Maryland Asphalt IC Demonstration

MD 170, MD (June 24-26, 2014)

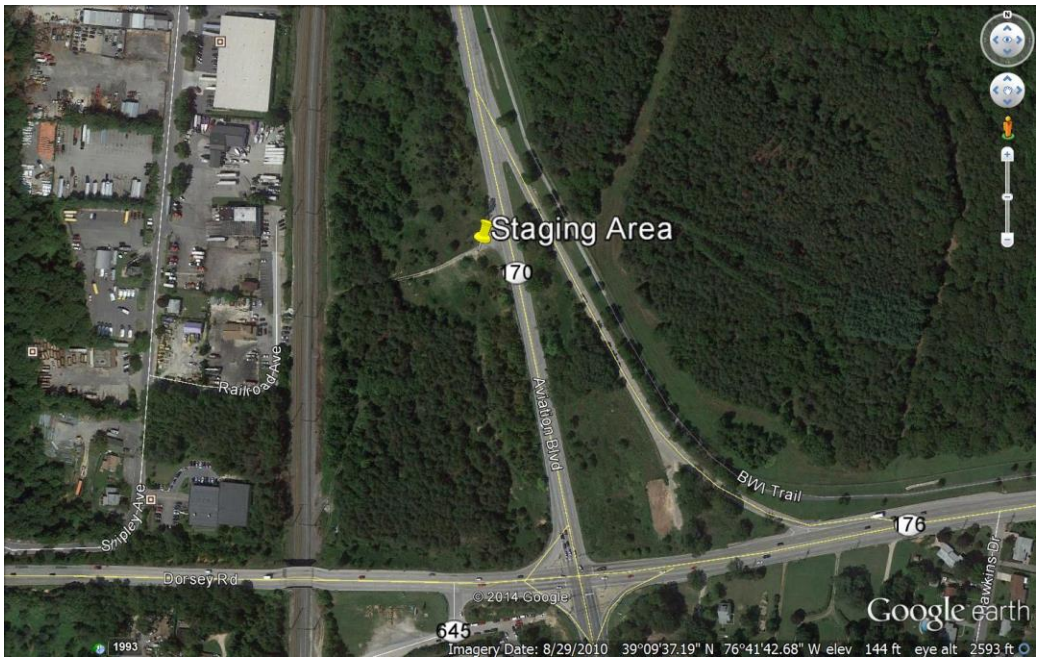
On-Site Personnel

First name	Last name	Affiliation	Telephone	Email
FHWA IC Project Team				
George	Chang	Transtec Group	512-659-1231	gkchang@thetranstecgroup.com
Lee	Gallivan	FHWA	317-605-4704	Victor.Gallivan@dot.gov
Bob	Horan	Asphalt Institute	804-539-3036	bhoran@AsphaltInstitute.org
Sabrina	Garber	Transtec Group	512-736-9162	
Azmat	Hussain	FHWA - MD	410-779-7161	Azmat.hussain@dot.gov
State DOT				
Gloria	Burke	MD SHA	443-386-9266	gburke@sha.state.md.us
Ed	McNeal	MD SHA	443-695-0894	Emcneal@sha.state.md.us
Rebecca	Smith	MD SHA	443-386-9276	Rsmith8@sha.state.md.us
James	Folden	MD SHA	410-841-1004	jfolden@sha.state.md.us
Wesley	Chan	MD SHA	410-841-1044	wchan@sha.state.md.us
John	Shipley	MD SHA	443-572-5227	jshipley@sha.state.md.us
Geoff	Hall	MD SHA	443-572-5067	Ghall1@sha.state.md.us
Ross	Cutts	MD SHA	443-572-5273	rcutts@sha.state.md.us
Barry	Catterton	MD SHA	443-572-5051	bcatterton@sha.state.md.us
Robert	Voelkel	MD SHA	443-572-5113	rvoelkel@sha.state.md.us
Vendors				
Tim	Kowalski	Wirtgen/Hamm	615-594-4604	tkowalski@Wirtgenamerica.com
Mark	Sterling	Caterpillar – Lead	443-987-0554	Sterling_Mark_L@cat.com
Dave	King	Caterpillar - Support	763-412-5553	King_David_A@cat.com
Garry	Aicken	Kessler (LWD-a Test)	703-989-6612	garry@kesslerdcp.com
Mike	Winsor	SiteTech	443-619-2020	mikew@sitech-ches.com
Paving Contractors				
Bill	Midgett	Reliable Contracting	443-520-8864	Bmidget@reliablecontracting.com
Nathan	Scrivener	Reliable Contracting	301-399-7407	nscrivener@reliablecontracting.com
Rob	Scrivener	Reliable Contracting	443-520-8867	rscrivener@reliablecontracting.com
Paving Association				
TBA				

