



SPR-2 (212) Pool Fund Study

Non-Nuclear Testing of Soils and
Granular Bases using the
GeoGauge

Initial Kickoff Meeting
November 29-30, 2000



Non-Nuclear Testing Soils and Bases

Pool Fund Goal

Identify and evaluate non-nuclear testing devices that can:

- ◆ Determine fundamental properties of soils and bases accurately and rapidly
- ◆ Be correlated to moisture/density or strength gain properties



Non-Nuclear Testing Soils and Bases

Benefits

- ◆ Improve testing speed and quantity
- ◆ Reduce paperwork associated with nuclear gauges
- ◆ Reduce construction variability
- ◆ Integrate design with construction and performance



Non-Nuclear Testing Soils and Bases

GeoGauge

a non-nuclear, non-destructive testing device that directly and rapidly measures the stiffness (resistance of a layer of material to deformation) of soils and soil-aggregate mixtures.



Meeting Purpose

- ◆ To understand the GeoGauge
 - ◆ background, history, fundamental properties
- ◆ To learn how to operate it
- ◆ To learn about recent applications
- ◆ To discuss delivery of GeoGauge



Meeting Purpose

And last but not least

- ◆ To develop a more detailed research and evaluation program



Agenda



Nov 29

AM – GeoGauge

PM – Applications

Nov 30

AM – Research Plan



Research Concept

Task 1. Pre-Study Activities

- ◆ Literature Review
- ◆ Evaluate On-going Work
- ◆ Form Technical Advisory
- ◆ Develop Research plan



Research Concepts

Task 2. GeoGauge Procurement

- ◆ Identify the States
- ◆ Develop procurement documents
- ◆ Deliver GeoGauges
- ◆ Train users



Research Concept

Task 3. Experimental Plan

A. Compare moisture/density of soils and aggregate bases to GeoGauge soil stiffness measurements



Research Concept

Task 3. Experimental Plan

B. Validate GeoGauge stiffness measurements with resilient modulus and plate load tests



Research Concept

Task 3. Experimental Plan

- C. Study of subgrade variability using GeoGauge testing speed and ease versus Falling Weight Deflectometer (FWD), RDD, and RLD and other non-destructive tests, as appropriate



Research Concepts

Task 3. Experimental Plan

D. Determinate the GeoGauge effectiveness in measuring strength gain of chemically-stabilized soils and bases.



Research Concepts

Task 4.

Evaluate/develop draft standards for consideration by AASHTO as interim standards and procedures.



Research Concepts

Task 5.

Administrative - Manage Study



Research Concepts

- ◆ Are we limited to just these areas?
- ◆ Not at all

Q. Can we look at other devices?

A. Yes we can



Research Timeframe

December 2001 - Nominal

Can be extended depending on
funds and final experimental
plan