INTERNATIONAL ROAD DYNAMICS INC.

# LTPP SPS PHASE II

# WEIGH-IN-MOTION SITE ACCEPTABILITY ASSESSMENT REPORT

## KANSAS SPS-2
## LTPP ID 200200
## JUNE 6, 2005
## CLIN 1001 TASK ORDER 3

**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 Kansas SPS-2 site was visited on May 31st and June 1st, 2005, by the CLIN 1 team and a Weigh-in-Motion (WIM) site acceptability assessment was performed. This site is located on I-70 near the town of Junction City in Dickinson County. This assessment resulted in the selection and evaluation of a WIM site for the WB outside lane at Mile Post 287.5 approximately 1500 feet downstream of the SPS-2 pavement test section 200212. Based upon our site evaluation and discussions with the State, it is recommended that a new WIM system utilizing Bending Plate technology be installed after corrective action has been taken to address pavement smoothness issues.

The selected WIM site is located immediately following a large radius curve and the grade is relatively flat. Vehicles track smoothly through this area at speeds between 65 and 75 MPH. Traffic flow is light to medium on this four lane Interstate.

The existing roadway pavement at this location consists of structurally sound 12 inch thick Portland Cement Concrete (PCC). As such, it not necessary that the State replace the existing pavement with a 400 foot PCC slab to accommodate the WIM system's in-pavement sensors.

There are power and telephone services available at the existing WIM cabinet. The State will need to extend these services approximately 400 feet from this existing cabinet to within 25 feet of the proposed new WIM cabinet location.

Based upon the CLIN 1 team's on-site observations and review of the Phase I contractor's analyses of profiler data, the adequacy of the pavement smoothness from 325 feet upstream to 75 feet downstream of the proposed WIM scale location ("WIM Pavement") is currently questionable and, as a result, WIM accuracy may or may not be met. As such, it is recommended that blanket grinding of the existing pavement's surface be performed prior to the installation of the new WIM system. Upon completion of this corrective action, a follow-up evaluation of the pavement smoothness should be made. Such evaluation should include visual observation of trucks passing through the site as well as an analysis of new pavement profile data by our team. Upon confirmation that the pavement smoothness is adequate for the WIM system to meet accuracy requirements, this site can be instrumented with WIM.

# 2.0 EXISTING ROADWAY

## 2.1 PAVEMENT AND GEOMETRICS

The SPS-2 is a rigid pavement study. The existing roadway pavement as well as the outside and inside (median) shoulders approaching, through, and departing the proposed WIM site are PCC. The two westbound lanes are each 12 feet wide with a 10 foot wide outside shoulder and a 5 foot wide inside (median) shoulder. The grade is relatively flat. A Mettler-Toledo load cell WIM system is currently situated in the PCCP roadway between the 200212 and 200211 SPS test sections. These existing scales are located in a tangent section of roadway. However, the recommended location for the new scales (395 feet upstream of the existing scales) is immediately preceded by a large radius (11,460 ft. as per the State) horizontal curvature. In observing traffic movement through the site, this curvature has no apparent detrimental effect on the trucks or other vehicles passing through the proposed scale location. Additionally, this curvature is greater than the 5700 ft. minimum specification set forth under ASTM E 1318-02 (6.1.1, Horizontal Alignment). In regard to cross slope, the two adjacent lanes slope 1.5% toward the outside shoulder.

## 2.2 OBSERVED TRAFFIC OPERATING CHARACTERISTICS

The light to medium 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 65 and 75 MPH (posted speed limits are a maximum 70 MPH and a minimum 40 MPH for all traffic). There are no signals or merging in the WIM site vicinity. Trucks are “cruising” through the site at constant speeds. In that there are no on/off locations between the 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 PCC approach, WIM, and departure pavements are in very good condition (Refer Sections 5.1 and 5.2).

## 3.2 OBSERVED PAVEMENT SMOOTHNESS- REQUIRES ATTENTION

Although the PCC approach, WIM, and departure pavements are in very good condition and would visually appear to be smooth, the smoothness of the 400 foot WIM pavement needs to be improved to facilitate the new WIM system's meeting accuracy requirements (Refer Section 5.3). The existing pavement, 325 feet in advance of and 75 feet following the proposed WIM scale location should be blanket ground. Following pavement grinding, a reassessment of the pavement should be made.

