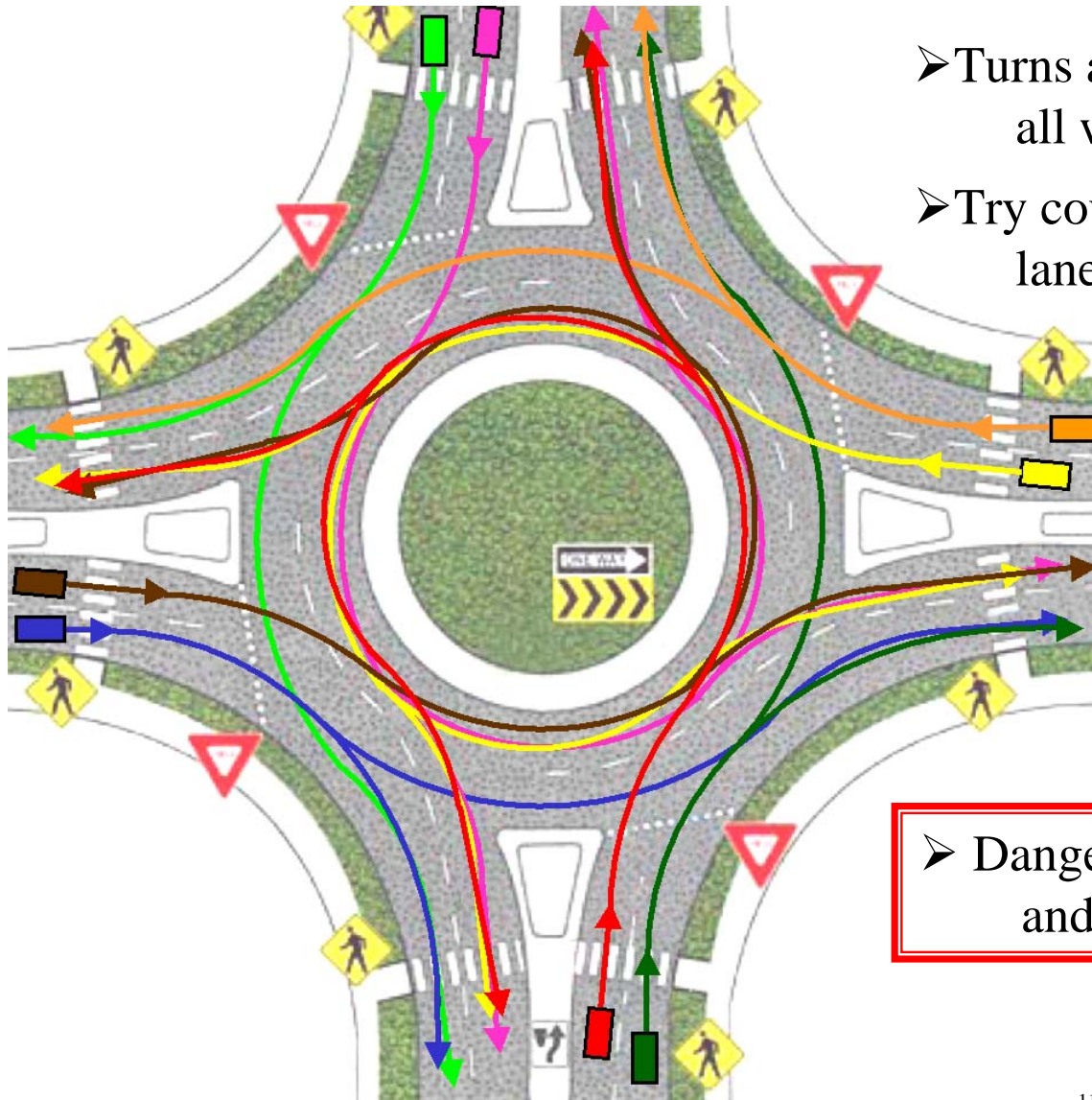
➤ Visit San Ildefonso and observe for yourself! (~8 AM, while school is in session)

Two-lane Roundabouts?

Two-lane roundabouts are yield-intensive



Two-lane roundabouts produce intrinsic traffic conflicts



- Turns and paths shown are all within guidelines
- Try counting merges and lane changes!

➤ Dangerous for bicyclists and motorcyclists!!

Conclusions and Recommendations

We see many indications that single lane roundabout(s) provide inadequate capacity for NM502 in Los Alamos

- USDOT Roundabout guidance
- SIDRA Calculations with recommended parameters
- Observation of current Trinity/East conditions
- Comparison with San Ildefonso roundabout

Terminate Study: MIG Study does not meet goals

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Some ideas & recommendations

- Use existing features that work, solve problems directly
 - Find more innovative and responsive design firm
 - Improvements for motor vehicles
 - uniform turn lanes
 - raised traffic guides
 - enhanced access lanes
 - smarter lights, possibly add one or two
 - Additional pedestrian and bike features
 - more pedestrian crossings: strobe assisted
 - quality bike lanes

- Improve East Road and main hill road

Summary

- Proposed changes: little to gain, lots to lose
 - Predicted poor performance
 - Configuration would not meet LAC goals
 - High costs and risks

We ... urge the Council to reject modifications to Trinity Drive and/or East Road (and other arterial streets) that would

- (1) decrease the number of thru-traffic lanes
- and/or
- (2) install roundabouts.