CHIP SEAL: A PROGRAMMATIC APPROACH

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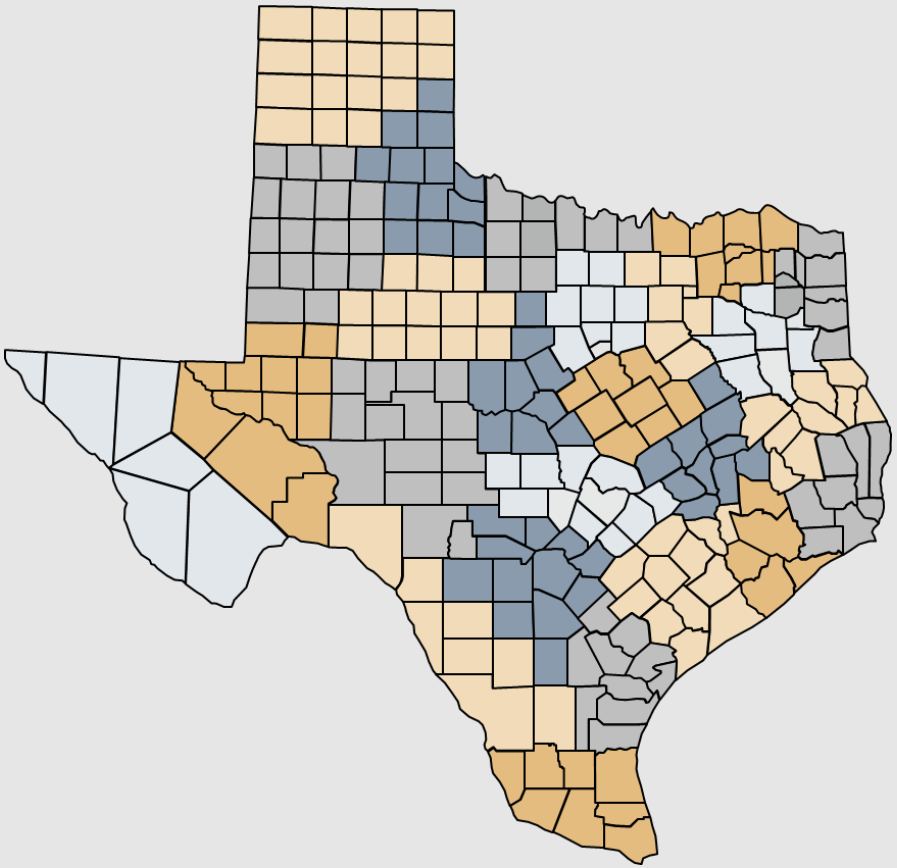
Texas – A Whole Other Country



Statistics

- 194,000 Lane Miles
- 21,000 LM chip sealed annually
- $357 Million annually spent on chip seals

Safety + Preservation = Chip Seals

- Average annual fatalities on Texas roads: **3,208**
- Average annual fatalities attributable to wet weather: **286**
- **87.19** percent of our roads in good or better condition

Opportunities or Challenges?