## 3.3 ANALYSIS OF PAVEMENT PROFILE DATA- REQUIRES ATTENTION

Profile data was collected by the NRSC on March 12, 2004 with the LTPP Profiler and a profile data analysis was performed by the Phase I contractor (Phase 1 Contractor Assessment Report 4/13/2004). The results of this analysis indicate that this pavement does not meet the smoothness requirements for an SPS WIM site. Corrective action will be required to smooth out the existing pavement. It is recommended that the 400 foot WIM pavement be ground with a blanket grinder prior to installation of the scales. This will meet FHWA's recommendation and preference that the WIM system scales be installed in PCC pavement with such pavement being structurally sound and smooth 325 feet prior to and 75 feet following the WIM scales.

## 3.4 ROADWAY GEOMETRICS- PASS

The grade is minimal and the lane in which the sensors are to be installed is 12 feet wide. Although there is a horizontal curvature immediately in advance of the proposed WIM scale location, such curvature in the roadway alignment should have no noticeable detrimental effect on the accuracy of the WIM system. The pavement cross slope is adequate for proper roadway drainage.

## 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-2 pavement test sections.

## 3.7 POTENTIAL WIM INTERFERENCE SOURCES- PASS

The nearest source of any potential interference, overhead power lines, is 450 feet away from the proposed WIM system location. This will not interfere with system performance.

## 3.8 ACCESS TO POWER AND PHONE SERVICES- PASS

The State will need to extend existing power and phone services to service points within 25 feet of the proposed WIM cabinet location.

## 3.9 EQUIPMENT INSTALLATION CAPABILITY- PASS

There is an adequate location for the WIM controller cabinet at the site 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. There is adequate room adjacent to the cabinet location for service facilities. Roadway and overall site drainage is very good. There is no foreseen potential for ponding or flooding at the cabinet or pullbox locations. There is adequate topography for scale pit drainage. The width and structural stability of the adjacent lane and median shoulder allow a lane closure and traffic shift which will 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 approach sight distance, the lack of nearby intersections or interchanges, and the ability to move traffic's left wheels onto the adjacent lane's median shoulder. No other work zone safety issues are foreseen at this rural site.

## 3.11 TRUCK CIRCUIT- PASS

The nearest usable EB truck turnaround is I-70 Exit 290 (Milford Lake Road), which is located 3.0 miles upstream of the WIM site.

The nearest useable WB truck turnaround is I-70 Exit 286 (Chapman), which is located 1.3 miles downstream of the WIM site.

The test truck round trip circuit route is 8.6 miles. There are no foreseen potential restrictions and the turnaround locations are easily accessed and maneuvered. The estimated lap time is 10 minutes.


**Figure 1: Truck Circuit Map**

## 3.12 RECOMMENDATIONS ON SITE ACCEPTANCE / CORRECTIVE ACTIONS

The State will need to extend existing power and phone services to service points within 25 feet of the proposed WIM cabinet location.

In addition, based upon both on-site visual observations and an analysis of the pavement profiling data, there is indication that the lack of adequate pavement smoothness may cause suspension dynamics in the trucks traversing the site sufficiently large enough to cause inaccurate WIM weight estimate measurements. Due to this, corrective action is necessary to the pavement smoothness prior to the installation of the WIM system to ensure that the system will meet the specified accuracy requirements. Such corrective action should be a blanket grinding of the existing PCC pavement from 325 feet upstream to 75 feet downstream of the proposed WIM scale location.

This recommended pavement smoothness corrective action, properly carried out, will satisfy FHWA's recommendation and preference that the WIM system's scales be installed in PCC pavement with such pavement being structurally sound and smooth 325 ft. prior to and 75 ft. following the scales.

## 4.0 TRAFFIC DATA REVIEW

**Vehicle distributions of all trucks (FHWA Class 4 and higher) – 25.3%**

**Vehicle distributions for heavy trucks (FHWA Class 6 and higher) – 24.6%**

**Volume of trucks comprising of 10 % or more of truck population**

**Class 9 vehicles – 69.0%**

**Volume of heavy trucks comprising 10 % or more of heavy truck population**

**Class 9 vehicles – 78.1%**

**The 2004 Traffic Volumes provided indicate the ADT to be 16,000**

The data as noted has been collected by Kansas Department of Transportation as supplied from existing 2001 though 2003 traffic studies.

