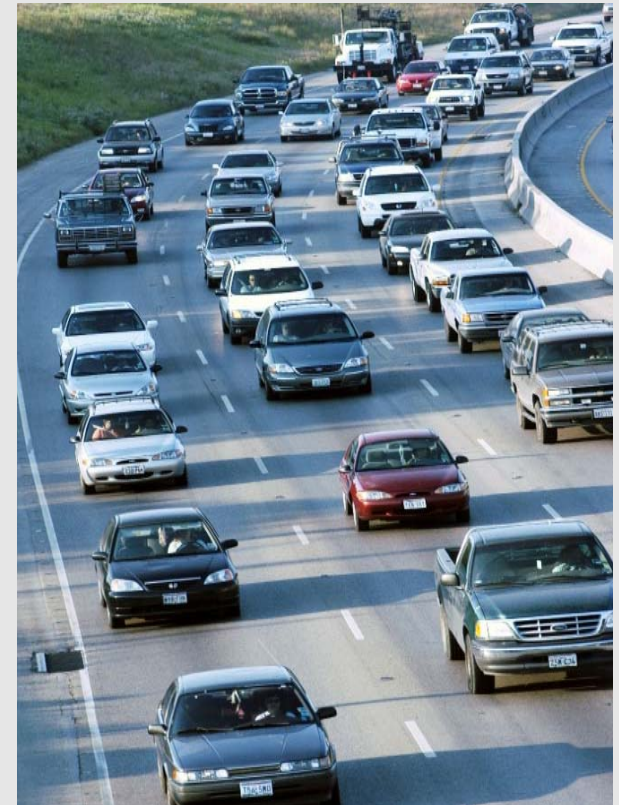




# TXDOT BRIDGE MANAGEMENT PRACTICES

Steven Austin, P.E.