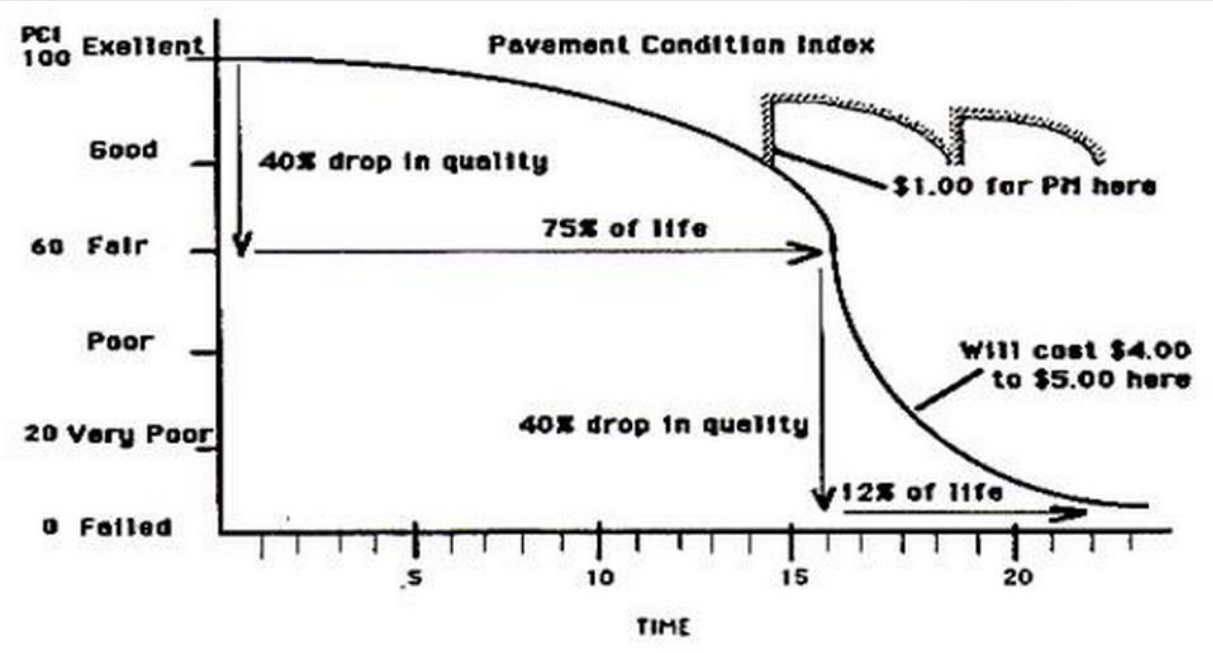
Statewide Preservation: A Programmatic Asset Focus

PAST

PM FUNDING: FOCUSED ON ADT / LOADING

FUTURE

PM FUNDING: FOCUS ON CONDITION "KEEPING THE GOOD / GOOD"



- Typical Financial Investment in Preventative Maintenance and Rehabilitation
- $1.3 Billion / YR : Choosing PM vs. REHAB – looking to optimize

Competitive Bidding

- **Statewide Specifications**
  - Tiered system for binder selection
  - Aggregate selection tool
  - PG binder system

Competitive Bidding

