INTERNATIONAL ROAD DYNAMICS INC.

LTPP SPS PHASE II

WEIGH-IN-MOTION SITE ACCEPTABILITY ASSESSMENT REPORT

ILLINOIS SPS-6
LTPP ID 170600
MARCH 22, 2005
CLIN 1001 TASK ORDER 1

CONTRACT NO. DTFH61-05-D-00001

U.S. Department of Transportation
Federal Highway Administration

LONG TERM Pavement PERFORMANCE

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1.0 EXECUTIVE SUMMARY

The proposed Illinois SPS-6 Weigh-in-Motion (WIM) site was visited on March 7th and 8th, 2005, and a site acceptability assessment was performed. The site is located on I-57 at Mile Post 225.6 near the town of Tuscola, county of Douglas. It is proposed to install a WIM system for the NB outside lane approximately 1.5 miles downstream of the SPS-6 pavement test section. Based upon our site evaluation criteria, our discussions with the State, and lane closure considerations, it is recommended that this site be accepted and instrumented with Bending Plate technology.

The site is located on a straightaway with no curves immediately before or after the WIM location and the grade is relatively flat. Vehicles track smoothly through this area at speeds between 55 and 75 MPH. Traffic flow is medium to heavy on this four lane Interstate.

The existing roadway pavement at this location consists of a 5 inch Asphalt Concrete (AC) section over 10 inch Portland Cement Concrete (PCC) section. The State has installed a blanket ground 500 foot PCC slab to accommodate the WIM system's in-pavement sensors. Both the approach and departure pavement and the PCC slab are in very good condition with no noticeable distress conditions. It is noted that the sealant at the AC/PCC cold joints both leading & trailing the PCC slab have degraded and the cold joints need to be repaired as soon as possible to prevent premature roadway deterioration.

There is currently no AC power available at the proposed WIM controller cabinet location; however, the State can provide power from an existing service drop located 800 feet away. The telephone service is existing and available at the proposed WIM cabinet location. The State will need to confirm whether or not this telephone service is operational. If the telephone service is not operational it will need to be reactivated.

2.0 EXISTING ROADWAY

2.1 PAVEMENT AND GEOMETRICS

The two northbound lanes are each 12 feet wide with a 10 foot wide outside shoulder and a 4 foot wide inside (median) shoulder. The horizontal alignment is tangent with minimal grade (positive 0.371%). Although there is a +2% and -2% section of grade in advance of the site to accommodate the highway's crossing over railroad tracks, such grade changes are short in length and terminate 1000' in advance of the proposed WIM location. They have no effect on the trucks passing through the site. In regard to cross slope, the two lanes are crowned at the lane line with each lane sloping 1.5% away from the lane line.

2.2 PCC WIM SLAB

A 500 foot non-reinforced plain PCC jointed slab has been installed to accommodate the WIM system's in-pavement sensors. The slab thickness is 12 inches and the transverse joints are on nominal 15 foot centers. These joints are dowelled. The inside lane's pavement is also PCC as well as that of both the inside and outside shoulders.

2.3 OBSERVED TRAFFIC OPERATING CHARACTERISTICS

The medium to heavy traffic flow exhibited good lane discipline, staying well within the lane and shoulder line markings. Traffic is free flowing at all times at speeds between 55 and 75 MPH (posted speed limits are 55 MPH for trucks and 65 MPH for autos). Although tailgating can occasionally occur, this can be accommodated by adjustments in the system's software. There are no signals or merging in the WIM site vicinity. Trucks are "cruising" through the site at constant speeds. It is noted that during the site visit extreme cross winds were present. Such cross winds can cause "imbalanced" left versus right wheel load WIM readings, particularly on empty truck trailers. It will be necessary to adjust the WIM system software such that wind affected imbalance readings do not result in the system's flagging such readings as "invalid". In that there are no on/off locations between WIM site and SPS site, the truck traffic composition at the WIM site is the same as that at the SPS site.

3.0 SITE CONFORMANCE TO EVALUATION CRITERIA

3.1 PAVEMENT TYPE AND CONDITION- PASS

The AC approach and departure pavements appear to be structurally sound with no evidence of distress. The 500 foot PCC slab installed specifically for the WIM system sensors also appears to be structurally sound with no evidence of distress conditions. It is recommended that the WIM system scales be installed approximately 80 feet from the end of the PCC slab. This will meet FHWA's recommendation and preference that the WIM system scales be installed in the PCC with 325 feet of structurally sound and smooth pavement prior to, and 75 feet of structurally sound and smooth pavement beyond the WIM scale area. However, it was noted that the sealant used for the AC/PCC transition joints at each end of the PCC slab has degraded (Appendix E.1.6 Slab Joint Detail). These joints should be repaired as soon as possible to prevent premature pavement deterioration.

3.2 OBSERVED PAVEMENT SMOOTHNESS- PASS

The AC approach and departure pavements as well as the blanket ground PCC slab appear to be quite smooth. The ride through this area is also smooth and observations of trucks approaching and passing through the proposed scale location indicated minimal suspension and body motion dynamics.

3.3 ANALYSIS OF PAVEMENT PROFILE DATA- PASS

The profile data for this site was obtained from Stantec Engineering March 14, 2005. Profiling was performed by Stantec on August 30, 2004 after slab installation and grinding. Analysis of this data indicates that the site is sufficiently smooth to provide research quality WIM data, and the construction of the slab is anticipated to retain this level of smoothness exceeding 5 years.

3.4 ROADWAY GEOMETRICS- PASS

The grade is minimal and the lane in which the sensors are to be installed is 12 feet wide. The pavement cross slope is adequate for proper roadway drainage. The adjacent (inside) lane's having an opposite cross slope poses no problem.

3.5 TRAFFIC OPERATING CHARACTERISTICS- PASS

The general traffic pattern is free flowing with good lane discipline. There are no interchanges or signals affecting traffic flow. The truck traffic is cruising through the site and staying within the lane lines.

3.6 TRUCK TRAFFIC COMPARISON BETWEEN WIM AND TEST SITE- PASS

There are no exit/entrance locations between the WIM site and the SPS-6 pavement test sections.

3.7 POTENTIAL WIM INTERFERENCE SOURCES- PASS

The nearest source of any potential interference, overhead power lines, is 800' away from the proposed WIM system location.

3.8 ACCESS TO POWER AND PHONE SERVICES- PASS

The State will run AC power to the proposed WIM controller cabinet location from an existing service point 800 feet upstream. A telephone line now exists at the controller cabinet location, but needs to be checked for suitability (or reactivation) by the State.

3.9 EQUIPMENT INSTALLATION CAPABILITY- PASS

There is an adequate location for the WIM controller cabinet at the site of the abandoned traffic data controller cabinet adjacent to the highway right-of-way fence. This location would provide over 50 feet clearance from the roadway. There is good visibility from the cabinet location of the sensors and approaching vehicles. It would be beneficial, but not critical, if the State would agree to construct a maintenance pullout to provide improved parking and more convenient access to the cabinet. There is adequate room adjacent to the cabinet location for service facilities. Roadway and overall site drainage is adequate; there is no foreseen potential for ponding or flooding at the cabinet and pullboxes, and there is adequate topography for scale pit drainage. There is the ability to provide safe clearance in the work zone from live traffic during installation of the WIM system.

