WIM System Field Calibration and Validation Handout Guide

Wisconsin SPS-1
SHRP ID – 550100

Validation Date: May 14, 2013

Table of Contents

1 Site Information

Site ID:	550100	**State:**	Wisconsin
LTPP Region:	North Central	**Configuration:**	Loop-2 Bending Plates-Loop
Controller Type:	iSINC	**Sensor Type:**	Bending Plate
Power:	AC	**Communication:**	Landline
Class Scheme:	LTPP Mar 06	**CPU type/setup:**	iSINC

2 Contact Information

Agency	Contact	Position	Phone	E-mail
FHWA	Debbie Walker	COTR	202-493-3068	deborah.walker@dot.gov
FHWA	Wesley Shemwell	LTPP Division Rep.	608-829-7521	Wesley.shemwell@dot.gov
RSC	Frank Meyer	Project Manager	716-632-4804	fmeyer@stantec.com
WIDOT	Steven Krebs	LTPP Coordinator	608-246-7930	steven.krebs@dot.wi.gov
WIDOT	John Williamson	Traffic Contact	608-267-2939	john.williamson@dot.wi.gov
WIDOT	Laura Fenley	Coordinator	608-246-5455	laura.fenley@dot.wi.gov
ARA	Dean Wolf	Task Leader	717-512-6638	dwolf@ara.com
ARA	Olga Selezneva	Project Manager	410-540-9949	oselezneva@ara.com
	Greg Guite	Trucks	715-849-4000	greg@elitecarriers.com

3 Schedule of Events

Date	Event	Location	Start Time
5/13/13	Travel	Wausau, WI	TBD
5/14/13	Test Truck Weigh/Measure/Inspection	Rib Mountain Truck Center	7:00 am
5/14/13	Equipment Assessment	SPS-1 WIM Site	8:00 am
5/14/13	Initial Performance Evaluation	SPS-1 WIM Site	8:30 am
5/14/13	System Test/Class and Speed Study	SPS-1 WIM Site	TBD
5/15/13	Test Truck Weigh (if required)	Rib Mountain Truck Center	7:00 am
5/15/13	Calibration/Validation (if required)	SPS-1 WIM Site	8:00 am
5/16/13	Travel	Camp Hill, PA	TBD

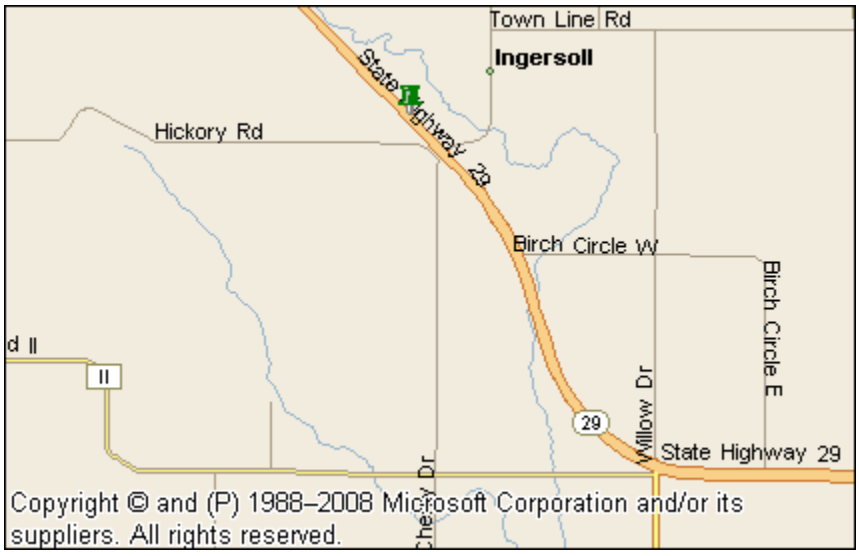
4 Maps

4.1 Airport Location

Name:	Central Wisconsin Airport	**Location:**	200 CWA Drive, Mosinee WI
Latitude:	44.7853°	**Longitude:**	-89.6705°

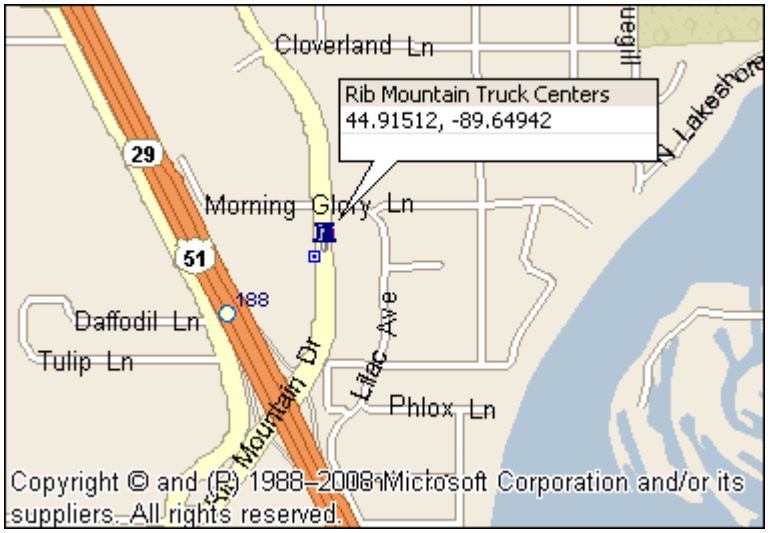
4.2 Site Location

Location:	US-29 at M.P. 189.8	**Direction:**	WB
Latitude:	44.8508°	**Longitude:**	-89.2671°



