

# Gates Pass Safety Improvement Concept Report

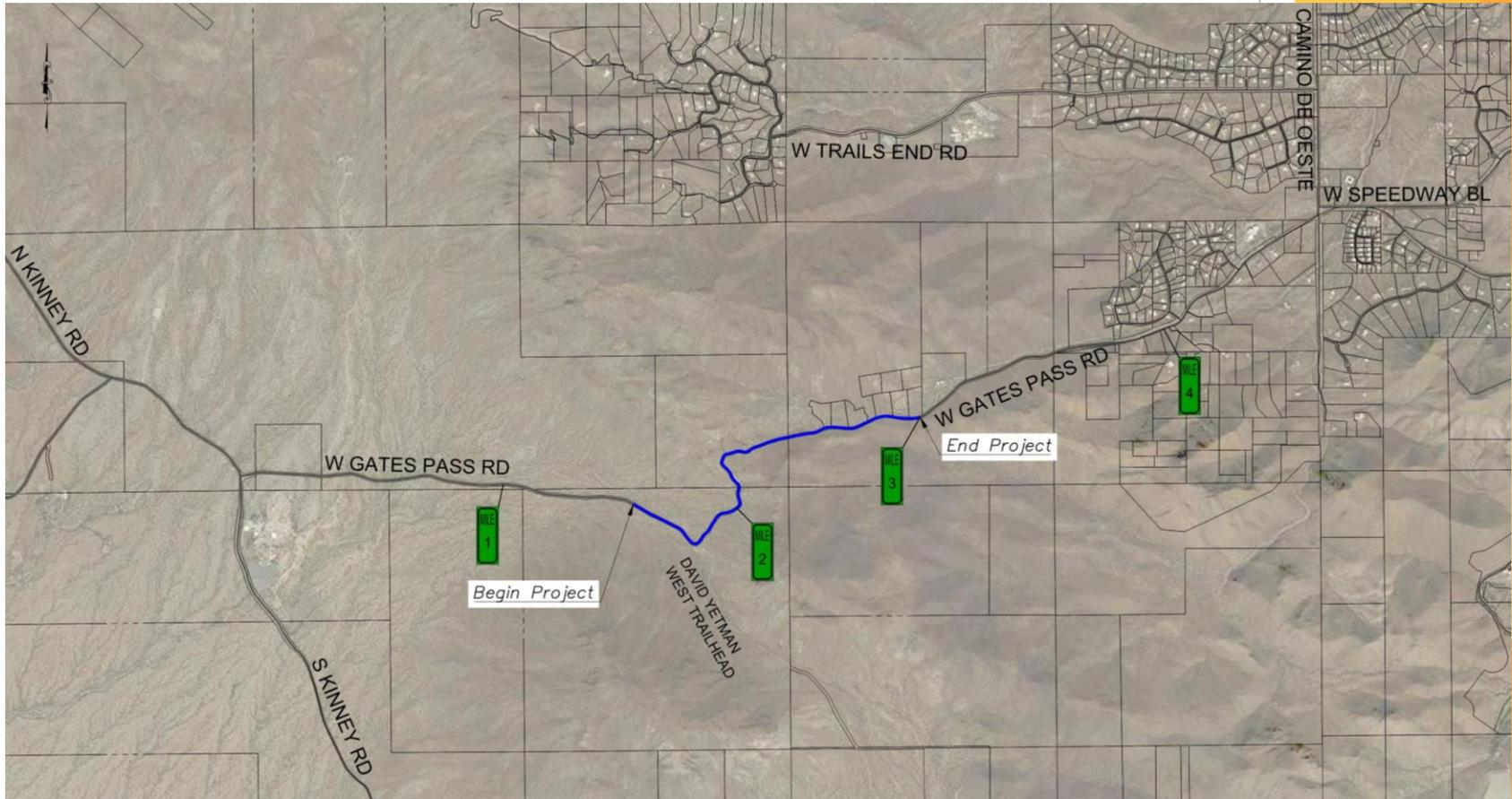
