ABC in Oregon

Peer to Peer ABC Workshop

Sacramento, CA

May 19, 2015

Craig Shike, P.E.

Bridge Operations & Standards Manager

Bridge Engineering Section

Oregon Department of Transportation
ABC in Oregon

ABC Committee

Started by Ben Tang – June 2008

BDDM Section 3.24

- 24 ABC projects 1973 - 2014
ABC in Oregon

ABC Projects

1973 – Fremont Bridge – Arch span floated on barges and moved into place using strand jacks

1997 – Imnaha Bridge – Single span steel, lateral slide (NE Oregon, 21 miles from Wallowa Lake Highway)

1997 – I-5 Interstate Bridge – Trunion assembly replacement – 7 days (14 days ahead of schedule)

2002 – OR 26 Mill Creek Bridge Deck Replacement - 3-span truss – Deck panels replaced sequentially, 24 days
ABC in Oregon

ABC Projects

2006 – US 20 over Hayes Creek – Precast cap and slabs – Bridge constructed during a 72-hour closure

2007 – Sauvie Island over Columbia River – 365 ft steel tied arch – SMPT used to skid and load the span on barges and floated into place

2007 – Depot Street Rogue River – 306 ft concrete tied arch built adjacent to existing and slid laterally into place – 5 day road closure

2008 – OR 38 over Elk Creek / Hardscrabble Creek – Both structures built to the side and slid laterally into place
2012 – US 30 Burnt River (UPRR)
- Precast prestressed deck panels with UHPC joints
2012 – US 30 Burnt River (UPRR)

- Precast prestressed deck panels with UHPC joints
2012 – US 30 Burnt River (UPRR)
• Lessons Learned
  ❖ Texturing HPC Deck Concrete in the plant is not easy
  ❖ UHPC is expensive!
  ❖ CIP end sections work well
  ❖ Precast deck panels cost more than CIP

• See *Aspire* magazine, Summer 2014
2014 – US 26 West Humbug Creek
• Precast prestressed deck panels with P/T joints
2014 – US 26 West Humbug Creek
• Precast prestressed deck panels with P/T joints
2014 – US 26 West Humbug Creek
• Precast prestressed deck panels with P/T joints
2014 – US 26 West Humbug Creek
• Precast prestressed deck panels with P/T joints
2014 – US 26 West Humbug Creek

- Lessons Learned

- UHPC Joints preferred over P/T

- Match cast joints should have epoxy

- Post Tensioning all panels at once is difficult

- When using new technology, it may be beneficial to specify some means and methods

- Project will test durability of precast deck panels
2012 – OR213 I-205 Redland Road

• Lateral Slide
2012 – OR213 I-205 Redland Road

• Lateral Slide
ABC in Oregon

Future Direction

More use of UHPC if cost is reasonable

Possible Geosynthetic Reinforced Soils Integrated Bridge System (GRS-IBS) for a county bridge

Need more funding (ODOT currently replaces 1 bridge per year)

Falsework for CIP concrete construction generally not allowed for overpass construction due to mobility requirements (17 ft minimum vertical clearance)

Designers and Contractors are ready and willing to use ABC
ABC in Oregon

Questions?

Craig Shike, P.E.
Bridge Operations & Standards Managing Engineer
Bridge Engineering Section
Oregon Department of Transportation
Craig.L.SHIKE@odot.state.or.us
503-986-33323