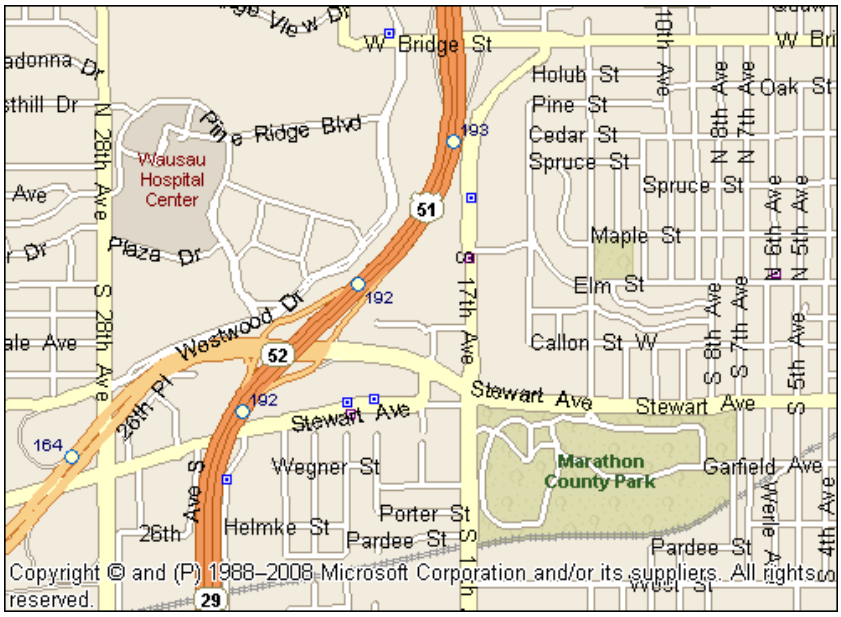
4.3 Truck Scale Location

Name:	Rib Mountain Truck Centers	**Location:**	US 51-29 Exit 188
Latitude:	44.9151°	**Longitude:**	-89.6494°



4.4 Hospital Location

Name:	Wausau Hospital Center		
Phone:	(715) 847-2121	**Location:**	333 Pine Ridge Blvd, Wausau, WI



5 Occupational Health and Safety Plan

All fieldwork in the right-of-way will be carried out when the ground visibility is more than 3 km, and when there is no accumulation of water, snow, or ice is on the pavement.

To the extent possible, inspection work during extremely high and low temperatures will be avoided. If the work becomes necessary, workers will be reminded to make appropriate precautions (wear protective clothing, drink fluids, and avoid prolonged exposure to severe weather conditions).

All personnel present on the right-of-way will wear approved safety gear (boots, reflective safety vest, and helmet).

The following items will be available at the site: a standard first-aid kit, a cell phone, and the location of nearby hospital(s).

6 Contingency Plan

If inclement weather is forecasted prior to mobilizing to the site, the Project Manager will make the final decision to postpone the Validation visit. The Task Leader is responsible for contacting all parties involved to inform them of the postponement. He is also responsible for rearranging travel.

Once the Validation team is on-site, the On-Site Task Leader is responsible for making decisions to delay or postpone the Validation. He will contact the Project Manager to make recommendations for completing the Validation, and the Project Manager will make the final decision to cancel or postpone. The On-Site Task Leader is responsible for contacting the COTR and all other participating parties to inform them of the delay or postponement.

Traffic Sheet 17 LTPP MONITORED TRAFFIC DATA WIM SITE INVENTORY	STATE CODE: 55 SPS WIM ID: 550100 DATE (mm/dd/yyyy) 5/15/2013

1. ROUTE: US-29 **MILEPOST:** 189.8 **LTPP DIRECTION:** west

2. WIM SITE DESCRIPTION

Grade: <1% Sag Vertical: N
Nearest Upstream SPS Section:
Distance from sensors to SPS Section: feet

3. LANE CONFIGURATION

Lanes in LTPP direction: 2 Median: 3 - grass
Lane width: 11.5' Shoulder: 2 - paved AC
Shoulder width: 8.5'

4. PAVEMENT TYPE PCC

5. PAVEMENT SURFACE CONDITION - Distress Survey

Date: 5/15/13 Photo Filename: 550100_downstream_5_15_13.jpg
Date: 5/15/13 Photo Filename: 550100_trailing_loop_5_15_13.jpg
Date: Photo Filename:

6. SENSOR SEQUENCE

Loop - 2 Bending Plate - Loop

7. REPLACEMENT AND/OR GRINDING

Date:
Date:
Date:

8. RAMPS OR INTERSECTIONS

Intersection within 300' upstream of site: N
Intersection within 300' downstream of site: N
Is shoulder routinely used for turning? N

9. DRAINAGE

Drainage *(bending plate and load cell)* : 1 - Open to Ground
Clearance under plate (in.):
Clearance /access to flush fines from under system:

Traffic Sheet 17 LTPP MONITORED TRAFFIC DATA WIM SITE INVENTORY	STATE CODE: 55 SPS WIM ID: 550100 DATE (mm/dd/yyyy) 5/15/2013