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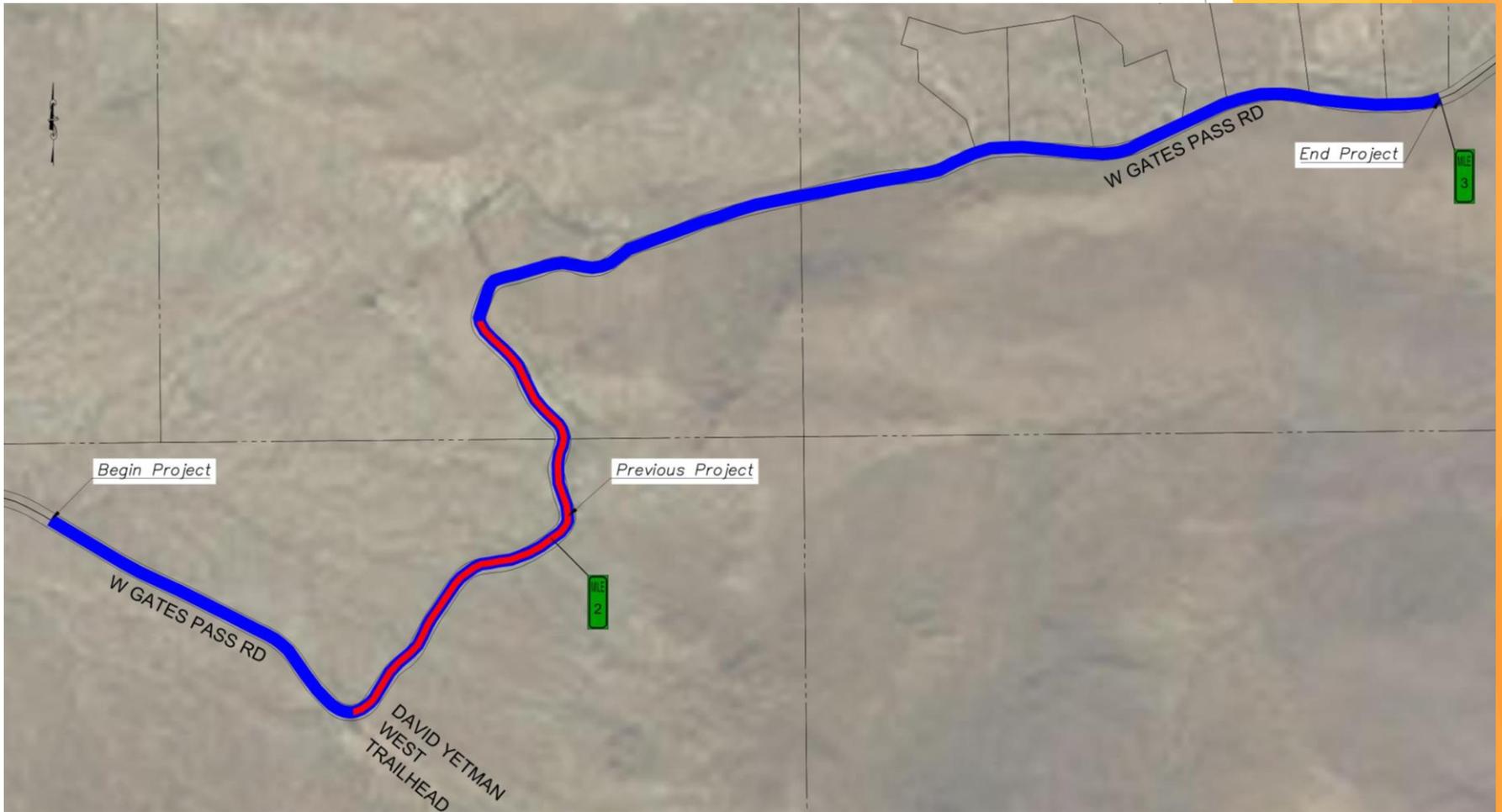
# Open House Outline

