

# ADVANCES IN DESIGNING FIELD COMPACTION: M-D Relations

**July 29, 2010** at the United Way Conference Center  
 Located at 50 Waugh Drive at Feagan, Rooms A & B

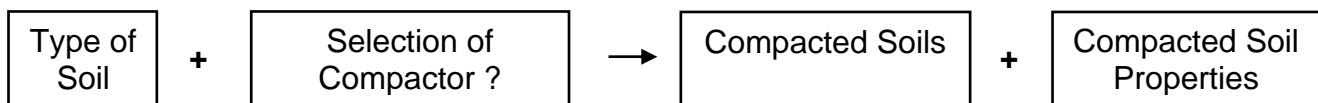
**Seminar Time: 12:00 p.m. to 5:00 p.m.**

(Registration: Cash or Check Only - Lunch included in registration fee)

## Why Compaction?

Since the early 1930's, use of compacted soils (three phase materials) for embankments, pavement subgrades, earthen dam construction, and retaining wall backfills has seen tremendous growth. Hence abilities to effectively utilize and combine advances in compaction control to meet the loading requirements on compacted soils is ever more critical. High quality civil infrastructure requires better performance and lower maintenance costs. Technological advances in the areas of compaction, monitoring, and pre-compaction control information can be effectively combined to meet the specifications in the field productively with full engineering and construction control.

The presentation will focus on issues related to compaction of soils using modern compactors, limitation of some of the current practices and advances in knowing compaction performance, moisture-density (M-D) states, and engineering properties before soil conditioning or compaction is done (Fig. 1). Also methods to design compaction (selection of compactor based on the available soil) to meet the field requirements will be discussed.



**Figure 1 - Major issues in Achieving the Goals of Compacted Soils**

## Frequently Asked Questions (FAQ)

- (1) Is the M-D relationship same for the field and laboratory?
- (2) Is a test pad needed for field verification?
- (3) Any method available to select the compactor based on available soil on site?
- (4) Any method available to select the soil type based on available compactor on site?
- (5) Can trial & error practice be avoided in fill construction?
- (6) Can contractors construct fills at crew capacities?
- (7) What properties of field compacted soil (strength, modulus of resilient) can be determined?
- (8) Is the available information on the web?

## Instructor

**Cumaraswamy Vipulanandan (Vipu)** is a professor of civil and environmental engineering at the University of Houston (UH), Houston, Texas and has been with UH since 1984. He is the Director for the Center for Innovative Grouting Materials and Technology (CIGMAT). He received his MS and PhD in Civil Engineering from Northwestern University, Evanston, Illinois. His work has resulted in more than 170 refereed journal and conference papers and over 120 presentations at national and international conferences.

## **AGENDA**

- 12:00 – 1:00 Registration and Lunch
- 1:00 - 2:15 Compaction Control Advances
- 2:15 – 2:30 Break
- 2:30 – 3:00 Construction Industry Representative (TBD) – Compaction problems in the field
- 3:00 – 3:30 Equipment Representative (TBD) – Advances in compaction equipment
- 3:30 - 3:45 Break
- 3:45 – 4:15 Compaction Control Software Representative (TBD) – Available software
- 4:15 - 5:00 Open Discussion

## **REGISTRATION (Seating is limited so please sign up early.)**

### **( CASH or CHECK ONLY )**

Advanced Registration (by 7/26/10)	\$ 40.00
At –The – Door Registration	\$ 50.00
Student Registration*	\$ 15.00

\*Current student ID required

Please make check payable to ASCE Houston Branch, mail registration form and check to:  
Earthwork Solutions, LLC  
1155 Dairy Ashford, Suite 520  
Houston, TX 77079 – 3011  
(Attn: Larry Goldberg, PE)

Name \_\_\_\_\_

Nick Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_

Fax \_\_\_\_\_

Email \_\_\_\_\_

### **( CASH or CHECK ONLY )**

**Sandwich selection:** \_\_\_\_\_ Roast Beef \_\_\_\_\_ Turkey \_\_\_\_\_ Ham \_\_\_\_\_ Veggie

**Seating is limited so please sign up early.**

**Earn 3 PDH by attending the entire seminar.**

For more information contact Larry Goldberg at

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