# 5.0 PAVEMENT EVALUATION

In determining WIM site acceptability, visual on-site observation of the existing PCC pavement was made by the CLIN 1 Team. Additionally, the analysis of the then current profile data performed by the Phase I contractor (Phase 1 Contractor Assessment Report 4/13/2004) was reviewed.

## 5.1 SURFACE CONDITION

The site evaluation concentrated efforts on the range of pavement from 900 feet prior to and 100 feet following the proposed WIM scale location. Pictures were taken to document the surface condition, several of which are presented in Appendix E.

### 5.1.1 PCC PAVEMENT 325 FEET IN ADVANCE OF AND 75 FEET FOLLOWING PROPOSED WIM SCALE LOCATION ("WIM PAVEMENT")

The PCC pavement was constructed in 1991 (according to the State). The structural condition of the PCC pavement and shoulder throughout the 400 foot section appear to be very good. Only minimal transverse and longitudinal joint spalling was noted. Only minimal minor hairline surface cracking was observed. This existing pavement has perpendicular transverse weakened plane joints with spacings of 15 - 16 feet. The joints have foam-like material inserts and are sealed. The State advises that the pavement is 12 inch thick and that the joints are dowelled.

### 5.1.2 PCC PAVEMENT UPSTREAM AND DOWNSTREAM OF WIM PAVEMENT

There are no discernable differences between the 400 foot "WIM Pavement" section and the "WIM Pavement" approach and departure pavements included in the 1000 foot evaluation section. The entire 1000 foot section was constructed in 1991. There are minor or no distress conditions. These pavements are in very good condition and the joints are well maintained.

Some potential long wavelength profile problems were observed at approximately 220 feet and 305 feet downstream of the proposed WIM system (85 feet and 175 feet upstream of the existing WIM system). These potential profile problem areas are well beyond the 325 ft plus 75 ft WIM Pavement section for which FHWA recommends and prefers that the pavement be sound and smooth. It was also noted that as large trucks crossed the existing load cell plates in both westbound lanes a "banging" could be heard even at several hundred feet upstream and downstream from the scales. This would indicate that the plates are loose in their frames, although movement could not be verified by visual observation.

### 5.1.3 SHOULDER CONDITION

The roadway shoulders are PCC throughout the study area and were constructed in 1991 in conjunction with the traveled way pavement. Little or no distress was observed in the shoulder pavement. This pavement is in very good condition and the joints are well maintained.

## 5.2 SURFACE PROFILE

Although the pavement surface appears to be quite smooth, experience indicates that it must be blanket ground to ensure that the system can be properly calibrated and that accurate WIM estimates of static loads can be made. This is supported by the findings of the Phase I contractor based upon analysis of the profile data.

Observations of trucks and other vehicle types approaching and passing through the selected scale location area indicated only minimal body motion, indicating that there are no existing “long wavelength” profile problems which might be difficult to correct with blanket grinding of the pavement. Only minimal suspension motion could be noted on these vehicles. Proper blanket grinding should eliminate any existing “short wavelength” profile problems.

Several automobile “drive throughs” by the CLIN 1 team members appeared to confirm the above noted observations. Only minimal vehicle body motion could be felt, but there was some minor suspension “chatter”.

The most recent Profile data was collected by the NRSC on March 12, 2004 with the LTPP Profiler. Based on the profile evaluation performed by the Phase I contractor, (Assessment Report 4/13/2004), the Kansas SPS-2 WIM site pavement smoothness does not meet the requirements for SPS WIM site locations. More current profile data or evaluation is not required until such time that corrective action is taken to smooth out the existing pavement. This should be performed by means of blanket grinding.

## 5.3 SUMMARY OF RESULTS

Based upon our on-site observations and the Phase 1 evaluation of the pavement profile data, it is recommended that corrective action to the smoothness of the pavement surface be performed prior to the installation of the WIM system.

Upon completion of this corrective action, new profiling data will need to be collected. At this time the site will need to be re-evaluated and the new profiling data be provided to our team to confirm the pavement smoothness has been remedied and is now adequate for the installation of the WIM system. Once this is performed and deemed acceptable, this site can be instrumented WIM.

