

# *Asphalt* *Challenges* *in* *Russia*



**Bill Pine**

**Emulsicoat / Heritage Research**

# Why Are We There?

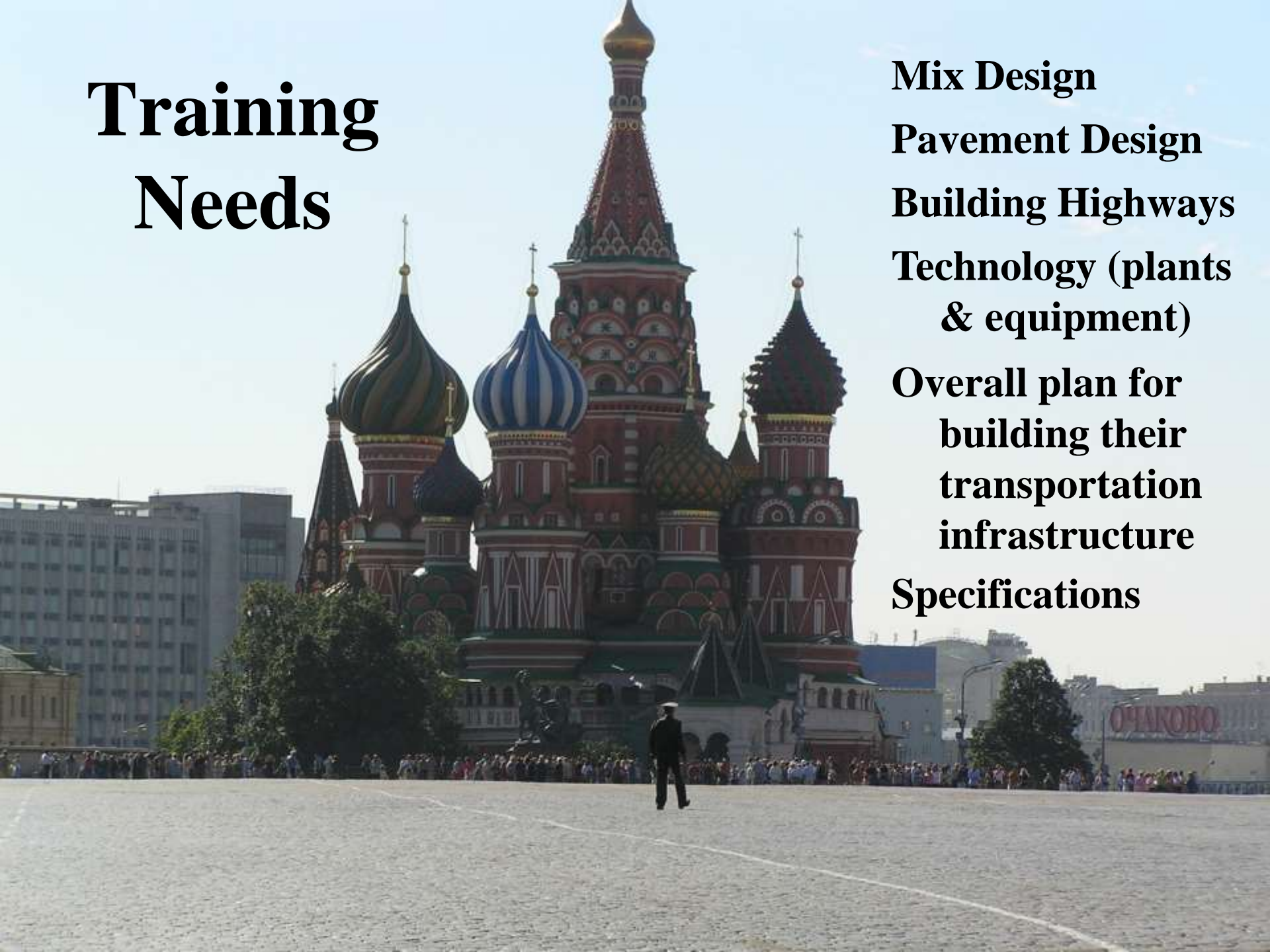
- **Business Opportunity**
  - **Modified AC Product for:**
    - **Open-Graded Cold Mix (Low Volume Routes)**
    - **Stone Matrix Asphalt (High Volume Routes)**
  - *Transfer Technology*