- ▶ Introductions
- ▶ Presentation starts at 6:15pm
  - ▶ Purpose of the project
  - ▶ Existing Conditions
  - ▶ Results of Crash Analysis
  - ▶ Potential Countermeasures
- ▶ Question & Answer Session
- ▶ Individual Discussion at Display Boards

# Project Limits



# Previous Project



# Project Goals and Objectives

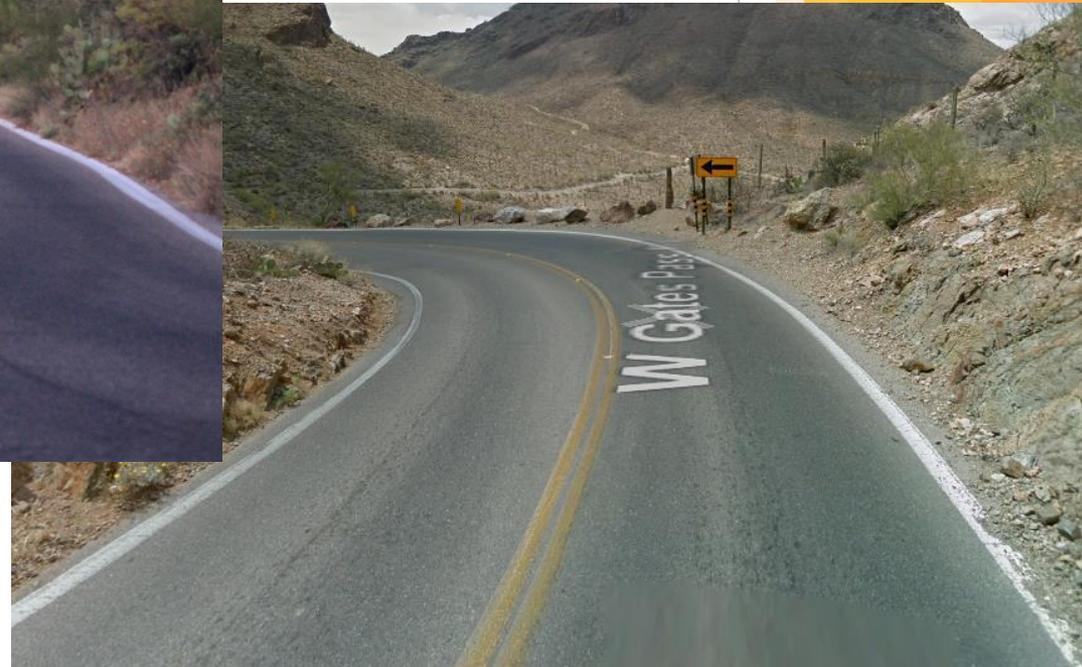
- ▶ Evaluate 1.5 miles of Gates Pass Road to scope appropriate crash mitigation measures
- ▶ Identify potential short, Intermediate and long-term improvements
- ▶ Identify potential funding sources