# 6.0 PROPOSED WIM SITE- INFORMATION

## 6.1 LOCATION – I-70 MP 287.5

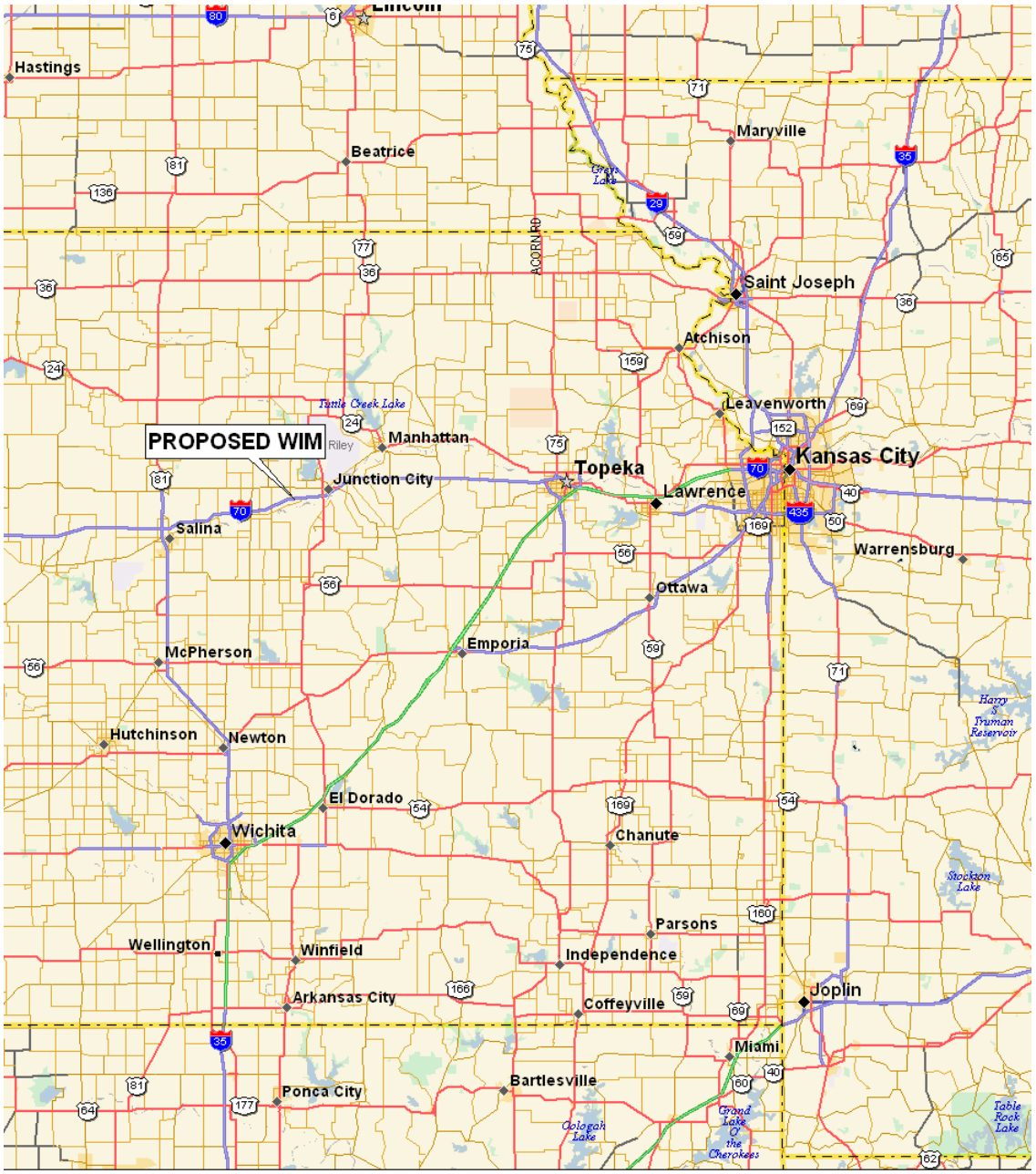



**Figure 2: Map of the I-70 WIM Site**


**Figure 3: Map of the I-70 WIM Site at Milepost 287.5**

The LTPP SPS-2 test sections, approximately 140 miles west of Kansas City, are located in the westbound outside lane of Interstate 70 between exits 286 and 290 just west of Junction City.

