



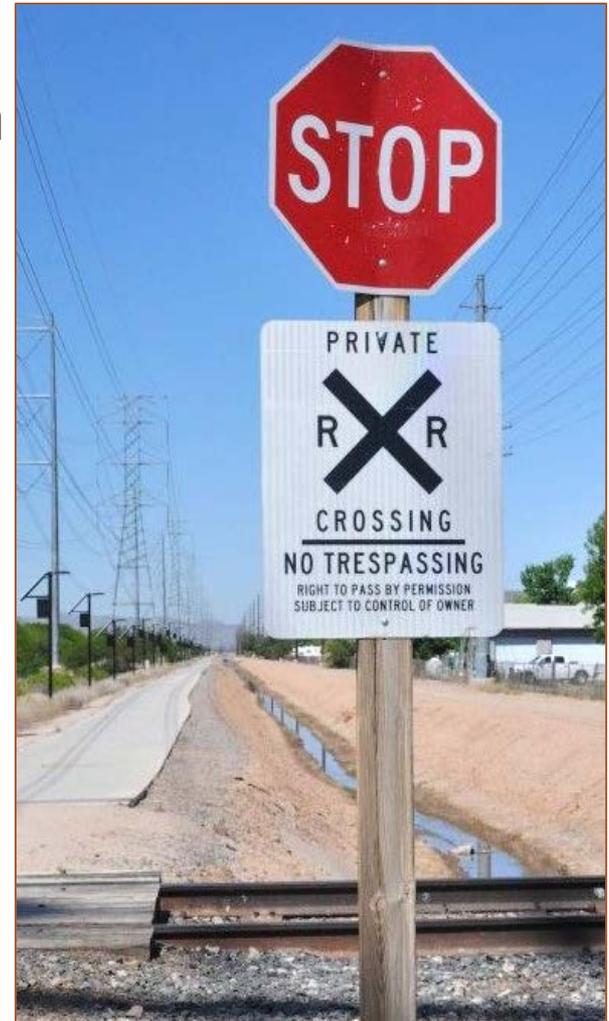
MAG RR/Trail Crossing Recommendations Study

