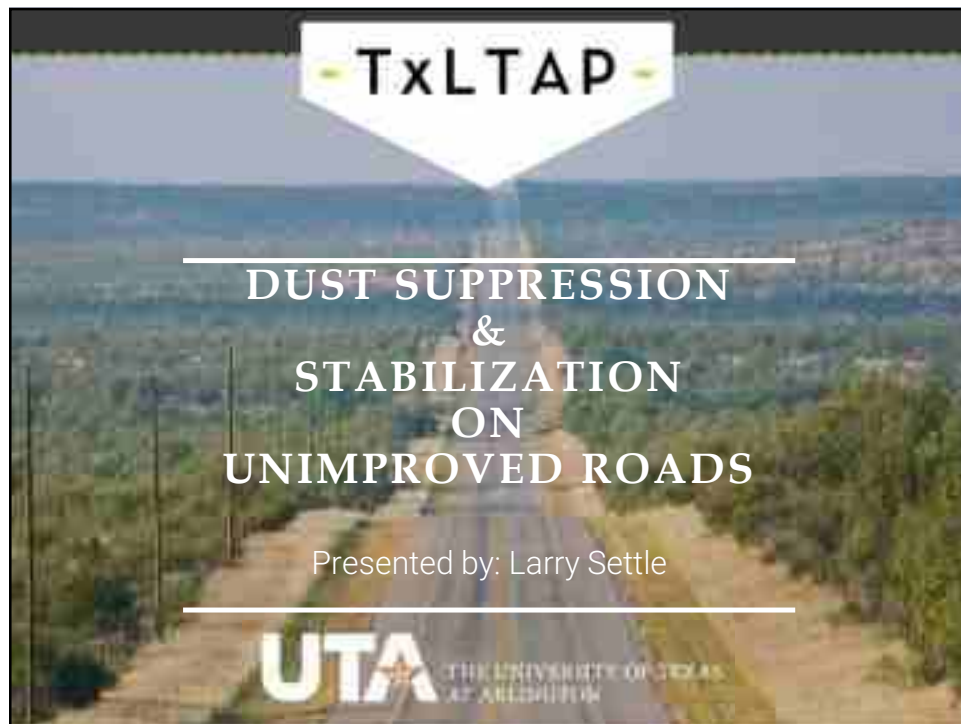






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**Statement from
Federal Highway Administration**

The Federal Highway Administration (FHWA) states that **71%** of public access roads in the U.S. are in rural areas. **45%** of these roads are unpaved, which presents a problem because roughly **3/4** of these rural roads are not eligible for federal funding. That leaves many counties and small towns and cities essentially on their own — with a lot of miles and a shortage of money.

I believe we all understand the problems faced by County Commissioners and Road Superintendents and budgets

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Before we start, I want to talk about my past

My Grandfather graded roads in the Panhandle of Texas with a mule team during the Depression...He took me out when I was a young teenager to show me some of the roads that he had graded.

He asked me what was wrong with the road?

Not wanting to appear ignorant, I told him I wasn't real educated on road problems...he simply asked me to tell him what I saw.

I looked around and told him,

"Well, Grandpa, we are down here and the fields around us are up here."

He then told me that these roads are worn out.

All they ever do is grade these roads and leave the material on top. Trucks and Cars drive over this material and the wind blows, and all that road material just disappears into the wind.

Now think about that for a few seconds!!!

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What does it cost to allow Road Material to just blow away

According to TxDot, 1 vehicle driving down a mile of unimproved road every day for a year will displace close to a ton of dust on either side of the road ...

How many vehicles drive down your unimproved roads???

If one vehicle displaces over a ton of dust, that is basically equal to 1 cubic yard of material(fines) leaving the road.

If you have 100 vehicles per day on a road you are losing about 100 tons of material on that road in just one year or about 100 cubic yards of material...

In some areas of Texas where they are drilling and fracking, 400+ cars, pickups and trucks are driving down the roads everyday!

I have done roads where the vehicle count per day is more than 1,200 vehicles per day!

What does that cost to replace Road Material after three or four years?

If you add material to your road it takes close to 1865 cubic yards of material to add 4" of material on 1 mile of 20 ft wide road at a cost of **\$4.00 per Ton**.

That will equal around **\$7,300**.

