INTERNATIONAL ROAD DYNAMICS INC.

LTPP SPS PHASE II

WEIGH-IN-MOTION SITE ACCEPTABILITY ASSESSMENT REPORT

COLORADO SPS-2
LTPP ID 080200
JULY 25, 2005
CLIN 1001 TASK ORDER 3

CONTRACT NO. DTFH61-05-D-00001

U.S. Department of Transportation
Federal Highway Administration

LONG TERM Pavement PERFORMANCE

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

The Colorado SPS-2 site was visited on July 23rd and 25th, 2005, by the CLIN 1 team and a Weigh-in-Motion (WIM) site acceptability assessment was performed. This site is located approximately 55 miles Northeast of central Denver on I-76 near the town of Keenesburg in Weld County. This assessment resulted in the selection and evaluation of a WIM site for the Eastbound outside lane at Mile Post 39.7 approximately 20 miles downstream of the SPS-2 pavement test section 080223. Based upon our site evaluation and discussions with the State, it is recommended that a new WIM system utilizing Bending Plate technology be installed at this location after corrective action has been taken to address pavement smoothness issues.

The CLIN 1 team performed an extensive search for a suitable WIM site location in the vicinity of the SPS-2 test sections. However, the poor condition of much of the existing Eastbound Portland Cement Concrete (PCC) concrete, the numerous on and off ramps, and the inability to locate conveniently accessible power and phone services resulted in an initial failure to locate a good proposed site without recommending that the State replace a 400 foot section of existing PCC pavement with a costly PCC WIM slab. The State desired to utilize a location 20 miles upstream of the SPS-2 site due to its having almost new PCC pavement in the Eastbound lanes, an existing WIM system (piezo), and existing power and phone services. The State has given its assurances that the for the most part the truck traffic through the SPS test sections and that through proposed WIM site location is the same.

The selected WIM site is located within a tangent section of roadway and the grade is relatively flat. Vehicles track smoothly through this area at speeds between 70 and 80 MPH. Traffic flow is moderate on this four lane Interstate.

The existing roadway pavement at this location consists of two year old structurally sound 10 inch thick 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.

Power and telephone services utilized for the existing WIM system are available for the new proposed system. Both the AC service panel and the telephone network interface box are situated 300 feet upstream of the new WIM cabinet location. The State will need to extend these services to service points within 25 feet of the new cabinet location.

Based upon the CLIN 1 team's on-site observations, 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 existing roadway pavement as well as the outside and inside (median) shoulders approaching, through, and departing the proposed WIM site are PCC. The two Eastbound lanes, constructed in 2003, are each 12 feet wide with a 10 foot wide outside shoulder and a 4 foot wide inside (median) shoulder. The mainline pavement's thickness is 10 inches. The alignment is tangent and the grade is relatively flat. Piezo WIM sensors are currently located in the PCCP roadway 400 upstream of the proposed new scale location.

2.2 OBSERVED TRAFFIC OPERATING CHARACTERISTICS

The moderate 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 70 and 80 MPH (posted speed limit is 75 MPH for all traffic). There are no signals or merging in the WIM site vicinity. Trucks are "cruising" through the site at constant speeds.

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

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, experience dictates that the smoothness of the pavement through the WIM site needs to be improved to facilitate the new WIM system's meeting accuracy requirements. The existing pavement, 325 feet in advance of and 75 feet following the proposed WIM scale location ("WIM Pavement"), should be blanket ground. Following pavement grinding, a reassessment of the pavement should be made.

3.3 ANALYSIS OF PAVEMENT PROFILE DATA- TO BE PERFORMED

Profile data analysis of the pavement at or near the recommended WIM site location for conformance to SPS smoothness criteria has not been performed. Following blanket grinding of the 400 foot "WIM Pavement" section, profile data should be provided to the CLIN 1 team for analysis.

3.4 ROADWAY GEOMETRICS- PASS

The roadway's horizontal alignment is tangent, 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.

