



# Pinnacle Peak Road and Happy Valley Road Traffic Interchange Reconstruction

July 25, 2017

Estamos presentando información en inglés  
esta noche. Para ayuda en español, por favor  
hable con Lourdes Lerma. Gracias.

# Tonight's Meeting:

- ▶ Project Overview
- ▶ Additional Lanes on I-17
- ▶ Diamond Interchange at Pinnacle Peak Road
- ▶ Diverging Diamond Interchange at Happy Valley Road
- ▶ Project Team Q&A
- ▶ Review Exhibits
- ▶ Complete and Turn in Comment Forms

# Title VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act (ADA)

Pursuant to Title VI of the Civil Rights Act of 1964, and the Americans with Disabilities Act, ADOT does not discriminate on the basis of race, color, national origin, age, sex or disability. Persons who require a reasonable accommodation based on language or disability should contact ADOT's Civil Rights Office at 602.712.8946 or at [civilrightsoffice@azdot.gov](mailto:civilrightsoffice@azdot.gov). Requests should be made as early as possible to ensure the State has an opportunity to address the accommodation.

De acuerdo con el título VI de la Ley de Derechos Civiles de 1964 y la Ley de Estadounidenses con Discapacidades (ADA por sus siglas en inglés), el Departamento de Transporte de Arizona (ADOT por sus siglas en inglés) no discrimina por raza, color, nacionalidad, edad, género o discapacidad. Personas que requieren asistencia (dentro de lo razonable) ya sea por el idioma o por discapacidad deben ponerse en contacto con la Oficina de Derechos Civiles al 602.712.8946 o en [civilrightsoffice@azdot.gov](mailto:civilrightsoffice@azdot.gov). Las solicitudes deben hacerse lo más pronto posible para asegurar que el equipo encargado del proyecto tenga la oportunidad de hacer los arreglos necesarios.



# ADOT Self-Identification Cards

- ▶ Self-identification survey cards available
- ▶ Fill one out and turn it in before you leave
- ▶ The information helps ADOT fulfill federal reporting requirements from the Federal Highway Administration (FHWA)
- ▶ Information is anonymous
- ▶ **Participation is voluntary**

# Project Purpose

- ▶ Why & How:
  - Identified as a priority project
  - Existing traffic interchanges not function efficiently due to current growth and development
  - New interchanges will accommodate current and future traffic projections and improve regional traffic flow and safety
  - Project funding
    - Programmed for \$49.5 million

# Project Overview

- ▶ Reconstruct traffic interchanges at Pinnacle Peak and Happy Valley roads
- ▶ Add one general purpose lane on I-17 in each direction between Pinnacle Peak and Happy Valley
- ▶ Construction Manager at Risk (CMAR) delivery method
  - Contractor selected for pre-construction services (during design)
- ▶ Construction scheduled to begin in fall 2018
  - Approximately 20 months for construction

# I-17 Mainline

## Existing Condition:

- ▶ 3 general purpose lanes and 1 HOV lane

## New Construction:

- ▶ 4 general purpose lanes and 1 HOV lane



# Pinnacle Peak Road

## Existing Condition

- ▶ Diamond interchange
  - One through lane and one left-turn lane in each direction within interchange area
  - Bridge Span is narrow and cannot accommodate future I-17 (5+1 lanes) expansion
  - Does not accommodate bicyclist and pedestrians



# Pinnacle Peak Road

## New Construction

- ▶ Diamond interchange (similar to Jomax Rd)
  - 2 through lanes and 2 left-turn lanes in each direction within interchange area
  - New Interchange accommodate future I-17 expansion(5+1 Lanes)
  - Bicyclist and Pedestrian crossing will be accommodated



# Happy Valley Road

## Existing Condition

- ▶ Spread diamond interchange
  - 2-lane roundabouts with 1-lane in each direction within interchange area.
  - Bridge Span is narrow and cannot accommodate future I-17 (5+1 lanes) expansion
  - Does not accommodate bicyclist and pedestrians