MAG Bicycle and Pedestrian
Committee

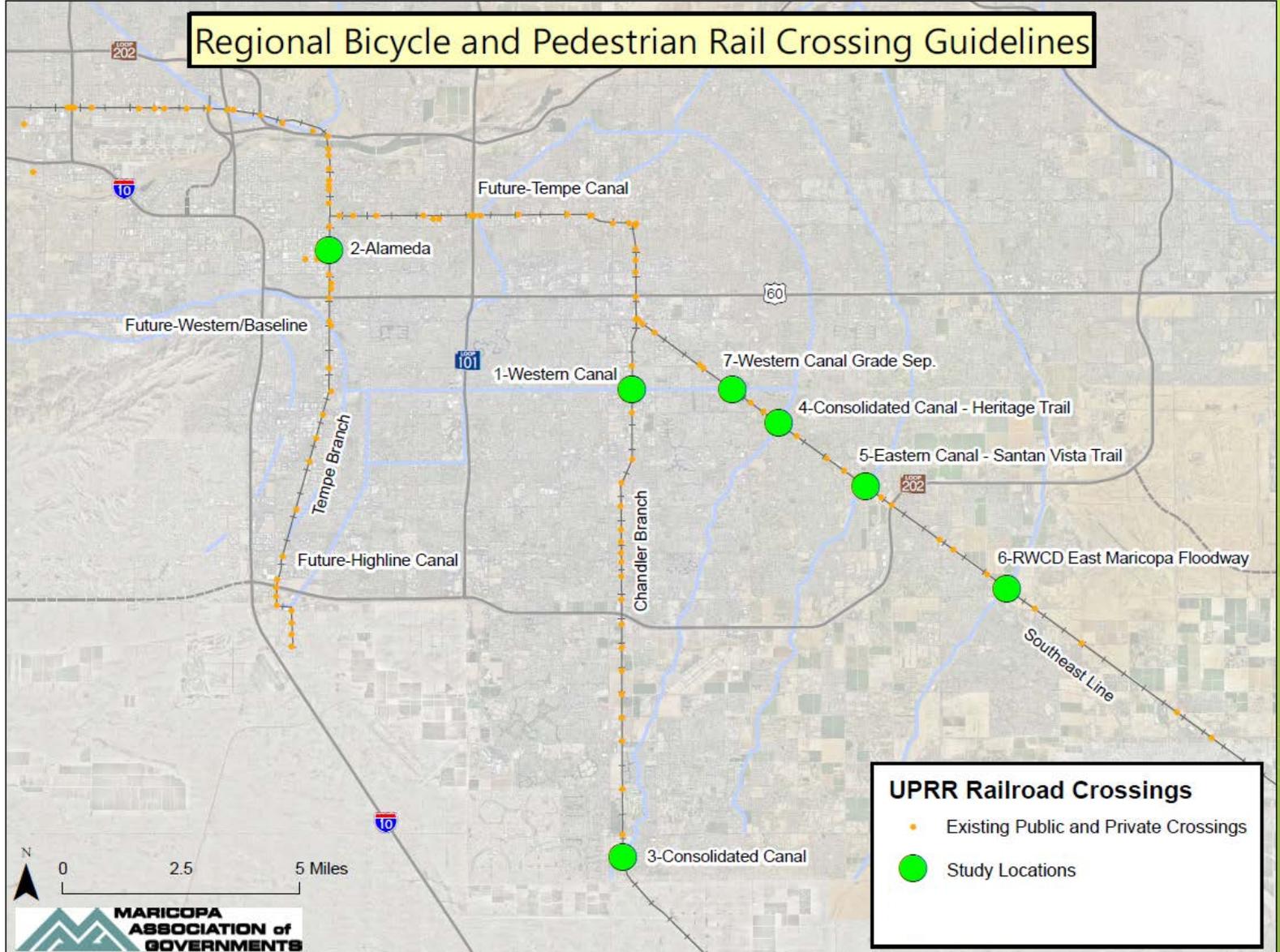
February 11, 2014

Project Need

- Popular Regional Trail System
- Gaps where trails meet railroad tracks
- “No Trespassing”
- Safety Concerns



Project Need



STANDARDS

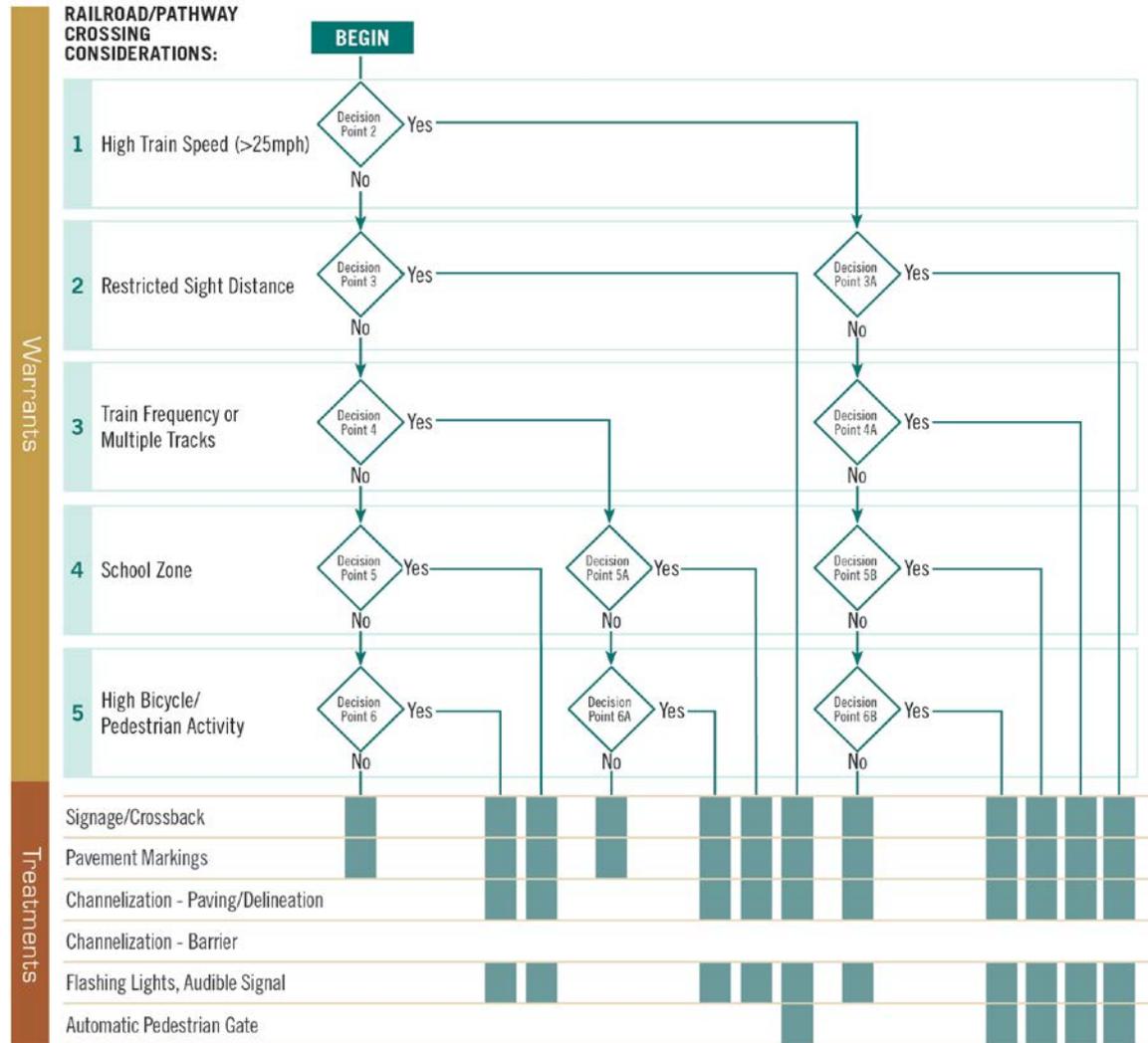
NO NATIONAL TRAIL CROSSING DESIGN STANDARD