10. CABINET LOCATION

Same side of road as LTPP lane: Y
Distance from edge of traveled lane: 43 ft
distance from system: 49 ft
type: M

Cabinet access controlled by: Agency and LTPP
Contact name: John Williamson Phone # 608-267-2939
Alternate name: Jane Oldenburg Phone # 608-245-2679

11. POWER

Distance to cabinet from drop: 7 ft
Type: AC
AC in cabinet? Y
Service provider: Unknown Phone #

12. TELEPHONE

Distance to cabinet from drop: 7 ft
Type: landline
Service provider: Unknown Phone #

13. SYSTEM

Software and version no. Version 5.0
Computer connection: RS-232

14. TEST TRUCK TURNAROUND TIME

Duration: 7 minutes Distance: 6.5 miles

15. PHOTOS

	Filename
Power source:	550100_power_meter_5_15_13.jpg
Phone source:	550100_telephone_service_5_15_13.jpg
Cabinet exterior:	550100_cabinet_exterior_5_15_13.jpg
Cabinet interior:	550100_cabinet_interior_front_5_15_13.jpg
Weight sensors:	550100_leading_WIM_sensor_5_15_13.jpg
	550100_trailing_WIM_sensor_5_15_13.jpg
Other sensors:	550100_leading_loop_5_15_13.jpg
	550100_trailing_loop_5_15_13.jpg
Downstream from sensors on LTPP lane:	550100_downstream_5_15_13.jpg
Upstream from sensors on LTPP lane:	550100_upstream_5_15_13.jpg

Traffic Sheet 18 LTPP MONITORED TRAFFIC DATA WIM SITE COORDINATION	STATE CODE: 55 SPS WIM ID: 550100 DATE (mm/dd/yyyy) 5/15/2013

1. DATA PROCESSING

a. Download: State only

b. Data review: State per LTPP guidelines
If state, how often?

c. Data submission: State
If state how often? Monthly

2. EQUIPMENT

a. Purchase: State

b. Installation: State personnel

c. Maintenance: State personnel
Expiration Date

d. Calibration: LTPP

e. Manuals and software control: State

f. Power
i. Type: Underground ii. Payment: State

g. Communication
i. Type: Landline ii. Payment: State

3. PAVEMENT

a. Type: Portland Concrete Cement

b. Allowable Rehabilitation activities: Maintenance only

c. Profile Site Markings: Temporary

Traffic Sheet 18 LTPP MONITORED TRAFFIC DATA WIM SITE COORDINATION	STATE CODE: 55 SPS WIM ID: 550100 DATE (mm/dd/yyyy) 5/15/2013

4. Onsite Activities

a. WIM Validation Check advance notice required

_____ Days 2 Weeks

b. Notice for straightedge and grinding check

_____ Days 2 Weeks

i. On site lead LTPP

ii. Accept grinding LTPP

c. Authorization to calibrate site State

d. Calibration routine LTPP annually

Other: State per LTPP Protocol

e. Test Vehicle Responsibilities

i. Trucks

1st-	Air suspension 3S2	LTPP
2nd-	Air Suspension 3S2	LTPP
3rd-		
4th-		

ii. Loads LTPP

iii. Drivers LTPP

f. Contractor(s) with prior experience in wim calibration in state:
IRD

g. Access to cabinet LTPP

h. State personel required on site No

i. Traffic control required No

J. Enforcement coordination required No

Traffic Sheet 18 LTPP MONITORED TRAFFIC DATA WIM SITE COORDINATION	STATE CODE: 55 SPS WIM ID: 550100 DATE (mm/dd/yyyy) 5/15/2013

5. SITE SPECIFIC CONDITIONS

a. Funds and accountability: _____
b. Reports: _____
c. Other: _____
c. Special Conditions _____

6. CONTACTS

a. Equipment (operational status, access, etc.)
Name Roy Czinku Phone # 306-270-9492
Agency IRD

b. Maintenance (equipment)
Name Roy Czinku Phone # 306-270-9492
Agency IRD

c. Data Processing and pre-visit data
Name Basel Abukhater Phone # 716-632-0804
Agency Stantec

d. Construction schedule and verification
Name _____ Phone # _____
Agency _____

e. Test Vehicles (trucks, loads, drivers)
Name Greg Guite Phone # 715-849-4000
Agency Elite Carriers

f. Traffic control
Name _____ Phone # _____
Agency _____

g. Enforcement coordination
Name _____ Phone # _____
Agency _____

h. Nearest static scale
Name Rib Mountain Travel Location: US51/SR29 exit 188
Phone: 713-359-8728

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 1	STATE CODE: 55 SPS WIM ID: 550100 DATE (mm/dd/yyyy) 5/15/2013

CALIBRATION TEST TRUCK - Primary

PART A

1. FHWA CLASS: 9 **2. Number of axles:** 5

3. AXLE WEIGHTS (lbs)

	a. Empty Truck Avg. Axle Weight	b. Pre-test Average Axle Weight	c. Post-Test Avg. Axle Weight	d. Direct or Calculated?
A		12230	11910	Direct
B		16460	16325	Direct
C		16460	16325	Direct
D		15890	15885	Direct
E		15890	15885	Direct
F				