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Gravel needed to apply to roads in tons	Width of Road			
per inch	18'	20'	22'	24'
2"	821	913	1004	1095
3"	1232	1369	1506	1643
4"	1643	1825	2008	2190
5"	2053	2281	2510	2738
6"	2464	2738	3012	3285
\$4.00 per ton	18'	20'	22'	24'
2"	\$ 3,285	\$ 3,650	\$ 4,015	\$ 4,380
3"	\$ 4,928	\$ 5,476	\$ 6,023	\$ 6,571
4"	\$ 6,571	\$ 7,301	\$ 8,031	\$ 8,761
5"	\$ 8,213	\$ 9,126	\$ 10,039	\$ 10,951
6"	\$ 9,856	\$ 10,951	\$ 12,046	\$ 13,141
\$5.00 per Ton	18'	20'	22'	24'
2"	\$ 4,107	\$ 4,563	\$ 5,019	\$ 5,476
3"	\$ 6,160	\$ 6,844	\$ 7,529	\$ 8,213
4"	\$ 8,213	\$ 9,126	\$ 10,039	\$ 10,951
5"	\$ 10,267	\$ 11,407	\$ 12,548	\$ 13,689
6"	\$ 12,320	\$ 13,689	\$ 15,058	\$ 16,427
\$6.00 per Ton	18'	20'	22'	24'
2"	\$ 4,928	\$ 5,476	\$ 6,023	\$ 6,571
3"	\$ 7,392	\$ 8,213	\$ 9,035	\$ 9,856
4"	\$ 9,856	\$ 10,951	\$ 12,046	\$ 13,141
5"	\$ 12,320	\$ 13,689	\$ 15,058	\$ 16,427
6"	\$ 14,784	\$ 16,427	\$ 18,069	\$ 19,712

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Common Road Practices across Texas today

After a rain it is easier to grade hard roads and cut out rubboards, potholes, ruts and washouts.

Now what do you do with all that loose material on Top?

Normally, after grading that material is left on top and vehicles kick the gravel/rocks into the ditch and dust flies up to 400 yards on either side of the road

So, you add more Gravel/Road Material to the Roads every year or so. Do you expect that to solve the problem?

If you simply do what you always have done and expect a different result...

That's called the definition of insanity!!!

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Let's Look at some Solutions

Apply something that will keep the gravel and materials on the road where it belongs.

You could overlay the road with 4" of Asphalt and spend more than \$120,000 per mile of 20 ft wide Road Surface. That's if you have your Road Crew do the work and Asphalt source is close!

or

You can Chip Seal...

To do a Double Course Chip Seal including labor and fuel, your cost is going to be \$18,000 or more per mile...

But,

That still is a lot of money especially if you have 100's of miles of road to do on a very limited budget.

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Let's discuss other Options

Water

Petroleum Products Oils

Oil Emulsions

Synthetic Polymer Products

Non-Petroleum Products

Tall Oil Emulsions

Lignin

Sugar Beet Products

Soybean Products

Animal fats (Tallow)

Used Cooking oils

Milk byproducts

Enzymes

Calcium Chloride & Magnesium Chloride

Blended Magnesium Products

(Deliquescent & Hydroscopic Salts)

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Water

Water from Rain, Snow and Dew
will help keep Road materials wet.

Adding water to a road surface is done every day in and around
Construction Sites, Quarries, Landfills and other sites.

Adding water everyday is not a reasonable choice
when dealing with 100's of miles of road to cover.
Yet, it is still an option!

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Petroleum Based Oils

For years in Oil producing areas, Oil Companies used
what is called BS or Bottom Sludge from
tank batteries and sprayed on roads.

However, Environmental Laws Changed and that is not allowed.

Some Counties apply an Asphaltic Oil just to cut the dust.

Where they have lots of Sand, they blend a
light asphaltic oil and blend with sand
and lay down and compact on the road surface,
this is called an Oil Sand Road

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Polymers

Acrylic Polymers

Acrylic Paint

These products that are like liquid plastic.

These products work by binding
or glueing dust particles together
to create a Dust Free Surface.

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Non-Petroleum Products

Tall Oil Emulsions

From Trees, like Pine oils

Lignin

*From Trees,
Refined Tree Sap*

Sugar Beet Products

Soybean Products

Animal fats

*Tallow, Used Cooking Oils
Milk Byproducts*

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Emulsions

Bitumen Emulsions

Slow-setting cationic or anionic emulsions can be used to suppress dust on dirt roads. They should be diluted with water and sprayed onto the soil.

Asphalt Emulsions

These emulsions can penetrate and bind to the existing road surface or create a hard layer of asphalt over the dirt. Some examples of asphalt emulsions used for dust control include CDP-40, DP-38, AEP, and AEPM

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Enzymes

Enzymes create a cationic chemical reaction in the base.