- **Russia has NO interstate system**
- **Moving goods & people is a slow process**
- **Major factor in Russia's slow growth economy**



# Training Needs

**Mix Design**  
**Pavement Design**  
**Building Highways**  
**Technology (plants  
& equipment)**  
**Overall plan for  
building their  
transportation  
infrastructure**  
**Specifications**



# Transferring Technology & Ideas

- Lot's of little things can add up to success or failure!
- Translation of meaning
- WHY are we sure it will work?
- What advantage will it give them?



# Are Their Roads Performing?













ЛЕВИНСКО-КУЗНЕЦКИЙ 147  
КЕМЕРОВО 242  
НОВОАКИШЕВО 35





**Bumps Ahead!**



10000 M

# Materials

- **Asphalt Cement**
  - Penetration
  - Viscosity
  - Using some modified AC's
- **Aggregates**
  - Very diverse!
  - Lack of quality control











# Materials Testing

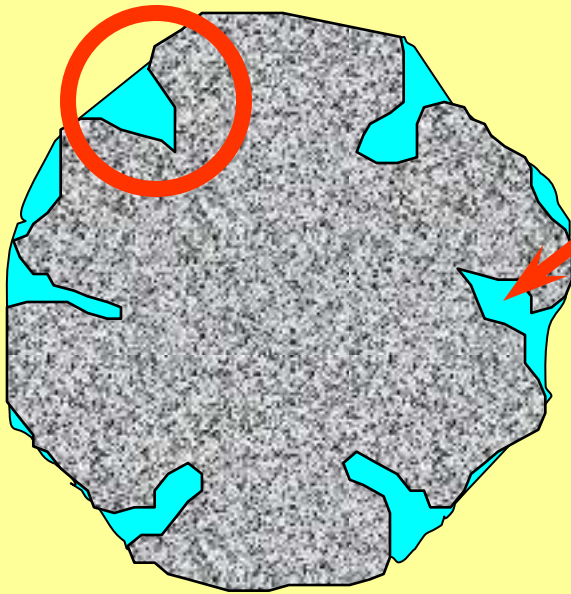




**Going back in time...**

# Bulk Specific Gravity

Surface Voids



Volume of  
water-permeable voids

$$G_{sb} = \frac{\text{Mass (oven dry)}}{\text{Vol of Agg, + Surface Voids}}$$

**Fine  
Aggregate**



**“Ground”  
Coarse  
Aggregate**



# Static Lab Compaction



**Timer**



**4% Lab Voids AND  
4-5% In-Place Field Voids (95-96% Density)...**



