Wrap It Up
- Externally Bonded Wraps -

Will Potter
FDOT
Outline

- Brief Background
- Implementation Efforts - Standardization
- Practical Applications
- What’s Still Needed – Gaps?
- The Future
Background

- Initiation – Late 1970s and 1980s
- Confinement Applications (Columns) – 1980s
- Concrete Flexural Applications – 1987
- Extensive Research Over the Past 30+ Years
  - State Agencies, NCHRP, Consortiums, Industry, etc.
- Alleviated an Immediate Need for Maintenance
- Limited Alternatives
Adoption Rationale

- Installation – Quick, Diverse and Low Impact
- High Strength-to-Weight Ratio
- Maintenance - Preservation
- Durability
- Aesthetics

- Considered a “Standard” Repair Material by Many Agencies
Codification and References

- ACI 440.2R
- JSCE
- CSA
- fib
- AASHTO
- State/Agency Specific Guidance
- Textbooks Available
Practical Applications

- Impact Damaged Concrete
- Corrosion Damage Concrete
- Strengthening
- Protective Wrapping
- Seismic Retrofit
- Confinement
- Impact Damaged Metal Poles
- Fatigue Damaged Sign Structures
- Culvert Liner
- Likely several more…
Impact Damaged Concrete
Strengthening – Corrosion Damage
Seismic Retrofit – Aesthetics - Preservation
Confinement
Gaps – Design Process

NCHRP 20-07 Task 428 – Update AASHTO Guide Specification
- Gaps -

Anchorage and Detailing
Gaps - Durability

- How long will it last?
- Band-aid or long-term solution?
- Inspection methods?
Future

- Fiber-Reinforced Cementitious Material (FRCM)
- ACI 549.4R-13
- Hybrid Fabrics
- Codification of New Materials/Methods
- Others?