3.10 POTENTIAL TRAFFIC CONTROL / WORK ZONE SAFETY ISSUES- PASS

The traffic control should go smoothly, given the good approaching sight distance, the lack of nearby intersections or interchanges, and the ability to move traffic's left wheels onto the adjacent lane's shoulder. No other work zone safety problems are foreseen at this rural site.

3.11 TRUCK CIRCUIT – PASS

The test truck round trip circuit route is a bit lengthy (18 miles – which is greater than most sites), but there are no foreseen potential restrictions and the turnaround locations are easily accessed and maneuvered. The estimated lap time is 25 minutes.

The nearest usable NB truck turnaround location is the I-57 Exit 229 to County Road18, a distance of 3.3 miles from the WIM site. The nearest usable SB turnaround location is the I-57 Exit 220 to US-45, a distance of 5.7 miles from the WIM site.

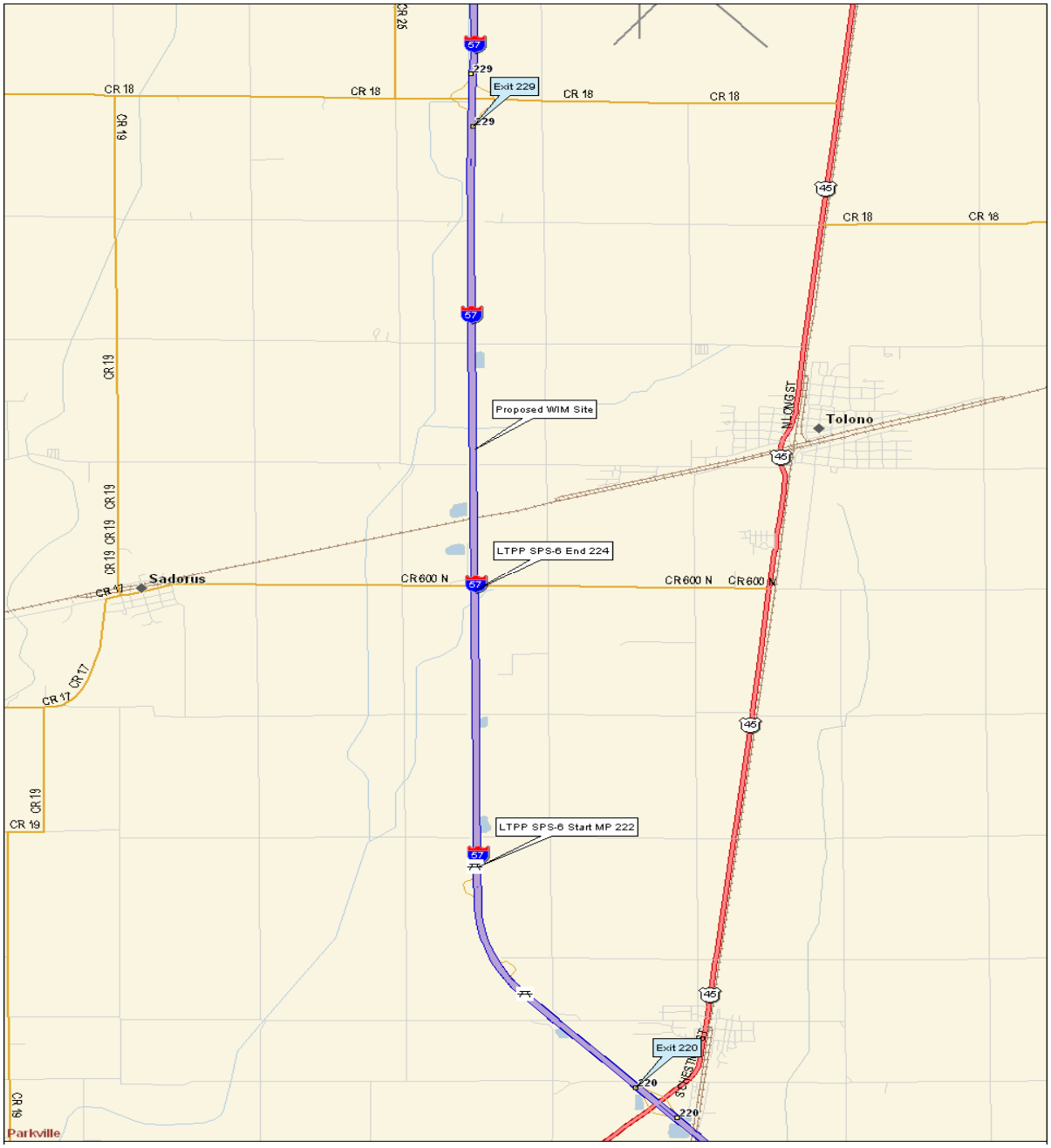

Figure 1: Truck Circuit Map

3.12 RECOMMENDATIONS ON SITE ACCEPTANCE / CORRECTIVE ACTIONS

The Bending Plate Weigh Pads should be installed halfway between 2 transverse weakened plane joints, approximately 80 feet from the end of the 500 foot PCC slab. This would put the sensors almost directly across from the existing cabinet.

It is noted that a roadway drainage pipe crosses beneath the pavement approximately 100 feet from the end of the 500 foot slab. The Bending Plate location has been selected so as to stay at least 15 feet away from this drainage exit (Appendix E.1.12 Roadway Drainage)

The AC/PCC joint, both leading and trailing the newly installed PCC slab, has deteriorated and is in need of repair. This must be addressed by the State as soon as possible so as to prevent any future roadway deterioration from occurring.

4.0 TRAFFIC DATA REVIEW

Vehicle distributions of all trucks (FHWA Class 4 and higher)
(Not Available)

Vehicle distributions for heavy trucks (FHWA Class 6 and higher)
(Not Available)

Volume of trucks comprising of 10 % or more of truck population
(Not Available)

Volume of trucks comprising 10 % or more of heavy truck population
(Not Available)

After discussions with the State and the RSC, it has been determined that current traffic data containing the above mentioned information is not available. The State does not have a continuous classification program at this location for quite some time and the RSC has verified that no meaningful class data from this site is currently available.

The Illinois Department of Transportation Web Site lists Annual Average Daily Traffic at this location to be 20,800 and the Average Daily Truck Traffic to be 5900. This information is based on portable studies that the State performs on an annual basis. Based upon observations during our site visit it should be noted that the majority of the truck traffic at this location is Class 9. We recommend using class 9 vehicles for the calibration after the installation has been completed.

5.0 PAVEMENT PROFILE EVALUATION

5.1 INTRODUCTION

This is an evaluation of the pavement profile information for Illinois LTPP SPS WIM site 170600. The profile data for this site was obtained from Stantec Engineering, and the profiles were obtained on August 30, 2004 after slab installation and grinding. Analysis of this data indicates that the site is sufficiently smooth to provide research quality Weigh in Motion (WIM) data, and the construction of the slab is anticipated to retain this level of smoothness exceeding 5 years.

5.2 ANALYSIS AND DISCUSSION

Several tests were run on the data. These included analysis to ensure that the various runs were consistent with each other and that an abnormal run was not used, that the representative data met the requirements of ASTM E1318-02, and a verification that the WIM Index software agreed with the anticipated location of the WIM installation.

The data set provided contained data for a 420m (1400 ft) section of the road. The installed WIM slab is 154m (500 ft) long, located between distance markers 200m (650 ft) and 354m (1150 ft).