** Paving on day time of Tuesday (6/24) and Wednesday (6/25).
** Open House from 8AM-noon, on Thursday (6/16).
** Project webpage: http://www.intelligentcompaction.com/projects/2012-2014-fhwa-hma/2014-field-projects/maryland-ic-demo-2014/)

Main Contacts

- **FHWA IC project**: Dr. George Chang, FHWA IC team.
- **Field Visits** Bill Midgett, project manager, Reliable Contracting, 443-520-8864.
- **Open House**: Gloria Burke, MD SHA, 443-386-9266
- **Roller Shipment**: *Shipping address*: 900 Ft North of MD 176 on MD 170; *Contacts* Bill Midgett, project manager, Reliable Contracting, 443-520-8864; *ETA*: Friday, June 20, 2014.



Responsibilities

FHWA IC Team

- IC training,
- Field data collection/analysis,
- Presentation during Open House.

DOT

- Personnel to be trained on IC,
- Coordination of the Open House event,
- Facility and AV (LCD projector and a screen) for the Open House event,
- Arrangement for personnel and equipment (2-3 rigs) for coring,
- Personnel and equipment for bulk density tests for the 60 cores.

Paving Contractor

- Personnel to be trained on IC,
- Two IC roller operators,
- Mobilization of IC rollers onsite and to the Open House location,
- One density gauge and an operator,
- Fuel for IC rollers.

Roller Vendors

- IC Training (esp. IC operation, data collection and transfer),
- Technical support during field demo,
- Presentation during Open House.

GPS Vendor

- GPS base station, rover and an operator,
- GPS training,
- Technical support during field demo,
- Presentation during Open House.

LWD-a Vendor

- Personnel and equipment for LWD tests.

Project Info

This project is a night-time paving job located at MD 170. It is milled and fill project with about 4" asphalt. There will be two (2) nights of IC demo.

The main focus will be the Night 2 base course paving at a main lane section.

Paving Info

- 2.5" base course at paving 12 ft wide
- The JMF is TBA.

Onsite Safety

Contact Bill Midgett, Paving Superintendent, 443-520-8864, Bmidget@reliablecontracting.com, for any onsite visits.

DOT and Contractor require all onsite participants to observe safety rules:

- Ingress and egress to and from the work zone, vehicles shall be equipped with yellow flashing lights.
- Location to park vehicles.
- Location for people to safely observe operations.
- Adequate PPE provided for all personnel within the work zone. (hard hats, safety vests, working gloves, safety glasses, steel toed boots, etc.)
- Suggest carpool to the job site.

On-site Activities

Schedule	Activities
Day 0 Monday (June 23)	• Conduct IC rollers/GPS setup and trial runs (equipment vendors and FHWA IC team only) at the staging area. (2PM-5PM)
Day 1 Tuesday (June 24)	• Conduct project briefing at the staging area and IC training for roller operators (7AM-8AM). • Start paving with one IC roller at breakdown and another IC roller at intermediate position. • Select a 500-ft section as a test strip to establish the rolling pattern. Conduct NG/GPS/LWD-a testing immediately behind the paver and at selected locations after each breakdown and intermediate roller pass within the test strip. • Perform production compaction using the rolling pattern. • Conduct NG/GPS/LWD-a at selected locations after the finishing rolling
Day 2 Wednesday Night (June 25)	• Set up the GPS base station and IC roller/GPS system (by 7AM). • Start paving with one IC roller at breakdown and another IC roller at intermediate position. • Conduct NG/GPS/LWD-a testing immediately behind the paver and at selected locations after each breakdown roller pass within the 1500-ft section. • Conduct NG/GPS/LWD-a testing at selected locations after each intermediate roller pass within the 1500-ft section. • After the finishing rolling, mark 60 locations within the 1500-ft paved section. Conduct NG/GPS tests at marked locations. Conduct LWD-a tests at designated locations. Conduct coring at the marked locations.
Days 3 Thursday (June 26)	• Conduct the Open House event including presentation and equipment demonstration from 8AM to noon