- **Alternative Contract Bidding Processes**
  - Bid Alternates
  - Bid Options
  - Bid Optimization
- **Performance Based: Looking Ahead**
  - Warranty
  - Embedment Performance

Support Knowledge Transfer

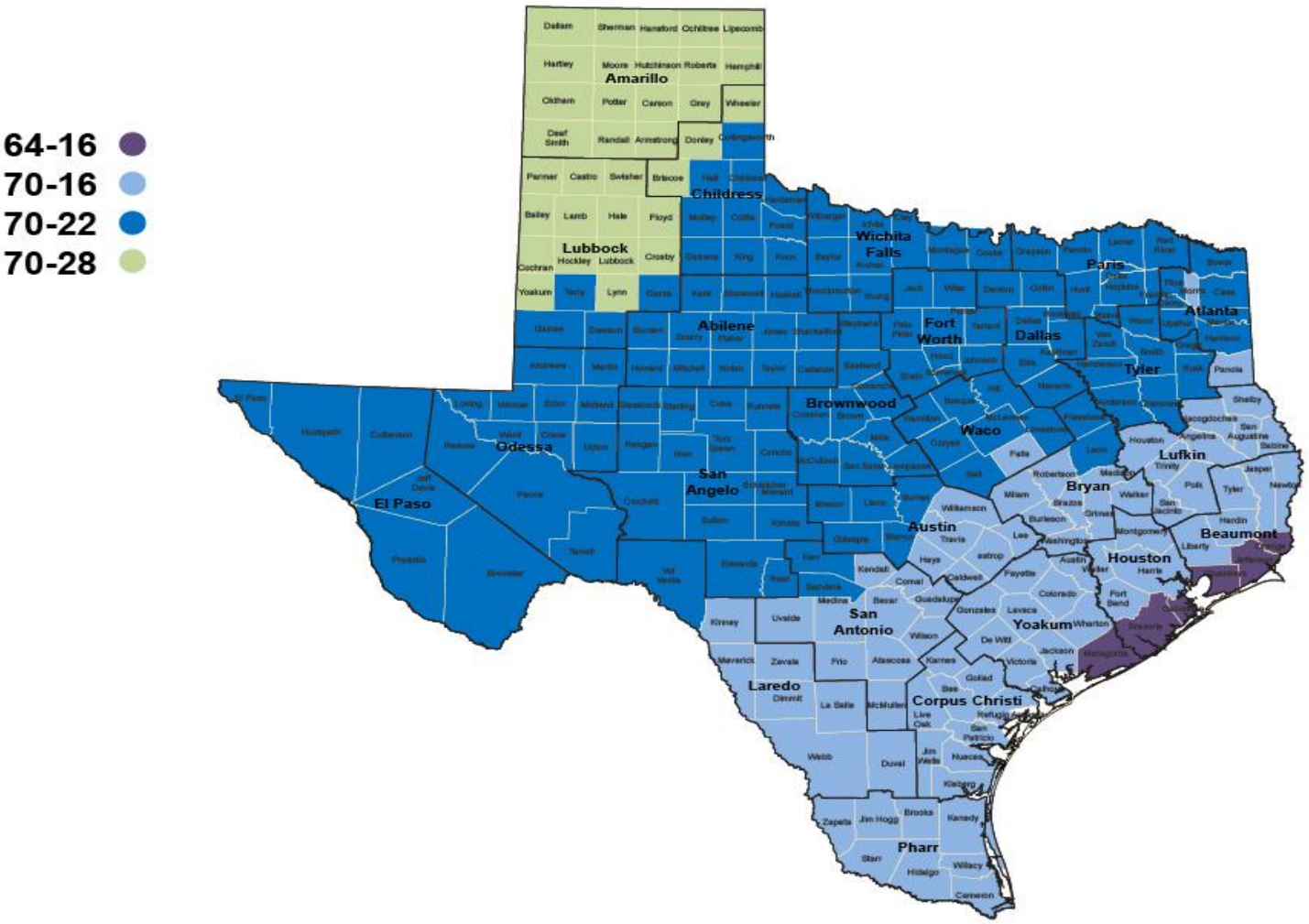
- **Annual Training**
  - Inspector Training
  - Chip Seal workshops
- **Industry Partnerships**
  - Texas Asphalt Pavement Association
  - Texas Transportation Institute
  - UT Center for Lifetime Engineering Education (CLEE)
  - Associated General Contractors of Texas

