ABC in Arizona so far:

• 2011 Mescal Road/J-Six Ranch Road Bridge
  – Emergency Bridge Replacement
  – Federal funding from Emergency Relief Funds
  – 3 span; 220.67 total bridge length
  – 35 precast adjacent box beams
• 2015 Gila River/Sacaton Road Bridge
  – Bridge Slide
  – 2, 70’ spans CIP deck on AASHTO Type III mod girders
  – SHRP2 project
  – 9 day closure vs 6 month closure
• Sacramento Wash Crossing at Oatman Highway (Historic Route 66)
  – 87 Hour ABC closure time
  – 4 modular decked beam units with precast abutment caps, abutment backwalls and approach slabs
Future ABC Projects
I-40 Meteor City

• Currently scheduled for construction in 2019
• Geosynthetic Reinforced Soil – Integrated Bridge System (GRS-IBS)
  – Under FHWA there are over 200 GRS Bridges in 44 States since 2010
  – There are only a few GRS Bridges currently on Interstates
• Precast Box Beams with a Polyester Polymer Concrete (PPC) topping and Precast Barrier
• All I-40 traffic closures limited to 25 calendar days
Existing Structure

• 3 Span Bridge with Integral T Girders
• Each Pier has 2 Columns on Independent Spread Footings and a Pier Cap Integral with the T Girders
• Due to the Pier configuration Phasing is not an option
• A Crossover is required for conventional construction
Maintenance of Traffic

- Both EB and WB Bridges to be replaced Simultaneously
- I-40 traffic routed to ramps – crossroad closed
- I-40 ramps are being modified for 25 day I-40 mainline closure
- 25 Calendar days to complete work with incentives and disincentives
Why ABC GRS-IBS Here?

• Sedimentary Bedrock Foundation
• No Scour
• Reduction in future Maintenance
• No local commercial concrete or aggregates – Long travel distances for materials
• Short work season due to weather
• Heavy De-Icing salt use
Abutment Design

- Two phase wall construction
- Design as MSE wall with foundation loads at top
ADOT’s Modifications to FHWA Guidelines

- Utilize geogrid instead of geotextile
- Batter of wall facing
- Setback of foundation loads from wall facing
- Mechanical connection of wall facing to reinforcements
- Restrict geogrid products to NTPEP
GRS Abutment

• Utilize Existing Industry
  – Segmental Wall Facing – Allan, Keystone, Mesa, etc.
  – Geogrid – Miragrid, Stratagrid, Acegrid, Synteen, etc.

• No construction phase testing of structural backfill
  - Utilize #57 Coarse Aggregate
  - Method specification for compaction

• Segmental block wall industry produces uniform spacing and alignment of wall facing blocks
Superstructure

- 11 B1-48 Box Beams with precast barrier
- 2 ½” PPC screeded overlay and 1” ACFC
- No Reinforcing steel or Concrete (PCC)

Quantity Item
Going Forward

• New ADOT Guidelines Available
  – Decision Making Matrix
  – Decision Flowchart

• ADOT is Looking for ways to Reduce our Impacts to travelers while decreasing Future Maintenance Expenditures