4. GVW (same units as axles)

a. Empty GVW:
b. Average Pre-Test Loaded weight: 76930
c. Post Test Loaded Weight: 76330
d. Difference Post Test - Pre-Tests: -600

5. TRUCK DESCRIPTION

a. Tractor Cab Style: Conventional Sleeper Cab: Yes
photo: ☑

b. Make: Freightliner
c. Model:

d. Trailer Load Distribution Description:

enclosed trailer carrying paper rolls.

photo: ☑

e. Tractor Tare weight - -
f. Trailer Tare weight - -
g. Axle Spacing - (feet and tenths)

A to B 17.1 B to C 4.4 C to D 35.5 D to E 4.0 E to F

h. Wheelbase - ☐ Measured ☑ Computed 61.0
i. Kingpin offset from Axle B (units) 1.5 photo: ☐
j. Overall Length - ☑ Measured 72.0

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 1	STATE CODE: 55 SPS WIM ID: 550100 DATE (mm/dd/yyyy) 5/15/2013

CALIBRATION TEST TRUCK - Primary

6. SUSPENSION

	a. Tire size	b.Suspension description (leaf, air # of leaves, taper or flat leaf, etc.)	c. photo
A	295/75R22.5	steel spring	☑
B	295/75R22.5	air	☑
C	295/75R22.5	air	☑
D	295/75R22.5	air	☑
E	295/75R22.5	air	☑
F			☐

d. Cold Tire Pressures (psi)- from right to left

Steering Axle	Axle B	Axle C	AxleD	AxleE	Axle F

PART B

Table 1 - Raw Measurements -Platform Scale

Axles	Meas.	Pre-test Weight	Instance	Instance	Post-test weight
A	I				
A+B	II				
A+B+C	III				
A+B+C+D	IV				
A+B+C+D+E(1)	V				
A+B+C+D+E+(F)(1)	VI				
B+C+D+E+(F)	VII				
C+D+E+(F)	VIII				
D+E+(F)	IX				
E+(F)	X				
(F)	XI				
A+B+C+D+E+(F)(2)	XII				

Traffic Sheet 19	STATE CODE:	55
LTPP MONITORED TRAFFIC DATA	SPS WIM ID:	550100
CALIBRATION TEST TRUCK # 1	DATE (mm/dd/yyyy)	5/15/2013

CALIBRATION TEST TRUCK - Primary

Table 2 - Axle and GVW Computations -Platform Scale Pre-test

	1		2		Avg.
Axle A	I	0	VI-VII	0	0
Axle B	II-I	0	VII-VIII	0	0
Axle C	III-II	0	VIII-IX	0	0
Axle D	IV-III	0	IX-X	0	0
Axle E	V-IV	0	X-XI	0	0
Axle F	VI-V		XI		
GVW	VI	0	XII	0	0

Table 3- Axle and GVW Computations - Platform Scale - Instance - _____

	1		2		Avg.
Axle A	I	0	VI-VII	0	0
Axle B	II-I	0	VII-VIII	0	0
Axle C	III-II	0	VIII-IX	0	0
Axle D	IV-III	0	IX-X	0	0
Axle E	V-IV	0	X-XI	0	0
Axle F	VI-V		XI		
GVW	VI	0	XII	0	0

Table 4- Axle and GVW Computations - Platform Scale - Instance - _____

	1		2		Avg.
Axle A	I	0	VI-VII	0	0
Axle B	II-I	0	VII-VIII	0	0
Axle C	III-II	0	VIII-IX	0	0
Axle D	IV-III	0	IX-X	0	0
Axle E	V-IV	0	X-XI	0	0
Axle F	VI-V		XI		
GVW	VI	0	XII	0	0

Table 5- Axle and GVW Computations - Platform Scale Post-Test

	1		2		Avg.
Axle A	I	0	VI-VII	0	0
Axle B	II-I	0	VII-VIII	0	0
Axle C	III-II	0	VIII-IX	0	0
Axle D	IV-III	0	IX-X	0	0
Axle E	V-IV	0	X-XI	0	0
Axle F	VI-V		XI		
GVW	VI	0	XII	0	0

Traffic Sheet 19	STATE CODE:	55
LTPP MONITORED TRAFFIC DATA	SPS WIM ID:	550100
CALIBRATION TEST TRUCK # 1	DATE (mm/dd/yyyy)	5/15/2013

CALIBRATION TEST TRUCK - Primary

Table 6 - Raw Data -Axle Scales - Pre-test

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
1	12220	16460	16460	15890	15890		76920
2	12240	16460	16460	15890	15890		76940
Avg.	12230	16460	16460	15890	15890		76930

Table 7- Raw Data- Axle scales -

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
Avg.							

Table 8- Raw Data- Axle scales -

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
Avg.							