This works by
Bonding clay particles in the soil together
to produce high-density
dirt road surfaces.

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Other Products

Acids

Sodium Silicates

Portland Cement

Fly Ash

And

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Magnesium/Calcium Chloride & Blends

*and Custom Blended Products
Utilizing Magnesium Chloride*

For years in the upper North and Western parts of the United States these products were used as a topical application. This application would tend to last only 4-6 months. I know a lot of you have driven on gravel roads in the mountains, and you do not see a lot of dust...They utilize Magnesium Chloride on these roads to control dust issues. Also, Magnesium Chloride products are used by TxDot & other States Department of Transportation to de-ice Roads and Bridges during Snow and Ice Storms.

These products were used in a Study done by the US Department of Agriculture Forestry Service in 2006. Blending into the base 2-6 inches increases the longevity up to 10 years with a maintenance dose after 5 years. The study talked about savings on maintenance of \$3,000 plus per year.

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The logo for TxLTAP, featuring the text "TxLTAP" in a stylized font inside a dark, downward-pointing arrow shape.

What Product is Best for your Roads

The Products that you decide
on should meet

Price

Ease of Application

Your Available Equipment

Preference of your Preferred Supplier

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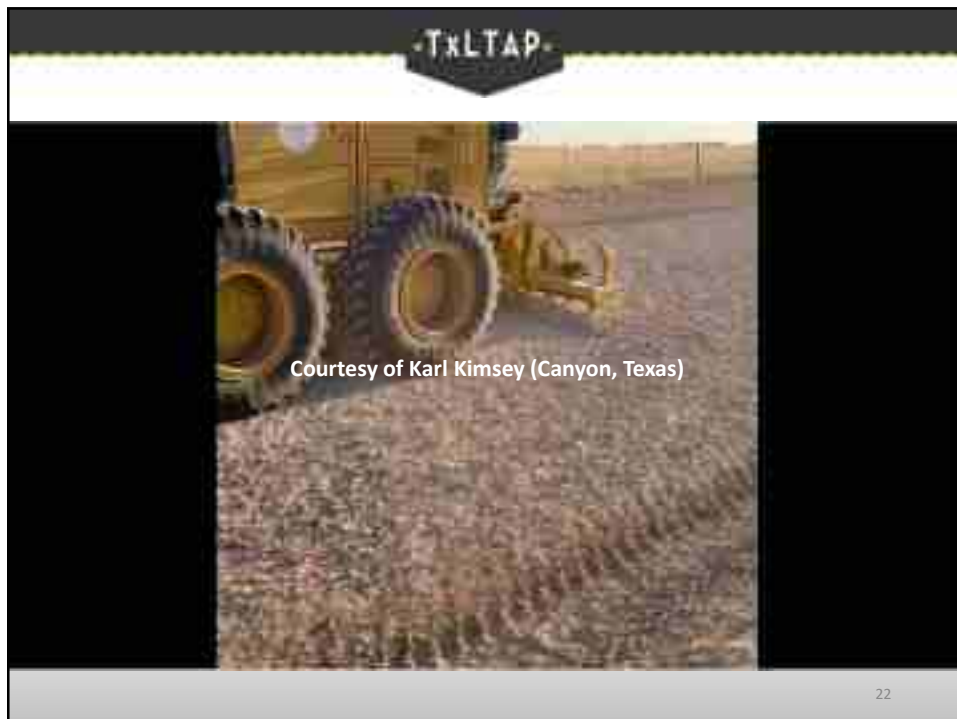
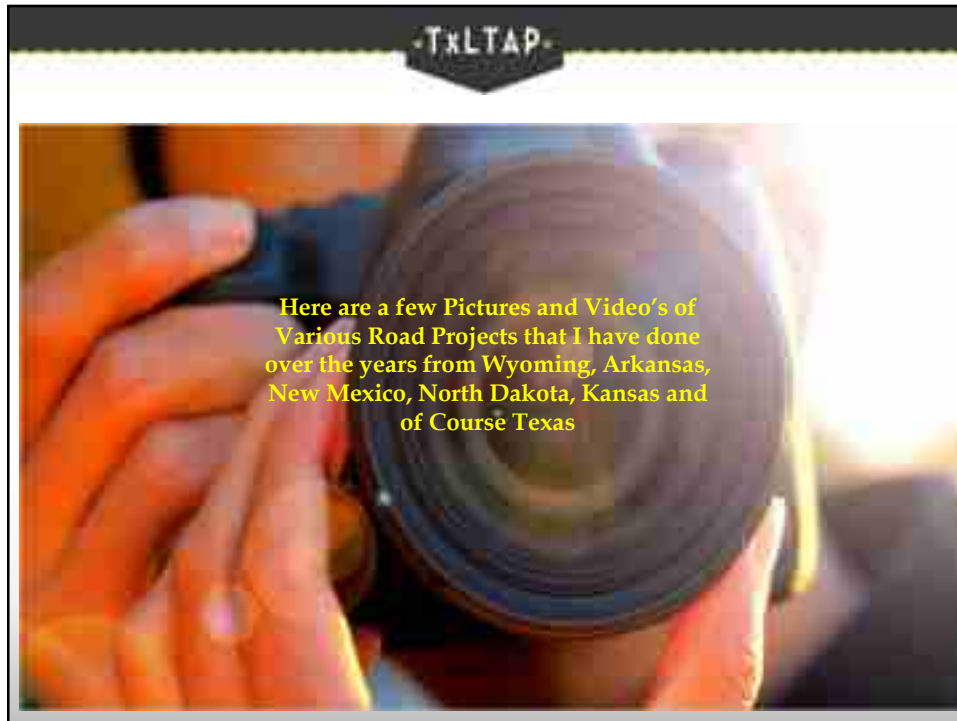
The logo for TxLTAP, featuring the text "TxLTAP" in a stylized font inside a dark, downward-pointing arrow shape.