- GPS: A base station and a rover will be provided by Sitech West.
- NG: Nuclear density gauge.
- LWD-a: Lightweight deflectometer for asphalt tests.
- Coring: 60 X 4” cores will be taken.
- Core tests: Bulk density testing of cores will be performed within 30 days after the demo.

Test Settings

Date	TB	Machine	Setting	Spot Tests	Notes/Comments
Day 1	1A	IC 1	0.3mm at 4000 vpm	NG, GPS, LWD-a	Breakdown compaction for asphalt base course. 1. Compact with normal roller passes. 2. NG/GPS/LWD-a tests after each roller pass at selected locations within the test section.
	1B	IC 2	Low amp at 4000 vpm	NG, GPS, LWD-a	Intermediate compaction for asphalt base course. 1. Compact with normal roller passes. 2. NG/GPS/LWD-a tests after each roller pass at selected locations within the test section.
	1C	Roller3	Static	NA	Finishing rolling 1. Compact with normal roller passes.
Day 2	2A	IC 2	Low amp at 4000 vpm	NG, GPS, LWD-a	Breakdown compaction for asphalt base course. 1. Compact with normal roller passes. 2. NG/GPS LWD-a tests after each roller pass at selected locations within the test section.
	2B	IC 1	0.3mm at 4000 vpm	NG, GPS, LWD-a	Intermediate compaction for asphalt base course. 1. Compact with normal roller passes. 2. NG/GPS LWD-a tests after each roller pass at selected locations within the test section.
	2C	Roller3	Static	NG, GPS, LWD-a, Coring	Finishing rolling 1. Compact with normal roller passes. 2. NG/GPS/LWD-a/Coring tests after the finishing rolling at marked locations within the test section.

*. The rolling pattern will be designated by the contractor.
*. Roller3: conventional finishing roller (if applicable)

Day 0 – IC Setup, Trial Runs, and GPS Validation

A GPS base station will be setup onsite (if applicable).

IC rollers will be fully setup and functioning.

