

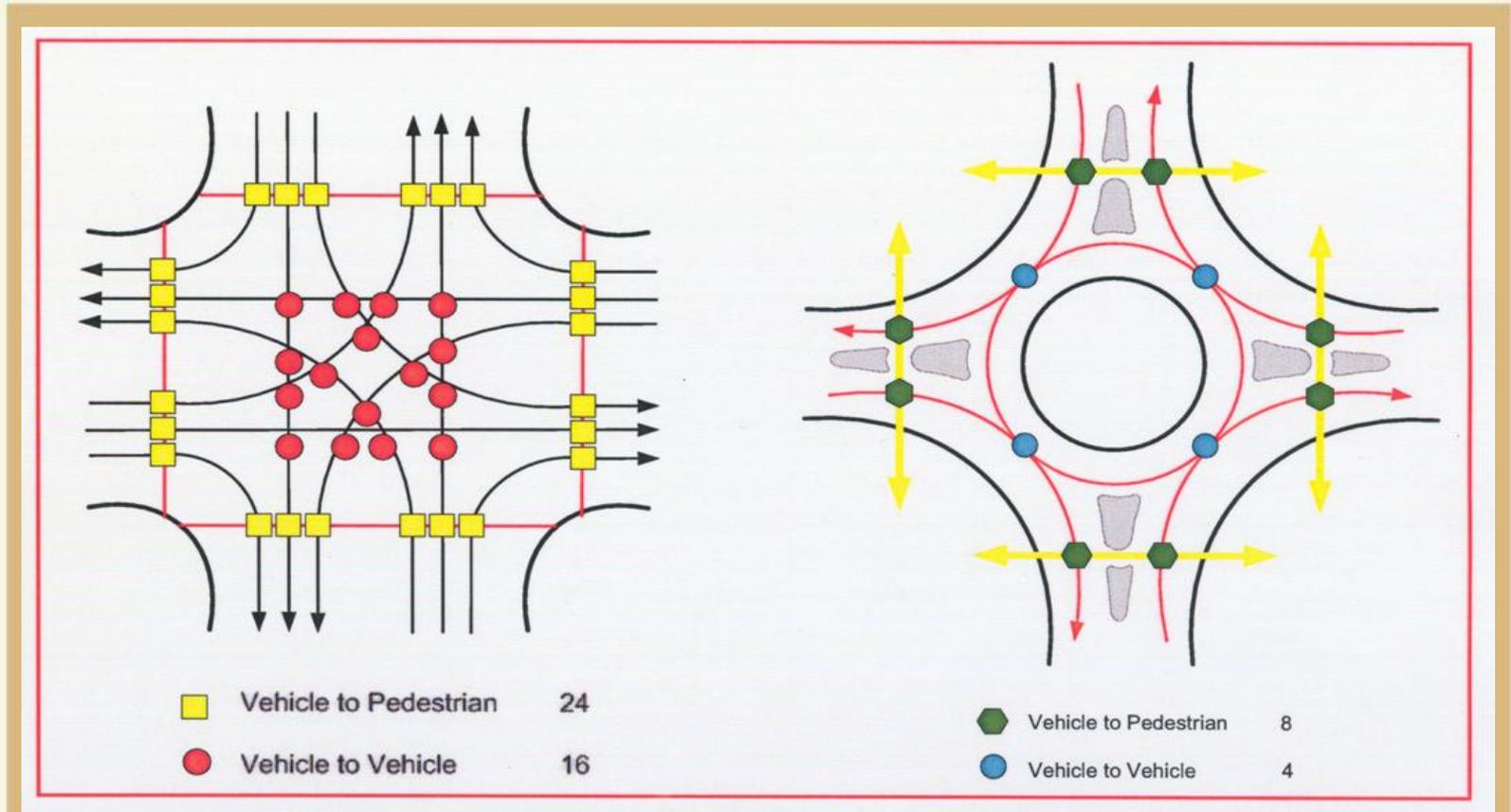
# OUR ROUNDABOUT EXPERIENCE



# **BENEFITS**

- **SAFETY**
- **TRAFFIC CALMING**
- **EFFICIENT TRAFFIC FLOW**
- **ENVIRONMENTALLY FRIENDLY**
- **ECONOMICAL**
- **AESTHETICS**