5.3 RUN TO RUN CONSTANCY

Several data runs were compared visually to verify the consistency and quality of the data. In all cases, the data showed to be comparable, as indicated in the following typical figure:

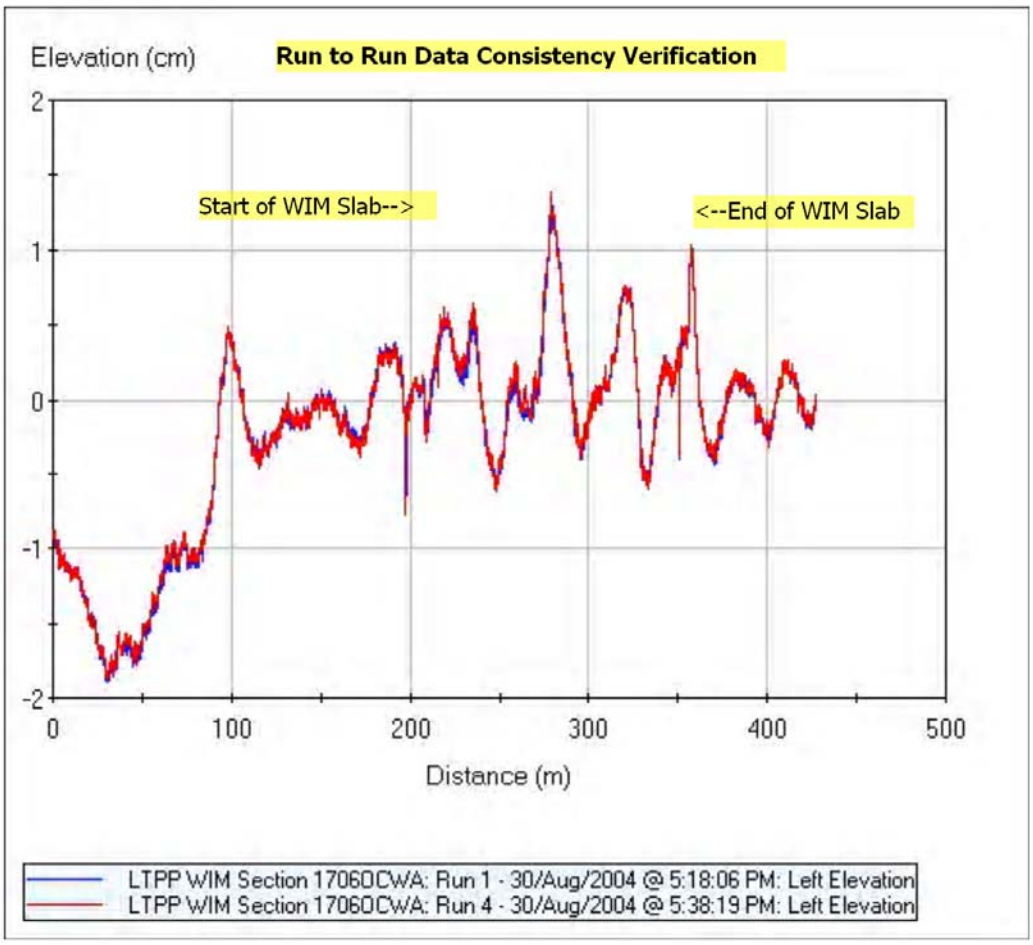

Figure 2: Run to Run Data Consistency Verification

These comparisons were run for various runs along each of the left, right and center elevations.

5.4 ROUGHNESS ANALYSIS

A roughness analysis was performed on typical data runs, using a combined dataset from a left, center and right data set. A localized roughness determination was used, based on the Texas DOT bump-finder algorithm, using parameters that are consistent with the ASTM E1318-02 specification. Specifically this specification calls for a deviation of less than 3mm (0.125 inch) over a 6m (20ft) interval. The ASTM specification calls for the use of a 6m (20ft) straight edge, and a 3mm (0.125 inch) thick disk, and this is simulated in the model by using a 6m (20ft) interval moving average, and looking for an absolute deviation of 3mm (0.125 inch). The analysis demonstrates that the deviation over the length of the slab is well within the limits.

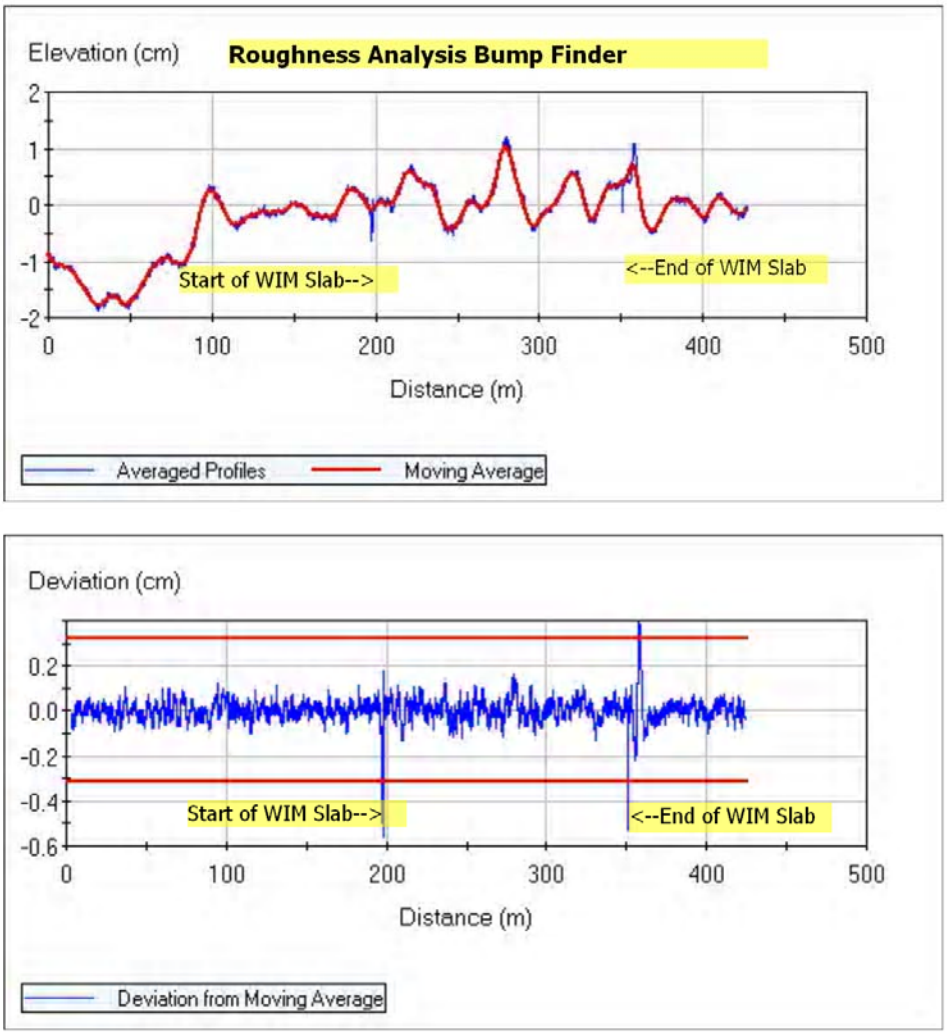

Figure 3: Roughness Analysis Bump Finder

Note that the deviations evident in the data represent the joints between the existing pavement, and the beginning and end of the WIM slab. All data along the length of the WIM slab is well within the 3mm (0.125 inch) limit.