# Happy Valley Road

## New Construction

- ▶ Studied several interchange configurations
  - Recommend DDI based on higher performance
- ▶ Remove Roundabouts
- ▶ 3 through lanes in each direction within Interchange area
- ▶ New Interchange accommodate future I-17 expansion(5+1 Lanes)



# DDI 101

## ► History and Existing Locations

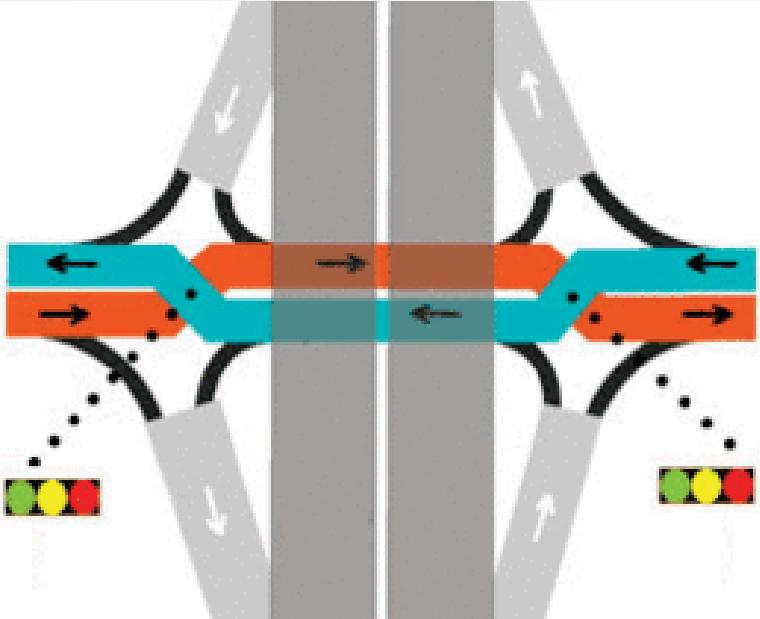


Source: Missouri Department of Transportation



# DDI 101

- ▶ Travel Patterns & Turning Movements



# DDI 101

- ▶ Process High Volume Traffic Generators



