

ASPHALT TECHNOLOGY DIVISION



Tex Par Energy, inc.

The Market for Polymer Modified Asphalts in the USA Volumes and Trends

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Introduction

- ▶ Funding Issues
- ▶ Market Trends
- ▶ Market Volumes
- ▶ Specification Issues
- ▶ Structural Changes
- ▶ New Products, New Challenges

FUNDING ISSUES

2000 vs. 2001

- ▶ Highway and Bridge Construction + 9%
- ▶ Total Transportation Construction + \$7 Billion
- ▶ New Contracts Awarded + \$5.0 Billion

Sources: U.S. Bureau of Census
ARTBA

FUNDING ISSUES - 2002

Federal Highway Funding

TEA – 21 \$33
+ \$2 Billion over 2001

State Revenues

\$15 Billion below FY 2002 estimates

FUNDING ISSUES

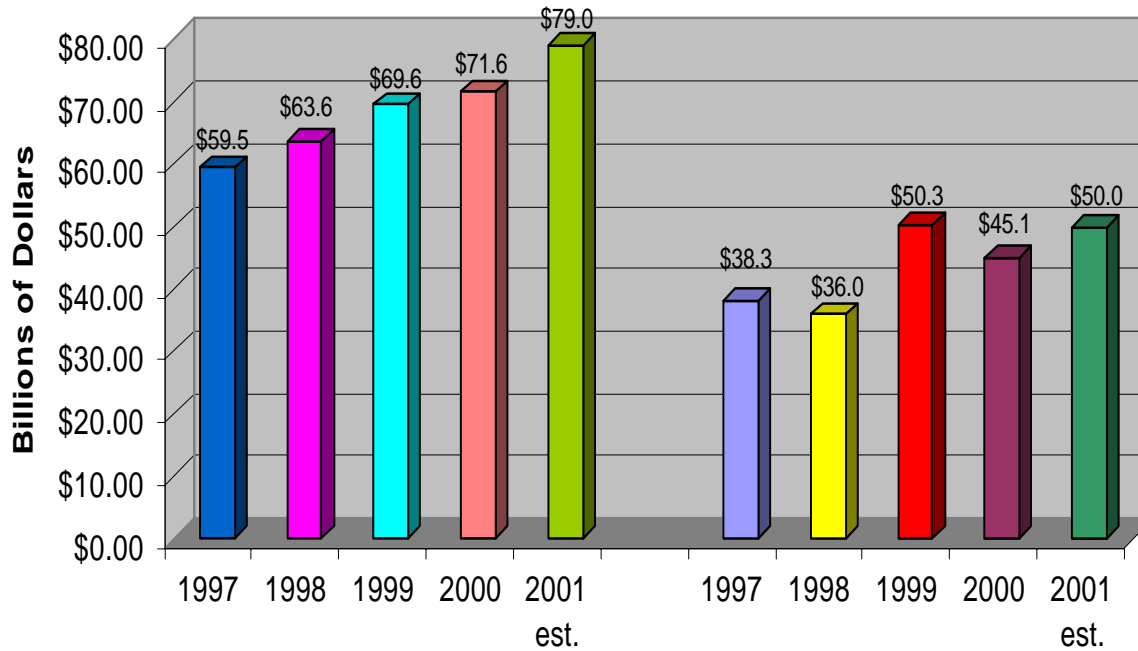
Overall Summary

New contract awards and construction permits in 2002 should increase by:

3 - 6%

Source: ARTBA

Transportation Construction Up in 2001

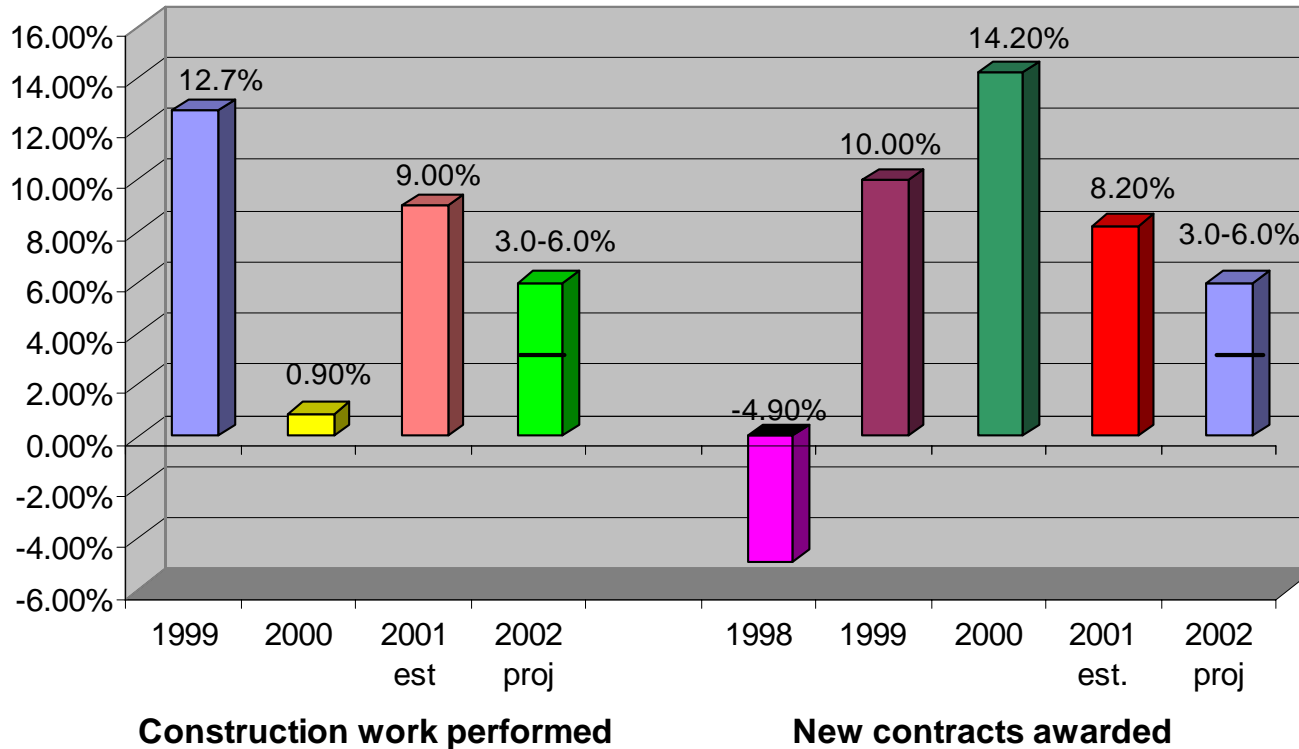


Source: ARTBA

Construction work performed

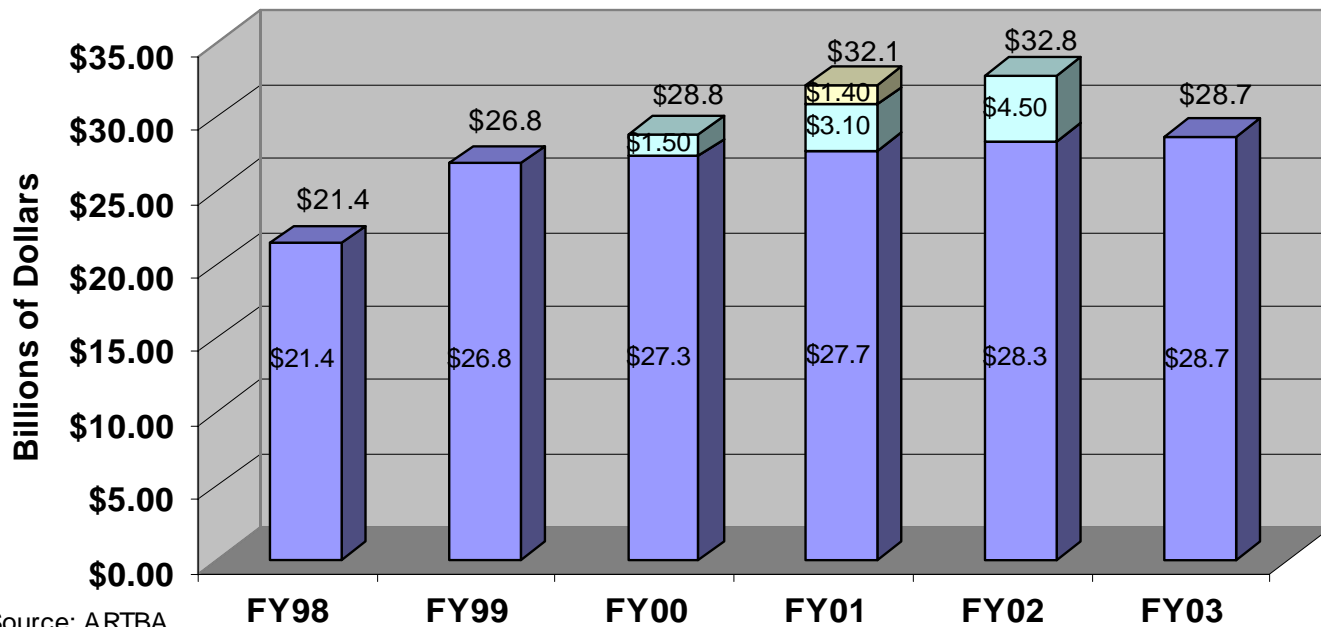
New contracts awarded

Highway and Bridge Construction Should Grow 3-6% in 2002