HOWEVER, DESIGN GUIDELINES DO EXIST IN:

- MUTCD
- AASHTO GREENBOOK
- FHWA GUIDANCE ON TRAFFIC CONTROL DEVICES AT HIGHWAY-RAIL GRADE CROSSINGS
- FHWA DESIGNING SIDEWALK AND TRAIL FOR ACCESS,
PART II.

DECISION MATRIX

CROSSING INFRASTRUCTURE SELECTION FLOWCHART



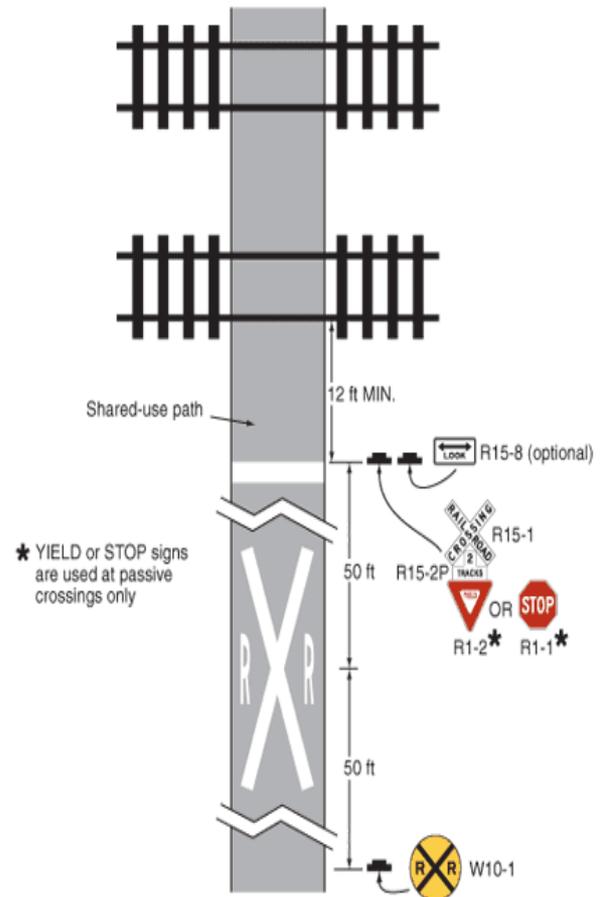
CROSSING OPTIONS

Passive Warning

- Signs (Crossbuck, Stop, Yield, Warning, Both Ways)
- Pavement Markings
- Detectable Tactile Tiles
- Clearly mark stopping location and crossing location
- Fencing
- Swing gates



