Complete RWIS services including; RWIS Central Management System, Pavement Forecasting System & ESS maintenance

Requisition #985 QA5

9/28/2012

1. Please forward a complete set of MDOT's metadata files for each of the ESS sites that we need to query and support.

See attached sheet for an example of what the metadata files will look like, to be used for informational bidding purposes only. This is NOT all inclusive. Complete metadata files will be given after the kick-off meeting.

2. Section 2.f.II states the CMS needs to collect data from up to 150 ESS throughout the state. Presumably this information will be included within the metadata files requested above, but if not please clarify what these sites consist of and the communication mode associated with each.

All locations utilize cell phone modems except one site in Iasco County utilizes a cable modem for their primary mode of communications.

3. Section 3e of the RFP request that we provide forecasts with a number of parameters, but it does not say how many sites or what locations. Please provide this information.

See Attachment A for listing of sites per region.

4. Please provide a list and map to show the MDOT Garages and specific routes that we will be responsible for providing forecasts.

See that attached Map for MDOT Maintenance Facilities and forecasts will be required for all trunkline routes.

5. For pay items 11, 13, 15, & 18 can additional information be provided regarding the term "EACH"? i.e. Does each mean per day, per hour, per site, per unit?

Refer to the 2012 Standard Specifications for Construction for the definition of specific pay items. This can be found at: http://mdotwas1.mdot.state.mi.us/public/specbook/2012/

6. Does the term "oper" in Items 12, 14 & 17 refer to "Operator"?

Refer to the 2012 Standard Specifications for Construction for the definition of specific pay items. This can be found at: http://mdotwas1.mdot.state.mi.us/public/specbook/2012/

7. Will MDOT consider a one week extension of the due date until October 8th?

The Due Date has now been extended to October 8th.

8. Road and Weather Forecasts – Section 3)d. – Method of Display and Delivery: Please indicate approximately how many people will require access to the Road and Weather Forecast system.

Per Section 3)d)i)1: "Access to forecasts shall be provided to SEMTOC, WMTOC, STOC, MDOT regions, TSCs, MDOT Maintenance Garages and Contract Agencies." Also per Section 3)a)i: "MDOT may, at its discretion, share the forecast with other agencies as appropriate", so this should be taken into account as well.

9. In paragraph one (1) of the response, it states that "Through the duration of the contract, non-routine maintenance and repairs due to Third Party Damages, Acts-of-God, and required system modifications or improvements are likely to occur that exceed the intent and scope of this contract." In paragraph two (2), the response states that "Troubleshooting, diagnosing, and repairs that are normally considered part of thepay items included in this contract will not be paid for separately regardless of whether the problems were caused by Third Party Damage & Acts-of-God." Is MDOT seeking to draw a distinction between a routine maintenance activity caused by a Third Party or Act of God (ie. sensor blown due to lightning) and a more severe impact to an RWIS site caused by a Third Party or Act of God (tractor trailer destroys entire RWIS site)? The former being covered under non-routine maintenance, the latter being covered under system modifications/improvements via Task Work Order. Item 5 then, should be an estimate by the bidder of TYPICAL non-routine service, which exceptional occurrences being over and above, and exceeding the scope of the contract whose focus is TYPICAL routine and non-routine maintenance.

Refer to the adjusted bid sheet with in the contract.

10. How will Bid Sheet items #5, 9, and 19, marked as "Lump Sum", actually be paid as services are performed? No unit prices, hourly rates, or "time and materials" rates are requested on the bid sheet.

Refer to the 2012 Standard Specifications for Construction for the definition of specific pay items. This can be found at: http://mdotwas1.mdot.state.mi.us/public/specbook/2012/

11. Sec 2.f.ii. System shall be capable of collecting data from up to 150 ESS within the State of Michigan. These sites may be owned by MDOT or another road authority.

These sites may contain equipment from various vendors. Question: Can we assume this is with the understanding that all equipment installed will be NTCIP compliant?

Most devices owned by MDOT are NTCIP compliant. Complete metadata files will be given after the kick-off meeting. At which time a thorough identification of which devices require NTCIP compliance will be completed. If devices are owned by another road authority NTCIP compliance cannot be guaranteed however MDOT will facilitate the transfer to data from non-MDOT owned stations to appropriate MDOT data format.

12. Sec 2.f.v. CMS shall be capable of maintaining, manipulating, and uploading/downloading complete ESS and RPU configuration data. Question: Can we assume this is via the NTCIP ESS poll?

Currently all ESS stations utilize cellular modems for communication except one station in Iasco County.

13. Sec 3. Road and Weather Forecasts. Question: Should we assume MDOT wants pavement forecasts for each ESS site or by region/district?

Per Section 3)a)ii: "Every ESS site shall have a pavement forecast specific to that site". Each forecast should include all parameters identified in Section 3)e)i.

14. Sec 4.a.vi. Response Time: The Contractor shall respond on site to service non-functioning equipment within 48 hours of the reporting of non-functioning during the period from October 1 – March 31 and within five days during the period from April 1 - September 30. Question: Will there be exceptions if the surface sensors cannot be replaced due to frozen ground. We may not be able to provide the necessary civil work.

The time frames above will not exclude the sensor from being installed per the Manufactures Guidelines.

15. Sec 3. c. Road and Weather Forecasts - Frequency of Forecasts

    a. Are the Short Term Forecasts and Long Term Forecasts needed individually for each of the 7 MIDOT geographical regions?

    b. Is there a control point within the region that can be used as a reference point for weather forecast data?

    c. Can the rest of the region, if different, be covered by additional remarks and/or text?