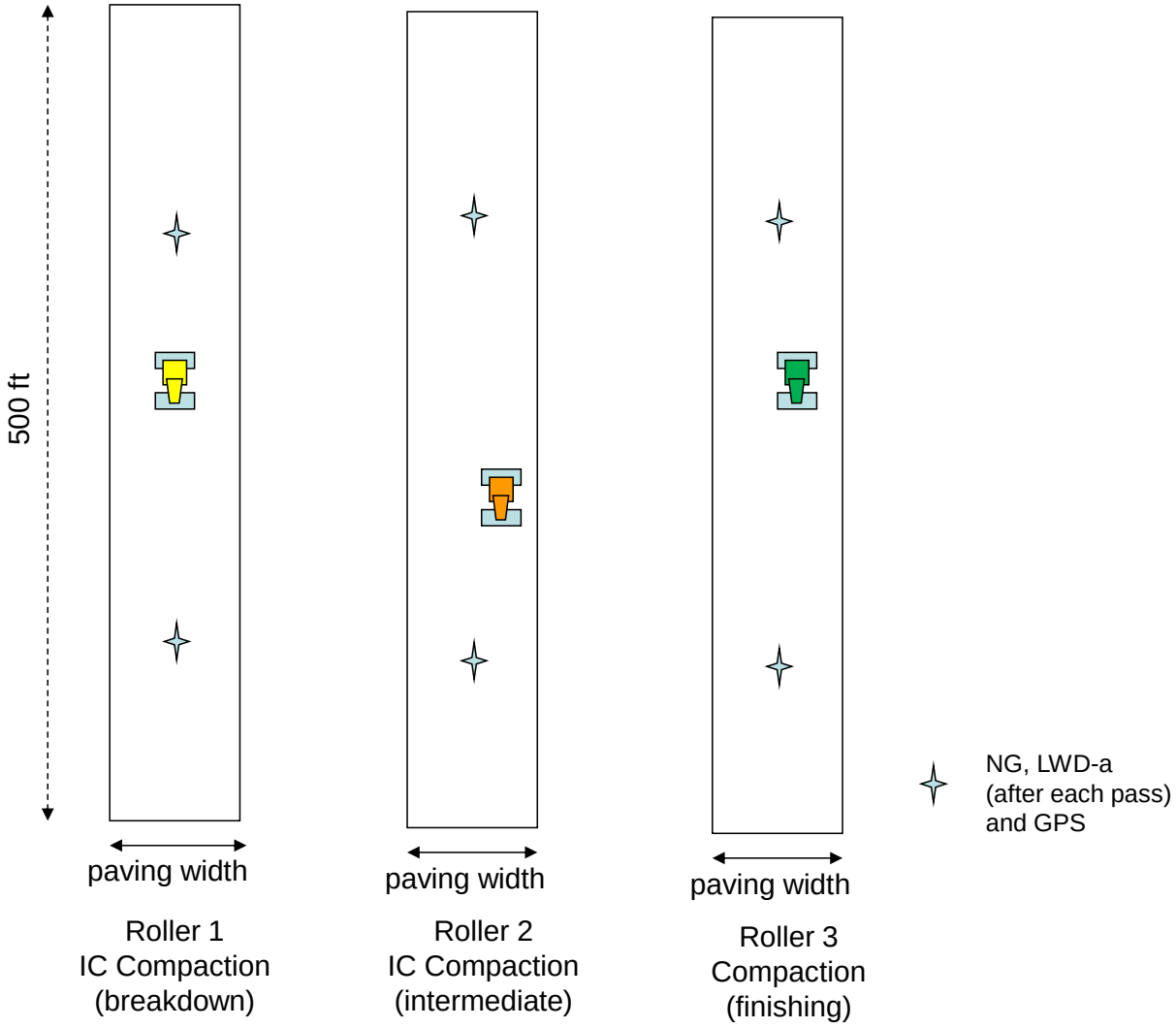
Brief trial runs in vibratory mode will be conducted with each IC roller.

Data files will exported from vendors' software or online solution and re-imported to Veda for checking.

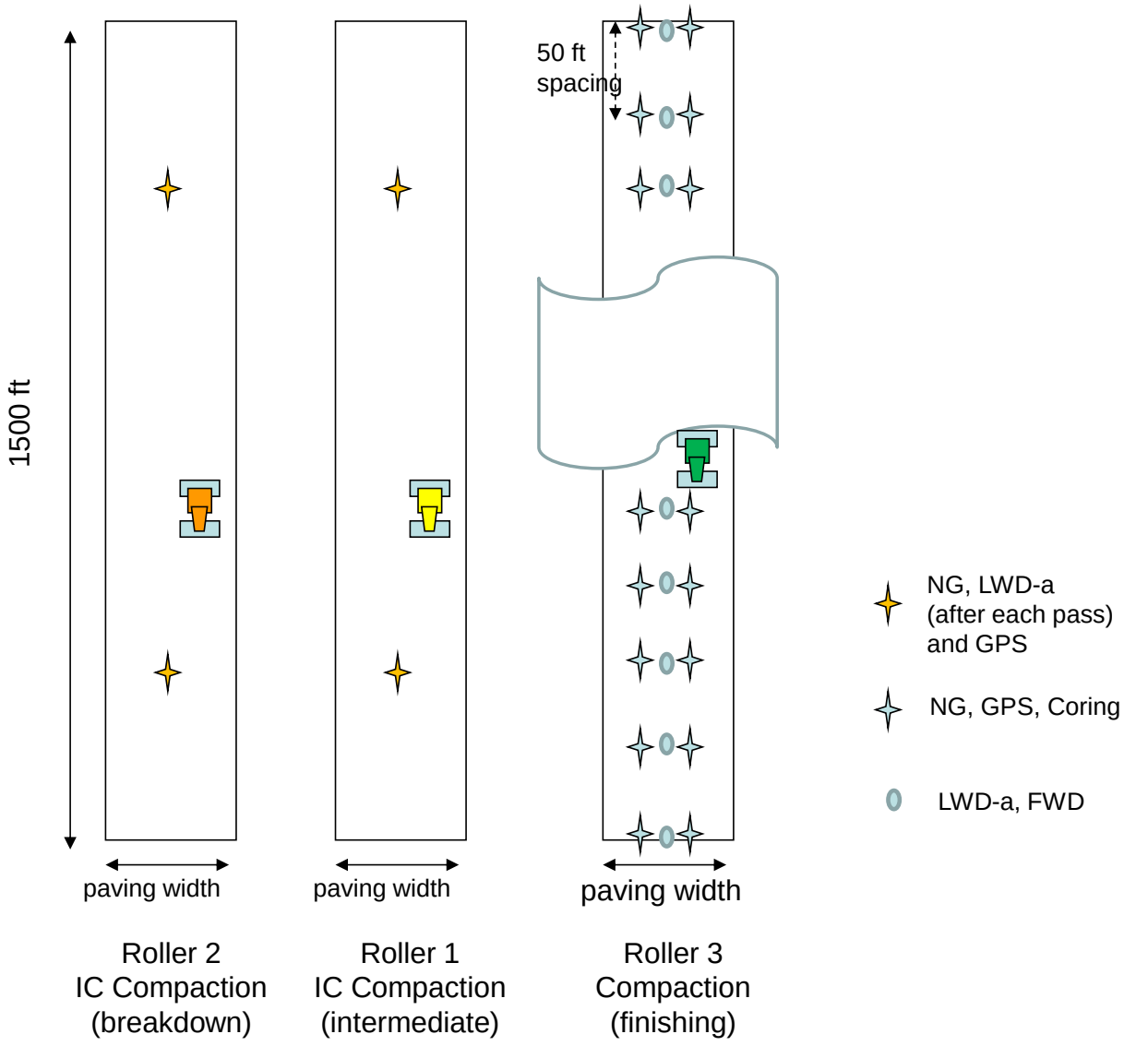
GPS Validation will be conducted via the following procedures:

1. Move the IC roller around until the GPS header computation is initialized.
2. Move the IC roller and park at a selected location.
3. Record the GPS measurements from the IC roller ensuring the distance offsets are applied so that the GPS coordinate is at the center or at left/right edges of the front drum.
4. Mark two locations on the ground adjacent to the right and left edges of the front drum contact patch.
5. Move the IC roller from the marked locations.
6. Use a hand-held rover to measure at the marked locations.
7. Average the rover GPS measurements if the roller GPS measurement is at the center of the front drum.
8. The differences between the roller GPS and rover measurements shall be within 12 inches (300 mm) for northing and easting.

Day 1 – Test Sections

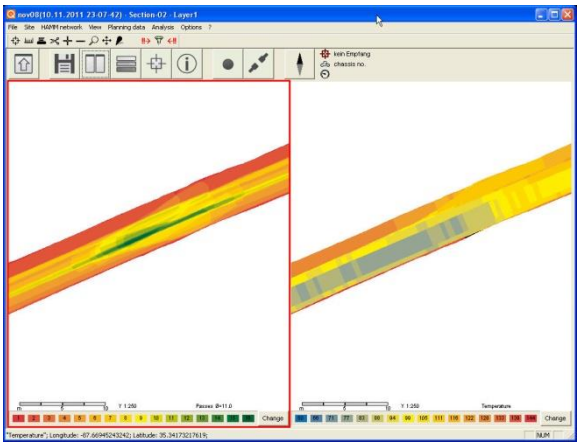


Day 2 – Test Section



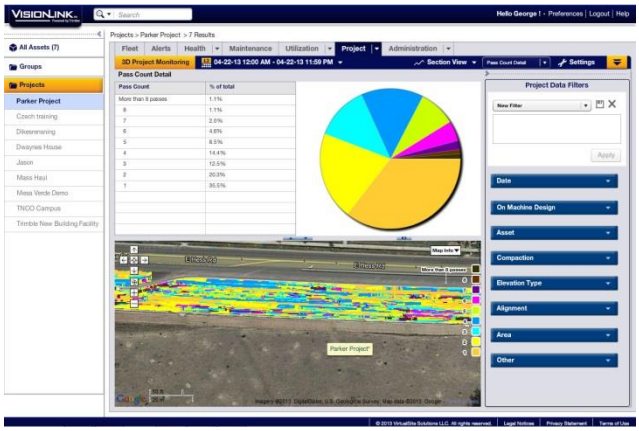
*FWD test is eliminated.