Figure 8D-1. Example of Signing and Markings for a Pathway Grade Crossing

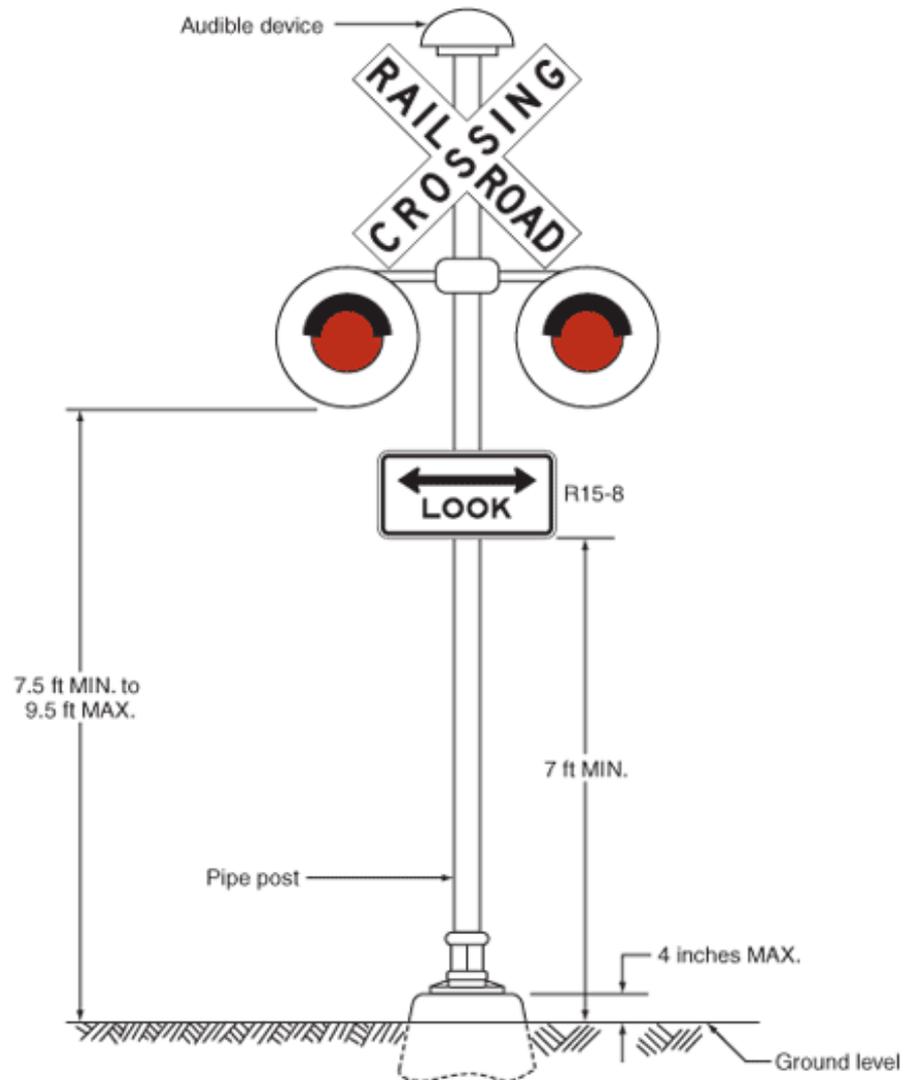


CROSSING OPTIONS

Active Warning

- Flashers
- Audible Devices
- Automated pedestrian gates
- Maze barriers
- Variable message signs