Texas Department of Transportation

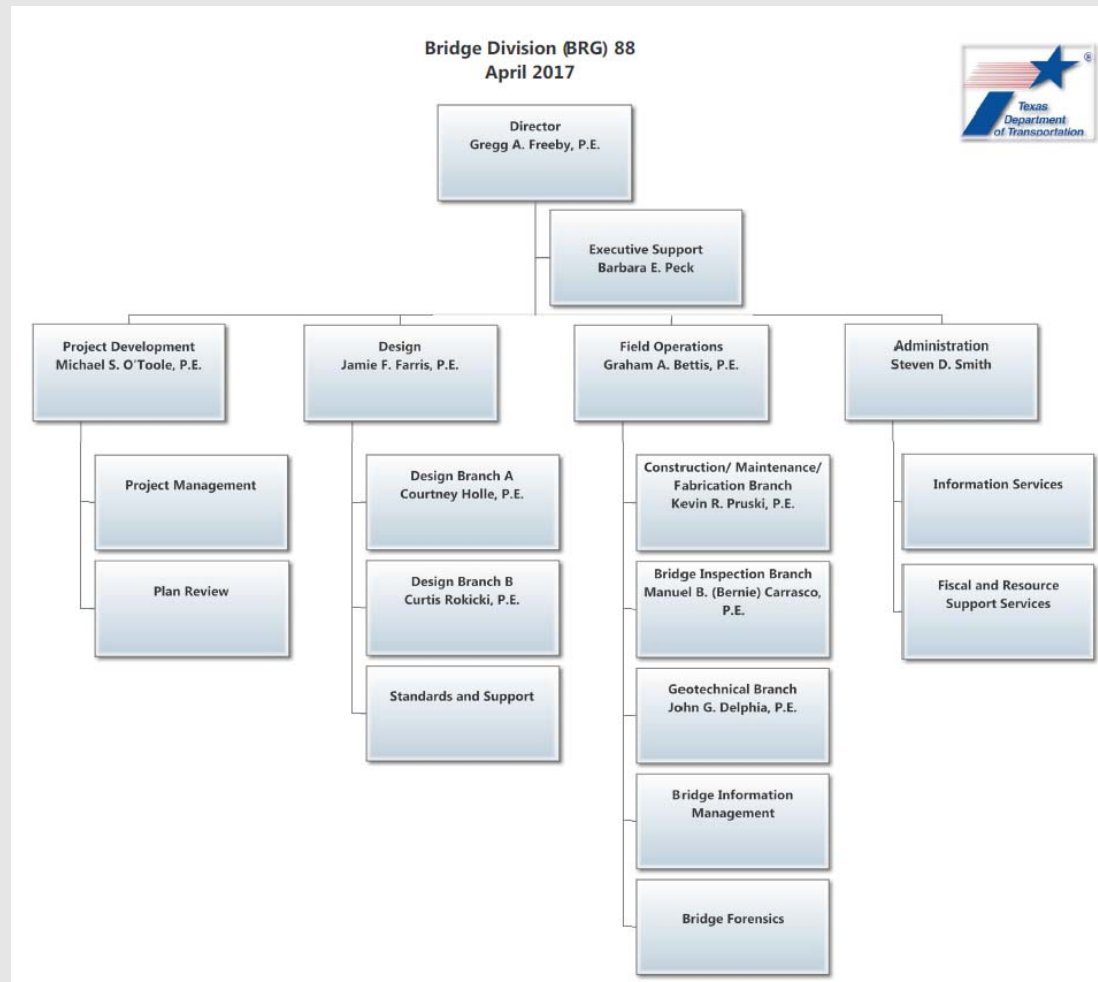


# TxDOT Bridge Management Practices

- Existing bridge inventory → Routine and preventive maintenance → Major bridge maintenance and improvements → Major bridge rehabilitation or bridge replacement



# TxDOT Bridge Management Practices





# Management Tools

## Current Tools

**PonTex** (TxDOT's version of Pontis)

**Maintenance Bridge Inspection Tracking System(MBITS)**

**Design And Construction Information System (DCIS)**

**Construction and Maintenance Contracting System (CMCS)**

**Bridge Portfolio Manager**

```
(A) TN3270 (MAINFRAME) [THD00046] - PowerTerm InterConnect
File Edit Terminal Communication Sessions Options Script Help
DCS2B233-CSJ WAS CHANGED; NO UPDATES MADE.
UPDATE MODE 04/25/17 PROJECT ID (P01) 14.06.29 ENGLISH DCIS.02A
CTL-SEC-JOB 0237 07 - 013 HWY NO FM 133 DIST 22 CNTY DIMMIT 64
BEG MILE POINT 1.000 END MILE POINT 6.000 PROJECT LENGTH MI 5.000
BEG REF MARKER NUM 426 SUFFIX DISPLACEMENT -0.083 DFO 0.000
END REF MARKER NUM 400 SUFFIX DISPLACEMENT -1.143 DFO 5.000
LIMITS FROM US 83 TRM UPDATE FLAG S
TO 5.0 MILES EAST OF US 83 PROJ CLASS RER
TYPE OF WORK BASE.GRADE.ACP.PAV MARK SPEC BOOK YEAR 14
LAYMANS DESC REHABILITATION OF AN EXISTING HIGHWAY

PDP CODE PL17 ABATEMENT AUTH 0 0 LET SCH FY 2017
RESP. SECTION LRD FUNCTIONAL CLASS 5 FED LETTER OF AUTH -0 0
INFLATION % 4.00 DISTRICT OVER % 0.00 STATE LETTER OF AUTH 0 0
LATEST EST OF CST COST 19923027 LOCAL GOVT NO UTP AUTHORITY C CONS
DATE OF LATEST EST 03 15 17 PERF END DATE N PRES DIST EST LET DATE -7 17
AUTHORIZED AMOUNT 7407770 TRUNK SYS N APPROVED LET DATE -7 17
CONTRACT CSJ 023707013 NIS N ELS ACTUAL LET DATE -0 0
OVERSIGHT S RAIL COORD N HURR EVAC RTE N PROJ NUM STP 1702(496)
PROJ ANCESTORS 023707955 ROW CSJ.
PROJ DESCENDENTS
REMARKS
Enter PF1--PF2--PF3--PF4--PF5--PF6--PF7--PF8--PF9--PF10--PF11--PF12--
LEGIS UPDT FIN EVAL EST SUM UTP STIP METR COR TPC PE MENU
MSE
F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12
3270 Display 3:15 Escact Fwcrsd Hlckd On-Line
```