# Moscow QC Lab







# Novosibirsk QC Lab

**cores**



**Who forgot to fill the hole?**













# What are bin dividers?







**Calibrating the *AC pump*  
on a *BATCH* plant...**



**Let's put it in  
the stockpile!**



**Manually  
Calibrating  
the Cold  
Feeds**

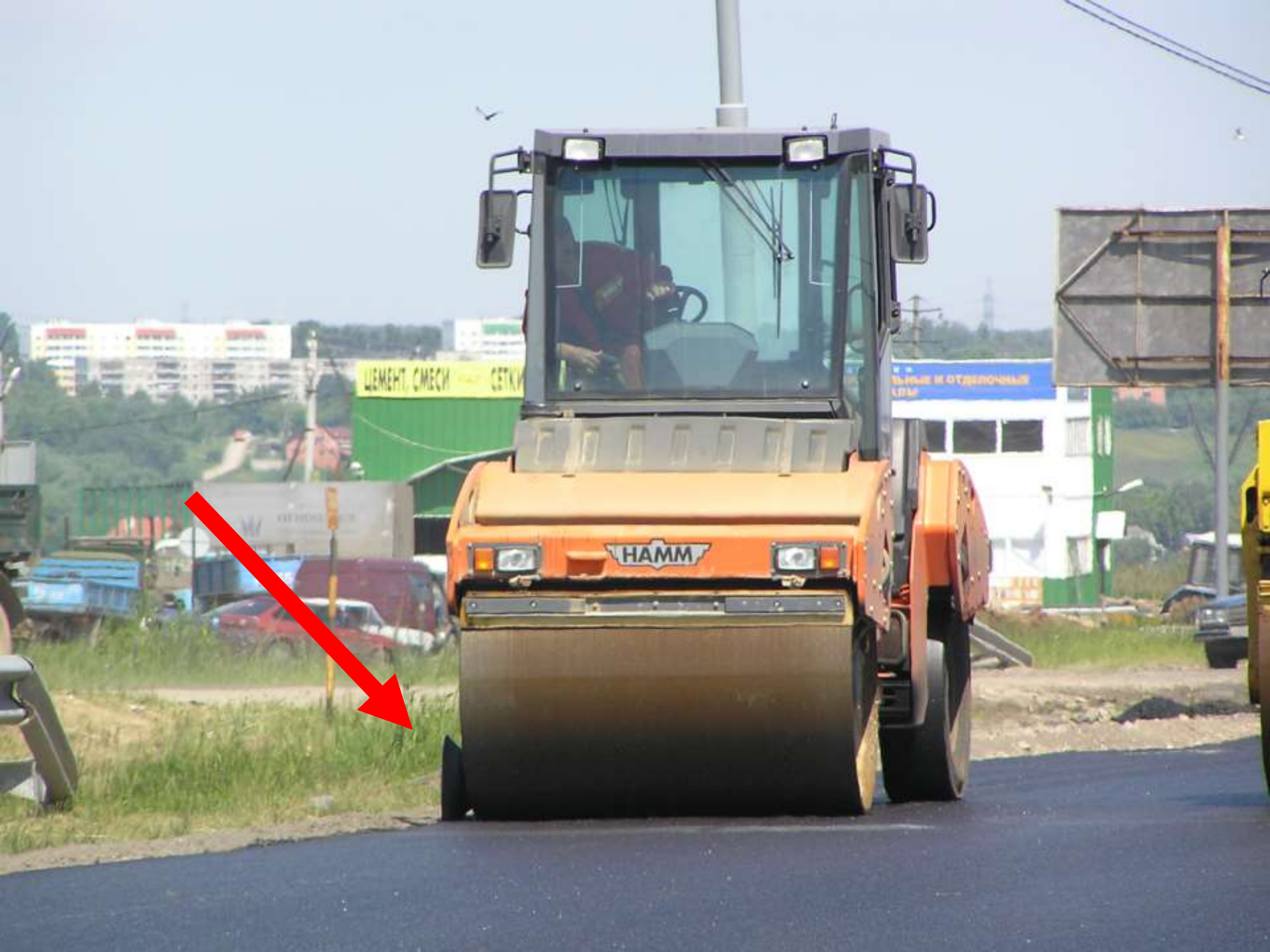




# Modern Placement Equipment

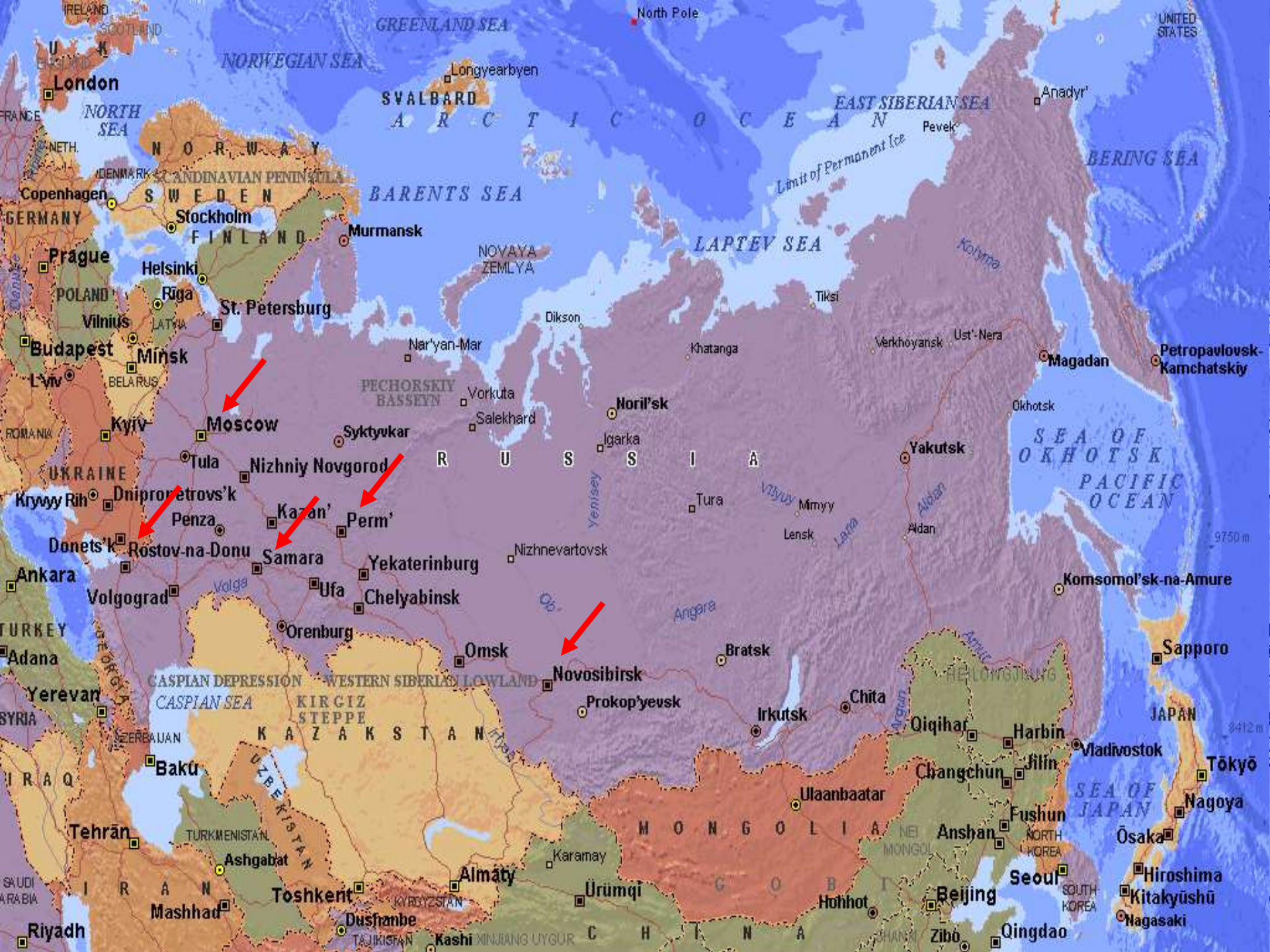








***Merge carefully!***



# **Novosibirsk 2005 OGCM Test Section**

- **Till and compact to generate an in-place recycled HMA base**
- **Install “French” under drains**
- **Apply tack coat**
- **Place two open-graded CM mixes**