# DDI 101

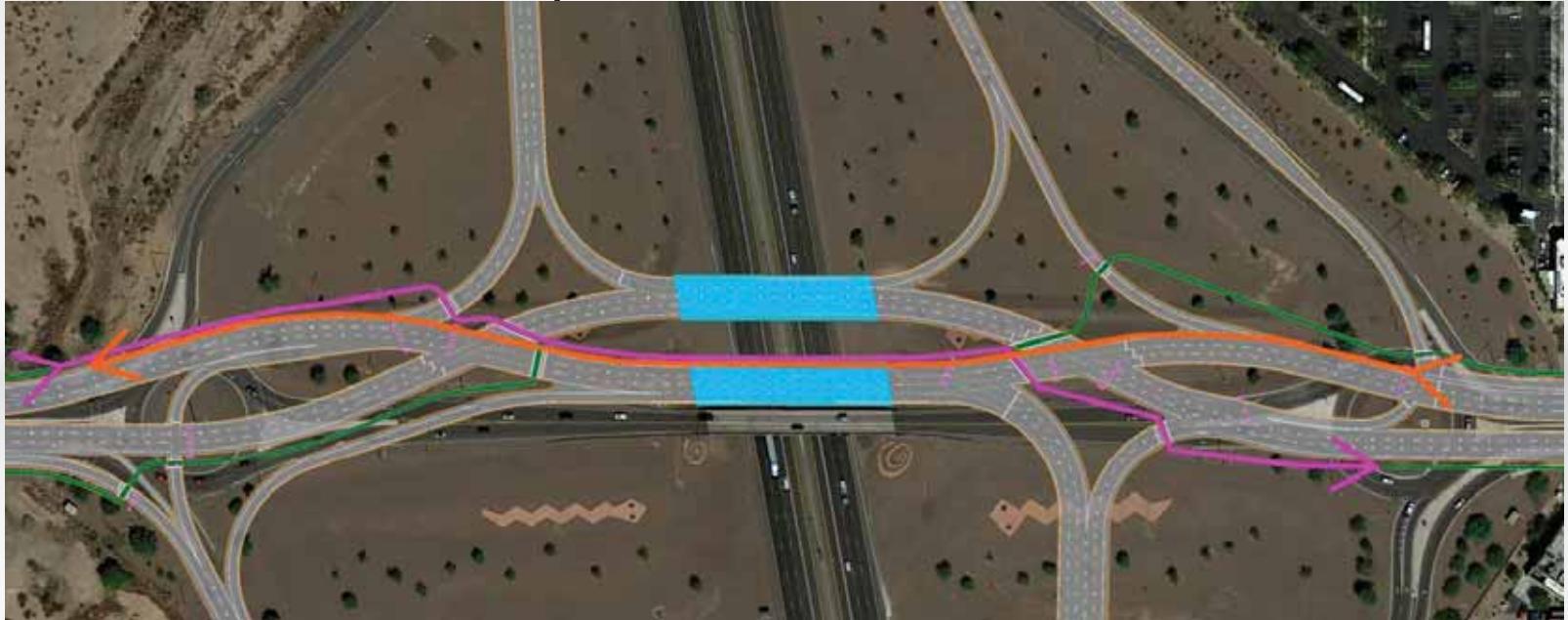
- ▶ Signal Configurations and Signing



**ADOT**

# DDI 101

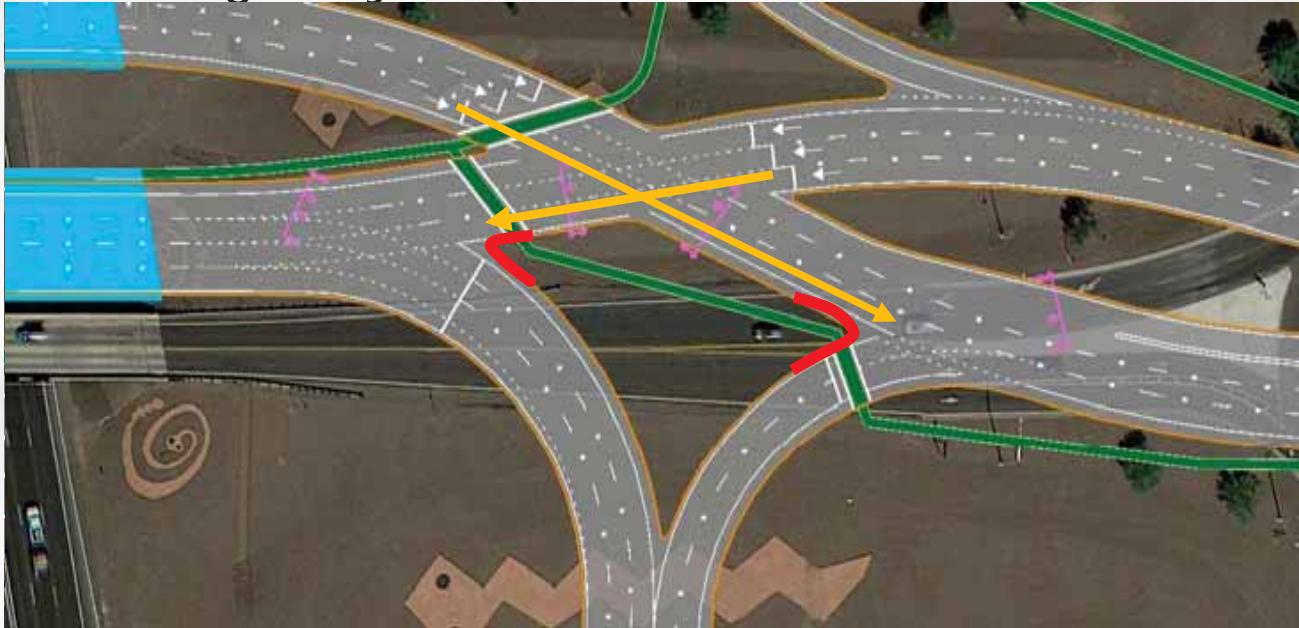
- ▶ Pedestrian & Cyclist Travel Route



**ADOT**

# DDI 101

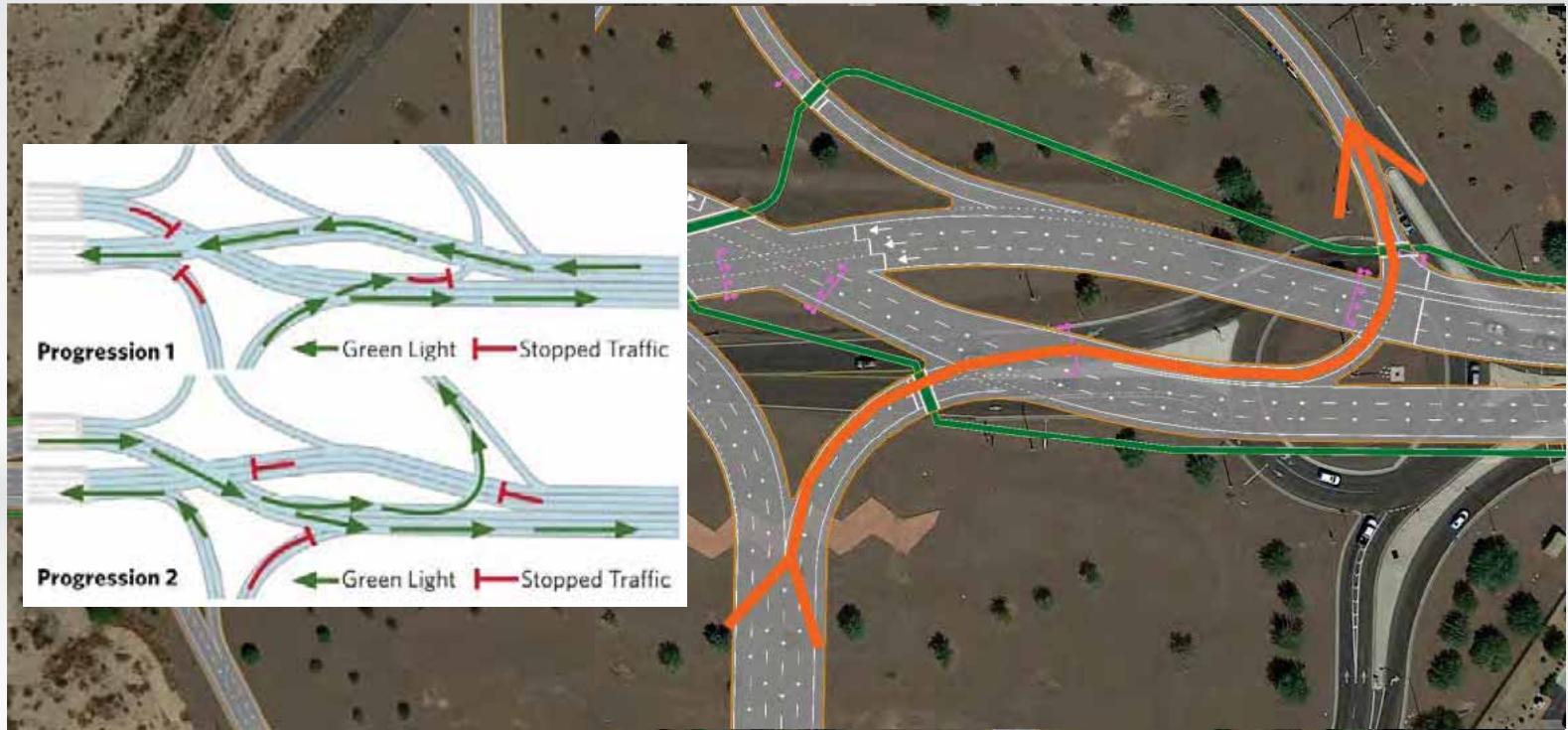