Whatever you decide

**Let's Stop the Insanity of doing the same old thing
of adding gravel every year or so
and expecting different results.**

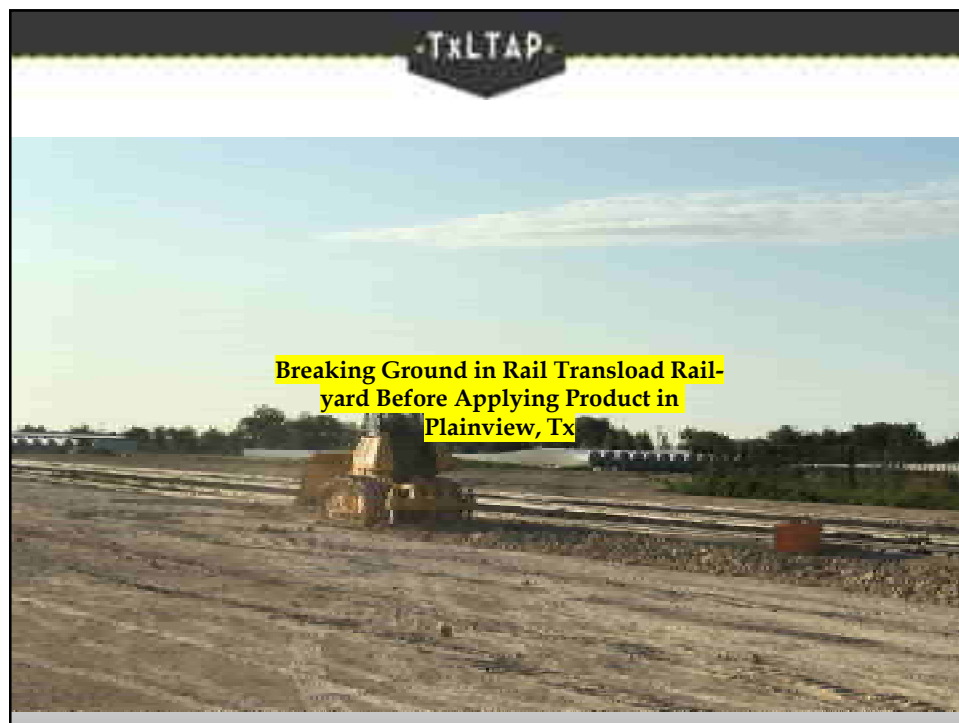
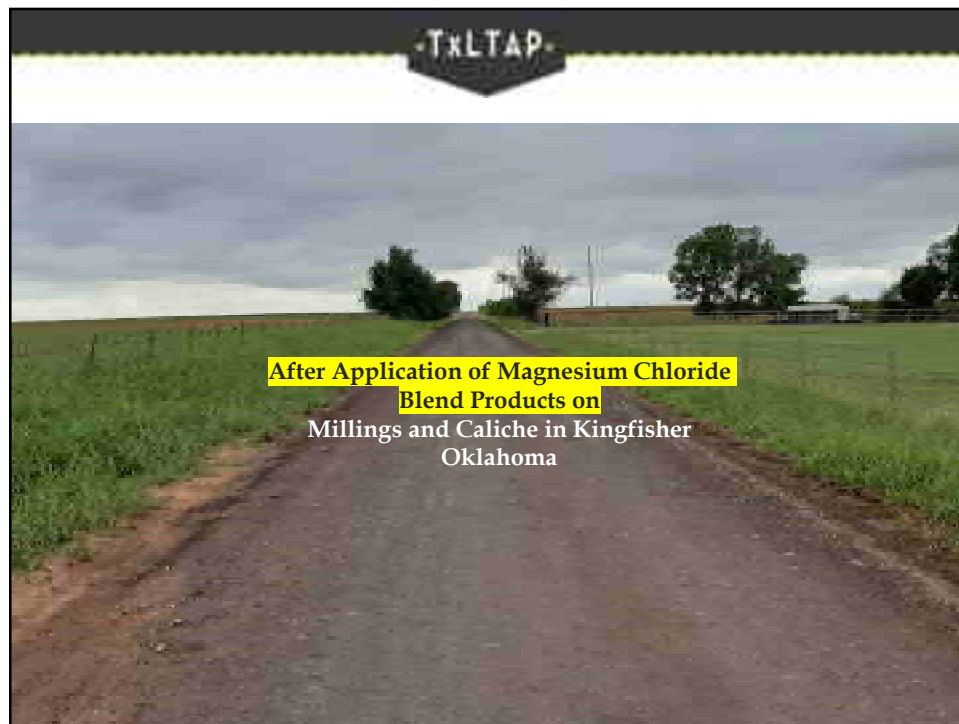
**Don't allow your Road material to just be blown
away with the wind or vehicle traffic on your
Roads.**