# Existing Conditions



- Narrow travel lanes (11 ft)
- Minimum shoulder, minimum recovery area

# Existing Conditions



- Significant curves with grades

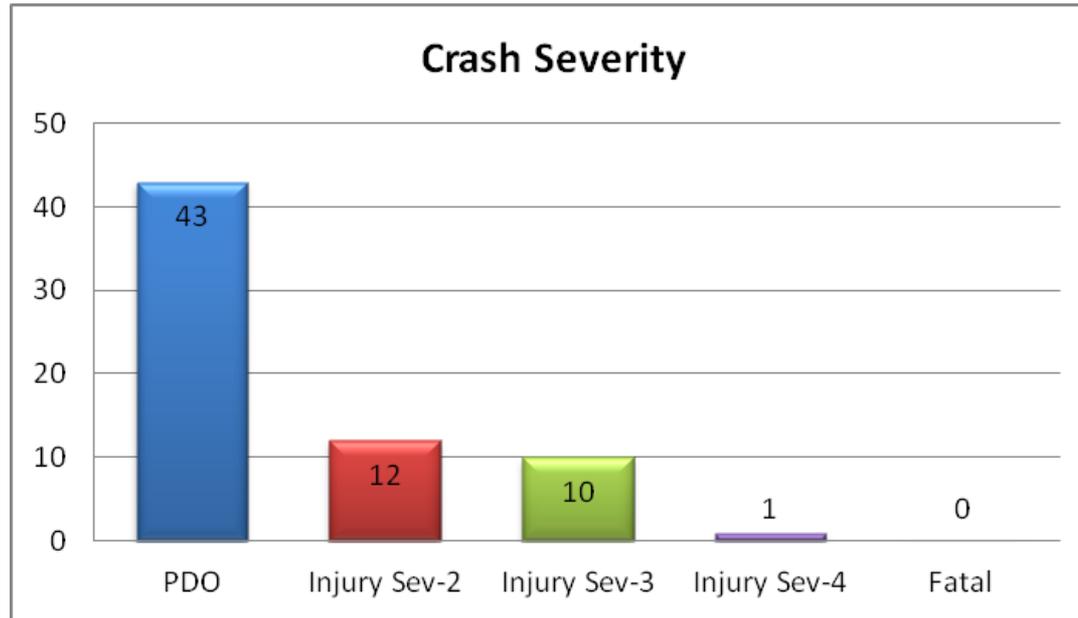
# Existing Conditions

- Roadway Characteristics
  - Pima County Scenic Route
  - Access to tourist destinations
  - Popular bicycle ride
  - East-west commuter route
- Traffic volume
  - Existing Two-way Traffic is 3,750 vehicles per day (vpd)
  - 2045 Traffic Volume Projection is 4,650 vpd

# Existing Conditions

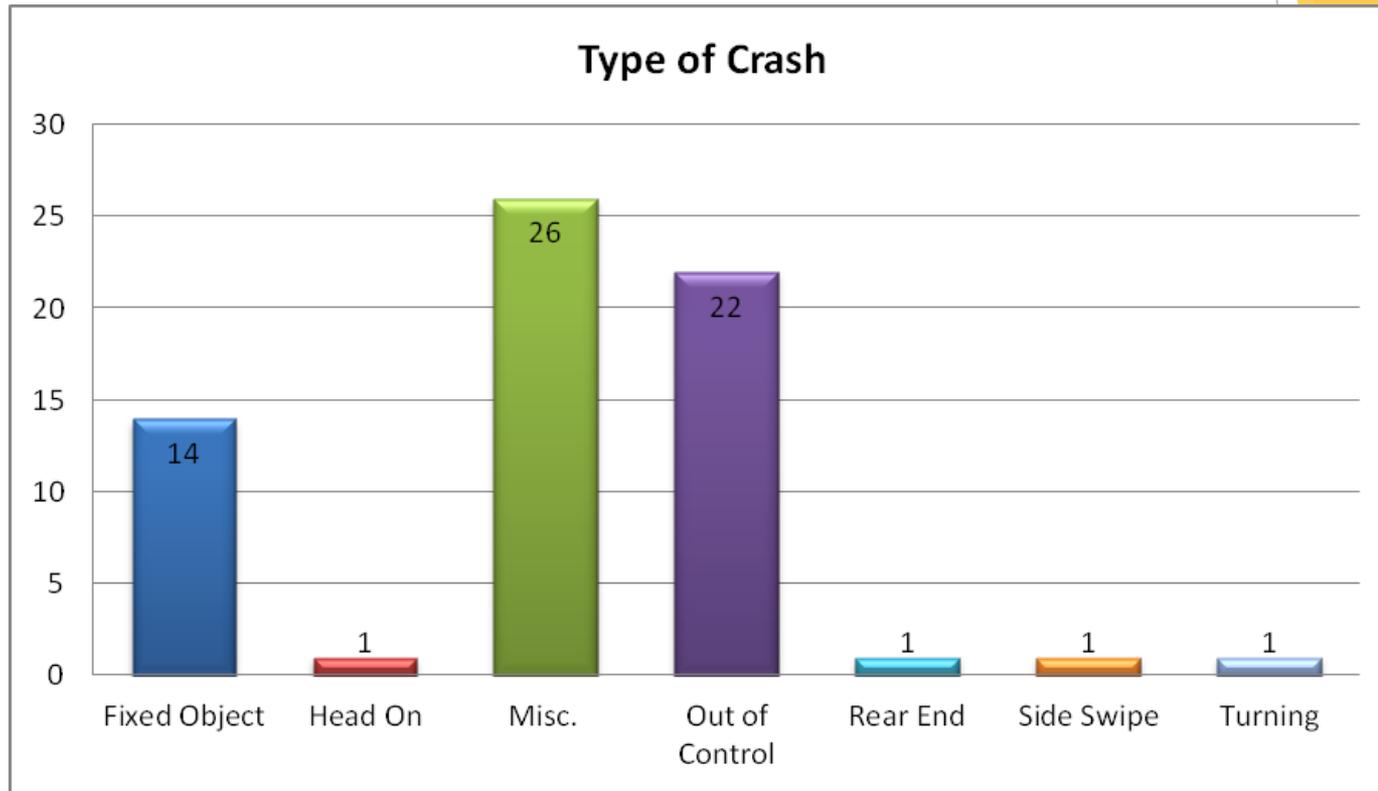
- Environmental Considerations
  - Land Use
  - Biological Resources
  - Water Resources
  - Floodplains
  - Noise
  - Visual Aesthetics
  - Hazardous Materials
  - Cultural Resources