Also note that the deviations from the limits shown in the graphic are located at the interface between the existing road pavement and the WIM slab. This level of interface roughness is normal and expected at such constructed sites.

5.5 WIM INDEX ANALYSIS

As the last and final test of the WIM slab roughness, the WIM Smoothness Index software developed by the LTPP was used to determine the level of long and short wave roughness. The analysis using this software involves firstly ensuring that the limits for long and short wavelength variations are not exceeded, and secondly optimizing the location of the WIM scales to suit the profile of the site pavement as it exists.

In all cases, the long and short wavelength roughness fell well below the maximum limits as defined in the UMTRI report.

Graphically, the following charts present the results of the analysis;

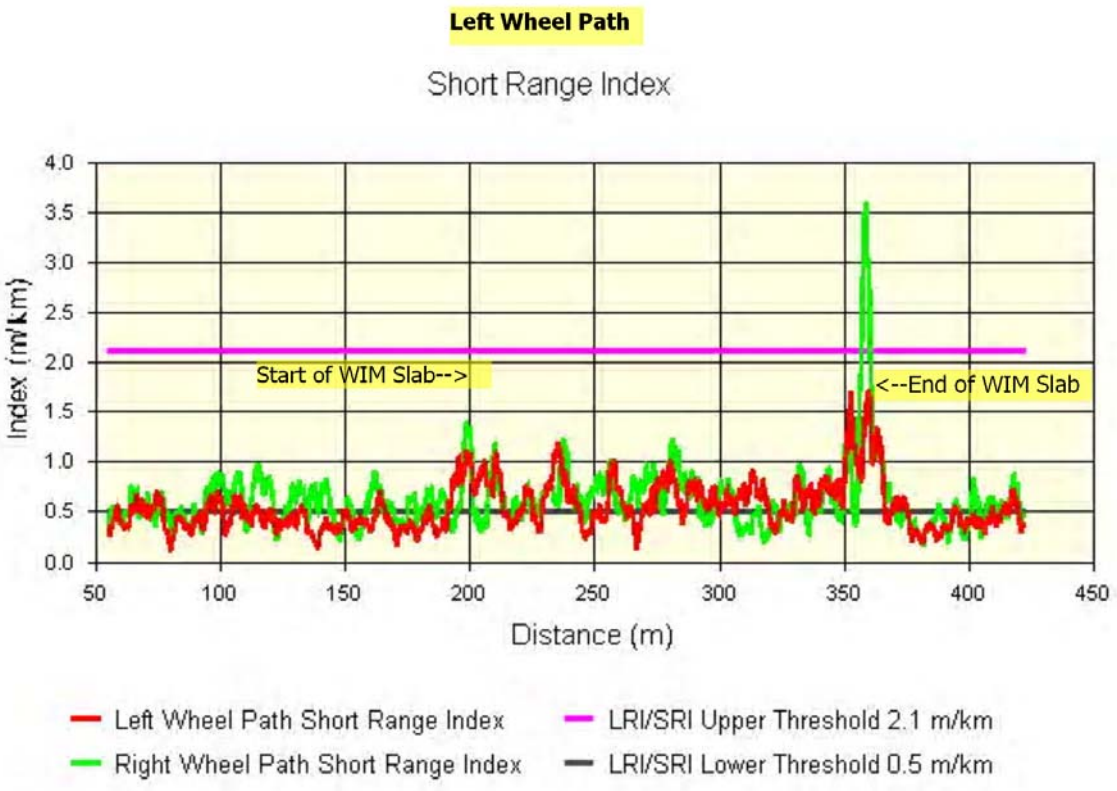

Figure 4: Left Wheel Path Short Range Index

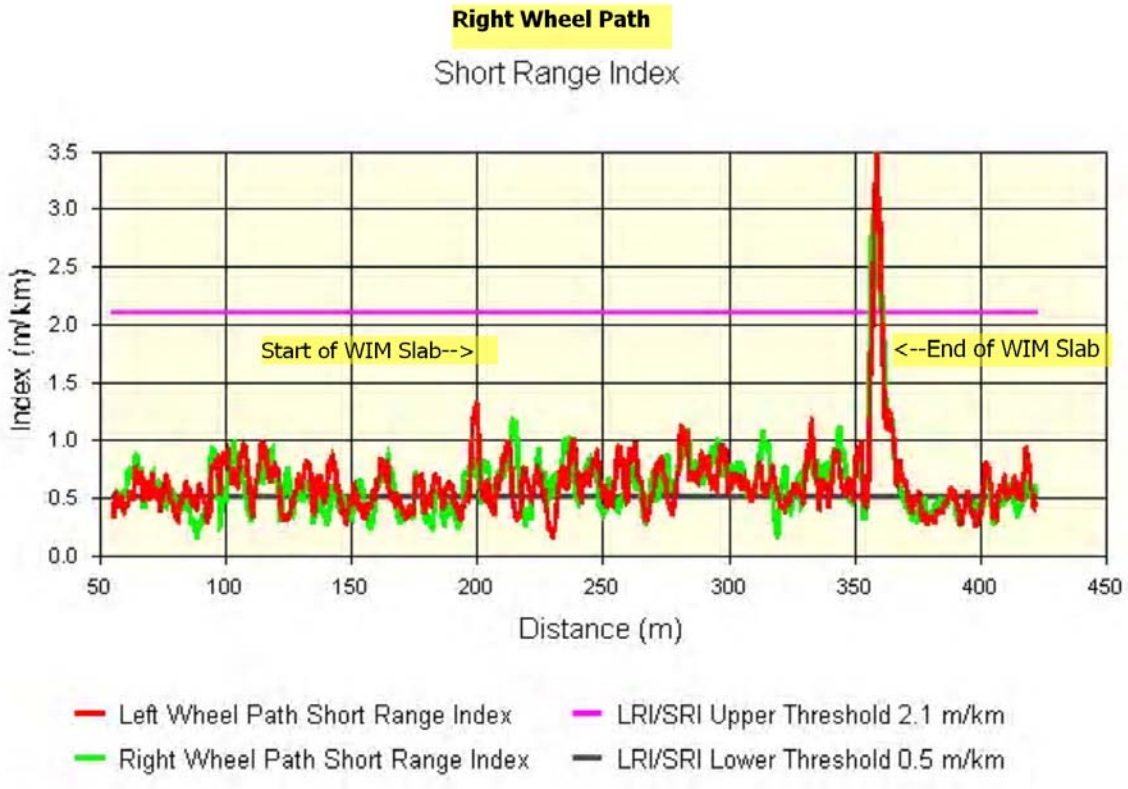

Figure 5: Right Wheel Path Short Range Index

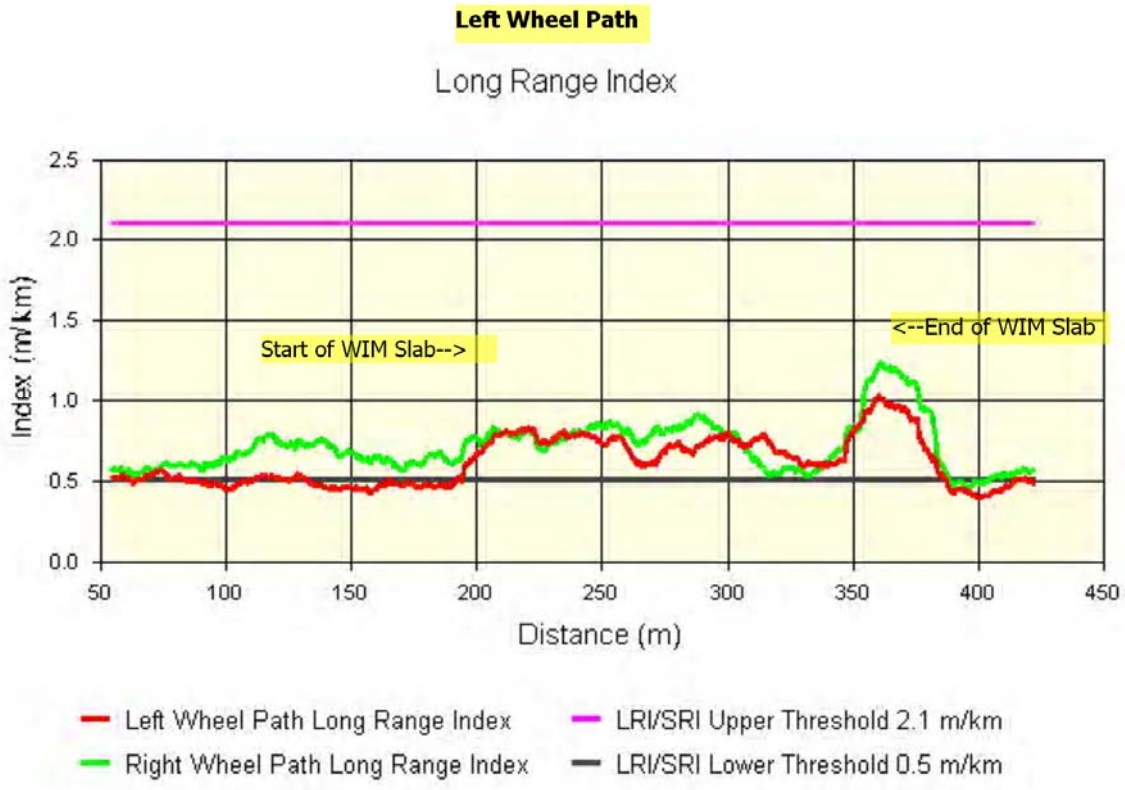

Figure 6: Left Wheel Path Long Range Index

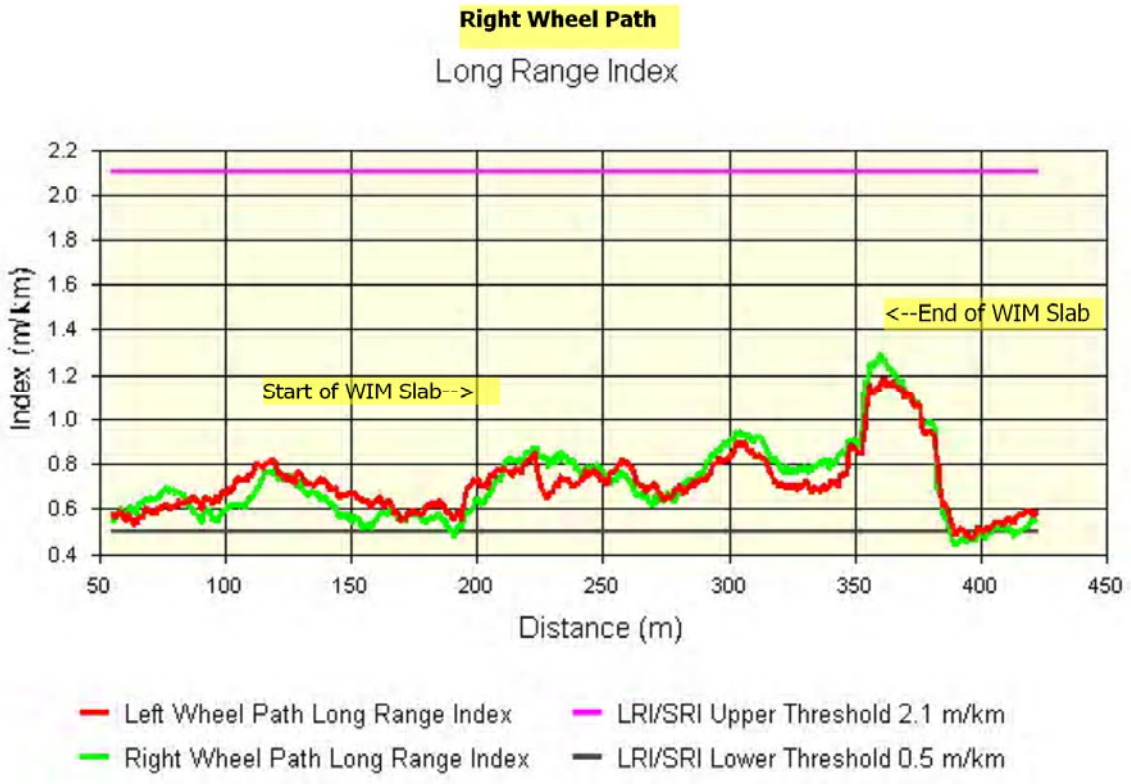

Figure 7: Right Wheel Path Long Range Index

Again, note that the deviations from the limits shown in the graphic are located at the interface between the existing road pavement, and the WIM slab. This level of interface roughness is normal and expected at such constructed sites.