Project Samples Tested as SPG

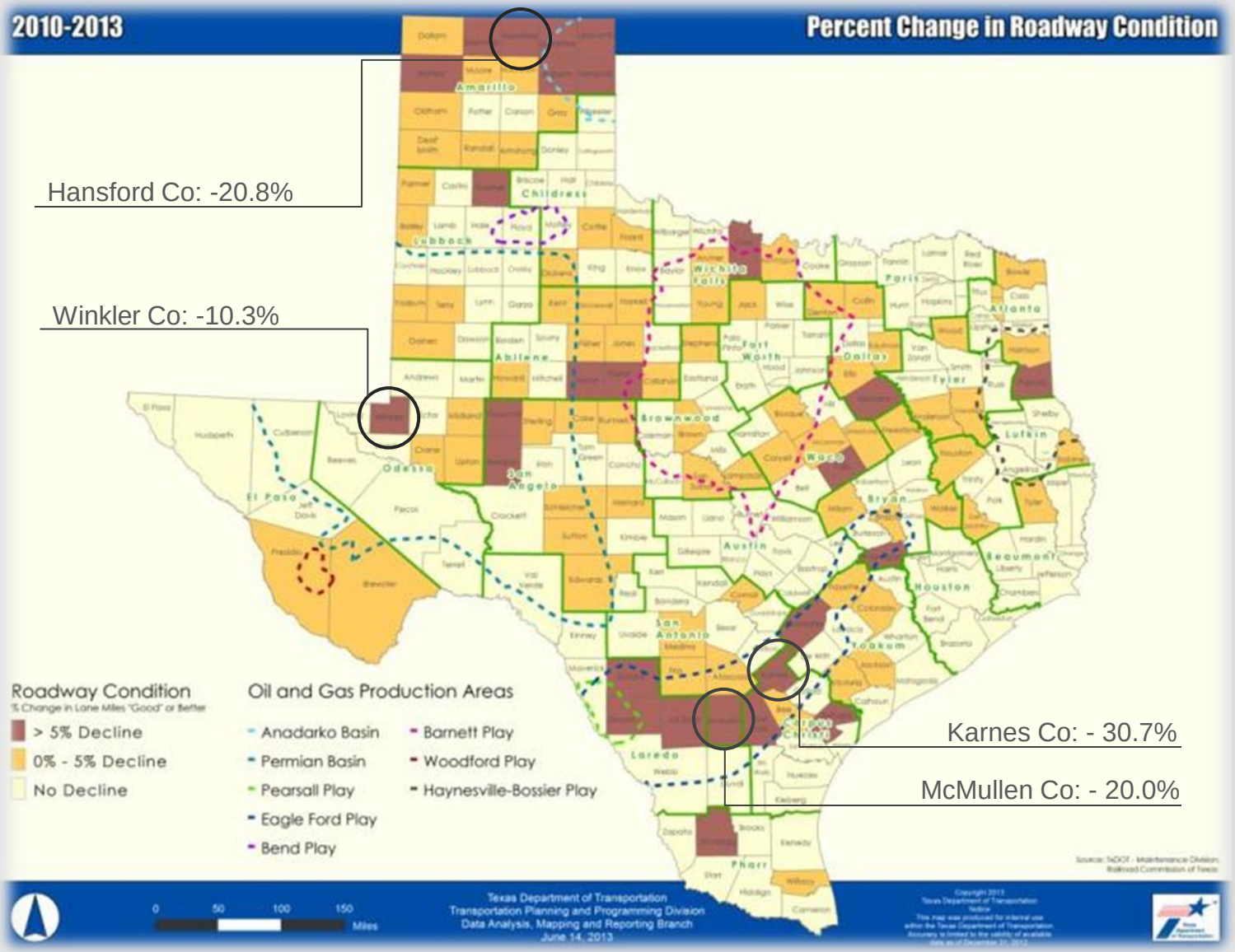
Curent Grade	Surface Performance Grade of Multiple Project Samples							
AC-20-5TR	67-16	70-13	70-16	70-19	73-16	73-19	76-16	79-19
CRS-2	64-10	67-13						
CRS-2P	70-10	76-16	79-16					
AC-10	61-19	64-16	64-19					
AC-15P	70-19	73-13	73-19	73-22				