# Crash History



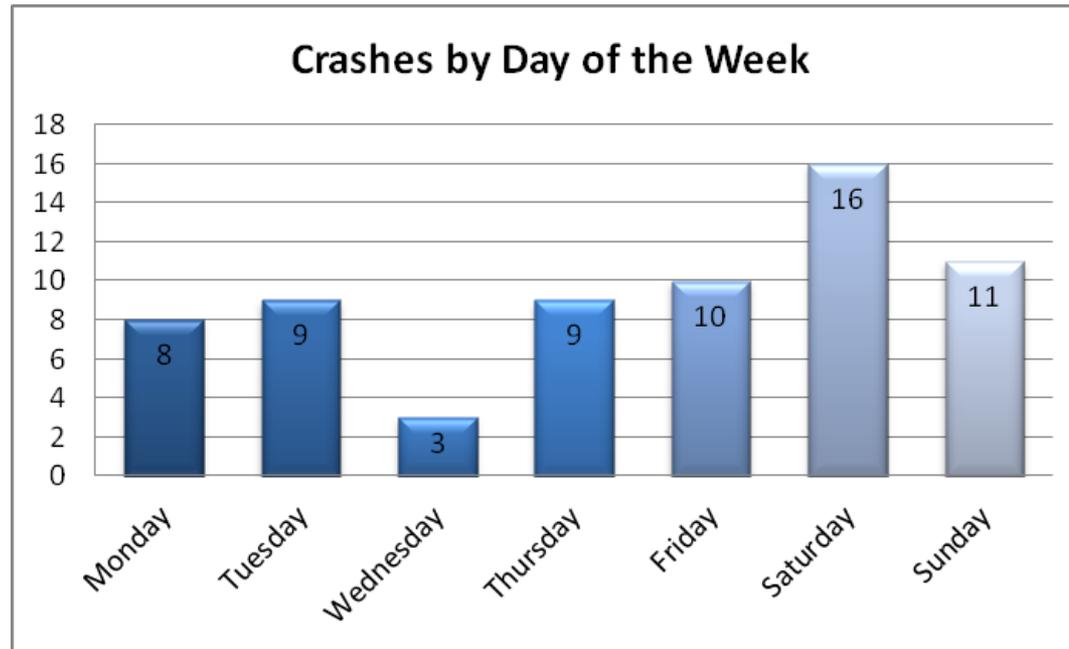
- 66 crashes in last 7 years (2010-2016); 1 bike crash
- Crash Rate: 6.55 crashes/mvm; 2.04 crashes/mvm on similar Pima County roadways
- Crash Severity Index: 0.20; 1.50 on similar Pima County roadways