Source: ARTBA

Federal Funding for Highways Will Grow \$2 Billion in FY 2002



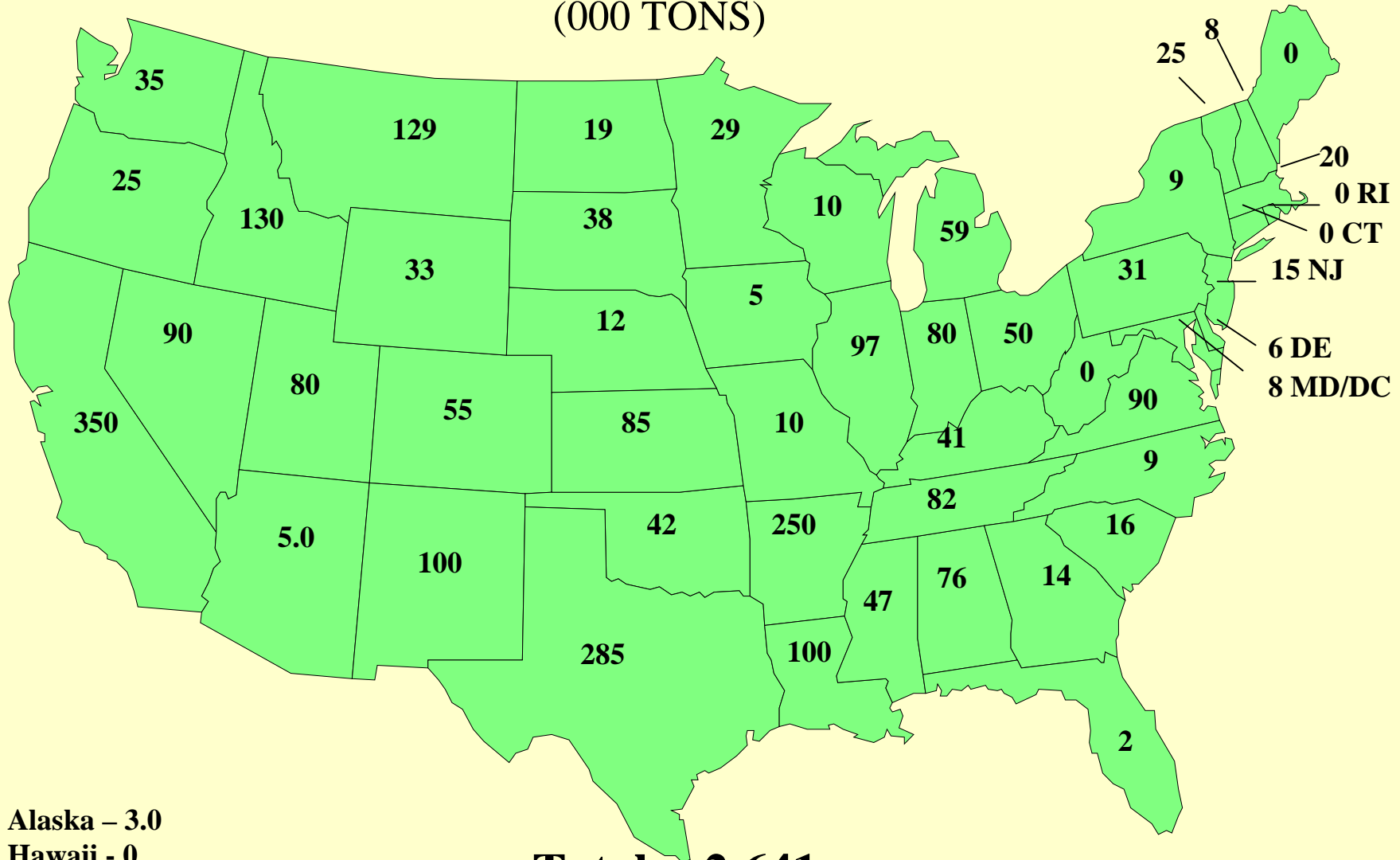
Source: ARTBA



Estimated Polymer Modified Asphalt Usage

2001, DOT

(000 TONS)



Alaska - 3.0

Hawaii - 0