Figure 8C-4. Example of Flashing-Light Signal Assembly for Pedestrian Crossings



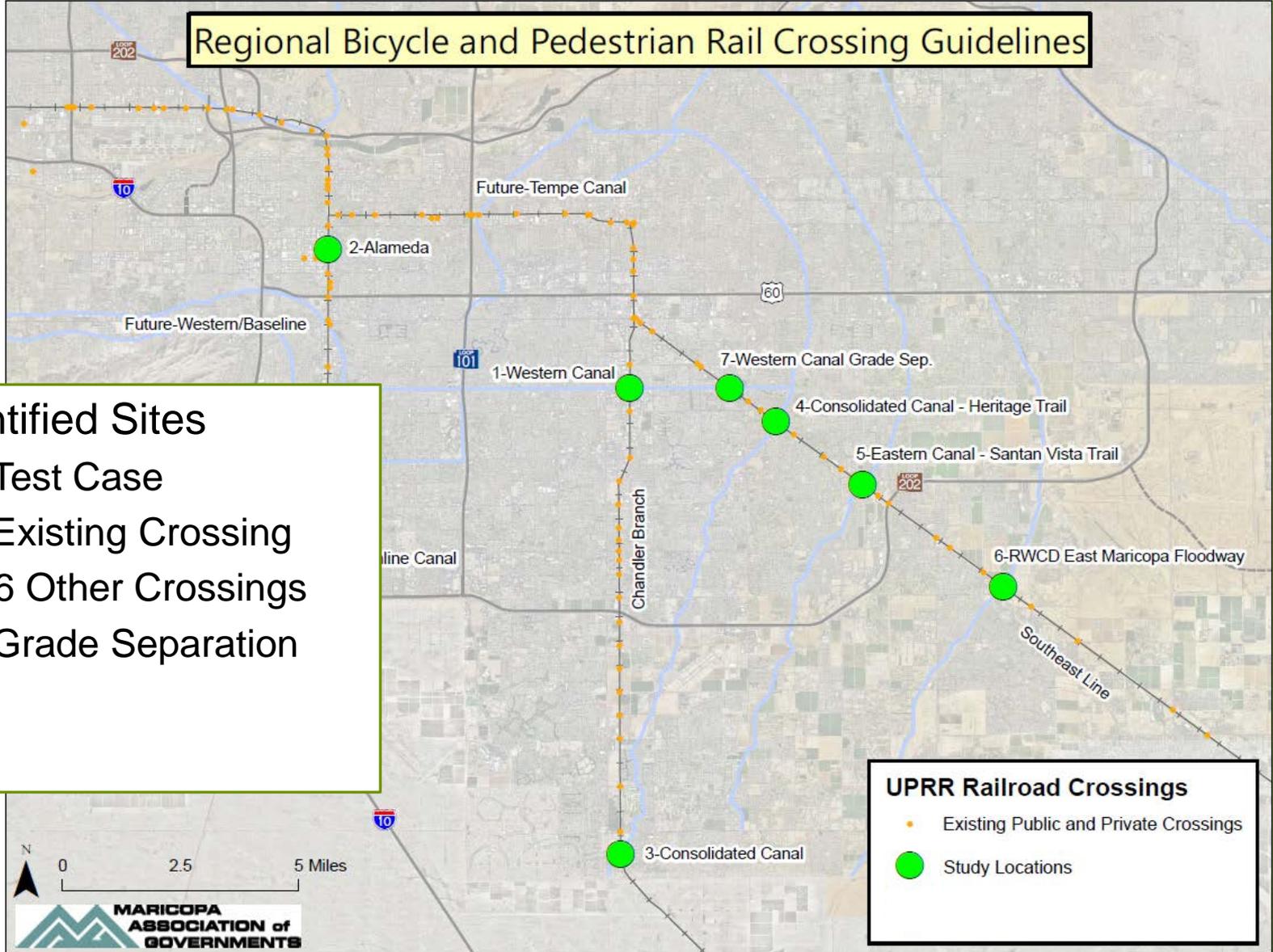
Site-by-Site Evaluation

- MAG staff, City/Town staff, UPRR conduct site visits, determine conditions and needs
- UPRR makes recommendations for crossing treatments
 - UPRR prefers grade-separated crossings at all locations

Site-By-Site Evaluation

Regional Bicycle and Pedestrian Rail Crossing Guidelines

- 7 Identified Sites
 - #1 Test Case
 - #2 Existing Crossing
 - #3-6 Other Crossings
 - #7 Grade Separation



UPRR Railroad Crossings

- Existing Public and Private Crossings
- Study Locations

0 2.5 5 Miles

MARICOPA ASSOCIATION of GOVERNMENTS

Western Canal - Chandler

- City of Chandler Design Assistance Grant
- FY2016 CMAQ construction funding
- Desire to connect to future path in Gilbert
- Low train volume, low train speeds