- Grade selection based on climatic temperature and field condition
- Current specifications allow for multiple proposed SPG grade binders.

Possible SPG Requirements (6 degree increments)



Impacts on Pavements Conditions



Surface Damage and Deformation

Traditional materials and design have to be changed.

SUCCESSFUL PROJECT SELECTION

BAD ROAD

GOOD ROAD

Pavement Management System

Best Practice: tool to use in determining “proper treatment at the proper time”…

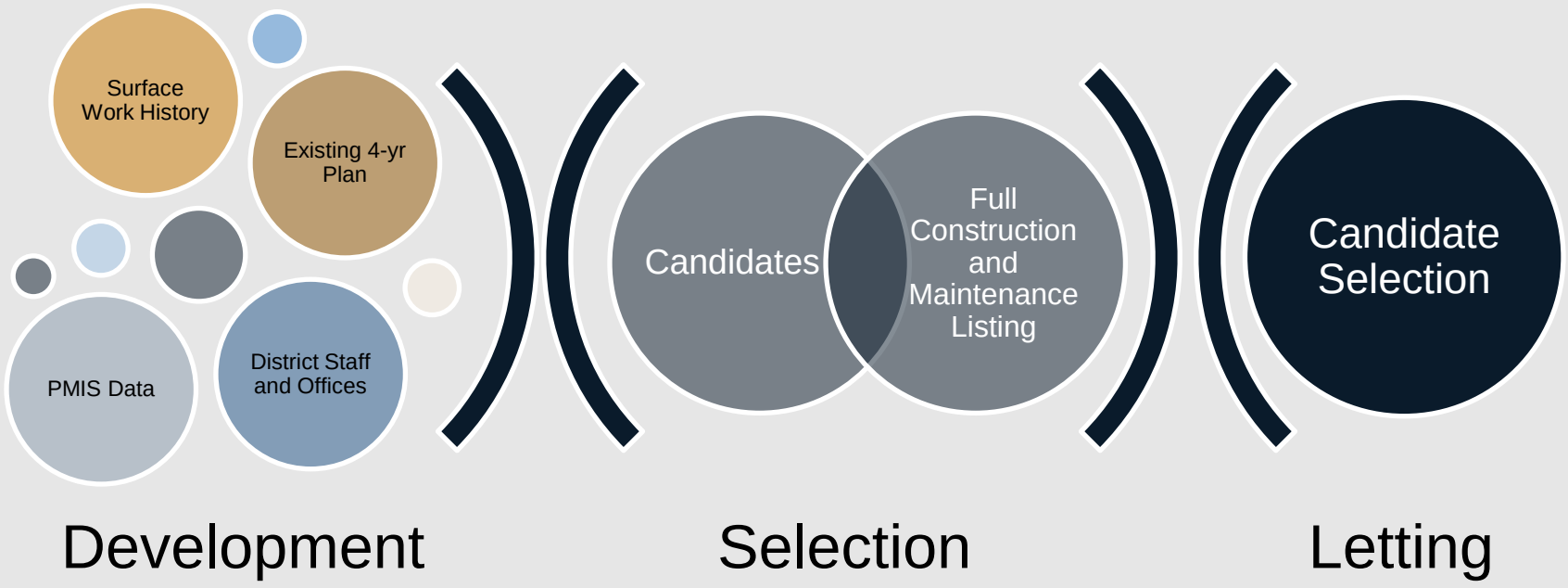
Successful Operation

Good Chip Seal Cycle Builds a Good Maintenance Program

Best Practice: full-time chip seal designer and inspector

- "…it's an annual operation that requires designer and inspector working together…"

Candidate Selection Process



Holistic Roadway Preparation

Figure 4-10

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Repairs and Patching

- Base Repair
- Edge Repair
- Crack Sealing

Repairs and Patching

- Milling or Planing
- Level Up
- Pothole Repair

Crack Seal and Repair

Aggregate Stockpiling

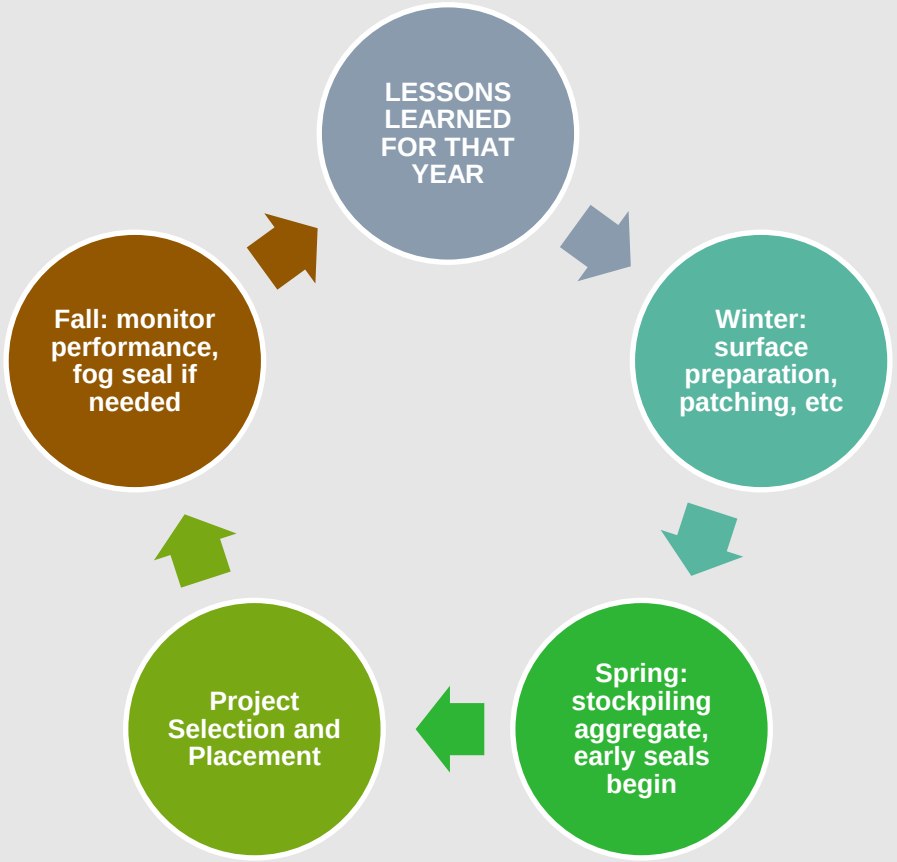
Considerations:

- Distance from roadway
- Drainage
- Sight distance
- Adjacent property access

Chip Seal Placement

Closing Remarks

Seal coat program preparations are iterative and repeating processes



Questions?