- ▶ Wrong Way Movement Prevention



# DDI Overview Video



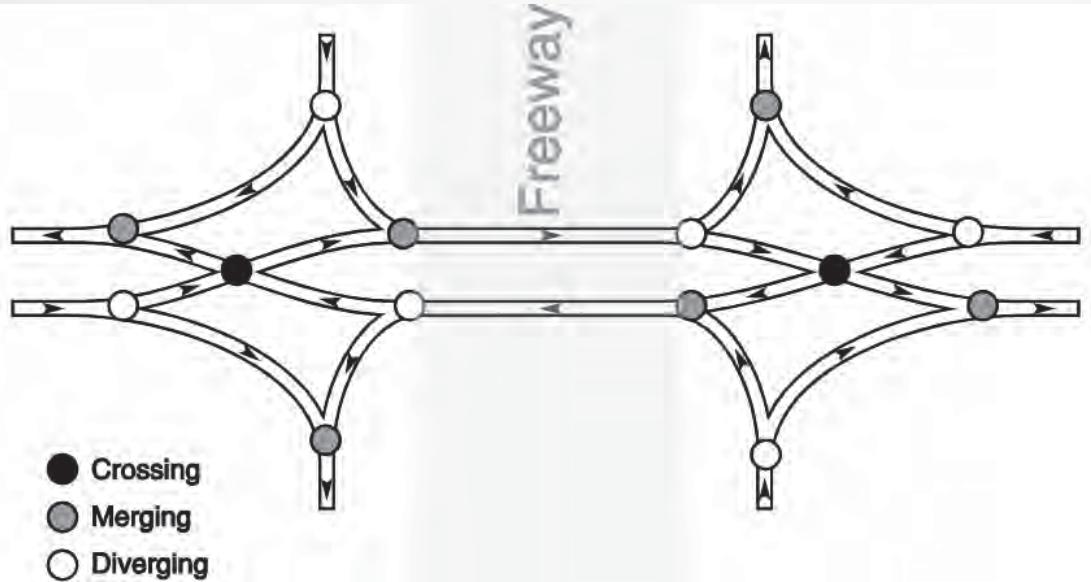
# DDI @ Happy Valley



**ADOT**

# DDI Safety Benefits

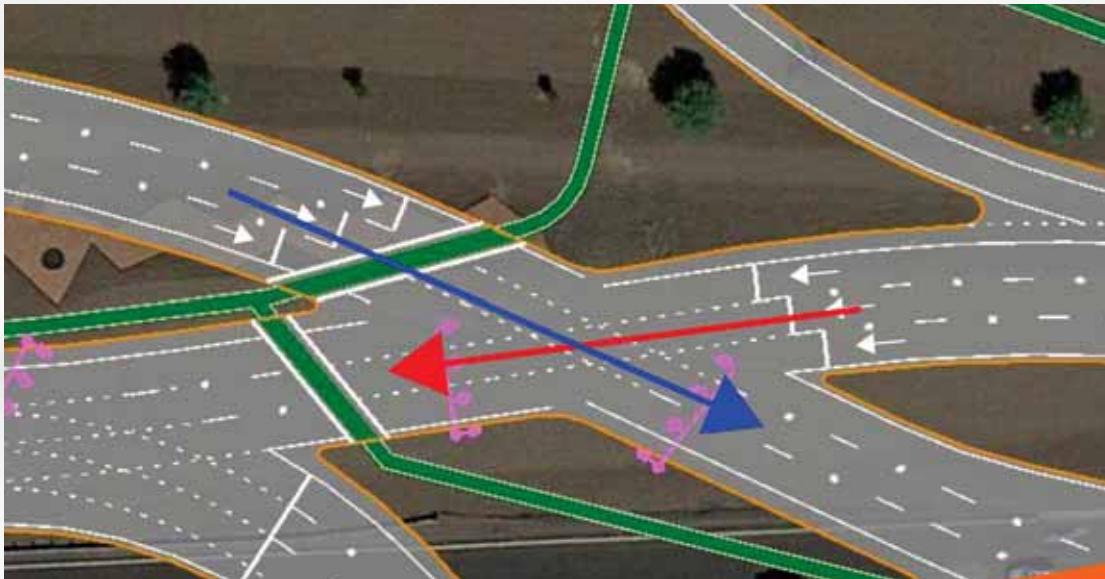
- ▶ Conflict Points and Correlation to Safety



