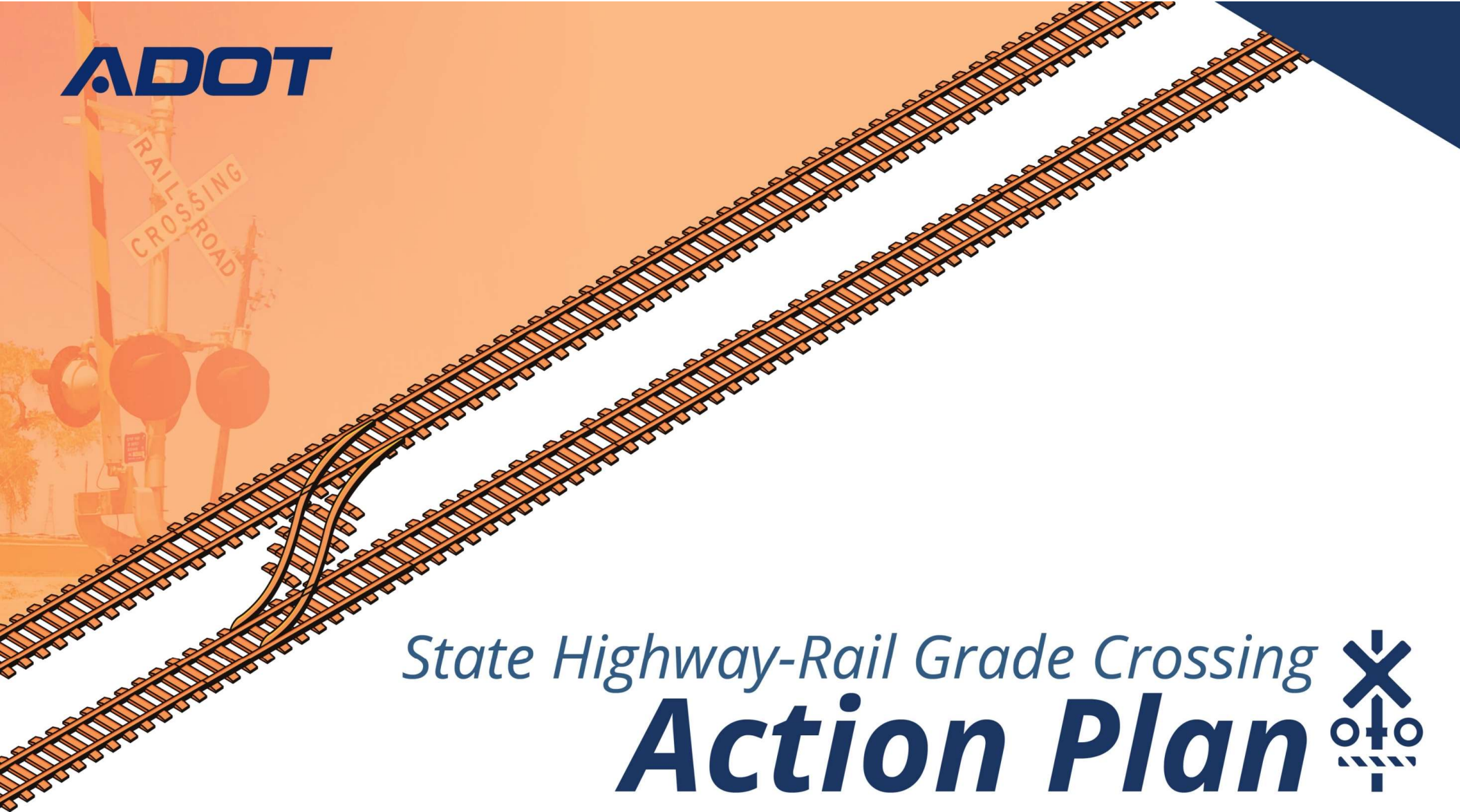




**ADOT**



*State Highway-Rail Grade Crossing*  
**Action Plan** 



## *SHRAP Overview*

- **What is a SHRAP?** Plan for how best to improve safety at ~700 public highway-railroad crossings in Arizona
- **Why develop a SHRAP?**
  - Safety is a top priority for ADOT
  - Intentional planning can bring about effective safety improvements
  - Provide recommendations for future programming of rail crossing safety improvements
  - Federal requirement for all states to have a SHRAP





## *SHRAP Goal and Objectives*

- **Goal:** Improve safety at public crossings where railroads interact with motor vehicles and other modes of transportation
- **Objectives:**
  - Reduce number and rate of incidents at passive and active crossings
  - Reduce number and rate of crossing incidents involving all modes of transportation
  - Reduce number and rate of incidents, injuries, and fatalities involving trespassers at at-grade crossings
  - Reduce severity of incidents at locations with reoccurring incidents