Western Canal - Chandler

- New concrete crossing surface
- Flashing lights
- Additional signage
- Clear vegetation
- Tactile warning strips
- Crossing agreement
 - UPRR, SRP, Chandler, Gilbert



Alameda - Tempe

- Uneven surface
- Minimal crossing treatments
- Excessive bollards



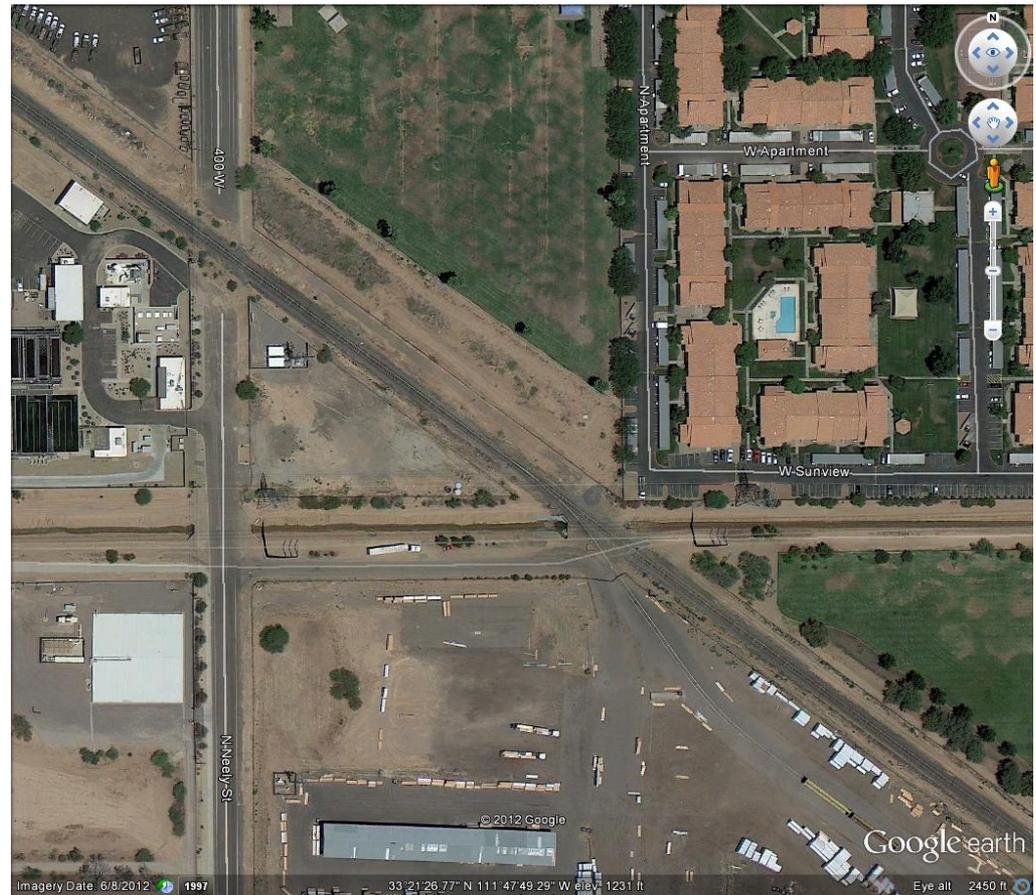
Alameda - Tempe

- Flashing lights and bell
- New signage
- Pavement advance warning markings
- New surface
- Remove bollards



Western Canal - Gilbert

- Intersects with UPRR mainline
- High-speed trains (60mph)
- Adjacent school
- Recommended grade-separated crossing



Western Canal - Gilbert

- Grade Separation
 - Channelization (fencing/pavement)
 - Fencing along UPRR tracks
- At-Grade
 - Flashing lights and bells
 - New crossing surface
 - Pavement markings

Overall Recommendations

- Implement grade-separated crossings
- Work with RR to implementing safe at-grade crossings
 - UPRR requires closing of two existing at-grade crossings to open one new at-grade crossing

Overall Recommendations

- Address crossings on a case-by-case basis
- Involve the railroad
- Follow decision matrix and step-by-step guide from report when considering crossing treatments

Questions?