**26 Points  
10 Crossing**

# DDI Safety Benefits

- Decreased Severity of Remaining Conflict Points



# DDI Safety Benefits

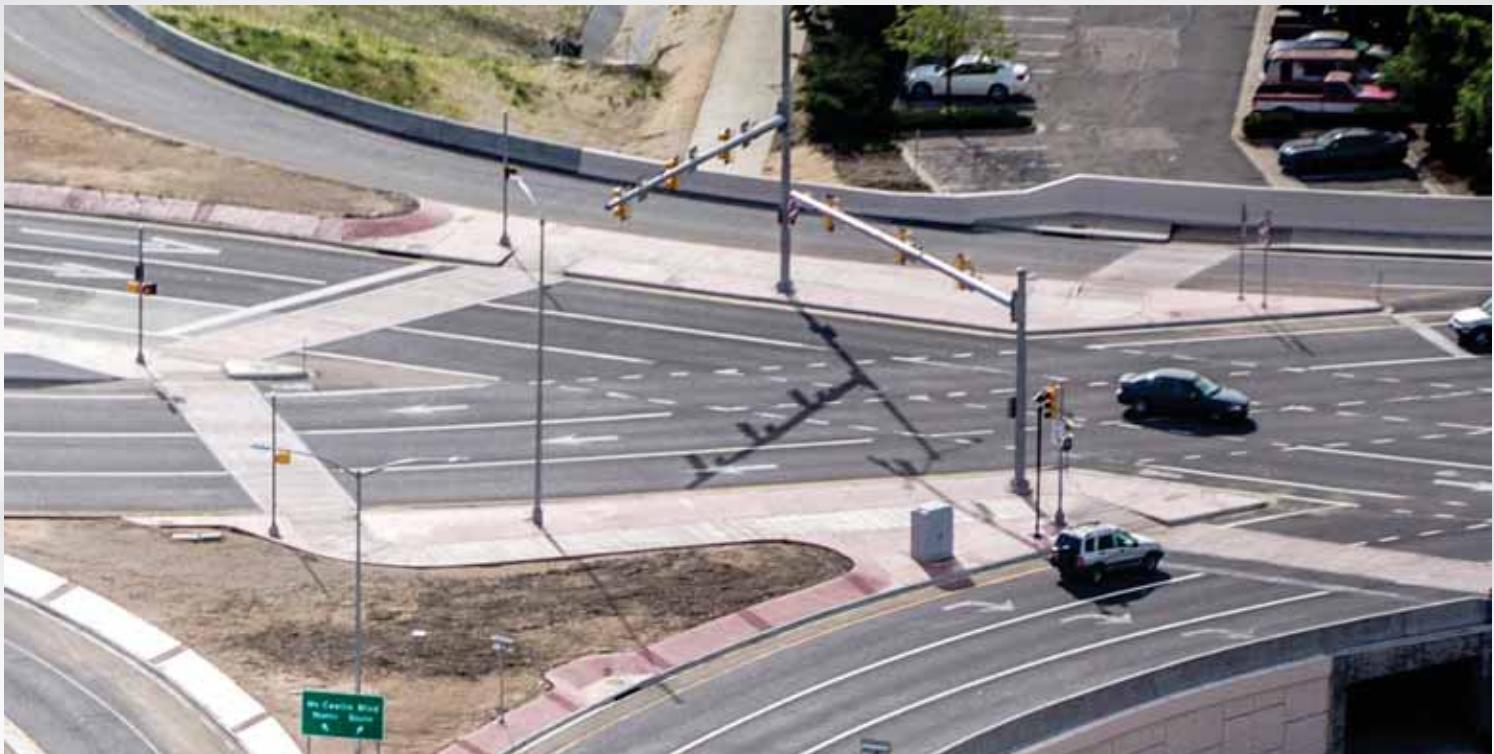
- ▶ Restrict Wrong Way Movement Ability
- ▶ Reduced Speed Through Intersections
- ▶ Reduced Conflict Points
- ▶ FHWA Study Results – 50% Overall Collision Reduction / 60% Reduction in Fatal Collisions