# Crash History



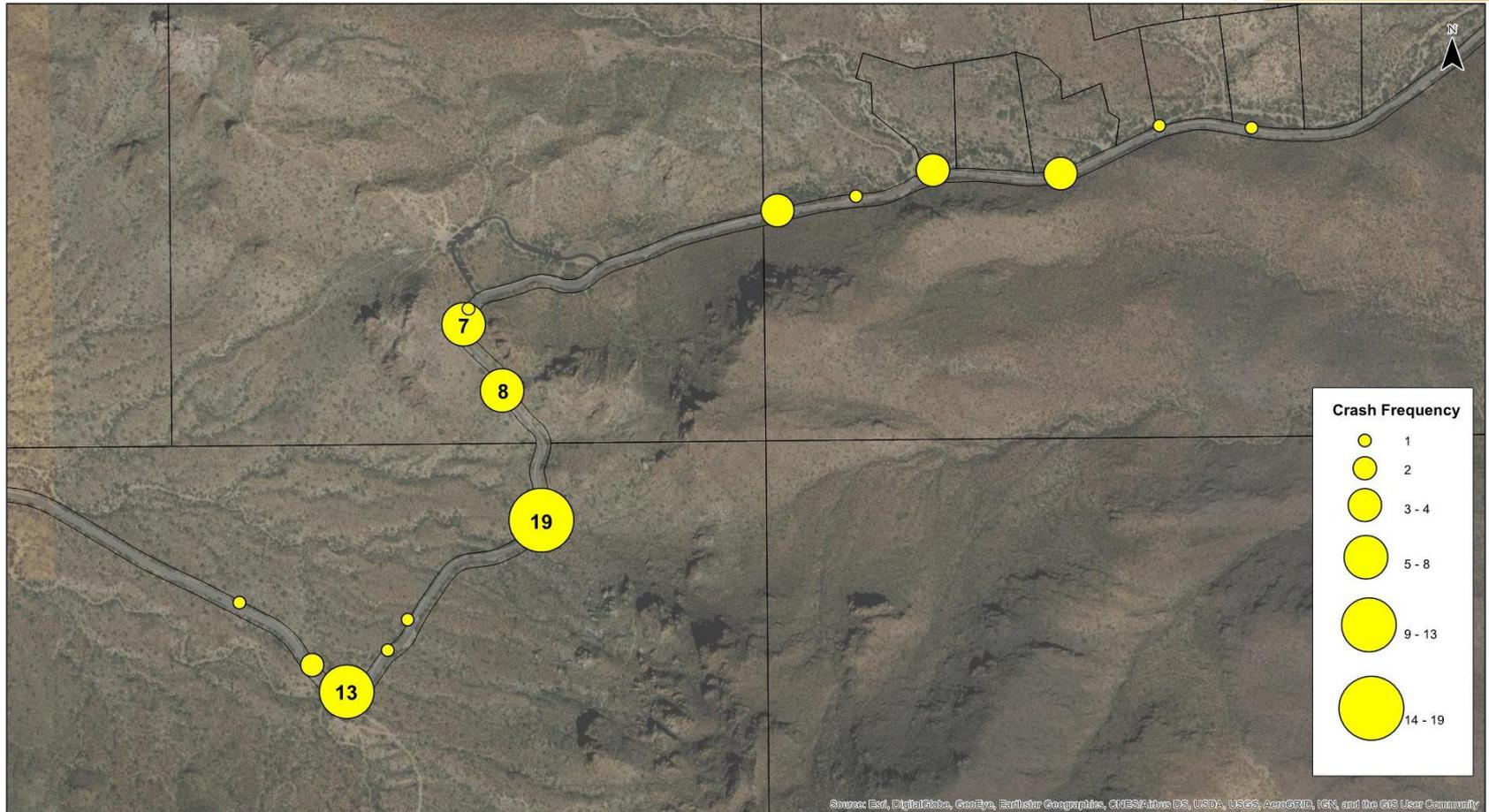
- The most common type of crash was Out of Control (lane departure)
- The most common type of violation cited was Speed to Fast for conditions

