




TRB AFD40 FEEDBACK

Feedback HVSIA activities





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7th Heavy Vehicle Simulator International Alliance (HVSIA) Meeting

3 to 5 November 2009
USACOE ERDC, Vicksburg, Mississippi



HVSIA consists of a consortium of all HVS owners and operators.

- Meet annually
- 2009 meeting hosted by EDRC at WES
 - (Chaired by Don Alexander)

- Presentations from all the HVS facilities:
 - UCD
 - ERDC:
 - Cold regions Research facility
 - Waterways Experimental Station
 - Florida
 - Sweden
 - CSIR, South Africa
 - Gauteng, South Africa
 - Feedback about progress on the Indian and Chinese HVS programmes



Feedback

1. HVSIA has established various task groups to assist in the dissemination of ideas / research / problems & solutions across all HVS owners and operators:

- Activity Coordination Task Group
- Instrumentation
- Results

2. Technical discussion sessions

- HVS predicted outcomes in comparison with LTPP evaluations
- Permanent deformation characteristics vs HVS loading patterns

3. HVSIA website and activity matrix



Activity matrix

1/11/2010 HVSIA Activity Matrix

HVSIA Activity Matrix

More information on the work done on each Focus Area per Institution/Organisation can be obtained by clicking on the relevant coloured square alongside the Focus Area.

NB: Each Institution/Organisation is responsible for the updating of their own information.

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Focus Areas	Competency Areas											
	Struc Des	Materials	Performance		Reliab/Maint	Constr	Sift/Syst	VTE	Instr	EIA		
			Func	Struc								
Asphalt	C	C	C	C	C	C	C	C	C	C	C	C
Cemented layers	C	C	C	C	C	C	C	C	C	C	C	C
Concrete	C	C	C	C	C	C	C	C	C	C	C	C
Granular	C	C	C	C	C	C	C	C	C	C	C	C
Modified binders	C	C	C	C	C	C	C	C	C	C	C	C
LC	C	C	C	C	C	C	C	C	C	C	C	C
Long lasting paints	C	C	C	C	C	C	C	C	C	C	C	C
NCT	C	C	C	C	C	C	C	C	C	C	C	C
LTPP	C	C	C	C	C	C	C	C	C	C	C	C
Surface Treatments	C	C	C	C	C	C	C	C	C	C	C	C
Blumen/polymer stab	C	C	C	C	C	C	C	C	C	C	C	C
CSR	C	C	C	C	C	C	C	C	C	C	C	C
Upgrading of LTPs	C	C	C	C	C	C	C	C	C	C	C	C
Roadbed prep	C	C	C	C	C	C	C	C	C	C	C	C
Waste materials	C	C	C	C	C	C	C	C	C	C	C	C
Subgrade soils	C	C	C	C	C	C	C	C	C	C	C	C
Geosynthetics	C	C	C	C	C	C	C	C	C	C	C	C
Unpaved roads	C	C	C	C	C	C	C	C	C	C	C	C
Side Slopes	C	C	C	C	C	C	C	C	C	C	C	C
Light weight material	C	C	C	C	C	C	C	C	C	C	C	C
Comparative testing	C	C	C	C	C	C	C	C	C	C	C	C

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Florida

Focus area activities: Concrete pavement testing

Focus Area	Description	Activities	Results
Concrete			

Reports for Focus area: Concrete pavement testing

Focus Area	Report No	Author(s)	Date of Issue
Assessing Appropriate Loading Configuration in Accelerated Pavement Testing	Proceedings, 2 nd Intl Conference on APT, Minneapolis , MN	Tom Byron, Bouzid Choubane & Mang Tia	September 2004
Evaluation of Early Strength Requirement of Concrete for Slab Replacement Using APT	Final Report, UF Project No 49104504972-12	Mang Tia, Wasantha Kumara	March 2005
Analysis of Composite Pavements Under Static and Moving Wheel Loads From a Heavy Vehicle Simulator	Proceedings of Intl. Conference on Best Practices for Ultrathin and Thin Whitetoppings	Wasantha Kumara, Mang Tia, Chung Wu & Bouzid Choubane	April 2005
Evaluation of Application of Ultrathin Whitetopping in Florida	TRR 1823	Wasantha Kumara, Mang Tia, Chung Wu & Bouzid Choubane	January 2003

Instrumentation matrix

1/11/2010

HVSIA Instrumentation Matrix

HVSIA Instrumentation Matrix

More information on the Instrumentation and or Systems per Institution/Organisation can be obtained by clicking on the relevant coloured block below.

PARAMETER	PROGRAMME					
	RSA/ Gautrans	Florida	Caltrans	Finland/ Sweden	CoE-ERDC	CoE-ERDC -Hanover
Structural	p					
Permanent deformation	dx					
- Surface	■	■	C	■	x	x
- In-depth	■	x	C	■	x	x
Elastic deflection	x					
- Surface	■	x	C	x	x	x
- In-depth	■	x	C	■	x	x
Strain	x	■	C	■	x	x
Stress	x	■	C	■	x	x
Stiffness	■					
Environmental						
Temperature	■	■	C	■	x	x
Moisture	x	x	C	■	x	x
Functional						
Data Acquisition System (DAQ)	■	■	C	■	x	x
Load	■		C			

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- List of current and future projects
- Standard Procedures and Protocols
- Data sharing
- Testing logs



Significant Outcome

- Pavement Design Catalogue based on all performance data collected from all HVS sites on all materials types

Traffic [E80s]	0.003 to 0.01 <i>FDOT</i>	0.01 to 0.03 <i>Gauteng</i>	0.03 to 0.1 <i>Gauteng</i>	0.1 to 0.3 <i>FDOT</i>	0.3 to 1 <i>Gauteng</i>	1 to 3 <i>VTI</i>	3 to 10 <i>Caltrans</i>
AC surfacing Granular base							
Layers	100 AC 265 limerock 305 granular WET	30 S 150 weathered granite 620 weathered granite WET	40 AC 150 G4 100 G8 150 G9 200 G9 DRY	100 265 limerock 305 granular AC DRY	30 S 150 weathered granite 620 weathered granite DRY	50 AC 250 G2 Fine sand DRY	90 AG 78 DGAC 349 G2 In situ clay DRY