Total - 2,641

POLYMER MODIFIED ASPHALT CONSUMPTION 000 TONS

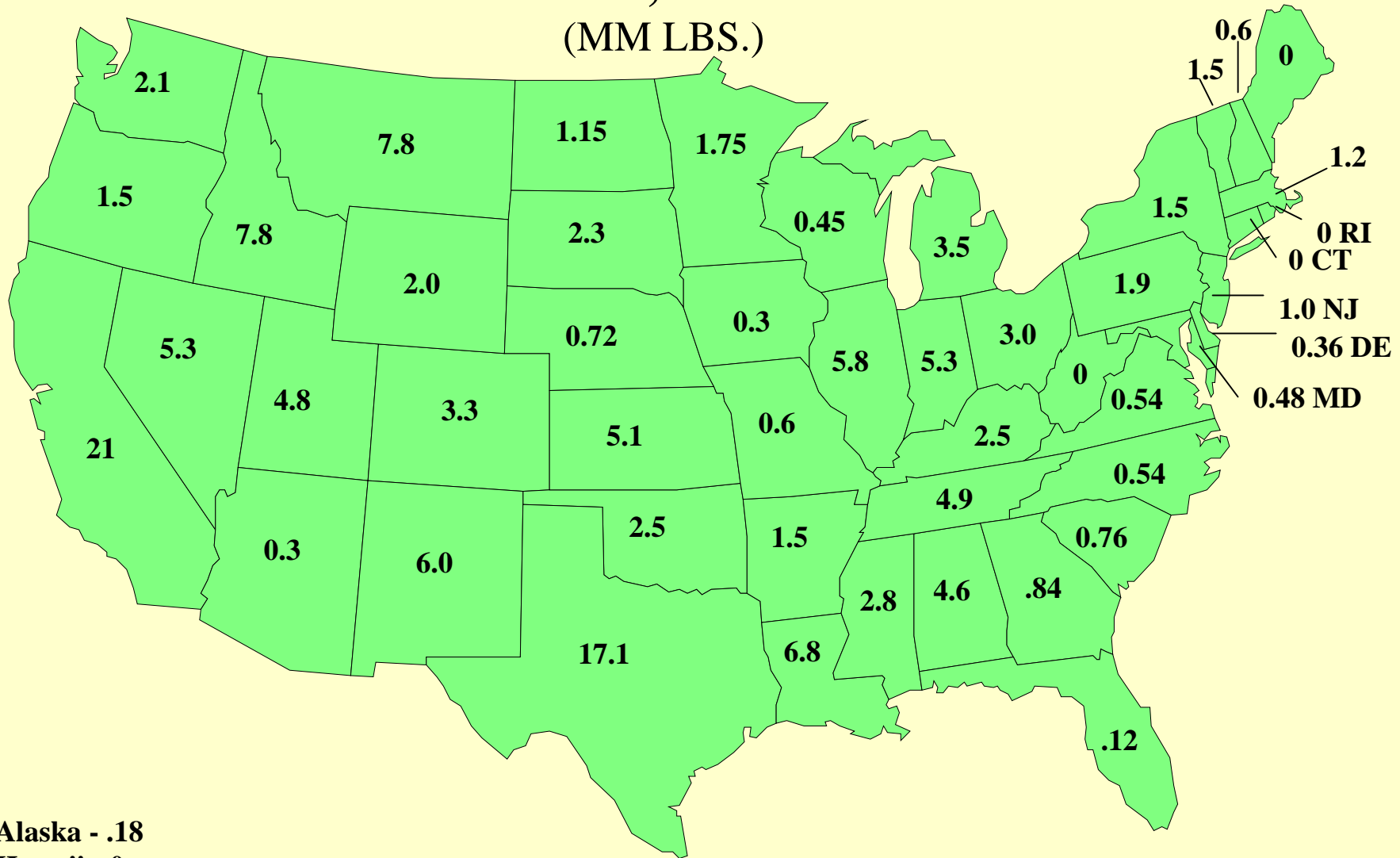
	<u>2000</u>	<u>2001</u>	<u>2002</u>
State DOT	2380	2641	2760
Other Roads*	950	1060	1100
Emulsions * *	<u>365</u>	<u>390</u>	<u>400</u>
TOTAL	3695	4090	4260