In all cases for this site, the WIM Index software recommended a WIM location approximately half way along the WIM slab length 74.5m (260 ft) from the leading edge of the slab, and 79.5m (277 ft) from the trailing edge of the slab. It is recommended that the WIM system scales be installed approximately 80 feet from the end of the PCC slab. This will meet FHWA's recommendation and preference that the WIM system scales be installed in the PCC with 325 feet of structurally sound and smooth pavement prior to, and 75 feet of structurally sound and smooth pavement beyond the WIM scale area.

5.6 WIM SLAB STRUCTURAL INTERPRETATION

The drawing and construction details of the WIM slab were provided by the State of Illinois for this site. The WIM slab consists of a non-reinforced, jointed Portland Concrete Cement (PCC) pavement, with doweled and sealed joints. The slab is nominally 30 cm (12 inches) thick, with thickened ends near the interface to the Asphalt Concrete (AC) pavement, to nominally 40 cm (15 inches).

The newly constructed slab was poured on a compacted 30 cm (12 inches) thick subgrade.

5.7 SUMMARY OF RESULTS

The slab meets the requirements noted in analysis simulating the smoothness verification of the ASTM E1318-02 specification, and passes the WIM Index test algorithm. The site is acceptable for the installation of all WIM technologies. The Index algorithm verified that the anticipated WIM installation location optimizes the WIM performance.