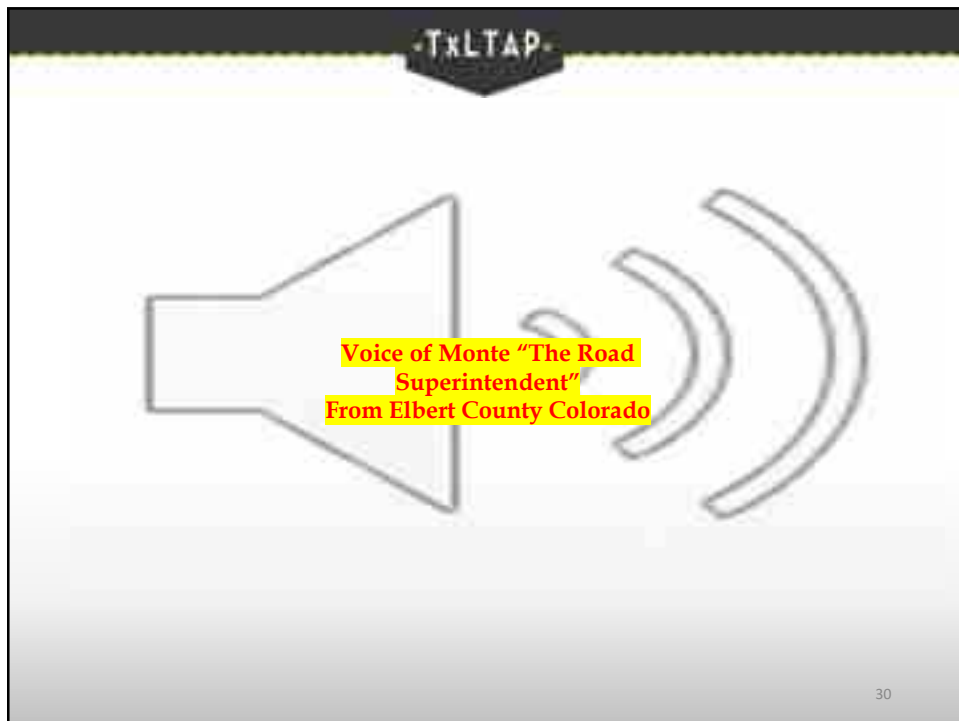
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Ladies & Gentlemen

Materials are not inexpensive. Even if someone gave you the Gravel you still have the expense of Hauling and applying the Gravel onto your roads.

Don't be the one to take your Grandson down a Dirt/Gravel Road and have to explain why your Roads are Worn out.

Do Something to Stop the Insanity!!!

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THANK YOU FOR YOUR TIME