# Crash History



- Most of the crashes occurred during dark or dusk conditions
- Crashes occurred most frequently during late night and early morning conditions

# Crash Frequency



# Potential Solutions

- ▶ Short-term Improvements
  - ▶ Additional curve warning signs
  - ▶ Wider Edge Stripe
  - ▶ Speed reduction markings
  - ▶ Edge delineators

# Potential Short-term Solutions

Additional curve warning signs



# Potential Short-term Solutions

Enhanced lane edge delineation



*Roadway with 4-in edge line*



*Roadway with 8-in edge line*

# Potential Short-term Solutions

Speed reduction markings



# Potential Short-term Solutions

## Vertical Delineators



# Potential Solutions

- ▶ Intermediate-term Improvements
  - ▶ Curve warning signs with flashing beacon
  - ▶ Speed feedback signs
  - ▶ Enhanced centerline delineation
  - ▶ Lighting at spot locations
  - ▶ Selected shoulder widening

# Potential Intermediate-term Solutions

Curve warning sign with flashing beacon



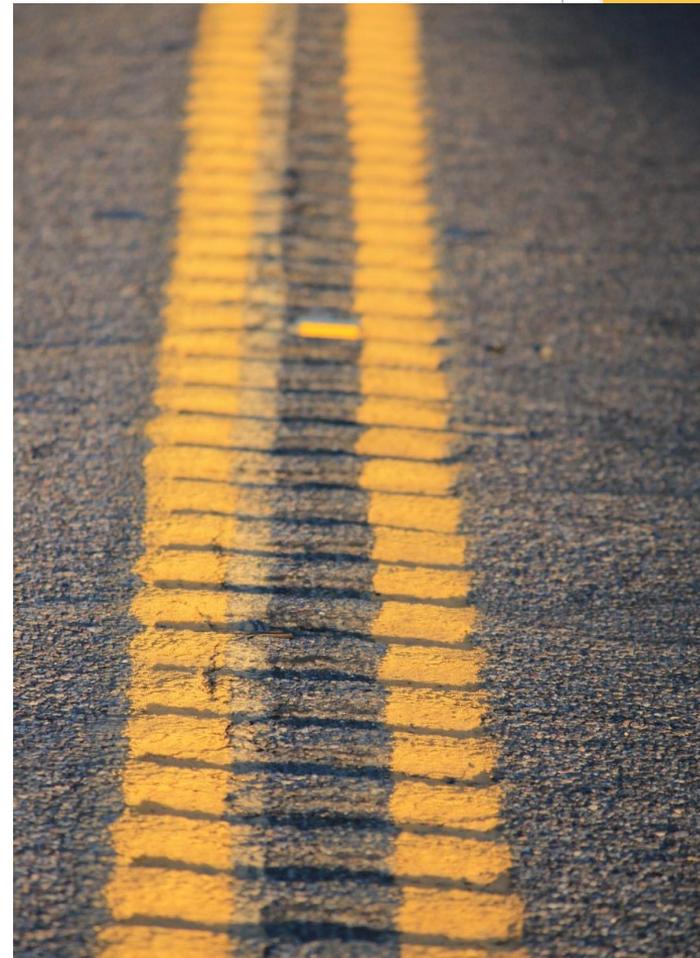
# Potential Intermediate-term Solutions

Speed feedback signs



# Potential Intermediate-term Solutions

Enhanced centerline delineation



# Potential Solutions

- ▶ Long-term Improvements
  - ▶ Safety (paved) shoulders
  - ▶ Roadway realignment / Curve Improvements
  - ▶ Widen roadway

# Gates Pass Safety Improvement Concept Report

**Thank you for coming!**

Please visit the exhibits, ask questions  
and provide input!