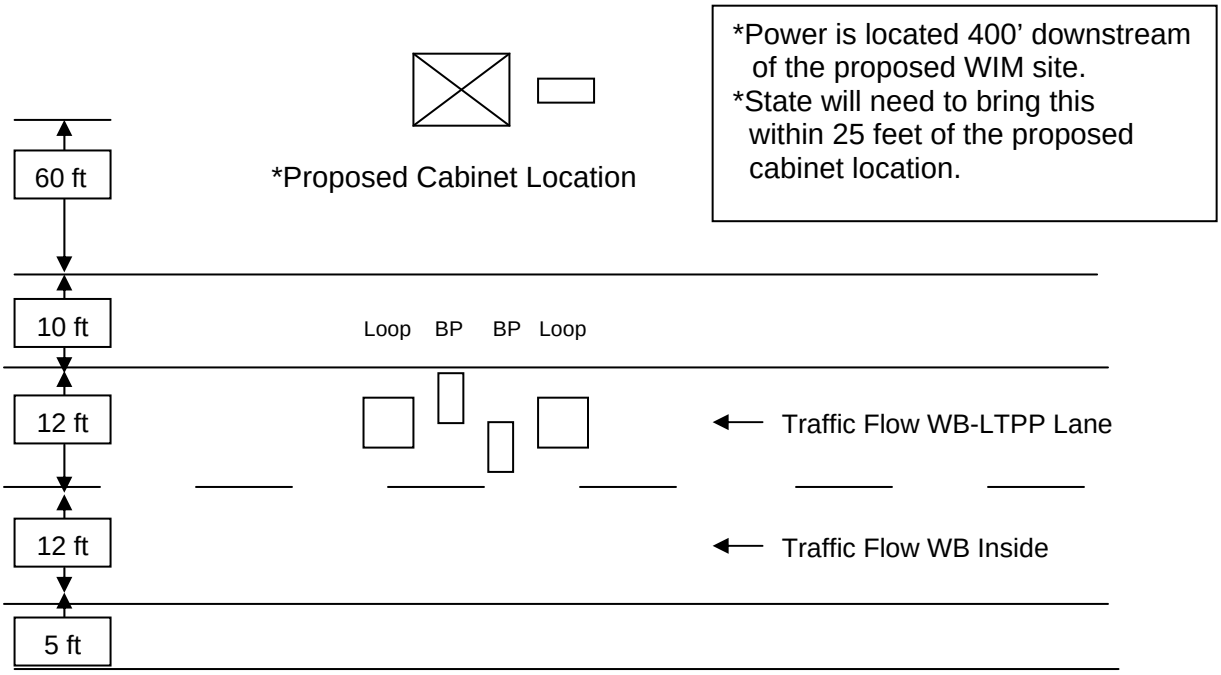
The location for the proposed WIM site is the westbound outside lane at milepost 287.5 which is 395 feet east of the existing WIM scales. The proposed WIM controller cabinet will be located approximately 50 feet west of an existing Weather Station at approximately 60 feet off the edge of traveled way.

## 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 meet the accuracy expectations of the State and provide the best value in terms of performance with minimal down time.

The centerline of the Bending Plate weigh pads should be installed approximately 395 feet in advance of the existing in-road WIM scales. This would put the sensors approximately 50 feet downstream of the existing weather station. During the CLIN 2 design stage, the layout of the existing transverse weakened plane joints will be analyzed to best fit the in-road sensors among the joints to optimize constructability and structural stability.