## *SHRAP Scope*

- Analysis of relevant highway-rail crossing data
- Identification of trends and high-risk crossings
- Coordination with stakeholders
- Prioritization of specific crossings with treatment recommendations
- Compilation of methodologies, findings, and recommendations into an Action Plan
- SHRAP funded by ADOT Multimodal Planning Division (MPD)





## *Pedestrian Safety at Railroad Crossings*

- Pedestrians are trespassing and pose a safety risk if they:
  - Walk along railroad tracks
  - Cross railroad tracks away from a designated crossing
  - Cross railroad tracks at a designated crossing when gate arms are down
- Trains cannot stop quickly enough for pedestrians on tracks
- Drugs or alcohol can impair judgment of pedestrians at railroad crossings
- 14 of the 19 fatalities in 2016-2020 were pedestrians and 1 was a bicyclist, all of whom were trespassing





## *ADOT Utility and Railroad Engineering (URR)*

- Liaison between ADOT and railroad companies
- Manages the Federal Highway-Railroad Grade Crossing Safety Program (Section 130) in AZ
- Manages Statewide Railroad Crossing Inventory





## *Typical Section 130 Projects*

- Install concrete crossing surface
- Install train activated lights/gates
- Install crossing-related sidewalks
- Crossing-related signing and striping updates
- Signal preemption updates
- Close a crossing





## *Section 130 Project Development*

- Projects selected and managed by URR
- Onsite diagnostic meetings and contract preparation
- Kickoff to project completion ~2-3 years
- URR responsible for agreements with local agencies and railroad companies and for FHWA authorization and ACC approval
- Local public agency work (approaches, medians, sidewalks, etc.)
  - Certification Acceptance (CA) – Local agency follows their CA
    - URR requests all authorizations and obtains railroad agreement
  - Non-CA: ADOT Local Government administers design and construction







# Section 130 Project Example

## 35<sup>th</sup> Ave/Harrison St, Phoenix

- Improved safety conditions
  - Updated existing railroad equipment
  - Added raised center medians for gates
- UPRR work
  - Install gates, cantilevers, and flashing lights
- City of Phoenix Work
  - Install center medians, sidewalks, ramps, signing, and striping
- 3-year project duration
- \$1.0 million cost mostly covered by Section 130 funds; City covered the rest





# Section 130 Project Example

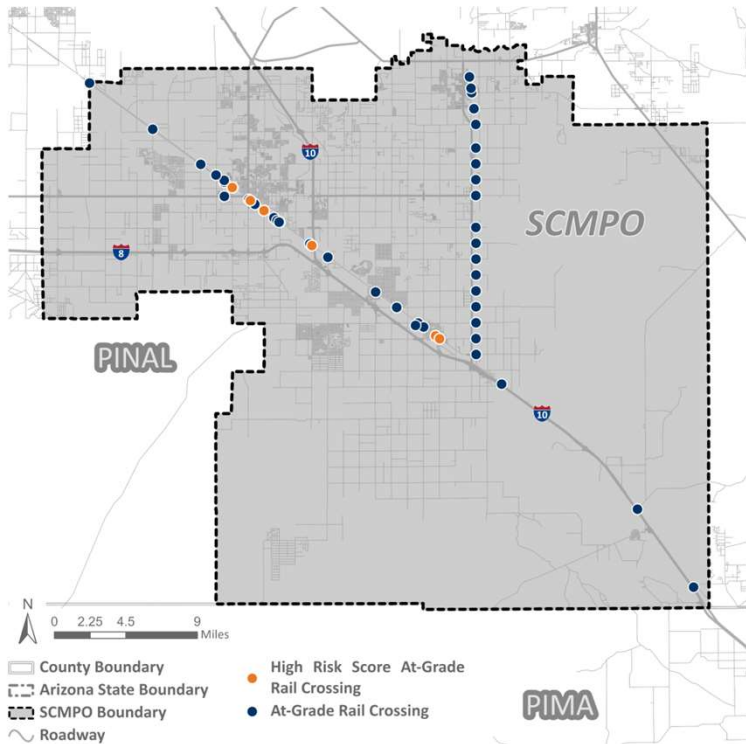
## Navajo Blvd/SR 77, Holbrook

- Upgrade failing concrete surface
  - Panels lifted and bouncing, bolts broken
- Construction by BNSF
  - Install continuous concrete surface
  - Install geogrid and underdrain below tracks
- Required complete closure for 3 days
- Extensive notification coordination
- 6-month duration (emergency request)
- \$1.1 million cost split between BNSF and Section 130





## Sun Corridor Metropolitan Planning Organization (SCMPO)



### SHRAP top crossing risk scores

- Florence St, Casa Grande (#12)
- Trekell Rd, Casa Grande (#19)
- Main St, Eloy (#24)
- Thornton Rd, Casa Grande (#41)
- Sunshine Blvd, Eloy (#58)
- Cox Rd, Casa Grande (#70)



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