## Coming Tools

**InspectTech (Bentley Systems)**

- Will replace PonTex with added functionality

**Modernize Portfolio Project Management (MPPM)**

**BrM (AASHTOWare)**

**Decision Lens**



# Funding by Project Type

- Routine Maintenance
  - Funds available varies by District
  - Allocation to bridges is at District's discretion



# Funding Program by Project Type

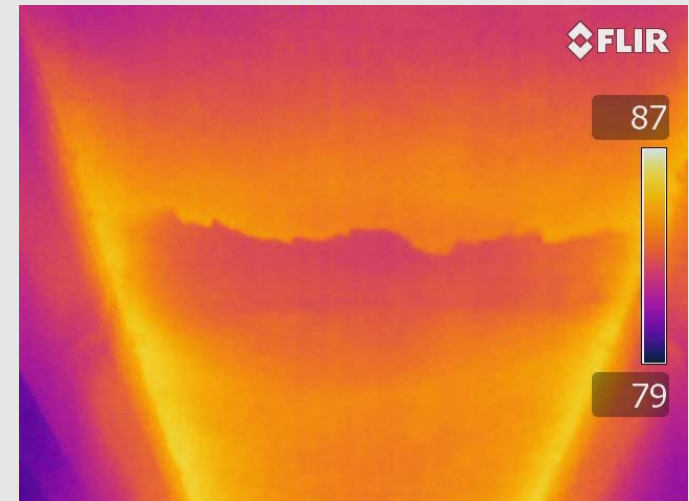
- Bridge Preventive Maintenance
  - Managed by Maintenance Division
  - Traditionally intended to help bridge the gap between routine maintenance and bridge replacement
  - \$15M / 25 Districts = \$600,000 avg. per district
  - State funds
  - To be spent in the FY it is authorized





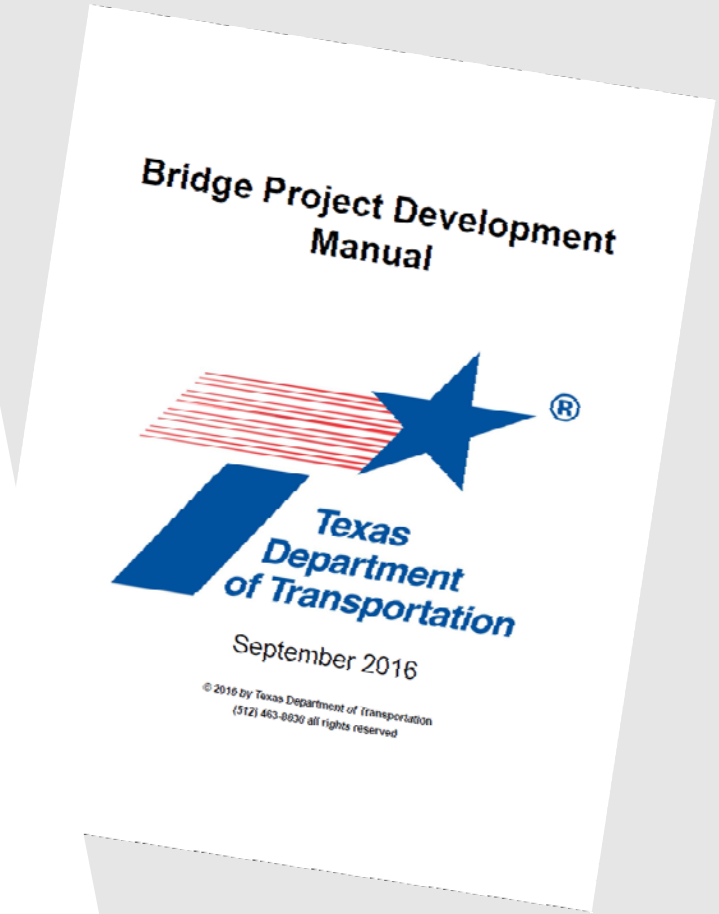
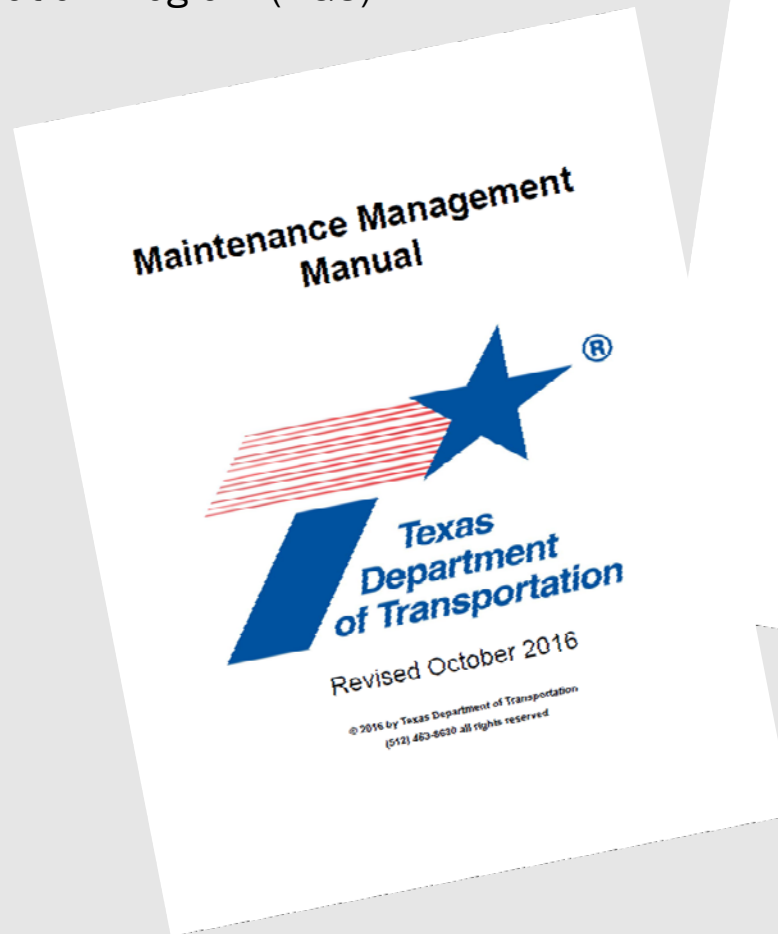
# Funding Program by Project Type