Table 9 - Raw Data -Axle Scales - Post-test

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
1	11920	16320	16320	15880	15880		76320
2	11900	16330	16330	15890	15890		76340
Avg.	11910	16325	16325	15885	15885		76330

Validation Test Truck Run Set - Pre

Measured By: _____

Verified By: _____

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 55 SPS WIM ID: 550100 DATE (mm/dd/yyyy) 5/15/2013

CALIBRATION TEST TRUCK - Secondary

PART A

1. **FHWA CLASS:** 9 2. **Number of axles:** 5

3. **AXLE WEIGHTS** (lbs)

	a. Empty Truck Avg. Axle Weight	b. Pre-test Average Axle Weight	c. Post-Test Avg. Axle Weight	d. Direct or Calculated?
A		12070	11760	Direct
B		14290	14235	Direct
C		14290	14235	Direct
D		14630	14630	Direct
E		14630	14630	Direct
F				

4. **GVW (same units as axles)**
   a. Empty GVW:
   b. Average Pre-Test Loaded weight: 69910
   c. Post Test Loaded Weight: 69490
   d. Difference Post Test - Pre-Tests: -420

5. **TRUCK DESCRIPTION**
   a. Tractor Cab Style: Conventional Sleeper Cab: Yes
   photo: ☑

   b. Make: Freightliner
   c. Model:

   d. Trailer Load Distribution Description:

   photo: ☑

   e. Tractor Tare weight - -
   f. Trailer Tare weight - -
   g. Axle Spacing -

A to B 17.1 B to C 4.3 C to D 34.5 D to E 4.1 E to F

   h. Wheelbase - ☐ Measured ☑ Computed 60.0
   i. Kingpin offset from Axle B (units) 1.5 photo: ☐
   j. Overall Length - ☑ Measured 72.5

Traffic Sheet 19 LTPP MONITORED TRAFFIC DATA CALIBRATION TEST TRUCK # 2	STATE CODE: 55 SPS WIM ID: 550100 DATE (mm/dd/yyyy) 5/15/2013

CALIBRATION TEST TRUCK - Secondary

6. SUSPENSION

	a. Tire size	b.Suspension description (leaf, air # of leaves, taper or flat leaf, etc.)	c. photo
A	295/75R22.5	steel spring	☑
B	295/75R22.5	air	☑
C	295/75R22.5	air	☑
D	445/50R22.5	air	☑
E	445/50R22.5	air	☑
F			☐

d. Cold Tire Pressures (psi)- from right to left

Steering Axle	Axle B	Axle C	AxleD	AxleE	Axle F

PART B

Table 1 - Raw Measurements -Platform Scale

Axles	Meas.	Pre-test Weight	Instance	Instance	Post-test weight
A	I				
A+B	II				
A+B+C	III				
A+B+C+D	IV				
A+B+C+D+E(1)	V				
A+B+C+D+E+(F)(1)	VI				
B+C+D+E+(F)	VII				
C+D+E+(F)	VIII				
D+E+(F)	IX				
E+(F)	X				
(F)	XI				
A+B+C+D+E+(F)(2)	XII				

Traffic Sheet 19	STATE CODE:	55
LTPP MONITORED TRAFFIC DATA	SPS WIM ID:	550100
CALIBRATION TEST TRUCK # 2	DATE (mm/dd/yyyy)	5/15/2013

CALIBRATION TEST TRUCK - Secondary

Table 2 - Axle and GVW Computations -Platform Scale Pre-test

	1		2		Avg.
Axle A	I	0	VI-VII	0	0
Axle B	II-I	0	VII-VIII	0	0
Axle C	III-II	0	VIII-IX	0	0
Axle D	IV-III	0	IX-X	0	0
Axle E	V-IV	0	X-XI	0	0
Axle F	VI-V		XI		
GVW	VI	0	XII	0	0

Table 3- Axle and GVW Computations - Platform Scale - Instance - _____

	1		2		Avg.
Axle A	I	0	VI-VII	0	0
Axle B	II-I	0	VII-VIII	0	0
Axle C	III-II	0	VIII-IX	0	0
Axle D	IV-III	0	IX-X	0	0
Axle E	V-IV	0	X-XI	0	0
Axle F	VI-V		XI		
GVW	VI	0	XII	0	0

Table 4- Axle and GVW Computations - Platform Scale - Instance - _____

	1		2		Avg.
Axle A	I	0	VI-VII	0	0
Axle B	II-I	0	VII-VIII	0	0
Axle C	III-II	0	VIII-IX	0	0
Axle D	IV-III	0	IX-X	0	0
Axle E	V-IV	0	X-XI	0	0
Axle F	VI-V		XI		
GVW	VI	0	XII	0	0

Table 5- Axle and GVW Computations - Platform Scale Post-Test

	1		2		Avg.
Axle A	I	0	VI-VII	0	0
Axle B	II-I	0	VII-VIII	0	0
Axle C	III-II	0	VIII-IX	0	0
Axle D	IV-III	0	IX-X	0	0
Axle E	V-IV	0	X-XI	0	0
Axle F	VI-V		XI		
GVW	VI	0	XII	0	0

Traffic Sheet 19	STATE CODE:	55
LTPP MONITORED TRAFFIC DATA	SPS WIM ID:	550100
CALIBRATION TEST TRUCK # 2	DATE (mm/dd/yyyy)	5/15/2013

CALIBRATION TEST TRUCK - Secondary

Table 6 - Raw Data -Axle Scales - Pre-test

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
1	12080	14290	14290	14630	14630		69920
2	12060	14290	14290	14630	14630		69900
Avg.	12070	14290	14290	14630	14630		69910

Table 7- Raw Data- Axle scales -

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
Avg.							

Table 8- Raw Data- Axle scales -

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
Avg.							