# CONFLICT POINTS



**VEHICLE TO VEHICLE AND VEHICLE TO PEDESTRIAN CONFLICT POINT COMPARISON FOR INTERSECTIONS WITH SINGLE-LANE APPROACHES**

# DESIGN PHILOSOPHY

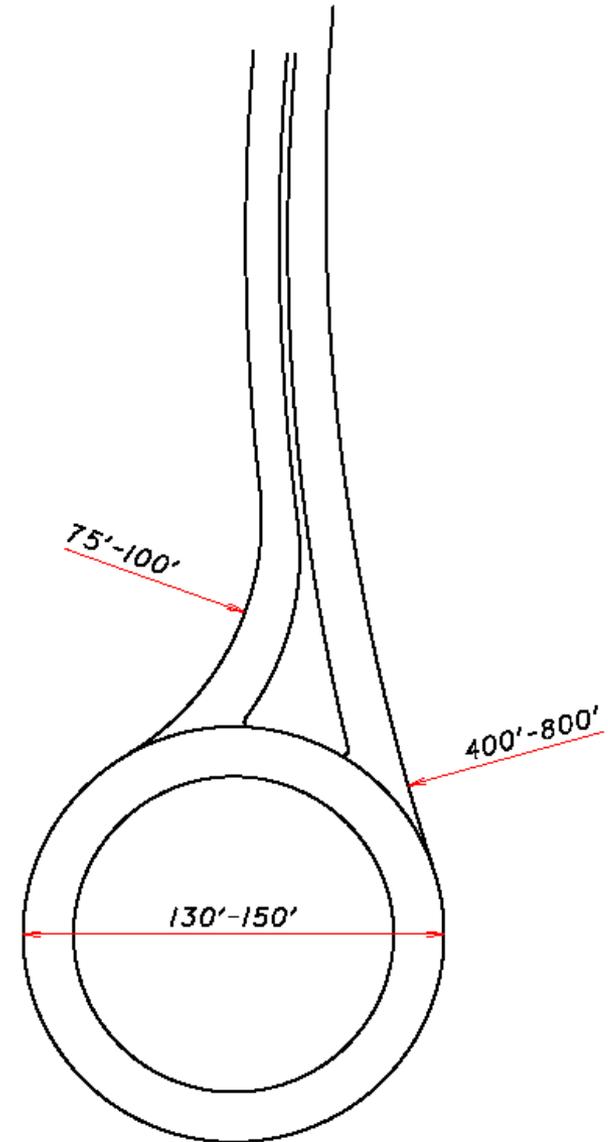
## •GAP ACCEPTANCE (NOT FHWA)

## •CAPACITY - CONFLICT POINTS

- <1,100 – One-lane
- 1,100 > 1,400 - ?
- >1,400 – Two-lane

## •EVERY INTERSECTION

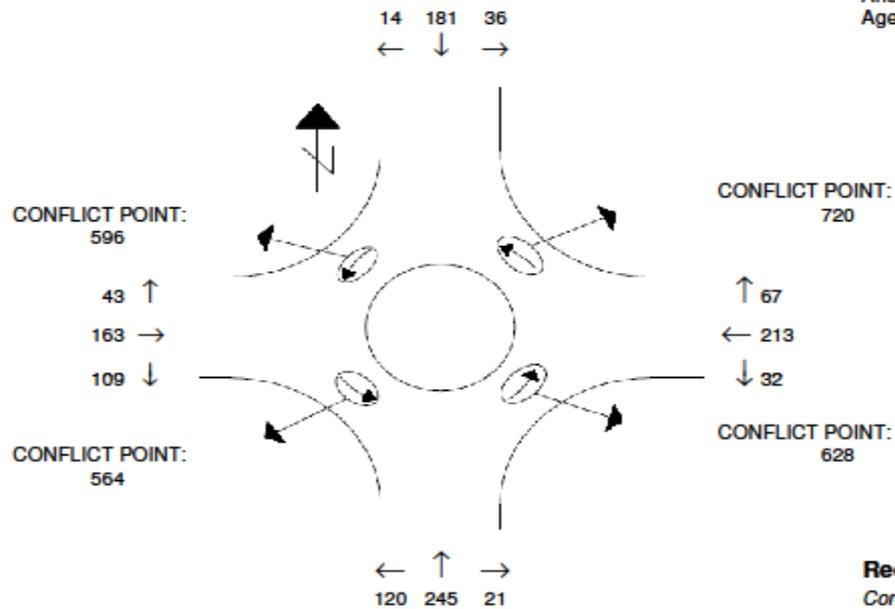
## •UPSIDE DOWN PLATE



# CONFLICT POINT ANALYSIS

## ROUNDBABOUT ANALYSIS

East/ West Street: Princeton Road  
South/ North Street: Yankee Road  
Analysis Time Period: PM Peak  
Date Performed: 7/8/2008  
Analysis Year: 2008  
Analyst: LSC  
Agency/ Co. : BCEO