6.0 PROPOSED WIM SITE- INFORMATION

6.1 LOCATION – I-57 MP 225.6

Figure 8: Map of I-57 WIM Site

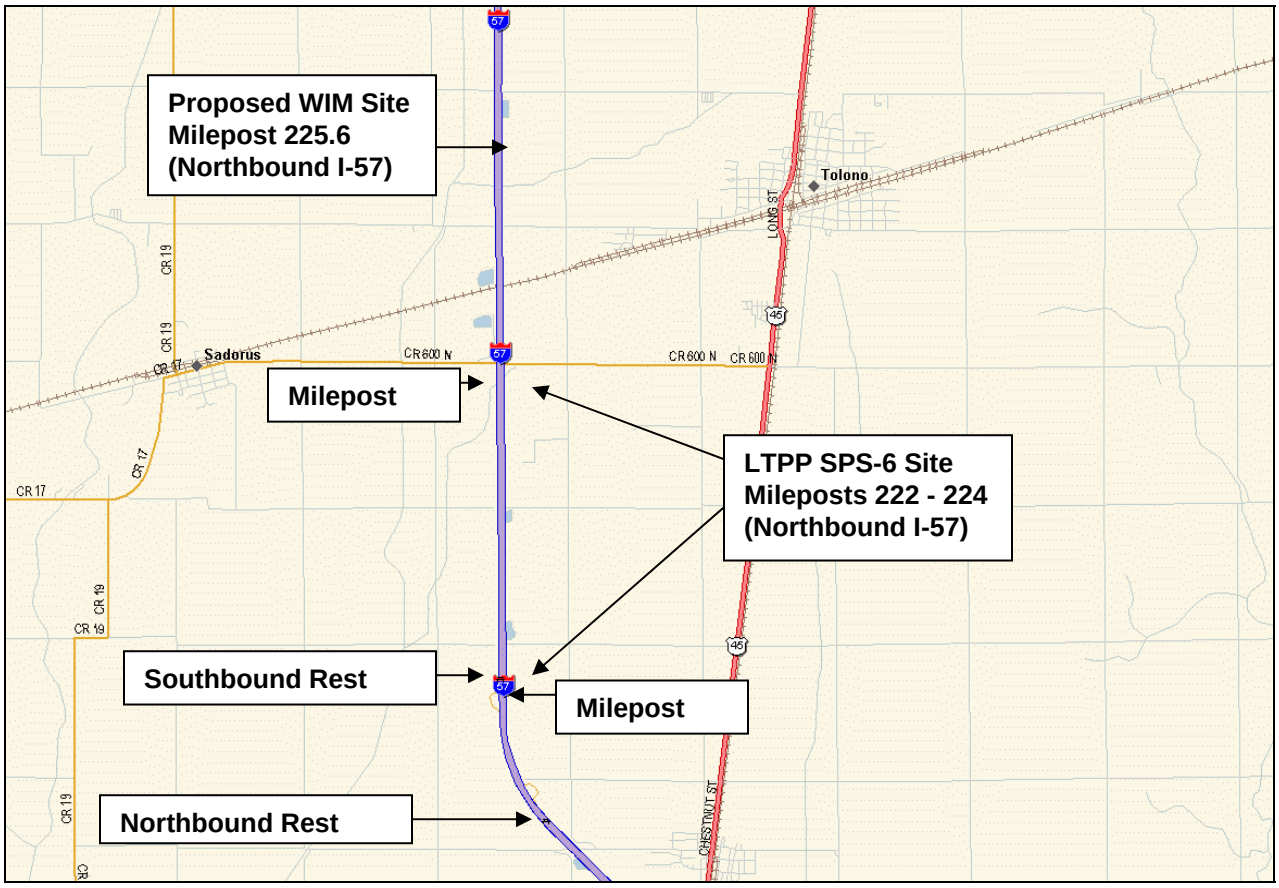

Figure 9: Map of I-57 WIM Site at Milepost 225.7

The LTPP SPS-6 test sections, approximately 175 miles from Chicago, are located in the northbound outside lane of Interstate 57 between mileposts 221.9 and 224.1, just north of the rest areas near the town of Pesotum.

The proposed site for the WIM system installation is located at milepost 225.6, 1.5 miles north of the last test section in the SPS-6 experiment, with scales to be installed in the NB outside lane. The controller cabinet and solar power panel from the abandoned traffic data collection system is still present at this location along the right-of-way fence.

7.0 RECOMMENDED WIM TECHNOLOGY

Based upon the site conditions and discussions with the State, the bending plate technology is recommended for use at this site. It will fit the performance expectations of the State and accommodate installation and future maintenance that fit into their lane closure plans.

Kistler was ruled out as a result of past experiences that the Illinois Enforcement Group had with this technology.

Single Load Cell was ruled out due to lane closure constraints within this district.

7.1 RECOMMENDED LOCATION AND LAYOUT FOR THE WIM SYSTEM

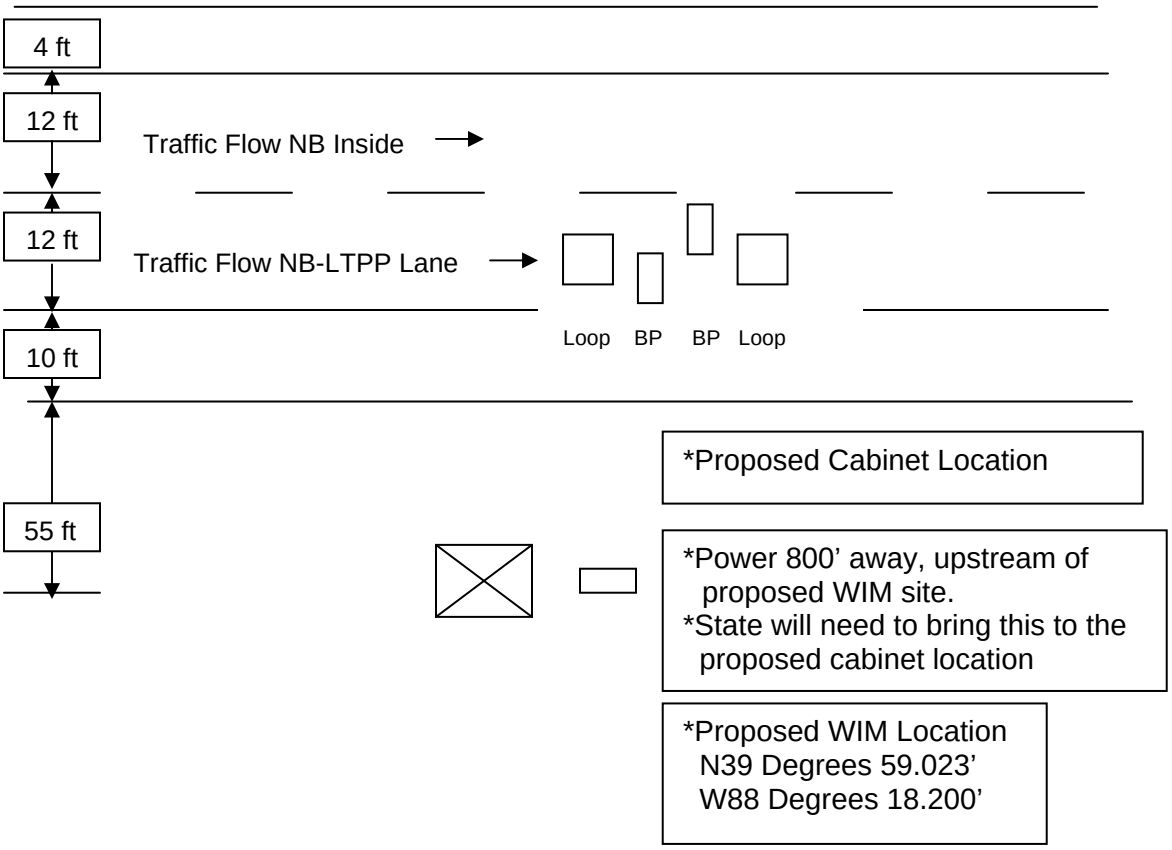

Figure 10: Proposed WIM Site Layout

A.0 COORDINATION DETAILS

Task Order #1, which authorized the CLIN 1001 "Determine Acceptability of Proposed Site" for the Illinois SPS-6 Site (LTPP ID 170600), was issued on January 3, 2005.