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

The proposed WIM site location is 20 miles upstream of the SPS-2 test site and there are on and off points that could be used by local truck traffic. Actually, there are interchanges within the SPS test section, including the recently completed E-70 interchange. The State asserts that for the most part the Eastbound truck traffic composition at the proposed WIM site location is the same as that through the SPS-2 test section location.

3.7 POTENTIAL WIM INTERFERENCE SOURCES- PASS

The nearest source of any potential interference, overhead power lines, is 300 feet upstream of the proposed WIM system location. These are “service” lines and will not interfere with system performance.

3.8 ACCESS TO POWER AND PHONE SERVICES- PASS

Both power and phone are readily accessible 300 feet upstream of the proposed new WIM cabinet location. 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 opposite the scale location between the roadway and the highway right-of-way fence. The cabinet should be installed at 30 foot clearance from the edge of traveled way to utilize the higher ground of the roadway embankment, minimizing the chance of ponding water. 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 but it would appear that ponding or movement of water is likely to occur between the toe of the roadway embankment and the right-of-way fence. There is no foreseen potential for ponding or flooding at the recommended cabinet and 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-76 Exit 48 (Roggen), which is located 8 miles downstream of the WIM site.

The nearest useable WB truck turnaround is I- 76 Exit 39 (Keenesburg), which is located 1 mile upstream of the WIM site.

The test truck round trip circuit route is 18 miles. There are no foreseen potential restrictions and the turnaround locations are easily accessed and maneuvered. The estimated lap time is 20 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 on-site visual observations 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 Colorado 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..

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 2003 (according to the State). The structural condition of the PCC pavement and shoulder throughout the 400 foot section appear to be very good. This existing pavement has dowelled perpendicular transverse weakened plane joints with nominal 15 foot spacings. These joints are sealed. The joints as well as the sealant are in excellent condition. The State advises that the pavement is 10 inch thick.

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 2003. There are no distress conditions of any consequence. These pavements are in very good condition and the joints are sealed and in excellent condition.

5.1.3 SHOULDER CONDITION

The roadway shoulders are PCC throughout the study area and were constructed in 2003 in conjunction with the traveled way pavement. There are no distress conditions of any consequence in the shoulder pavement. The shoulder pavement are in very good condition and the sealed 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.

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”.

Profile data analysis of the pavement at or near the recommended WIM site location for conformance to SPS smoothness criteria has not been performed. Following blanket grinding of the 400 foot “WIM Pavement” section, profile data should be provided to the CLIN 1 team for analysis.

5.3 PAVEMENT EVALUATION SUMMARY

Based upon our on-site observations, 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, the site will need to be re-evaluated and new profiling data be provided to our team for analysis to confirm that the pavement smoothness has been remedied and is adequate for the installation of the WIM system. Once this is performed and deemed acceptable, this site can be instrumented with WIM.

6.0 PROPOSED WIM SITE- INFORMATION

6.1 LOCATION – I-76, MP 39.7

Figure 2: Map of the I-70 WIM Site

Figure 3: Map of the I-76 WIM Site at Milepost 39.7

The location for the proposed WIM site is the Eastbound outside lane at milepost 39.7 near the community of Keenesburg, approximately 55 miles Northeast of central Denver. The proposed location of the new scales is 400 feet downstream from existing piezo WIM scales. The proposed WIM controller cabinet will be located approximately 30 feet off the edge of traveled way opposite the new bending plate scales.