Table 9 - Raw Data -Axle Scales - Post-test

Pass	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW
1	11760	14230	14230	14630	14630		69480
2	11760	14240	14240	14630	14630		69500
Avg.	11760	14235	14235	14630	14630		69490

Validation Test Truck Run Set - Pre

Measured By: _____

Verified By: _____

Traffic Sheet 21 (Wheel Load)
LTPP MONITORED TRAFFIC DATA
WIM SYSTEM TRUCK RECORDS

STATE CODE: 55
SPS WIM ID: 550100
DATE: (mm/dd/yyyy): 5/15/2013

Pvmt Temp	Radar speed	Truck	Pass	Time	Record No.	WIM Speed	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW	A-B space	B-C space	C-D space	D - E space	E - F space	Axle Length	Overall Length
71.9	65	2	1	8:34:29	19376	63.0	11.9	14.9	14.4	14.5	14.4		70.1	16.9	4.2	33.9	4.0		59.0	71.0
71.9	59	2	2	8:42:07	19410	59.0	11.8	14.7	14.3	14.4	14.4		69.6	16.9	4.2	34.1	4.0		59.2	72.0
71.9	54	2	3	8:51:44	19452	54.0	11.7	14.8	14.4	14.7	14.9		70.4	17.0	4.2	34.2	4.0		59.4	72.0
74.3	64	2	4	8:59:25	19477	63.0	11.9	14.4	14.6	14.7	15.0		70.7	17.0	4.2	34.0	4.0		59.2	72.0
74.5	59	2	5	9:07:18	19500	59.0	11.7	14.9	14.4	14.6	14.4		70.0	17.0	4.2	34.2	4.0		59.4	71.0
74.5	54	2	6	9:14:54	19529	54.0	11.5	14.7	14.6	14.5	14.6		69.9	16.9	4.2	34.0	4.0		59.1	72.0
77.5	64	2	7	9:22:52	19552	63.0	12.0	14.8	14.4	14.6	14.8		70.4	17.0	4.3	34.1	4.0		59.4	72.0
79.5	57	2	8	9:30:30	19577	59.0	12.0	14.5	14.4	14.8	14.8		70.6	17.0	4.2	34.1	4.0		59.3	72.0
79.4	55	2	9	10:27:27	19726	55.0	11.6	14.7	14.3	14.5	15.0		70.1	16.9	4.2	34.1	4.0		59.2	72.0
83.8	63	2	10	11:00:39	19826	64.0	11.9	14.8	14.4	14.8	14.7		70.7	17.0	4.3	34.1	4.0		59.4	72.0
85.6	60	2	11	11:17:23	19883	58.0	11.9	14.5	14.6	14.5	14.9		70.3	17.0	4.2	34.2	4.0		59.4	72.0
83.8	55	2	12	11:34:13	19925	55.0	11.5	14.4	14.2	14.6	14.8		69.7	16.9	4.2	34.0	4.0		59.1	72.0
91.9	65	2	13	11:50:33	19969	64.0	11.9	15.0	14.6	14.8	14.9		71.1	16.9	4.3	34.1	4.0		59.3	71.0
84.3	55	2	14	12:07:18	20027	55.0	11.4	14.7	14.6	14.5	14.8		70.1	17.0	4.2	34.2	4.0		59.4	72.0
88.4	65	2	15	12:33:45	20073	64.0	11.5	14.8	14.3	14.8	14.8		70.3	16.9	4.2	34.0	4.0		59.1	72.0
86.7	62	2	16	12:40:57	20140	59.0	11.8	14.6	14.5	14.6	14.8		70.3	16.9	4.2	33.9	4.0		59.0	72.0
86.4	61	2	17	12:57:48	20199	60.0	11.6	14.7	14.3	14.3	14.4		69.3	16.9	4.2	34.1	4.0		59.2	72.0
83.4	61	2	18	13:14:54	20232	59.0	11.6	14.5	14.6	14.8	14.9		70.3	16.9	4.2	34.1	4.0		59.2	72.0
81.9	64	2	19	13:32:09	20284	62.0	11.5	14.7	14.3	14.3	14.3		69.2	16.9	4.2	34.1	4.0		59.2	72.0
83.1	55	2	20	13:51:23	20348	55.0	11.3	14.5	14.5	14.7	14.9		69.6	17.0	4.2	34.1	4.0		59.3	72.0
80.4	63	1	1	10:42:46	23389	63.0	12.0	16.7	16.4	15.8	16.4		77.3	17.0	4.2	35.5	4.0		60.7	73.0
79.3	60	1	2	11:04:52	23462	60.0	11.9	16.4	16.7	15.9	16.1		77.0	17.0	4.2	35.5	4.0		60.7	72.0
83.6	54	1	3	11:26:37	23525	52.0	11.8	16.6	16.1	15.8	16.1		76.4	17.0	4.2	35.4	4.0		60.6	72.0
87.4	65	1	4	11:48:23	23597	65.0	11.9	16.9	16.5	16.8	16.0		78.2	17.0	4.2	35.5	4.0		60.7	73.0

Recorded By: GAH Verified By: djw Run Set Pre

Traffic Sheet 21 (Wheel Load)
LTPP MONITORED TRAFFIC DATA
WIM SYSTEM TRUCK RECORDS