*Estimated at 40% / * * 15% of State DOT Total
Growth Rate 2001 – 2002: ~ 5%

Estimated Polymer Demand

2001, DOT

(MM LBS.)



Alaska - .18

Hawaii - 0

Total 158 MM Pounds (Rounded)

POLYMER DEMAND

MM LBS.

	<u>2000</u>	<u>2001</u>	<u>2002</u>
State DOT	152	159	165
Other Roads	60	64	65
Emulsions	<u>21</u>	<u>23</u>	<u>24</u>
TOTAL	233	246	254

Growth Rate 2001 – 2002: ~ 4%

Other Issues

- **PG “Plus” Specifications**
- **Contractor’s Role**
- **Non-Polymeric Modifications**

PG + Specifications

- **PG** : Widely Accepted
40+ States using some version
- **PG+** : Broadly Used
20+ States Using some version

PG + Specifications

Is there a trend?

To the extent there is, it is to more
PG+ Specifications

AL, GA, UT Already There

IO, NB, NY, Heading That Way

Contractors' Role

- More Interest
- Better Understood Technical Challenge
- Reduced Capital Requirements
- Higher Volume

More Participation

Non-Polymeric Modifications

- Better Understanding of Specs
- Broader Search for New Materials
- More Options Being Explored
 - Ground Tire Rubber
 - Non-Polymeric Additives

Non-Polymeric Modifications

Ground Tire Rubber

- ▶ Six States Using in Large Quantity
FL, CA, VT, AZ, TX, NV
- ▶ Estimated Annual Usage: 44 MM Lbs.
- ▶ Use of GTR as a raw material likely to increase

LAST YEAR WE SAID:

“ALL ONGOING AND PROPOSED SPECIFICATION CHANGES WILL DIFFERENTIATE PRODUCTS IN A WAY TO GIVE MORE CREDIT TO POLYMER MODIFICATION”

WELL . . .

Non-Polymeric Modifications

- **A Challenge?**
- **A Danger?**
- **An Opportunity?**

Non-Polymeric Modifications

A Challenge:

Unfamiliar Materials

Lack of Field Knowledge

Unexplored Interactions

Non-Polymeric Modifications

A Danger:

Poor Performing Products

Products too sensitive to change

Non-responsible Producers

Non-Polymeric Modifications

An Opportunity:

Better Economics

Rifle-shooting Problems

Simpler Manufacturing

CONCLUSIONS

- ▶ **Demand for Polymer Modified Asphalts (PMA's), in 2001 increased by 10% over 2000.**
- ▶ **Demand for PMA's in 2002 is expected to increase by 5%, compared to 2001.**
- ▶ **Future growth rates will slow as PMA penetration reaches a plateau in its product life cycle.**
- ▶ **No drastic specification changes during 2001.**
- ▶ **Most used modified asphalt grade is 76-22.**
- ▶ **9.0% of total asphalt used in paving is polymer modified.**

CONCLUSIONS

- ▶ **Specifications More, not Less Complex.**
- ▶ **Greater Contractor Participation**
- ▶ **More Materials, Different Materials**

Still Going Strong!

Acknowledgements

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State DOT Engineers

THANK YOU!

Tex Par Energy, inc.

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