HAMM Double-Drum IC Roller



Manufacturer/ Vendor	HAMM/Wirtgen
Model Name	HCQ (Hamm Compaction Quality)
Model Number	HD+ 90 / HD+ 110, HD+ 120 / HD+ 140
Drum Width	78" w/offset to 84.7"
Machine Weight	Operating wt. 27,569 lbs. w/max of 32,187 lbs.
Amplitude Settings	High/Low - .028/.011 in. (0.71/0.27 mm)
Frequency Settings	Variable from 2700 - 4020 vpm
Auto-Feedback	NA
Measurement System	HAMM Compaction Quality (HCQ)
Measurement Value	HMV, density estimator, temperature, passes
Measurement Unit	[unitless, % compaction, °C, color coded]
Documentation System	HCQ with ability to export to Veda
Contact	Tim Kowalski (615) 594-4604 tkowalski@Wirtgenamerica.com

Caterpillar Double Drum IC rollers

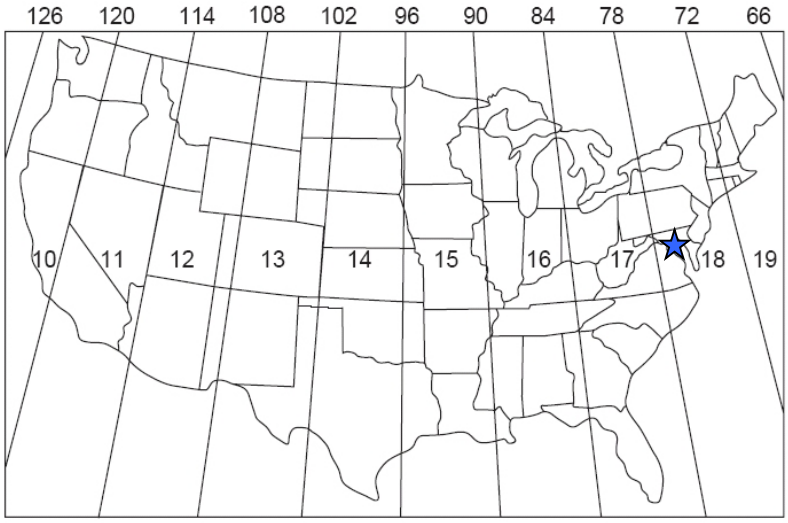


Manufacturer	Caterpillar
Model Name	Tandem vibratory roller
Model Number	CB54 XW
Drum Width	79”
Machine Weight	Operating wt. 26,300 lbs. Static linear load 165 lb/in.
Amplitude Settings	TBA”
Frequency Settings	TBA vpm
Auto-Feedback	NA
Measurement System	Compaction Meter Value (CMV)
Measurement Value	CMV
Measurement Unit	[unitless]
Documentation System	VisionLink
Contact	Bryan Downing, 763-493-7533 Downing_Bryan_J@cat.com

Global Positioning System (GPS)

Grid Reference

UTM-18N is the preferred coordinate reference for all devices.



Trimble GPS

- A Trimble GPS receiver and a radio will be mounted on the Caterpillar IC roller.
- The Trimble Internet Base Station Services (IBSS) will be used to provide RTK correction signals.
- A hand-held Trimble GPS rover will be used for in-situ point measurements.

OmniStar GPS

- A GPS receiver with OmniStar subscription will be mounted on the HAMM IC machine.
- A hand-held OmniStar GPS rover may be used for in-situ point measurements.

Open House

Time: 8 AM to noon, Thursday, June 26, 2014

Location: MD SHA Hanover Office

7450 Traffic Drive

Hanover, MD 21076

Contact:

Gloria Burke, 443-386-9266, gburke@sha.state.md.us

Agenda

- **Session 1** - 8:00AM to 11:00AM - Indoor Presentation
- **Session 2** – 11AM to noon – Outdoor Equipment Demonstration (IC, LWD-a, GPS)

Online Registration is required:

Webpage (http://fhwaicopenhouse-md.eventbrite.com/)