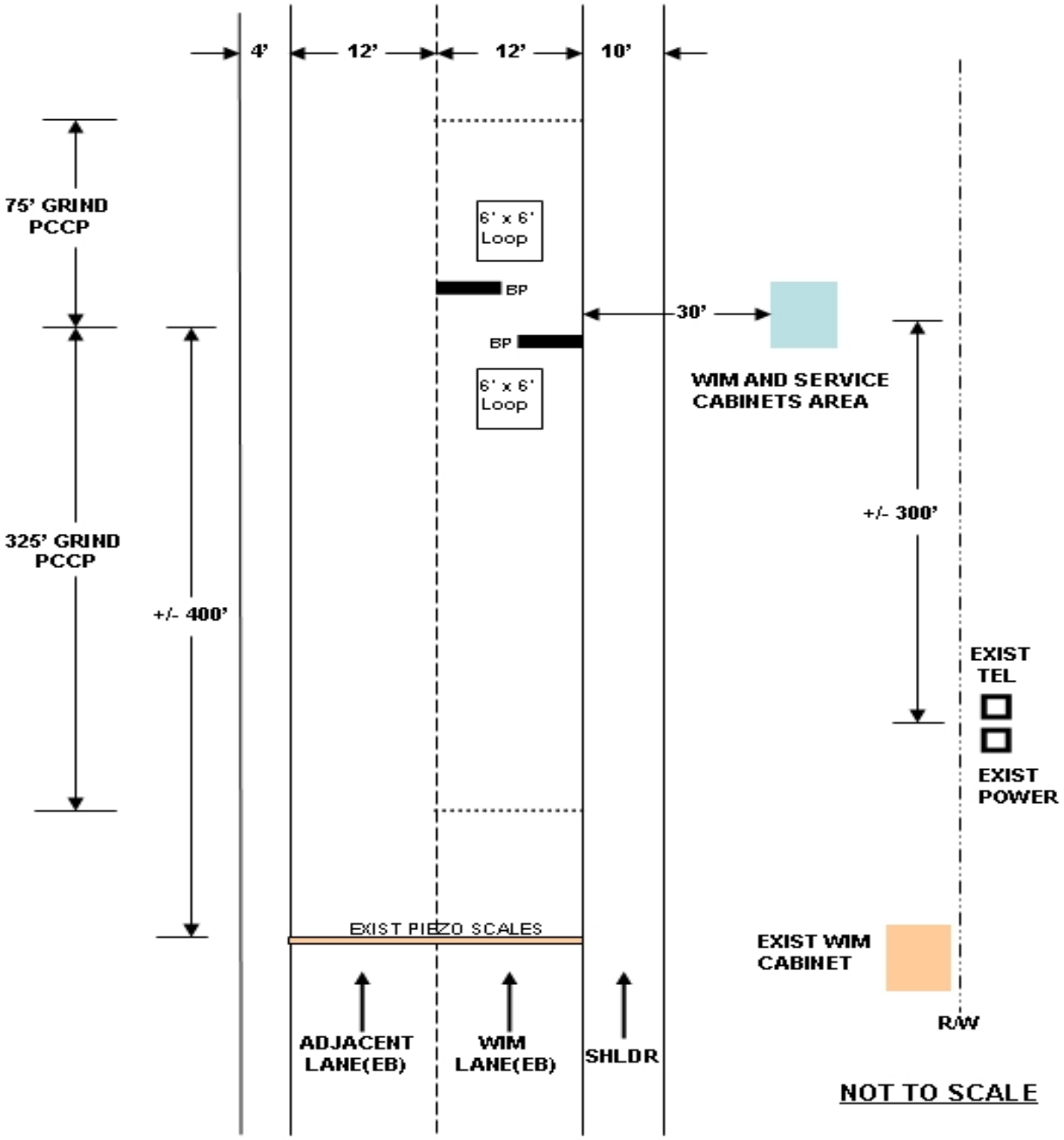
This proposed new WIM site is approximately 20 miles downstream from the SPS-2 pavement study location.