STATE CODE: 55
SPS WIM ID: 550100
DATE: (mm/dd/yyyy): 5/15/2013

Pvmt Temp	Radar speed	Truck	Pass	Time	Record No.	WIM Speed	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	GVW	A-B space	B-C space	C-D space	D - E space	E - F space	Axle Length	Overall Length
90.2	60	1	5	12:09:59	23663	59.0	11.9	16.7	16.5	16.4	16.3		77.7	17.0	4.2	35.5	4.0		60.7	72.0
85.3	55	1	6	12:31:43	23750	54.0	11.9	16.7	16.5	16.1	16.2		77.4	17.0	4.2	35.5	4.0		60.7	72.0
87.6	59	1	7	12:53:50	23825	58.0	11.6	16.9	16.6	15.8	16.4		77.2	17.0	4.2	35.6	4.0		60.8	72.0
87.0	55	1	8	13:16:11	23903	54.0	11.4	16.5	16.2	16.2	16.1		76.5	17.0	4.2	35.5	4.0		60.7	73.0
87.0	65	1	9	13:38:09	23985	65.0	12.1	16.6	16.2	15.9	15.9		76.7	17.0	4.2	35.4	4.0		60.6	73.0
88.1	59	1	10	13:59:44	24071	59.0	11.6	17.0	16.8	16.1	16.2		77.5	17.0	4.2	35.4	4.0		60.6	72.0
89.3	55	1	11	14:21:42	24139	54.0	11.6	16.4	16.5	16.2	16.0		76.8	17.0	4.2	35.4	4.0		60.6	73.0
94.3	65	1	12	14:43:27	24209	65.0	11.9	16.8	16.7	16.0	16.1		77.5	17.0	4.2	35.5	4.0		60.7	72.0
94.4	59	1	13	15:05:36	24285	58.0	11.8	16.7	16.6	15.6	16.0		76.7	17.0	4.2	35.5	4.0		60.7	72.0
92.4	56	1	14	15:27:30	24364	55.0	11.6	16.4	16.5	16.1	16.3		76.8	17.0	4.2	35.5	4.0		60.7	72.0
92.9	65	1	15	15:49:17	24451	65.0	11.7	16.5	16.3	16.5	15.8		76.6	17.0	4.2	35.5	4.0		60.7	73.0
92.7	60	1	16	16:11:17	24529	59.0	11.8	16.6	16.1	16.3	16.2		77.1	17.1	4.2	35.6	4.0		60.9	72.0
89.8	55	1	17	16:33:52	24637	54.0	11.7	16.5	16.6	16.4	16.2		77.6	17.0	4.2	35.5	4.0		60.7	73.0
79.8	66	1	18	16:55:29	24736	65.0	11.8	16.3	16.0	15.7	16.7		76.5	17.0	4.2	35.4	4.0		60.6	72.0
89.0	59	1	19	17:17:17	24818	59.0	11.8	16.8	16.5	15.9	16.1		77.0	17.0	4.2	35.5	4.0		60.7	72.0
87.5	55	1	20	17:38:46	24890	55.0	11.6	16.4	16.6	15.6	16.2		76.4	17.0	4.2	35.4	4.0		60.6	72.0

Recorded By: GAH Verified By: djw Run Set Pre

Traffic Sheet 22 LTPP MONITORED TRAFFIC DATA SITE EQUIPMENT ASSESSSMENT LTPP LANE ONLY	STATE CODE: 55 SPS WIM ID: 550100 STATE ASSIGNED ID 0 DATE (mm/dd/yyy) 5/15/2013

SITE EQUIPMENT INFORMATION

1. **TYPE OF EQUIPMENT** BOTH

2. **LANE NUMBER ON SITE** 1 **3. DIRECTION ON SITE** west

4. **VENDOR** IRD **MODEL** iSINC WCU-II **SERIAL#** 70506431

5. **WEIGHING SENSOR TYPE** bending plate

6. **SYSTEM SOFTWARE VERSIONS:**

CPU

LOOP

PIEZO

WEIGHPAD/ LOADCELL

COMMUNICATIONS

7. **CLASSIFICATION VIDEO:**

TIME FROM: 9:44:49 TO: 13:32:45
TIME FROM: TO:

SITE CONDITIONS

8. **PAVEMENT:**

Indicate any deficiencies that may affect the performance of the WIM sytem. List all photos on Sheet 24 that support the evaluation.

There is a previous WIM site installation located 330 feet upstream of the WIM scales that may affect the accuracies of the WIM system.

Traffic Sheet 22	STATE CODE:	55
LTPP MONITORED TRAFFIC DATA	SPS WIM ID:	550100
SITE EQUIPMENT ASSESSSMENT	STATE ASSIGNED ID	0
LTPP LANE ONLY	DATE (mm/dd/yyy)	5/15/2013

9. IN ROAD SENSORS:

Describe any deficiencies regarding the sensor installation. Indicate sensors that show any signs of being broken, severely worn, missing, removed, or loose. List photos on Sheet 24 for

the equipment is operating within the manufacturer's tolerances. None of the in-road sensors show signs of damage or excessive wear and appear to be fully secured in the pavement. There is a section of epoxy that has broken free from the conduit run adjacent to the trailing WIM sensor that has been temporarily repaired with asphalt patching material.

TRUCK OBSERVATIONS

10. Indicate any irregular truck behaviors such as bouncing, swerving, or braking near the weighing area (within 40 meters). Note the distance from the weighing sensors.