- Bridge Maintenance and Improvement Program
  - Managed by Bridge Division
  - Committee involvement (District, Bridge Division and Maintenance Division)
  - Intended for moderate to large improvement projects
  - \$45M / 25 Districts = \$1.8M avg. per district
  - Federal funds (federal requirements)
  - Condition survey required
  - Stated goals



# Funding Program by Project Type

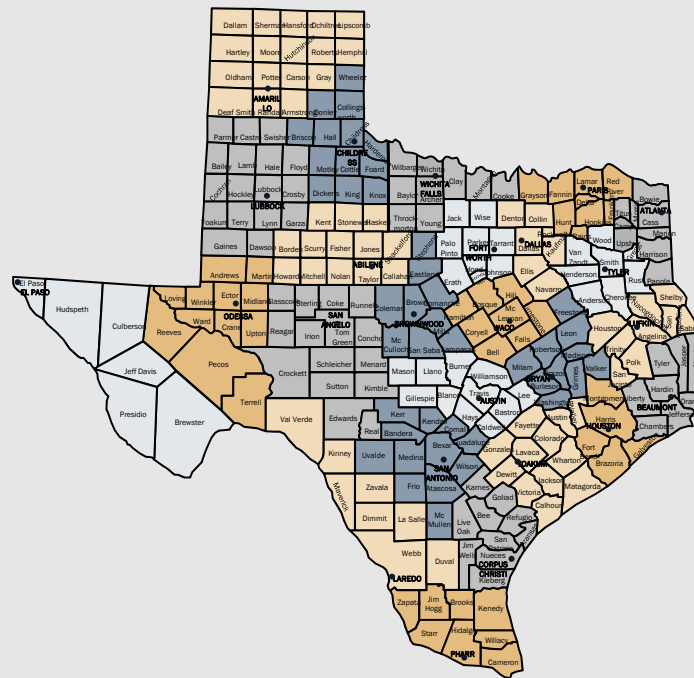
- Highway Bridge Program (HBP)
- Railroad Grade Separation Program (RGS)
- Emergency contracts





