INTERNATIONAL ROAD DYNAMICS INC.
702 - 43rd Street East, Saskatoon, SK, Canada,
Phone: (306) 653-6600 Fax: (306) 242-5599

- Site Service Report -

Date: Feburay 8 2010 **IRD Contract No.: 11167**
From: Trevor Ritchie **To: Cindy Mantie**
Project Name/Location: DE Ltpp rte 131

Service Date(s): Feburay 1 2010

Job Description: Prefrom Maintenace, troubleshoot commincation issue and possible sensor issue resulting in bad data

Work Completed:

When I arrived at the site today Feb 1, I noticed the modem was locked up with all the LED's on the modem on. I cycled the power on the entire cabinet because it is difficult to just reset the modem. I checked the phone line for dial tone and then called Labeed and asked him to call the site. He connected and observed traffic for a short time and everything looked fine.
I proceeded to test all the sensors below are the results.
K1 & K2 (wired in parallel)
Resistance=open
Capacitance = 14.54nF
Signal looked clean and approximently 150mV for midsize car
K3 & K4 (wired in parallel)
Resistance=open
Capacitance = 13.56nF
Signal looked clean and approximately 200mV for midsize car

Loop 1
resistance 2.65 ohms
Inductance 206.6
resistance to ground (Megger) 0.007M ohms
Loop 2
resistance 3.55 ohms
Inductance 278.3
resistance to ground 0.02M ohms

The Kistlers measure good but the loops don't measure that well. The resistance is slightly elevated considering the distance, the Inductance is slightly elevated as well is if they have 5 turns. It would be interesting to check previous Loop measurements to see if they have changed. Resistance to ground is extremely low.
I monitored traffic and observed 0.4 Kips on axles which is a default weight. I also observed class 14's and zero axles detected. I observed "0" ticks in diagnostics mode for both left and right weights. I also observed a couple instances of what appeared to be the system grouping two vehicles together to make one.

I located the Junction Box and respliced the loops. I could not Meg the loops in the JB because there is no ground rod in it. I noticed some oxidation on the loop wires which indicates moisture in the wire. After re splicing the loops I retested them in the cabinet and measured similar measurements, nothing significantly

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different to note.
I monitored traffic for awhile after resplicing the loops and I did not see any issues, everything appeared to be normal. Unfortunately I think this a coincidence as the loops did not measure different after the replicing.

I suspect the issue will reoccur as I did not really do anything. If the problem does reoccur I recommend replacing the KSM. Also due to the poor electrical readings on the loops I recommend replacing both of the loops. If the loops are replaced I recommend using part number 490099 - UC Wire 1C/14AWG IMSA 51-5 LP as it has an extra protective jacket instead of the basic wire that is currently installed at the site. Since there is obvious water penetration in the loops I would also recommend replacing the loop leads as well. Site needs to be monitored closely for reoccurance of data issue.

Action Items:

Item	Action Required	Ownership
1.		
2.		
3.		
4.		