A visual observation of the trucks as they approach, traverse, and leave the sensor area did not indicate any adverse dynamics that would affect the accuracy of the WIM system. The trucks appear to track down the center of the lane.

Minimum 15 minute or 35 truck sample video sample for pavement interaction deficiencies:

Tape Filename: _____

Time: From: _____ To: _____

Traffic Sheet 22 Addendum - Weighpad	STATE CODE:	55
LTPP MONITORED TRAFFIC DATA	SPS WIM ID:	550100
SITE EQUIPMENT ASSESSSMENT	STATE ASSIGNED ID	0
LTPP LANE ONLY	DATE (mm/dd/yyy)	5/15/2013

STATIC EQUIPMENT VALUES (SYSTEM OFF)

1. POWER

a. Solar Panel		WATTS		VDC
b. Equipment Power	121.4	VAC	11.8	VDC
c. Battery 1	13.4	VDC		
d. Battery 2		VDC		
e. Regulated		VDC		
f. Power Supply	11.8	VDC	11.8	VDC
g. System Input	121.4	VAC	11.8	VDC
h. Modem Power		VAC		VDC
i. Telephone	47.8	VDC		

2. LOOP SENSORS

	Resistance		Inductance		Shield	
a. Leading	0.6	Ω	83.4	µh	inf	MΩ
b. Trailing	0.6	Ω	81.4	µh	inf	MΩ

3. WEIGHPAD SENSORS

	Input		Output		Shield	
a. Leading	974	Ω	845	Ω	inf	Ω
b. Trailing	975	Ω	844	Ω	inf	Ω

DYNAMIC EQUIPMENT VALUES (SYSTEM ON)

4. LOOP SENSORS

	Frequency	
a. Leading	20	KHz
b. Trailing	21	KHz

5. WEIGHPAD SENSORS

	Zero Point	
a. Leading	2.7	mV
b. Trailing	0.4	mV

Assessor Greg Helman

Traffic Sheet 24A LTPP MONITORED TRAFFIC DATA SITE PHOTO LOG - Equipment	STATE CODE: 55 SPS WIM ID: 550100 DATE (mm/dd/yyy) 5/15/2013

Item	Description	Filename
1	Power Source	550100_power_meter_5_15_13.jpg
2	Telephone Source	550100_telephone_service_5_15_13.jpg
3	Cabinet Exterior	550100_cabinet_exterior_5_15_13.jpg
4	Cabinet Interior - Front	550100_cabinet_interior_front_5_15_13.jpg
5	Cabinet Interior - Rear	550100_cabinet_interior_Rear_5_15_13.jpg
6	Leading weight sensor	550100_leading_WIM_sensor_5_15_13.jpg
7	Trailing weight sensor	550100_trailing_WIM_sensor_5_15_13.jpg
8	Leading classification sensor	
9	Trailing classification sensor	
10	Leading loop sensor	550100_leading_loop_5_15_13.jpg
11	Trailing loop sensor	550100_trailing_loop_5_15_13.jpg
12	Downstream from site	550100_downstream_5_15_13.jpg
13	Upstream from site	550100_upstream_5_15_13.jpg
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		

Traffic Sheet 24B	STATE CODE:	55
LTPP MONITORED TRAFFIC DATA	SPS WIM ID:	550100
SITE PHOTO LOG - Test Trucks	DATE (mm/dd/yyy)	5/15/2013

Item	Description	Filename
1	Tractor, Truck #1	550100_Truck_1_Tractor_5_15_13.jpg
2	Trailer/Load, Truck #1	550100_Truck_1_Trailer_5_15_13.jpg
3	Kingpin Offset, Truck #1	
4	Suspension A, Truck #1	550100_Truck_1_Suspension_1_5_15_13.jpg
5	Suspension B, Truck #1	550100_Truck_1_Suspension_2_5_15_13.jpg
6	Suspension C, Truck #1	550100_Truck_1_Suspension_3_5_15_13.jpg
7	Suspension D, Truck #1	550100_Truck_1_Suspension_4_5_15_13.jpg
8	Suspension E, Truck #1	550100_Truck_1_Suspension_5_5_15_13.jpg
9	Suspension F, Truck #1	
10	Tractor, Truck #2	550100_Truck_2_Tractor_5_15_13.jpg
11	Trailer/Load, Truck #2	550100_Truck_2_Trailer_5_15_13.jpg
12	Kingpin Offset, Truck #2	
13	Suspension A, Truck #2	550100_Truck_2_Suspension_1_5_15_13.jpg
14	Suspension B, Truck #2	550100_Truck_2_Suspension_2_5_15_13.jpg
15	Suspension C, Truck #2	550100_Truck_2_Suspension_3_5_15_13.jpg
16	Suspension D, Truck #2	550100_Truck_2_Suspension_4_5_15_13.jpg
17	Suspension E, Truck #2	550100_Truck_2_Suspension_5_5_15_13.jpg
18	Suspension F, Truck #2	
19	Tractor, Truck #3	
20	Trailer/Load, Truck #3	
21	Kingpin Offset, Truck #3	
22	Suspension A, Truck #3	
23	Suspension B, Truck #3	
24	Suspension C, Truck #3	
25	Suspension D, Truck #3	
26	Suspension E, Truck #3	
27	Suspension F, Truck #3	
28	Scale	
29		
30		