### 7.1 RECOMMENDED LOCATION AND LAYOUT FOR THE WIM SYSTEM




*Proposed WIM In-Road Location
N38 Degrees 59.4004'
W96 Degrees 59.9356'

**Figure 4: Proposed WIM Site Layout**

## A.0 COORDINATION DETAILS

Task Order #3, which authorized the CLIN 1001 "Determine Acceptability of Proposed Site" for the Kansas SPS-2 Site (LTPP ID 200200), was issued on May 27, 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 May 27, 2005

- State Highway Agency (SHA)
  - Bill Hughes – SHA/KSDOT ph: 785-296-6863
  - Initial contact made May 27, 2005

- LTPP Regional Support Contractor (RSC)
  - Basel Abukhater – RSC/Stantec ph: 716-632-0804
  - Initial contact made May 27, 2005

- FHWA Division Office
  - Kirk Fredrichs – FHWA Div Rep ph: 785-267-7299 x326
  - Initial contact made May 27, 2005

The "Pre-Visit Handout Guide" was distributed on May 27, 2005, to the following individuals:

- Bill Hughes
- Debbie Walker

The site was visited on June 1, 2005, by Roy Czinku (IRD) and Rich Quinley (WIMTECH). Roy Czinku and Bill Hughes met on-site May 31, 2005 to confirm power and telephone availability at the proposed WIM location.

A briefing session was held at 10:00 AM on May 31, 2005, on-site at Kansas 200200 SPS 2 (Located on I-70 Mile Post 287.5).

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INTERNATIONAL ROAD DYNAMICS INC.

# LTPP SPS PHASE II

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

## KANSAS SPS-2
## LTPP ID 200200

**Date: May 27, 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. May 31, 2005 at the Kansas 200200 SPS 2 site (Located on I-70 Mile Post 287.5)
b. Site visit
   i. May 31, 2005 thru June 1, 2005

## B.2 BRIEFING SESSION MAY 31, 2005, POINTS OF CONTACT, PHONE NO

a. Contracting Officer's Technical Representative (COTR)
   i. Debbie Walker – FHWA-LTPP ph: 202-493-3068
b. State Highway Agency (SHA)
   i. Bill Hughes – SHA/KSDOT ph: 785-296-6863
c. LTPP Regional Support Contractor (RSC)
   i. Basel Abukhater – RSC/Stantec ph: 716-632-0804
d. FHWA Division Office
   i. Kirk Fredrichs – FHWA Div Rep ph: 785-267-7299 x326

## 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 (within the past year)
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-70 Mile Post 287.5 WB Outside Lane
b. Briefing session location
   i. On-Site at Kansas 200200 SPS 2 (Located on I-70 Mile Post 287.5)
c. Nearest major airport
   i. Kansas City 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

## KANSAS SPS-2
## LTPP ID 200200

**Date of Site Visit: May 31 – June 1, 2005**

**CONTRACT NO. DTFH61-05-D-00001**

U.S. Department of Transportation
Federal Highway Administration

LONG TERM Pavement PERFORMANCE

# C.0 SITE EVALUATION FORM

## C.1 PROPOSED WIM LOCATION

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

Route: I-70 Mile Post: 287.5 Direction: WB Lane: Outside

Proposed WIM Site is 1500 feet downstream of SPS Test Section 200212 and 700 feet upstream of SPS Test Section 200211

### C.1.1 EXISTING ROADWAY SURROUNDING THE PROPOSED WIM SITE

Type Pavement: PCC

Pavement Age: 14 years old

Lane Width: 12 feet

Thickness: 12 inches

Observed Structural Soundness: Very Good

Observed Smoothness: Good

Outside WB Shoulder Type: PCC

Width: 10 feet

Outside WB Shoulder Condition: Very Good

Inside WB Shoulder Type: PCC

Width: 5 feet

Inside WB Shoulder Condition: Very Good

### C.1.2 PAVEMENT 325' PRIOR AND 75' FOLLOWING WIM SCALE LOCATION

Type: PCC Structural Soundness: Very Good Smoothness: Good

Thickness: 14 inches Jointed or Continuous: Jointed (15 - 16 ft joints) – dowelled

Notes/Comments on Pavement:
The existing roadway pavement is PCC and is in very good condition. Based upon our observations and the Phase 1 evaluation of the pavement profile data (Assessment Report 4/13/2004), blanket pavement grinding will need to be performed prior to installation of the proposed WIM system. Upon completion of the grinding, the site will need to be re-evaluated, new profile data will need to be collected, and this profile data analyzed to confirm that the pavement meets the smoothness specifications.