Contacts were made with interested parties as follows:

- Contracting Officer's Technical Representative (COTR)
  - Debbie Walker – FHWA-LTPP ph: 202-493-3068
  - Initial contact made February 9, 2005

- State Highway Agency (SHA)
  - Tom Winkelman – SHA/IDOT ph: 217-782-2940
  - Ramon Taylor – SHA/IDOT ph: 217-782-2065
  - Initial contact made February 9, 2005

- LTPP Regional Support Contractor (RSC)
  - Basel Abukhater – RSC/Stantec ph: 716-632-0804
  - Initial contact made February 9, 2005

- FHWA Division Office
  - Pal Choudry – FHWA Div Rep ph: 217-492-4637
  - Initial contact made March 1, 2005

The "Pre-Visit Handout Guide" was distributed on March 1, 2005, to the following individuals:

- Tom Winkelman
- Debbie Walker

The site was visited on March 7 and 8, 2005, by Roy Czinku (IRD). Roy Czinku, Tom Winkelman, and Ramon Taylor were all on-site March 9 to check out AC Power availability and confirm the proposed WIM location.

A briefing session was held at 10:00 AM on March 9, 2005, at the State Highway Agency's District 5 Tuscola Operations Yard, located on US-36 about one mile East of I-57.

INTERNATIONAL ROAD DYNAMICS INC.

LTPP SPS PHASE II

WEIGH-IN-MOTION SITE ACCEPTABILITY PRE-VISIT HANDOUT GUIDE

ILLINOIS SPS-6
LTPP ID 170600

Date: March 1, 2005

CONTRACT NO. DTFH61-05-D-00001

U.S. Department of Transportation
Federal Highway Administration

LONG TERM PAVEMENT PERFORMANCE

B.0 PRE-VISIT HANDOUT GUIDE

B.1 SCHEDULE

a. Briefing session
   i. Meeting is scheduled for 10:00 a.m. March 9, 2005 at the District 5 Tuscola Operations Yard. (Located on U.S. Highway 36 about one mile East of I-57)
b. Site visit
   i. March 7, 2005 thru March 8, 2005

B.2 BRIEFING SESSION FEBRUARY 23, 2005, POINTS OF CONTACT, PHONE NO.S

a. Contracting Officer's Technical Representative (COTR)
   i. Debbie Walker – FHWA-LTPP ph: 202-493-3068
b. State Highway Agency (SHA)
   i. Tom Winkelman – SHA/IDOT ph: 217-782-2940
   ii. Ramon Taylor – SHA/IDOT ph: 217-782-2065
c. LTPP Regional Support Contractor (RSC)
   i. Basel Abukhater – RSC/Stantec ph: 716-632-0804
d. FHWA Division Office
   i. Pal Choudry – FHWA Div Rep ph: 217-492-4637

B.3 INFORMATION REQUESTS

a. From COTR
   i. FHWA Division contact person
   ii. New pavement profile from RSC if recent profile data unavailable
b. From RSC
   i. SHA contact person
   ii. SPS roadway section layouts (plan view and/or stationing or mileposts)
   iii. Recent pavement profile data
c. From SHA
   i. As-built info on roadway at proposed site
      1. Pavement cross section and structural section
      2. Alignment and grade
      3. Any utilities located in WIM install work area
   ii. Location and general availability of power and phone services, service providers, service provider contacts and phone numbers (may be beneficial if power and phone utility reps be requested to participate in briefing session and/or site visit)
   iii. Will SHA agree to extend power and phone services from existing available access points to demarcation points near planned controller cabinet location?

iv. If existing roadway pavement is AC or inadequate PCC will SHA consider replacement with 400' PCC slab if recommended per site assessment?
v. What permits will be needed to install equipment and what are procedures and time frames for obtainment?
vi. Required cabinet clear zone from edge of traveled way?
vii. If no detour routing available at proposed site (or three or more adjacent lanes), will SHA permit shifting inside lane traffic partially onto inside shoulder to provide safe clearance during installation in outside lane?
viii. Historic truck traffic data?

B.4 SITE LOCATION INFORMATION

a. Proposed WIM site
   i. I-57 Mile Post 225.6 NB Outside Lane
b. Briefing session location
   i. District 5 Tuscola Operations Yard, US Highway 36 one mile east of I-57
c. Nearest major airport
   i. Chicago O'Hara International Airport

Distribution --- COTR, RSC, SHA, FHWA Division, Site Assessment Team

INTERNATIONAL ROAD DYNAMICS INC.

LTPP SPS PHASE II

WEIGH-IN-MOTION SITE ACCEPTABILITY

SITE VISIT EVALUATION FORM

ILLINOIS SPS-6
LTPP ID 170600

Date of Site Visit: March 7-8, 2005

CONTRACT NO. DTFH61-05-D-00001

U.S. Department of Transportation
Federal Highway Administration

LONG TERM Pavement PERFORMANCE

C.0 SITE EVALUATION FORM

- ☑ Site Evaluation Forms
- ☑ Graph paper and note paper
- ☐ Clipboard
- ☑ Pens & pencils
- ☐ Small stapler
- ☑ Digital camera, with PC cable
- ☑ GPS receiver
- ☑ Notebook PC
- ☑ Calculator
- ☑ Cell phone
- ☑ Site Pre-visit Handout Guide
- ☑ Metal tape measure (25 ft.)
- ☑ Measuring wheel (ft.) and/or 100 ft. rag tape
- ☐ Folding rule (6 foot)
- ☐ Hand level
- ☐ Small torpedo level
- ☑ Keel markers
- ☐ Spray can white paint
- ☑ String Line
- ☑ Line Level
- ☑ Hammer and Concrete Nails
- ☐ _____

Request furnish on-site by Highway Agency:

- ☐ Spray can white paint
- ☐ Lath, 4 ft.
- ☐ Hammer
- ☐ Misc. small tools
- ☑ Keys for known Agency service cabinets
  Note: Key for existing cabinet is a standard Type II

Proper attire for field work and expected weather:

- ☑ Durable shoes
- ☑ Cold weather layering
- ☐ Rain gear
- ☐ _____

Safety equipment per State Highway Agency requirements:

- ☑ Hard hat
- ☑ Safety vest – type Hi-Vis Safety Yellow
- ☐ Other required equipment _____

C.1 PROPOSED WIM LOCATION

Proposed WIM Site Location – 4 Lane Roadway (2 Lanes each Direction)

Route I-57 Mile Post 225.6 Direction NB Lane Outside .