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 400 feet downstream of the existing piezo WIM scales. This location has been marked with a “WIM” in white paint on the outside shoulder. 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 Scales Location

GPS Coordinates: N 40 Deg 7.109' , W 104 Deg 30.509'

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 Colorado SPS-2 Site (LTPP ID 080200), 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 July 7, 2005

- State Highway Agency (SHA)
  - William (Skip) Outcalt – SHA/CDOT ph: 785-296-6863
  - Initial contact made July 7, 2005

- LTPP Regional Support Contractor (RSC)
  - Jason Puccinelli – RSC/Nichols ph: 775-329-4955
  - Initial contact made July 15, 2005

- FHWA Division Office
  - Jean Wallace– FHWA Div Rep ph: 303-969-6730 x382
  - Initial contact made July 15, 2005

The "Pre-Visit Handout Guide" was distributed on July 15, 2005, to the following individuals:

- William (Skip) Outcalt
- Jason Puccinelli
- Jean Wallace
- Debbie Walker

Initial site selection reviews and assessments were made on July 23rd, 2005, by Roy Czinku (IRD) and Rich Quinley (WIMTECH). Roy Czinku completed the site assessment on July 25th, 2005, following the briefing session with the State.

A briefing session was held at 9:00 a.m. on July 25th, 2005, at the Colorado DOT Research & Development Branch, 1325 Colorado Blvd., Suite B 600, Denver Colorado 80222

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INTERNATIONAL ROAD DYNAMICS INC.

LTPP SPS PHASE II

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

COLORADO SPS-2
LTPP ID 080200

Date: July 25, 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 9:00 a.m. July 25, 2005 at the Colorado DOT Research & Development Branch, 1325 Colorado Blvd., Suite B 600, Denver Colorado 80222
b. Site visit
   i. July 23, 2005 thru July 25, 2005

B.2 BRIEFING SESSION JULY 25, 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. William (Skip) Outcalt – SHA/CDOT ph: 785-296-6863
c. LTPP Regional Support Contractor (RSC)
   i. Jason Puccinelli – RSC/Nichols ph: 775-329-4955
d. FHWA Division Office
   i. Jean Wallace– FHWA Div Rep ph: 303-969-6730 x382

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-76 Mile Post 39.7 EB Outside Lane
b. Briefing session location
   i. Colorado DOT Research & Development Branch, 1325 Colorado Blvd., Suite B 600, Denver Colorado 80222
c. Nearest major airport
   i. Denver 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

COLORADO SPS-2
LTPP ID 080200

Date of Site Visit: July 23 – July 25, 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-76 Mile Post: 39.7 Direction: EB Lane: Outside

Proposed WIM Site approximately 20 miles East of SPS Test Section 080223. The Site is located in Weld County.

C.1.1 EXISTING ROADWAY SURROUNDING THE PROPOSED WIM SITE

Type Pavement: PCC

Pavement Age: 2 years old

Lane Width: 12 feet

Thickness: 10 inches

Observed Structural Soundness: Very Good

Observed Smoothness: Fair

Outside WB Shoulder Type: PCC

Width: 10 feet

Outside WB Shoulder Condition: Very Good

Inside WB Shoulder Type: PCC

Width: 4 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: Fair

Thickness: 10 inches Jointed or Continuous: Jointed (15' perpendicular) – dowelled

Notes/Comments on Pavement:
The existing roadway pavement is PCC and is in very good condition. Based upon our observations 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, profile data will need to be collected, and this profile data analyzed to confirm that the pavement meets the smoothness criteria. The selected location is approximately 20 miles downstream of the SPS Test Sections. This site has been selected due to the quality of pavement and Power & Telephone availability (there is existing Piezo WIM System at this location). The PCC closer to the test section is not structurally sound and would require complete replacement of a 400 foot section.

C.1.3 ROADWAY GEOMETRICS

Horizontal Alignment: Tangent 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 moderate

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? Yes, blanket grinding required

Truck traffic composition same at WIM site and SPS site? See notes

Truck traffic on/off locations between WIM site and SPS site? See notes

Posted Speed Limit: 75 MPH

Observed Truck Speeds: 70 – 80 MPH

Notes/Comments on Geometrics and/or Traffic Operating Characteristics:
Due to the layout of the newly constructed on/off ramps to accommodate E470 Toll Road, traffic throughout the SPS Test Sections have been affected somewhat. At the meeting with the State it was noted that this and other interchanges along the I-76 corridor did not impact the study. For the most part truck traffic composition from the SPS Test Section to the Proposed WIM Location is the same. 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 70 and 80 MPH. The posted speed is 75 MPH for all traffic. There is very good lane discipline at this site. Traffic flow is moderate on this four lane, two direction Interstate.