**Is this really a  
good idea?**



НОВОСИБИРСК 153  
ТОГУЧИН 83

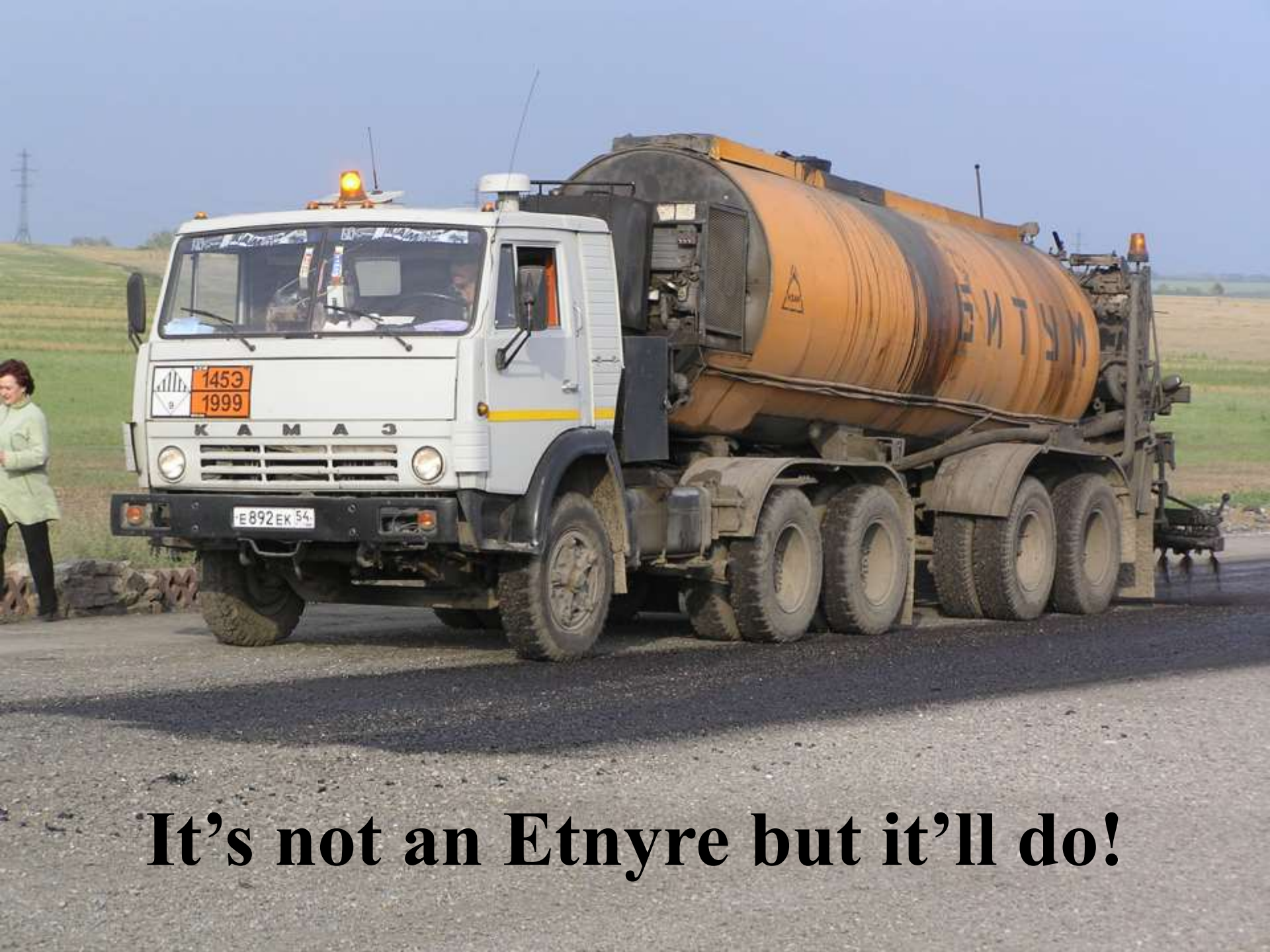
30

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**“French” Drain in Russia**