### Requirements for roundabouts

*Conflict Point:*  
<1,100 vph → single lane is ok  
1,100-1,400 vph → needs further analysis  
>1,400 vph → two lanes required  
vph= vehicles per hour

# WHERE ARE ROUNDABOUTS

- **TWO ROUNDABOUTS CONSTRUCTED IN 2008**
  - HAMILTON MASON ROAD and LIBERTY FAIRFIELD ROAD
  - LAKOTA DRIVE WEST and EAGLERIDGE DRIVE
- **TWO PLANNED FOR 2010/2011**
  - JACKSONBURG ROAD and MORGANTHALER ROAD
  - TRENTON ROAD and BUSENBARK ROAD (Edgewood H.S.)
- **PLANNING FOR SEVERAL FUTURE LOCATIONS**

# HAMILTON MASON & LIBERTY FAIRFIELD



# HAMILTON MASON & LIBERTY FAIRFIELD HISTORY

- **OFFSET INTERSECTION**
- **INSTALLED TEMP. TRAFFIC SIGNAL IN 12/2006**
- **ROADWAY WAS REALIGNED WITH ROUNDABOUT INSTEAD OF SIGNAL & TURN LANES**
- **GREATLY REDUCED PROJECT LIMITS**
  - >\$750,000 SAVINGS
  - PRIVATE UTILITY EASEMENT
  - CALMED TRAFFIC

# PRE-BUILD CRASH HISTORY

- **49 REPORTED ACCIDENTS FROM 01/2004 – 09/2008  
(WITHIN 200 FEET OF THE INTERSECTION)**
  - 31 AT HAMILTON MASON and LIBERTY FAIRFIELD
  - 18 AT HAMILTON MASON and VINNEDGE
  - 11 INJURY and 1 FATAL ACCIDENT

# CRASH HISTORY WITH ROUNDABOUT

- **4 REPORTED ACCIDENTS FROM 10/2008 – 9/2010  
(WITHIN 200 FEET OF THE INTERSECTION)**
  - REDUCED ACCIDENTS BY OVER 80% (3 of 4 single vehicle accidents)
    - One brakes failed, one ACDA, two FTC
  - ABSOLUTELY NO CONGESTION
  - CALMED SPEEDS
  - VERY POSITIVE FEEDBACK

# LAKOTA DRIVE WEST AND EAGLERIDGE



# LAKOTA DRIVE WEST AND EAGLERIDGE HISTORY

- **MAJOR VEHICLE QUEUES IN A.M.**
- **TRAFFIC GENERATORS**
  - BECKETT RIDGE SUBDIVISION
  - LAKOTA WEST HIGH SCHOOL
  - CUT-THROUGH TRAFFIC
- **ORIGINAL PLAN**
  - SIGNALIZATION WITH LEFT TURN LANES

# **PRE-BUILD CRASH HISTORY**

- **19 REPORTED ACCIDENTS FROM 01/2004 – 06/2008  
(WITHIN 200 FEET OF THE INTERSECTION)**
- **13 INTERSECTION ACCIDENTS INCLUDING 7 FTY**
- **MANY REPORTED 'NEAR MISSES'**

# CRASH HISTORY WITH ROUNDABOUT

- **8 REPORTED ACCIDENTS FROM 07/2008 – 09/2010  
(WITHIN 200 FEET OF THE INTERSECTION)**
  - 5 FAILURE TO CONTROL, SINGLE CAR ACCIDENTS
  - 2 FOLLOWING TOO CLOSELY / ACDA
  - 1 FTY (HIT/SKIP)
  - 15% ACCIDENT REDUCTION AND NO INJURY ACCIDENTS
  - ACCIDENTS INCLUDED:
    - DURING CONSTRUCTION
    - ALCOHOL
    - ICE
    - STRUCK TRAFFIC SIGN IN SPLITTER ISLAND
    - STRUCK LIGHT POLE

# LESSONS LEARNED

- **SIZE – 130'-150' PREFERRED (SMALLER TRUCK APRON)**
- **GAP ACCEPTANCE – VS – FHWA (EMPIRICAL)**
- **APPROACH GRADES**
- **LOCATION OF LIGHT POLES**
- **CENTER ISLAND HEIGHT**
- **ADJACENT DRIVES**
- **STAMPED CONCRETE**
- **MAINTENANCE – PLOWING & FREEZE/THAW**
- **MISSED OPPURTUNITIES**

# TESTIMONIALS

**"NO WAY THIS WILL WORK"**

**TO**

**"IT WORKS GREAT. I LOVE IT! WHERE ARE YOU  
PUTTING THE NEXT ONE?"**

## CONTACT INFO

- **MATTHEW LOEFFLER, P.E.**
  - TRAFFIC ENGINEER
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