C.1.5 ACCESS TO UTILITY SERVICES

Potential source(s) for power: An existing Piezo WIM Site is located 400 feet West of the proposed WIM location. There is an AC Service located approximately 300 feet upstream of the proposed WIM location.

Potential source(s) for telephone: An existing Piezo WIM Site is located 400 feet West of the proposed WIM location. There is an Telephone Service located approximately 300 feet upstream of the proposed WIM location

C.1.6 EQUIPMENT INSTALLATION CAPABILITY

Adequate location for controller cabinet? Yes, Large area between roadway and R/W fence.

Distance from edge of traveled way to cabinet? 30 feet from edge of traveled way to keep cabinet and pullboxes on highest ground possible.

Visibility from cabinet of sensors and approaching vehicles? Very Good

Adequate location for service facilities? Yes, Large area between roadway and R/W

Adequate drainage for scale pits? Yes

Adequate roadway and overall site drainage? Yes, except from toe of embankment to R/W fence.

Potential for ponding or flooding at cabinet or pullboxes? Minimal at recommended location.

Potential for traffic control problems during installation? Minimal

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 4 feet available on inside lane shoulder to accommodate a traffic shift.

C.1.7 POTENTIAL WIM SENSOR/EQUIPMENT INTERFERENCE SOURCES

Overhead power lines? 300 feet West of proposed WIM location, no problem
Adjacent railroad? 1500 feet South of proposed WIM location, no problem

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

Direction EB - Nearest usable truck turnaround location:

I-76, Exit 48 Roggen Distance from WIM: 8 Miles

Direction WB - Nearest usable truck turnaround location:

I-76, Exit 39 Keenesburg Distance from WIM: 1 Miles

Circuit travel distance: 18 Miles Estimated lap time: 20 Minutes

Potential circuit route restrictions? None

Identification and location of trucking firm and certified static scales:

Name Pilot Travel Center Contact Chuck Hall

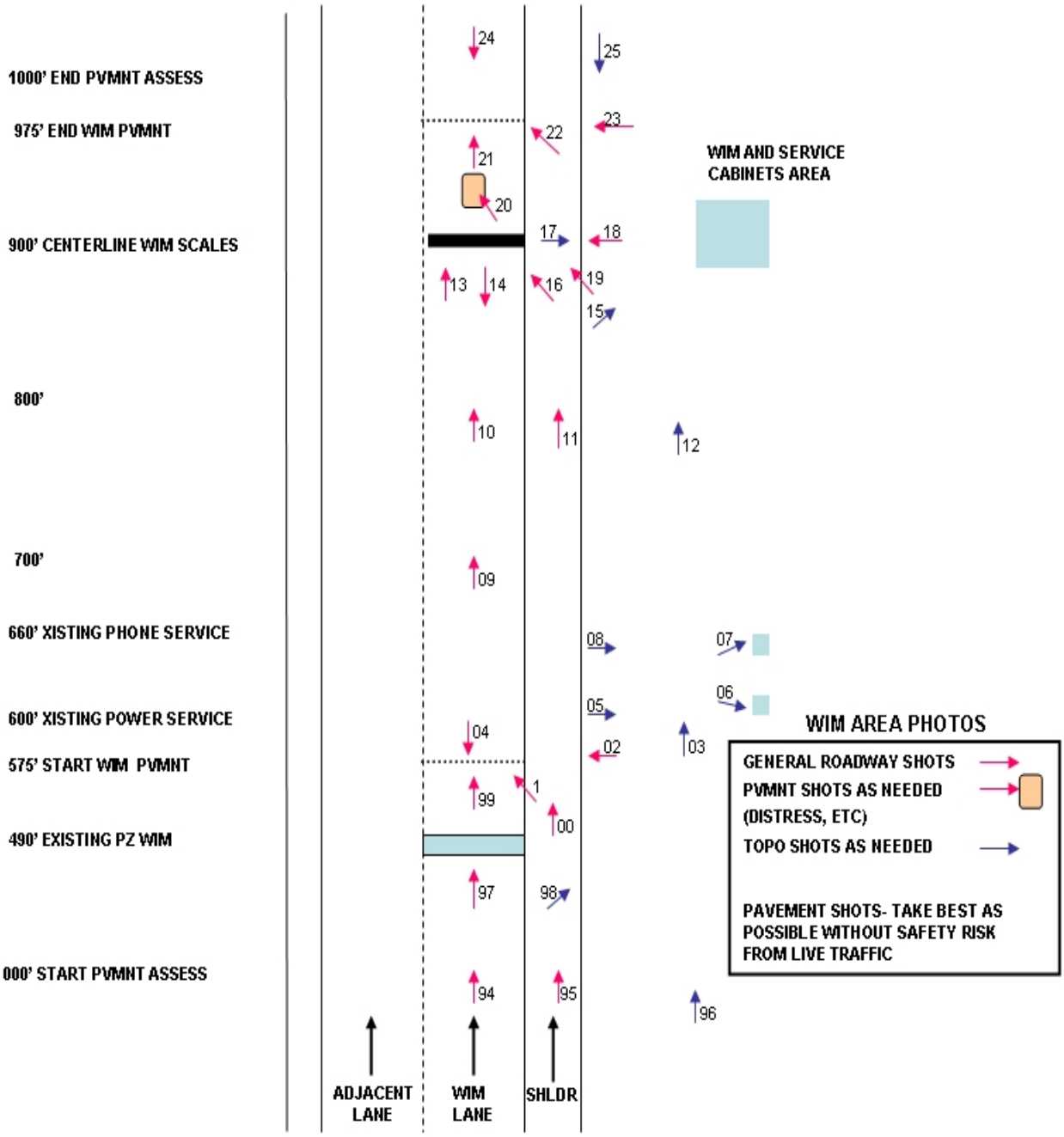
Address I-70, Exit 276A, Denver, Colorado

Phone 303-292-6303 Hours 24 hrs.

Notes/Comments on Test Truck Circuit and Static Weighing Facility

Pilot Travel Center is located approximately 37 miles from the Proposed WIM Site. They can recommend hauling companies that have 3S2 Tractor Trailer Air Ride vehicles and drivers available given 2-3 weeks notice. They have a certified static scale located at their facility.

C.2 LOCATION LOG OF PHOTOS



C.3 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	08
LTPP Traffic Data	*SPS PROJECT ID	080200
WIM SITE INVENTORY	*SPS WIM ID	SPS-2

1.* ROUTE I-76 MILEPOST 39.7 LTPP DIRECTION - N S E W

2.* WIM SITE DESCRIPTION - Grade < 0.5 % Sag vertical Y / N
Nearest SPS section upstream of the site 080223
Distance from sensor to nearest upstream SPS Section 20 miles ft

3.* LANE CONFIGURATION
Lanes in LTPP direction 2 Lanes EB 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 10 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: July 25, 2005

E.0 PHOTOGRAPHS

E.1.1 GENERAL SITE VIEW OF THE ROADWAY APPROACHING WIM SITE

E.1.2 EXIST PIEZO WIM 400' IN ADVANCE NEW WIM, FACE DOWNSTREAM

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

E.1.4 UPSTREAM VIEW OF ROADWAY AT START OF WIM PAVEMENT SECTION

E.1.5 PAVEMENT JOINT, TYP.

E.1.6 RECOMMENDED SCALE LOCATION

E.1.7 RECOMMENDED CABINET LOCATION, ON EMBANKMENT SLOPE

E.1.8 WIM SITE, FACING UPSTREAM

E.1.9 EXISTING POWER SERVICE

E.1.10 EXISTING TELEPHONE SERVICE

E.1.11 EXISTING WIM CABINET