# Bridge Preservation Challenges

- First must diagnose and address what caused the defect
- Requires familiarity of effectiveness of repair options
- Each project is unique, no “standard” repairs



# Bridge Preservation Resources

- TxDOT Bridge Division - Construction and Maintenance Branch
  - Expertise in bridge preservation options and techniques
  - Familiar with specifics of specifications
  - Available to perform site visits for construction inspection
- TxDOT Construction Division
  - Materials lab for material testing
  - Paint assessment and paint inspection
- TxDOT Concrete Repair Manual and Standard Specifications
- Departmental Material Specifications (DMS)
- Approved products in Material Producer List (MPL)



# New Designs and Replacements

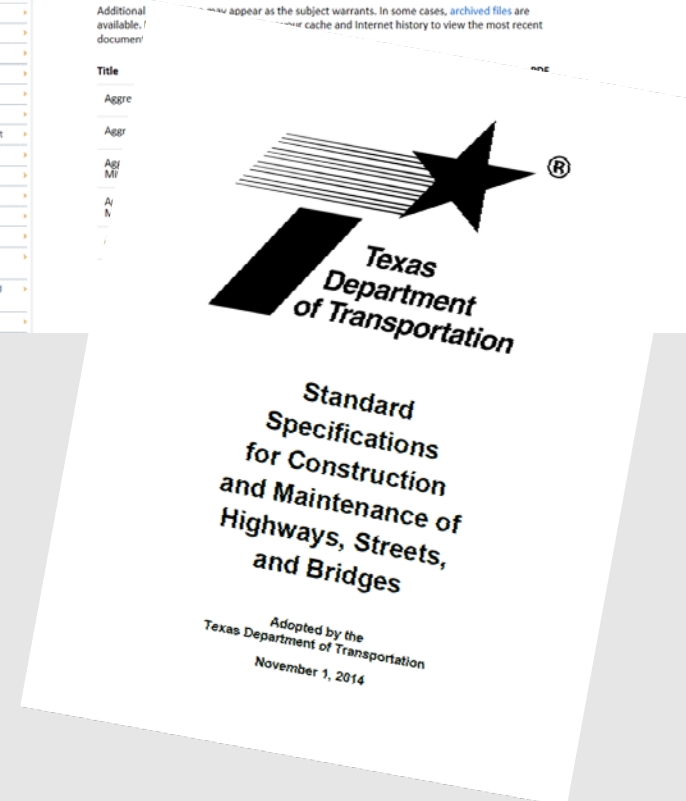
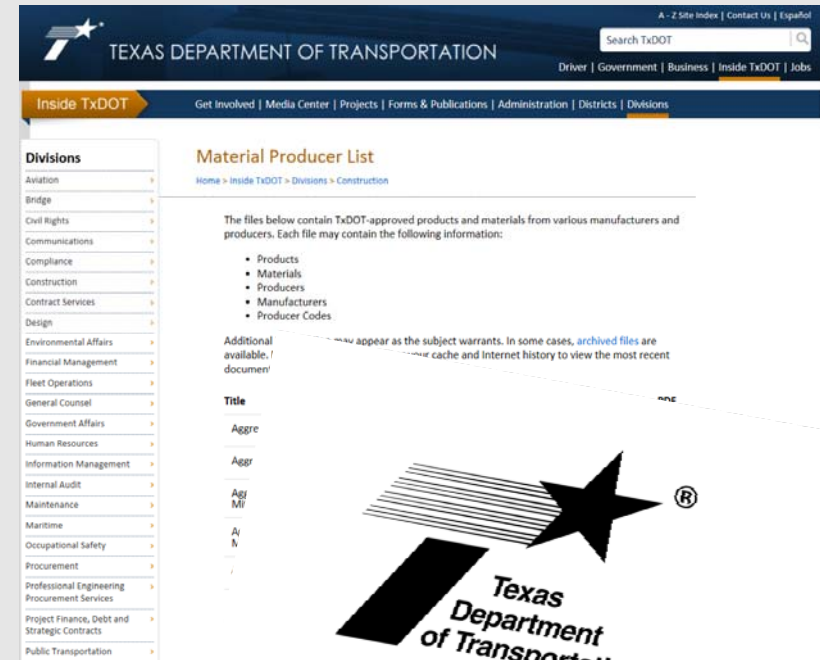
- Standardization as much as possible
  - Documented policy in the Bridge Design Manual and Bridge Detailing Guide
  - Standards for rails, deck reinforcing, bents, abutment, various beam types.
  - Standard Specifications
- Material Requirements
  - Use of HPC, prestressed concrete, and corrosion resistant reinforcing
  - Development of specific corrosion protection measures by District
  - DMS and MPL