Proximity to applicable SPS test section Proposed WIM Site is 1.5 miles Downstream of SPS 6 Test Section

C.1.1 EXISTING ROADWAY SURROUNDING THE PROPOSED WIM SITE

Type Pavement 10 inch PCC with a 5 inch Asphalt Overlay

Lane Width 12 feet Thickness 15 inches

Observed Structural Soundness Very Good

Observed Smoothness Very Good

Outside NB Shoulder Type Asphalt Width 10 feet

Outside NB Shoulder Condition Very Good

Inside NB Shoulder Type Asphalt Width 4 feet

Inside NB Shoulder Condition Very Good

C.1.2 PAVEMENT 425' PRIOR AND 75' FOLLOWING WIM SCALE LOCATION

Type PCC Structural Soundness Very Good Smoothness Very Good

Thickness 12 inches Jointed or Continuous Jointed Concrete (15 ft joints)

Notes/Comments on Pavement

The State has installed a 500 foot Portland Concrete Cement Slab to accommodate the WIM System. Grinding has been performed on the slab using a 48 inch wide blanket grinder with maximum 2 inch overlap between passes. The existing roadway and slab both are in very good condition. The sealant has degraded at the point where the slab meets the asphalt (both front & back of slab). This needs to be addressed as soon as possible so as to prevent premature roadway deterioration. Road profile data will need to be reviewed to confirm and validate site investigation findings.

C.1.3 ROADWAY GEOMETRICS

Horizontal Alignment Straightaway Grade Minimal (Less than 1%)

Cross-slope 1.5% Lane width 12 feet

C.1.4 OBSERVED TRAFFIC OPERATING CHARACTERISTICS

Passing, merging, not following lane lines? Good Lane Discipline

Stop and go traffic, congestion periods? Free Flowing at all Times

Traffic signals or interchanges affecting traffic flow? No Signals or Merging

Other adverse traffic flow conditions? Traffic Flow is Medium/Heavy, Extreme Cross Winds were prevalent while performing site evaluation

Truck traffic at "cruising" speed and no lugging? No Lugging, Smooth Flow

Truck traffic staying within lane lines? Yes, Good Lane Discipline

Observed truck suspension or body motion dynamics? Minimal/None

Truck traffic composition same at WIM site and SPS site? Yes

Truck traffic on/off locations between WIM site and SPS site? None

Notes/Comments on Geometrics and/or Traffic Operating Characteristics

The site is located on a straightaway with no curves immediately before or after the WIM location. The grade is relatively flat throughout the area 1000 feet upstream and 1000 feet downstream of the site. There is a 500 foot stretch of 2% downgrade that spans from 1500 feet to 1000 feet in advance of the WIM location. This is to accommodate railway tracks that run under the Interstate at this point. Vehicles track smoothly through this area at speeds between 55 and 75 MPH (posted speed is 55 MPH for Truck Traffic and 65 MPH for all other Traffic). There is very good lane discipline at this site. Traffic flows medium to heavy on this four lane, two direction Interstate. Please note, tailgating of vehicles can occur at times on this roadway. Please note this site can be prone to heavy cross winds.

C.1.5 ACCESS TO UTILITY SERVICES

Potential source(s) for power An Existing Lighted Sign Structure is located 800 feet away from proposed WIM location. This would be the easiest spot to obtain AC Power from.

Potential source(s) for telephone Existing WIM Cabinet c/w Telco is available at the proposed WIM location. We can easily tap into this and run to a new location or reuse the existing State cabinet. The State will need to confirm that this service is live and available for this project.

C.1.6 EQUIPMENT INSTALLATION CAPABILITY

Adequate location for controller cabinet? Yes, Large area off Right of Way

Distance from edge of traveled way to cabinet 55 feet Off Roadway

Visibility from cabinet of sensors and approaching vehicles? Very Good

Adequate location for service facilities? Yes, Large area off Right of Way

Adequate drainage for scale pits? Yes, Excellent Drainage

Adequate roadway and overall site drainage? Yes

Potential for ponding or flooding at cabinet or pullboxes? No

Potential for traffic control problems during installation? No

Ability to provide safe clearance in work zone from live traffic via:

- ☑ OK from State Agency to use opposite shoulder for traffic shift
- ☑ Multiple Adjacent Lanes

Notes/Comments on Equipment Installation Capability

The State will need to bring AC to the proposed WIM location. The Roadway is very busy. We will have to work closely with the State to coordinate closures (There is 16 feet available on inside lane to accommodate a traffic shift).

C.1.7 POTENTIAL WIM SENSOR/EQUIPMENT INTERFERENCE SOURCES

Overhead power lines? 800 ft upstream of WIM Adjacent railroad? None

C.1.8 CONDITIONS FOR USE OF TEST TRUCKS FOR CALIBRATION AND EVALUATIONS

Direction NB - Nearest usable truck turnaround location:

I-57 Exit 229 / CR18 Monticello Savoy Distance from WIM 3.3 Miles

Direction SB - Nearest usable truck turnaround location:

I-57 Exit 220 / US45 Pesotum Distance from WIM 5.7 Miles

Circuit travel distance 18 Miles Estimated lap time 25 Minutes

Potential circuit route restrictions? None

Identification and location of trucking firm and certified static scales:

Name Beebe Trucking Contact Jene Beebe

Address 306 Tiffany Court, Champaign, Illinois 61821

Phone 217-398-1903 Hours 7:30 am – 5:00 pm

Notes/Comments on Test Truck Circuit and Static Weighing Facility

Beebe Trucking is located approximately 20 miles from the Proposed WIM Site. They are a sand and gravel hauling companies that have 3S2 Tractor Trailer Air Ride vehicles and drivers available given 2-3 weeks notice. They have access to a certified scale weighing facility located within the city.

D.0 SHEET 17

Sheet 17	*STATE_CODE	LTPP
LTPP Traffic Data	*SPS PROJECT ID	170600
WIM SITE INVENTORY	*SPS WIM ID	SPS-6

1.* ROUTE I-57 MILEPOST 225.7 LTPP DIRECTION - N S E W

2.* WIM SITE DESCRIPTION - Grade < 1% % Sag vertical Y / N
Nearest SPS section upstream of the site 170664
Distance from sensor to nearest upstream SPS Section 8020 ft

3.* LANE CONFIGURATION
Lanes in LTPP direction 2 Lanes NB Lane width 12 ft

Median -
1 – painted
2 – physical barrier
→ 3 – grass
4 – none

Shoulder -
1 – curb and gutter
2 – paved AC
→ 3 – paved PCC
4 – unpaved
5 – none

Shoulder width 10 ft

4.* PAVEMENT TYPE 12 inch jointed PCC

8. RAMPS OR INTERSECTIONS
Intersection/driveway within 300 m upstream of sensor location Y / N - distance No
Intersection/driveway within 300 m downstream of sensor location Y / N- distance No
Is shoulder routinely used for turns or passing? Y / N No

Form completed by Roy Czinku - IRD Date Mar 8, 2005

E.0 PHOTOGRAPHS

E.1.1 SPS TEST SECTION MARKER

E.1.2 GENERAL SITE VIEW OF THE CONCRETE SLAB

E.1.3 GENERAL SITE VIEW OF THE CONCRETE SLAB FROM SHOULDER

E.1.4 DOWNSTREAM VIEW OF ROADWAY AND TRAILING EDGE OF SLAB

E.1.5 UPSTREAM VIEW OF ROADWAY AND LEADING EDGE OF SLAB

E.1.6 SLAB JOINT DETAIL

E.1.7 RECOMMENDED SCALE LOCATION

E.1.8 RECOMMENDED CABINET LOCATION

E.1.9 POTENTIAL POWER SERVICE

E.1.10 EXISTING TELEPHONE SERVICE

E.1.11 EXISTING WIM CABINET

E.1.12 ROADWAY DRAINAGE