



New Mexico DEPARTMENT OF  
**TRANSPORTATION**  
MOBILITY FOR EVERYONE

New Mexico Technician Training and Certification Program

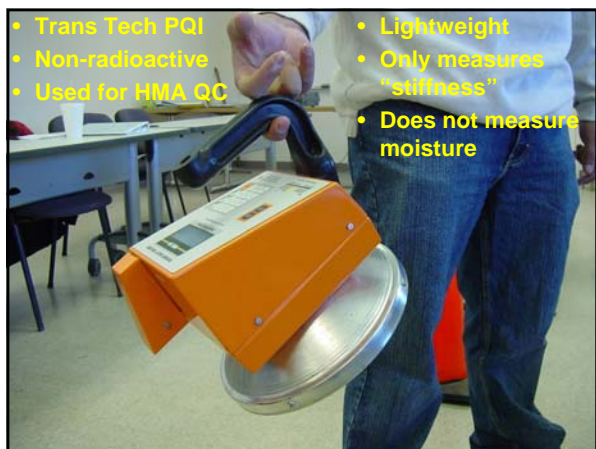
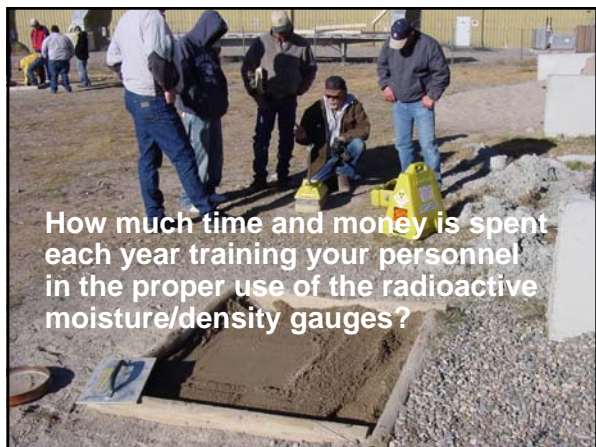
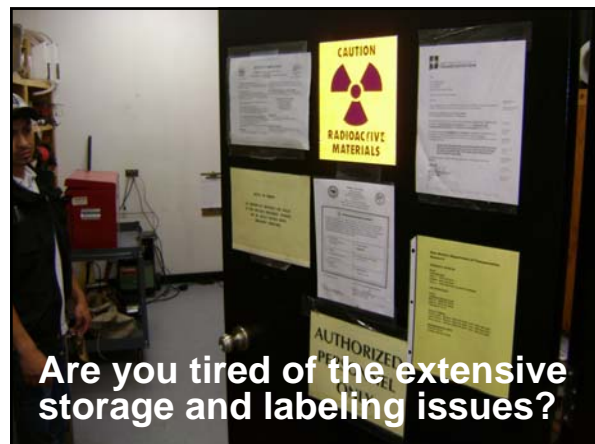
**Emerging Technology**

Trans Tech Non Nuclear  
Soil Density Gauge



Brian Legan  
M-TRAC Meeting – St. Louis  
August 17-18, 2010





**TransTech Non Nuclear Soil Density Gauge**

**What's In the Box?**

**Includes:** Gauge, Case, AC Cord, DC Cord, Charger, Handle Extender and Quick Start Guide

**SDG200      \$8900 + Shipping (Approx. \$300 in US)**

**Contents & Cost**

**Direct and Indirect Costs associated with radioactive moisture/density gauges for NMDOT from 2005-2009**

**Direct Costs to NMDOT '05-'09**

• TTCP Training & Certification	635 students
• TTCP Registration Fees	\$147,100
• Per Diem	\$75,565
• Miles Traveled to Albuquerque	152,400
• Fuel Consumption (20 mpg)	7,620 gallons
• Fuel Cost (\$2.20 pg)	\$16,764
• Lost Production	10,160 hours
• Travel Time (3 hr roundtrip avg.)	1,905 hours
• Time Value (Production & Travel - \$13 ph avg.)	\$156,845

**Direct Costs to NMDOT '05-'09**

• <b>Annual Calibration Contract</b>	
– \$100,000 per year x 5 years	\$500,000
– Shipping for calibration	\$120,000
• <b>Annual Personnel Badge Contract</b>	
– 250 personnel x \$2.95 per badge/ per quarter x 5 years	\$14,750
<b>TOTAL</b>	<b>\$634,750</b>

**Direct Costs to NMDOT '05-'09**

Totals for:

• TTCP Registration	\$147,100
• Per Diem	\$75,565
• Fuel	\$16,764
• Time Value	\$156,845
• Calibration & Shipping	\$620,000
• Personnel Badges	\$14,750
<b>TOTAL</b>	<b>\$1,031,024</b>

- In-Direct Costs to NMDOT '05-'09**
- Paperwork
  - Storage
  - Safety
  - Vehicle Transport Containers
  - Tracking Information
  - Radioactive Materials License
  - Time
  - Public Perception
  - Terrorism



- This technology transfer project, in which promising new technology can be purchased and tested here in New Mexico.
- It is being funded for \$30,000 by the NMDOT Research Bureau.
- The objective of this project is to compare the performance of the nuclear densometer with a **Trans Tech** instrument for determining stiffness and moisture content of soils, base course and asphalt.
- A benefits-cost comparison will be completed by the project advocate.
- It is anticipated that the timeframe of this project will be 12 months.

### Future Costs to Switch Over

- **Purchase New Trans Tech Gauges**
- \$9000 x 120 gauges \$1,080,000
- **Nuclear Gauge Disposal & Shipping**
- 140 x \$900 \$126,000
- Switch gradually over the next 5-10 years.
- The cost savings realized by eliminating the radioactive material will pay for the new technology and elimination of the current material.

### Questions?

**Brian Legan**

New Mexico Department of Transportation

- Technician Training and Certification Program – Administrator
- NMDOT's Radiation Safety Officer (RSO) – Technical
- New Mexico TTCP Nuclear Densometer Instructor

6135 Edith Blvd., NE  
Albuquerque, NM 87107

(505) 344-2072, ext. 18

[Brian.Legan@state.nm.us](mailto:Brian.Legan@state.nm.us)