### C.1.3 ROADWAY GEOMETRICS

Horizontal Alignment: Follows Large Radius Curve Grade: Minimal (Less than 0.5 %)

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/interchanges affecting traffic? No Signals or Merging

Other adverse traffic flow conditions? Traffic Flow is Light/Medium

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

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

Observed truck suspension or body motion dynamics? Minimal/Some

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 proposed WIM site is located immediately downstream of a large radius curve. The grade is less than 0.5% throughout the area 900 feet upstream and 100 feet downstream of the site. Vehicles track smoothly through this area at speeds between 65 and 75 MPH (posted speed is 70 MPH for all traffic, minimum speed 40MPH). There is very good lane discipline at this site. Traffic flows light to medium on this four lane, two direction Interstate.

### C.1.5 ACCESS TO UTILITY SERVICES

Potential source(s) for power: An existing Weather Station is located 50 feet upstream of the proposed WIM location. This would be the easiest spot to obtain power from. Alternately, there is a power available 400 feet downstream of the proposed WIM site if the Weather Station cannot be utilized.

Potential source(s) for telephone: Phone service should also be accessible at the existing Weather Station, located 50 feet upstream of the proposed WIM location. Alternately, there is a phone service available 400 feet downstream of the proposed WIM site, if the Weather Station cannot be utilized.

### C.1.6 EQUIPMENT INSTALLATION CAPABILITY

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

Distance from edge of traveled way to cabinet? 60 feet from edge of traveled way

Visibility from cabinet of sensors and approaching vehicles? Very Good

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

Adequate drainage for scale pits? Yes

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 provide power and phone service points within 25 feet of the proposed WIM cabinet location. The roadway is moderately busy. We will have to work closely with the State to coordinate closures lane. There are 5 feet available on inside lane shoulder to accommodate a traffic shift.

### C.1.7 POTENTIAL WIM SENSOR/EQUIPMENT INTERFERENCE SOURCES

Overhead power lines? 450 feet downstream of WIM Adjacent railroad? None

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

Direction WB - Nearest usable truck turnaround location:

Exit 286 – Chapman Distance from WIM: 1.3 Miles

Direction EB - Nearest usable truck turnaround location:

Exit 290 – Milford Lake Road Distance from WIM: 3.0 Miles

Circuit travel distance: 8.6 Miles Estimated lap time: 12 Minutes

Potential circuit route restrictions? None

Identification and location of trucking firm and certified static scales:

Name De Bruce Grain Contact Brent Martin

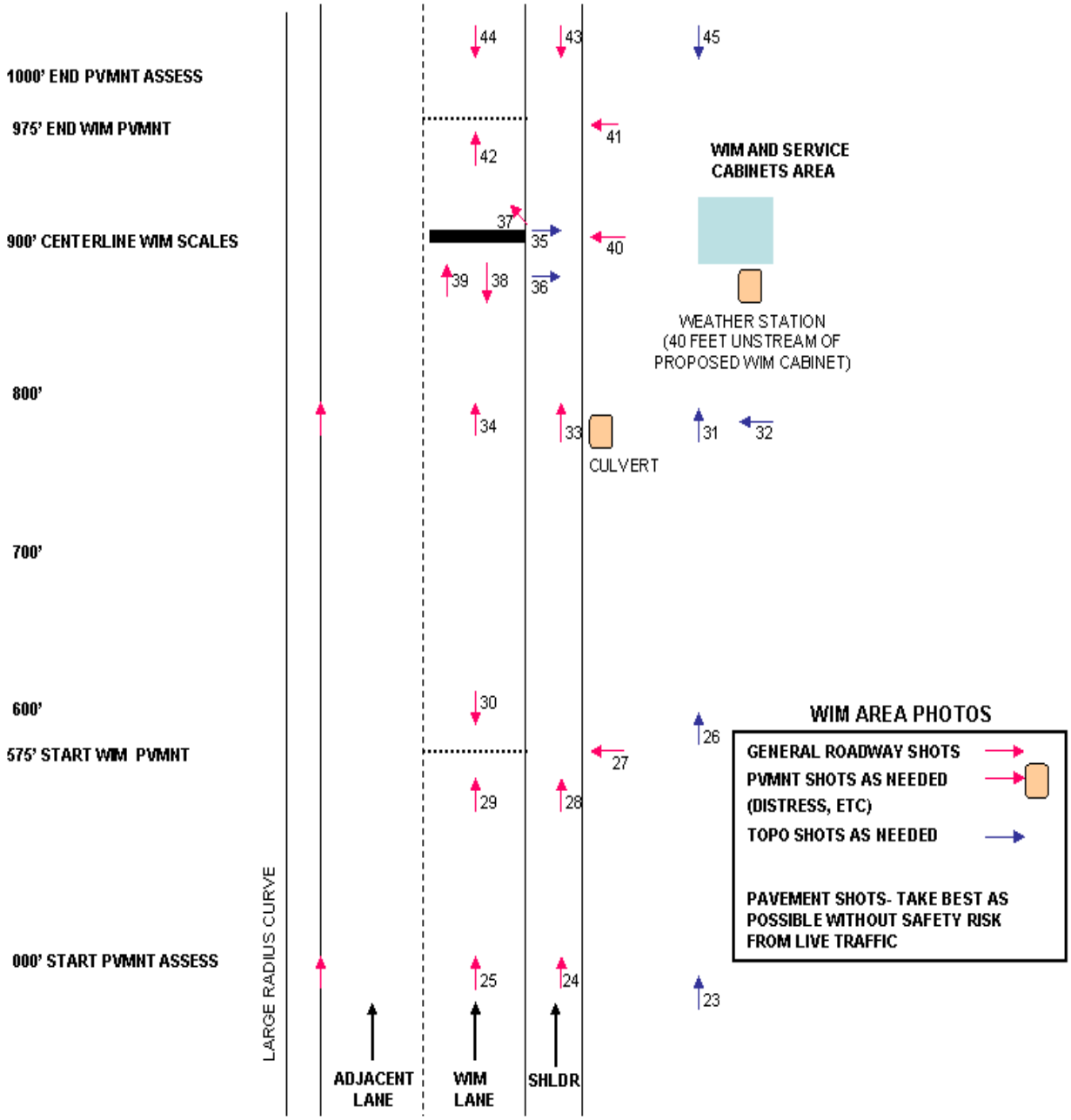
Address 513 W. First Street, Abilene, Kansas

Phone 785-263-7275 Hours 7:30 a.m. – 5:00 p.m.

Notes/Comments on Test Truck Circuit and Static Weighing Facility

De Bruce Grain is located approximately 14 miles from the Proposed WIM Site. They are a grain hauling company that has access to Tractor Trailer Air Ride vehicles and drivers available given 2-3 weeks notice. They have access to a certified scale weighing facility.

## C.1.9 LOCATION LOG OF PHOTOS



## C.2 EQUIPMENT AND MATERIALS

☑ 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
☑ Steel toe shoes
☐ Other required equipment _____

# D.0 SHEET 17

| | | |
|---|---|---|
| Sheet 17 | *STATE_CODE | LTPP |
| LTPP Traffic Data | *SPS PROJECT ID | 200200 |
| WIM SITE INVENTORY | *SPS WIM ID | SPS-2 |

1.* ROUTE I-70 MILEPOST 287.5 LTPP DIRECTION - N S E W

2.* WIM SITE DESCRIPTION - Grade < 0.5 % Sag vertical Y / N

Nearest SPS section upstream of the site 200212

Distance from sensor to nearest upstream SPS Section 1500 ft

3.* LANE CONFIGURATION

Lanes in LTPP direction 2 Lanes WB 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 14 inch jointed PCC - doweled

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: June 1, 2005

# E.0 PHOTOGRAPHS

## E.1.1 SPS TEST SECTION MARKER


## E.1.2 GENERAL SITE VIEW OF THE ROADWAY APPROACHING WIM SITE

### E.1.3 DOWNSTREAM VIEW OF ROADWAY AT START OF WIM PAVEMENT SECTION


### E.1.4 UPSTREAM VIEW OF ROADWAY APPROACHING WIM PAVEMENT SECTION

### E.1.5 PAVEMENT JOINT DETAIL


### E.1.6 RECOMMENDED SCALE LOCATION

### E.1.7 RECOMMENDED CABINET LOCATION BESIDE EXISTING WEATHER STATION


### E.1.8 EXISTING POWER SERVICE

### E.1.9 EXISTING TELEPHONE SERVICE


### E.1.10 EXISTING WIM CABINET