# Pedestrian Treatments

- ▶ Center Running in Median
- ▶ Protected Crossings
- ▶ Shorter Crossings



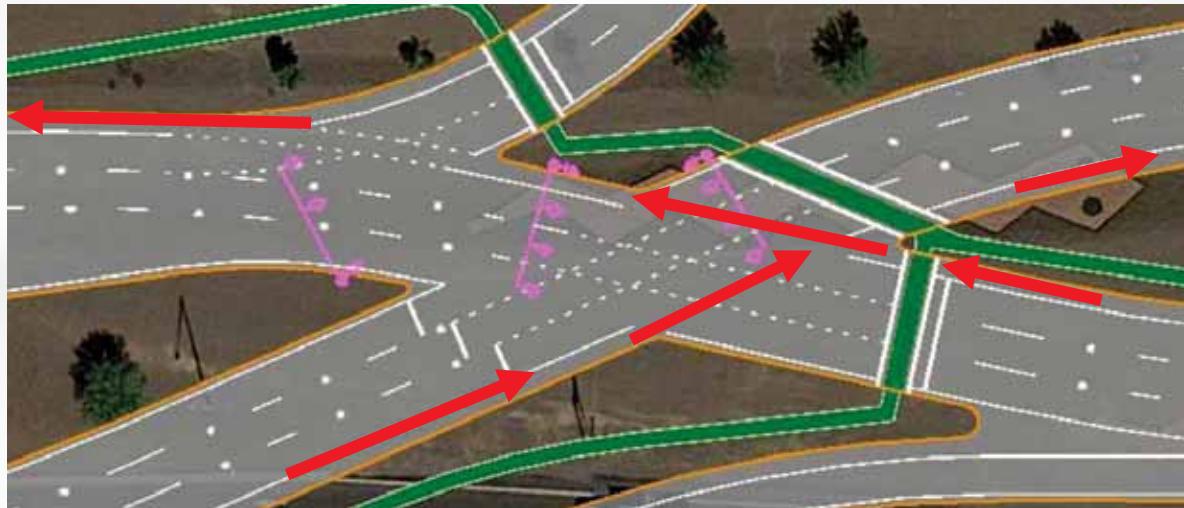
# Pedestrian Treatments



**ADOT**

# Cyclist Treatments

- ▶ Right Side of Vehicles
- ▶ Crossing at Intersections Shorter



# Cyclist Treatments



**ADOT**

# Interchange Comparison

Evaluation Criteria	Parclo	Diamond	3-Level Diamond	DDI	<u>Benefit Level</u>
# of Signal Phases	Yellow	Yellow	Green	Green	
AM Traffic Capacity* (West / East)	Red	Red	Yellow	Red	
PM Traffic Capacity* (West / East)	Green	Red	Red	Red	High
Vehicles Conflict Points	Red	Yellow	Yellow	Green	
Bikes and Pedestrians Conflict Points	Red	Yellow	Yellow	Green	Medium
Ease of Future Expansion	Red	Green	Red	Green	
Park and Ride Compatibility	Yellow	Yellow	Yellow	Yellow	
Cost	Yellow	Yellow	Red	Green	
Temporary Construction Impacts to Users	Red	Red	Red	Green	Low

\*2035 traffic volumes plus 20%

# How to Comment:

Complete and turn in comment form tonight

Email: [Projects@azdot.gov](mailto:Projects@azdot.gov)

Phone: 855.712.8530

Mail: ADOT Communications  
1655 W. Jackson St. MD 126F  
Phoenix, Ariz. 85007