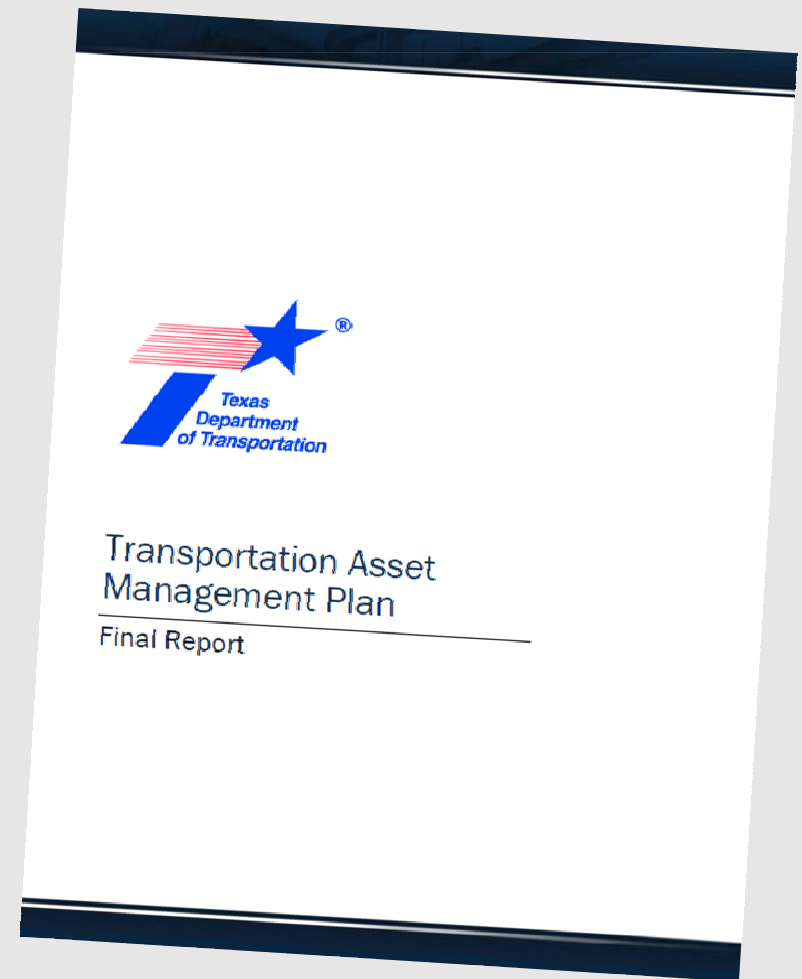
# New Designs and Replacements

- SiteManager
- In-house inspection and Construction Engineering and Inspection contracts.
- TxDOT Construction Division
  - Materials lab for testing
  - Paint assessment and paint inspection
  - Quality Assurance at fabricators