**It's not an Etnyre but it'll do!**





↑ К19Р Л-КУЗНЕЦКИЙ ЮРГА 80 297

КЕМЕРОВСКАЯ ОБЛАСТЬ

**ФЭЦИТ**  
Дорожи - строительный бренд

**BOMAG**



**Blotter aggregate**



↑ Л-КУЗНЕЦКОЙ 80  
ЮРГА 297

О 139  
1875

ФЭЦИТ



**37.5mm  
(1-1/2")  
NMAS**

















**19.0mm  
(3/4")  
NMAAS**

# Novosibirsk – October 2006



# Perm 2007 – SMA







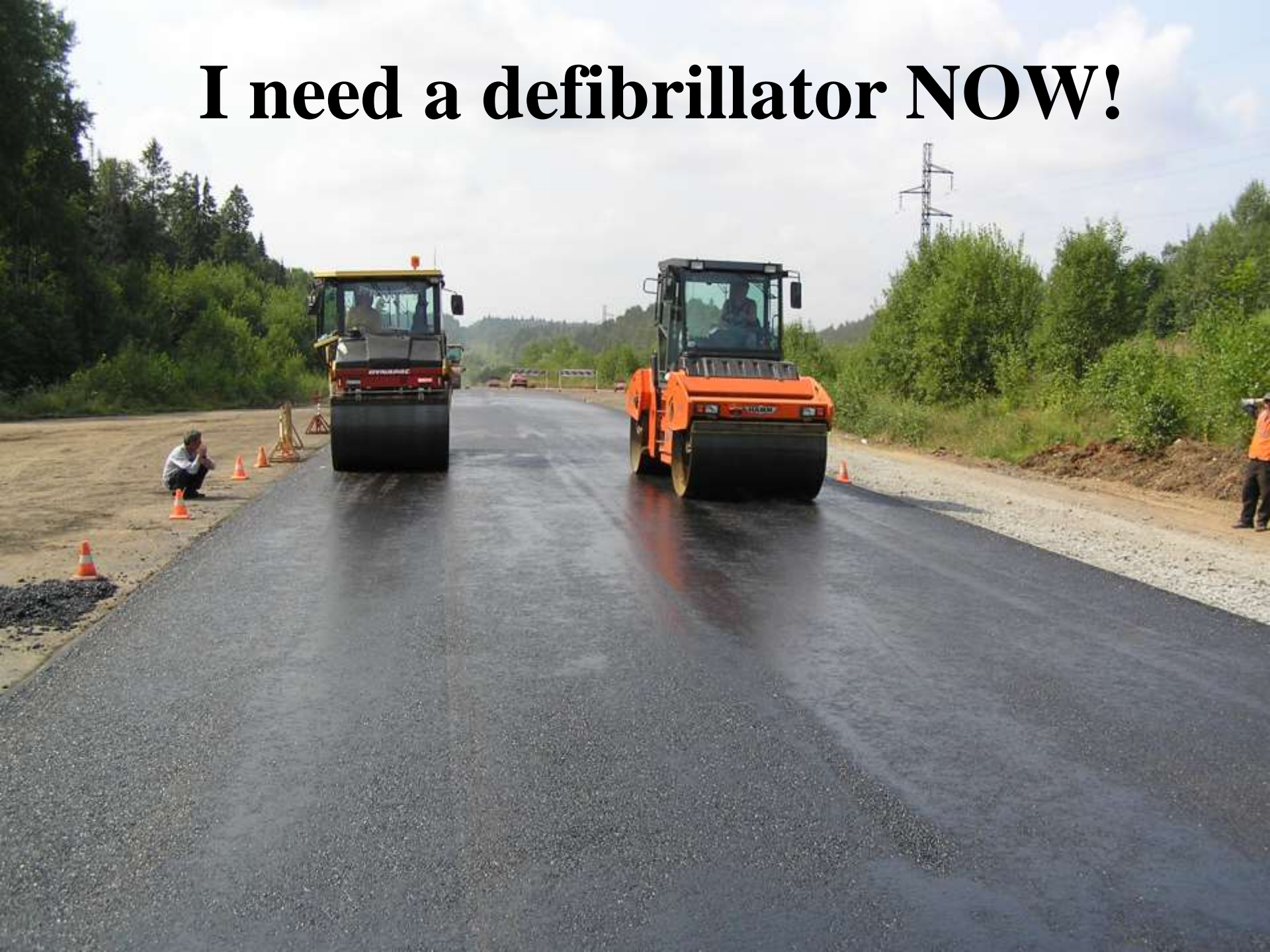


**NOT the  
proper  
way to  
sample  
hot  
bins!**





**I need a defibrillator NOW!**







# What have we learned?

- It's difficult to communicate ideas!
- Our technology and techniques will work!
- Lots of opportunity, but it takes time and effort to develop!



**кronotex**  
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**СТРОЙ КОМПЛЕКТ**

пр. Кузнецкий, 234, тел. 37-77-77

Европа  
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**Thank You!**