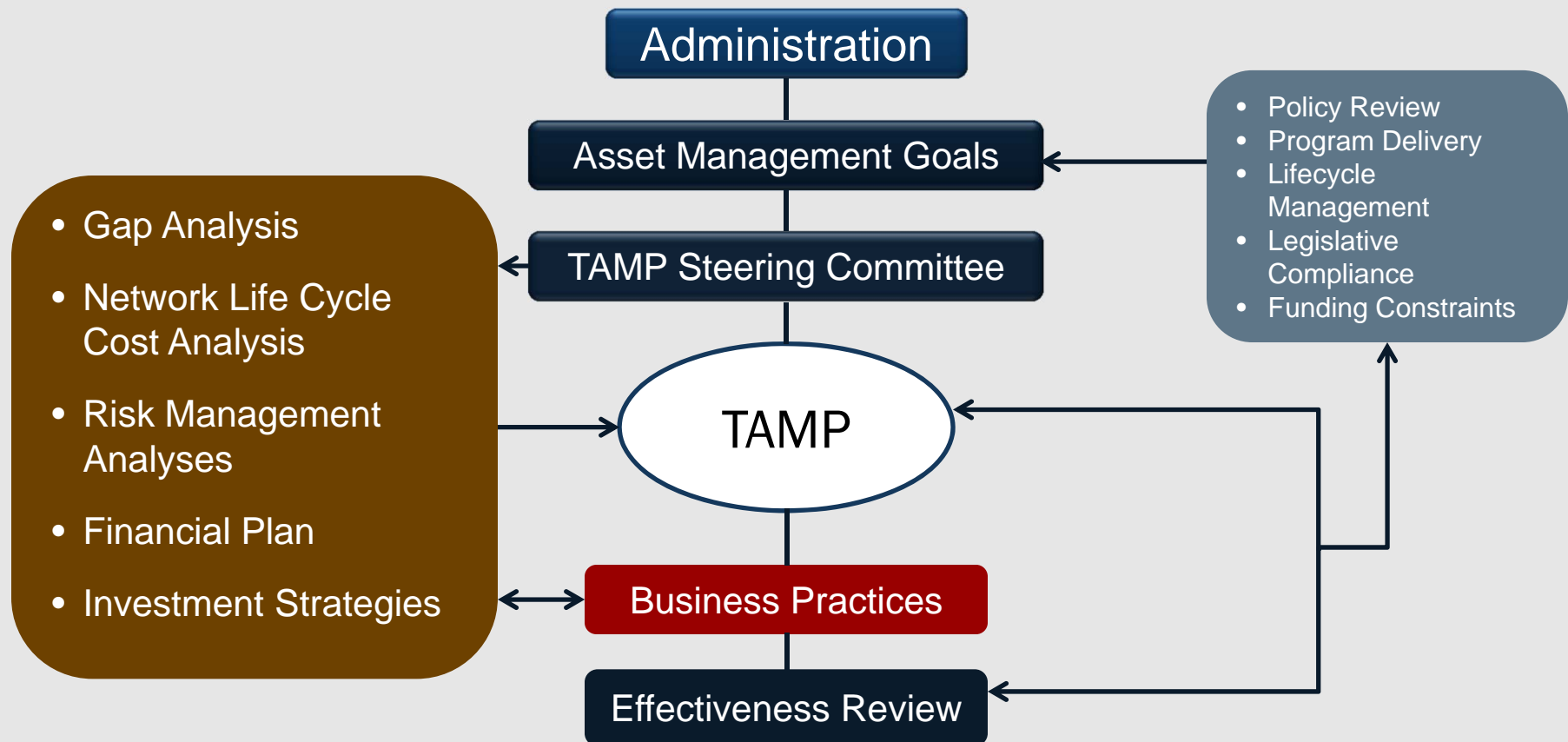


# TxDOT's TAMP Progress

- Effort being led by Roadway Asset Management Branch of Maintenance Division
- Building off of first-generation TAMP Documents
- Risk analysis
  - Developed preliminary risk register
- Drafting preliminary gap analysis
  - Performed compliance research (MAP-21, FAST Act, Texas HB 20, TxDOT Policies)
  - Aggregating asset performance data
  - Assessing current inventory conditions with FHWA and TxDOT performance measures
  - Identifying process gaps and performance gaps
- Reforming TxDOT's TAMP Steering Committee



# TAMP Business Structure





# Copyright Notice

Copyright 2017 • Texas Department of Transportation • All Rights Reserved

Entities or individuals that copy and present state agency information must identify the source of the content, including the date the content was copied. Entities or individuals that copy and present state agency information on their websites must accompany that information with a statement that neither the entity or individual nor the information, as it is presented on its website, is endorsed by the State of Texas or any state agency. To protect the intellectual property of state agencies, copied information must reflect the copyright, trademark, service mark, or other intellectual property rights of the state agency whose protected information is being used by the entity or individual. Entities or individuals may not copy, reproduce, distribute, publish, or transmit, in any way this content for commercial purposes. This presentation is distributed without profit and is being made available solely for educational purposes. The use of any copyrighted material included in this presentation is intended to be a “fair use” of such material as provided for in Title 17 U.S.C. Section 107 of the US Copyright Law.