In response to Questions 15 a - 15 c, per Section 3)a)ii: "Every ESS site shall have a pavement forecast specific to that site."

d. Can these forecasts consist of pdf documents sent by fax and email?

No per Section 3)d)i: "A system shall be provided that allows a user to obtain all data, both in the office and at home, through an internet connection at all times

e. Are text messages also required?

See Section 3)d)i)5: "Users shall be able to select customizable alerts for specific weather data or sensor data. Limits shall be selectable for each alert. Users will have the option of getting alerts via text, phone, email, or fax." All options need to be made available for alerts.

16. Sec 3. e. iv.

a. Can these forecasts and updates of 2-hour notice be pdf documents sent by email and fax?

No per Section 3)d)i: "A system shall be provided that allows a user to obtain all data, both in the office and at home, through an internet connection at all times."

b. Can forecasts and updates be sent by text messages?

No per Section 3)d)i: "A system shall be provided that allows a user to obtain all data, both in the office and at home, through an internet connection at all times."

						SURFACE	
Siteid	**LOCATIONS**	**CPU**	**SP RPU**	**ESP RPU**	**LX RPU**	**SENSORS**	**SUB PROBE**
705000	Harvey	0			1	4	1
705001	Au Train	0			1	4	1
705002	Engadine	0			1	4	1
705003	Brevort	0			1	4	1
705004	Escanaba	0			1	5	1
705005	Seney	0			1	4	1
705006	Cooks	0			1	4	1
705007	Twin Lakes	0			1	4	1
705008	Rudyard	0			1	6	1
705009	Gwinn	0			1	4	1
705010	Golden Lake	0			1	5	1
705011	St. Ignace	0			1	6	1
705012	Michigamme	0			1	5	1
			SP	**ESP RPU**	**LX RPU**	**SURFACE**	**SUBPROBE**
Totals			**0**	**0**	**13**	**59**	**13**

MDOT SUPERIOR REGION RWIS STATUS REPORT

Location	RPU #	Air Sensor/ RM Young	Wind Sensor/RM Young	Surface Sensor/FP2000	SubSurface Sensor	Precipitation Sensor/ Wivis	Visibility Sensor/Sentry	Barometric Pressure Sensor	Camera	Temperature Data Probe	DMS
Harvey	0	1	1	1, 2	1	1	1	1	1	1	1
Au Train	1	1	1	1, 2	1	1	1	1	1	1	
Engadine	2	1	1	1, 4	1	1	1	1	1	1	1
Brevort	3	1	1	4	1	1	1	1	1	1	1
St. Ignace	5	1	1	6	1	1	1	1	1	1	
Rudyard	6	1	1	6	1	1	1	1	1	1	
Cooks	7	1	1	3	1	1	1	1	1	1	
Seney	8	1	1	4	1	1	1	1	1	1	
Gwinn	9	1	1	4	1	1	1	1	1	1	
Michigamme	10	1	1	5	1	1	1	1	1	1	
Twin Lakes	11	1	1	4	1	1	1	1	1	1	
Golden Lake	12	1	1	5	1	1	1	1	1	1	
Wetmore (DMS ONLY)											1

MDOT NORTH REGION RWIS STATUS REPORT

Location	RPU #	Air Sensor/ RM Young	Wind Sensor/RM Young	Surface Sensor/FP2000	SubSurface Sensor	Precipitation Sensor/ Wivis	Visibility Sensor/Sentry	Barometric Pressure Sensor	Camera	Temperature Data Probe	DMS
Benzonia ESS	3	1	1	2	1	1	1	1	1	1	
Cadillac ESS	6	1	1	2	1	1	1	1	1	1	
Mason/Scotsville ESS	9	1	1	2	1	1	1	1	1	1	
Reed City ESS	11	1	1	2	1	1	1	1	1	1	
Grand Traverse / Willamsburg ESS	13	1	1	2	1	1	1	1	1	1	
Charlevoix ESS	16	1	1	2	1	1	1	1	1	1	
Waters ESS	20	1	1	2	1	1	1	1	1	1	
Grayling ESS	21	1	1	2	1	1	1	1	1	1	
Houghton Lake ESS	24	1	1	2	1	1	1	1	1	1	
West Branch ESS	26	1	1	2	1	1	1	1	1	1	
Mackinaw City ESS	40	1	1	2	1	1	1	1	1	1	
Wolverine ESS	42	1	1	2	1	1	1	1	1	1	

Superior Region ESS Stations

State	SiteId	Sysid	Rpuid	Lat	Long	Name	Customer
MI	705000	705	0	46.4881200	-87.2314900	Harvey	MIDOT
MI	705001	705	1	46.4316400	-86.8449200	Au Train	MIDOT
MI	705002	705	2	46.1008900	-85.6178000	Engadine	MIDOT
MI	705003	705	3	46.0084100	-85.0055500	Brevort	MIDOT
MI	705004	705	4	45.794878	-87.0760700	Excanaba	MIDOT
MI	705005	705	5	46.3453800	-86.0357800	Seney	MIDOT
MI	705006	705	6	45.9096000	-86.4806200	Cooks	MIDOT
MI	705007	705	7	46.8849400	-88.8637000	Twin Lakes	MIDOT
MI	705008	705	8	46.1862500	-84.5608700	Rudyard	MIDOT
MI	705009	705	9	46.2761600	-87.4158600	Gwinn	MIDOT
MI	705010	705	10	46.1604600	-88.8798400	Golden Lake	MIDOT
MI	705011	705	11	45.8973500	-84.7447500	St. Ignace	MIDOT
MI	705012	705	12	46.5388700	-88.1297800	Michigamme	MIDOT

Northern Lower ESS Stations

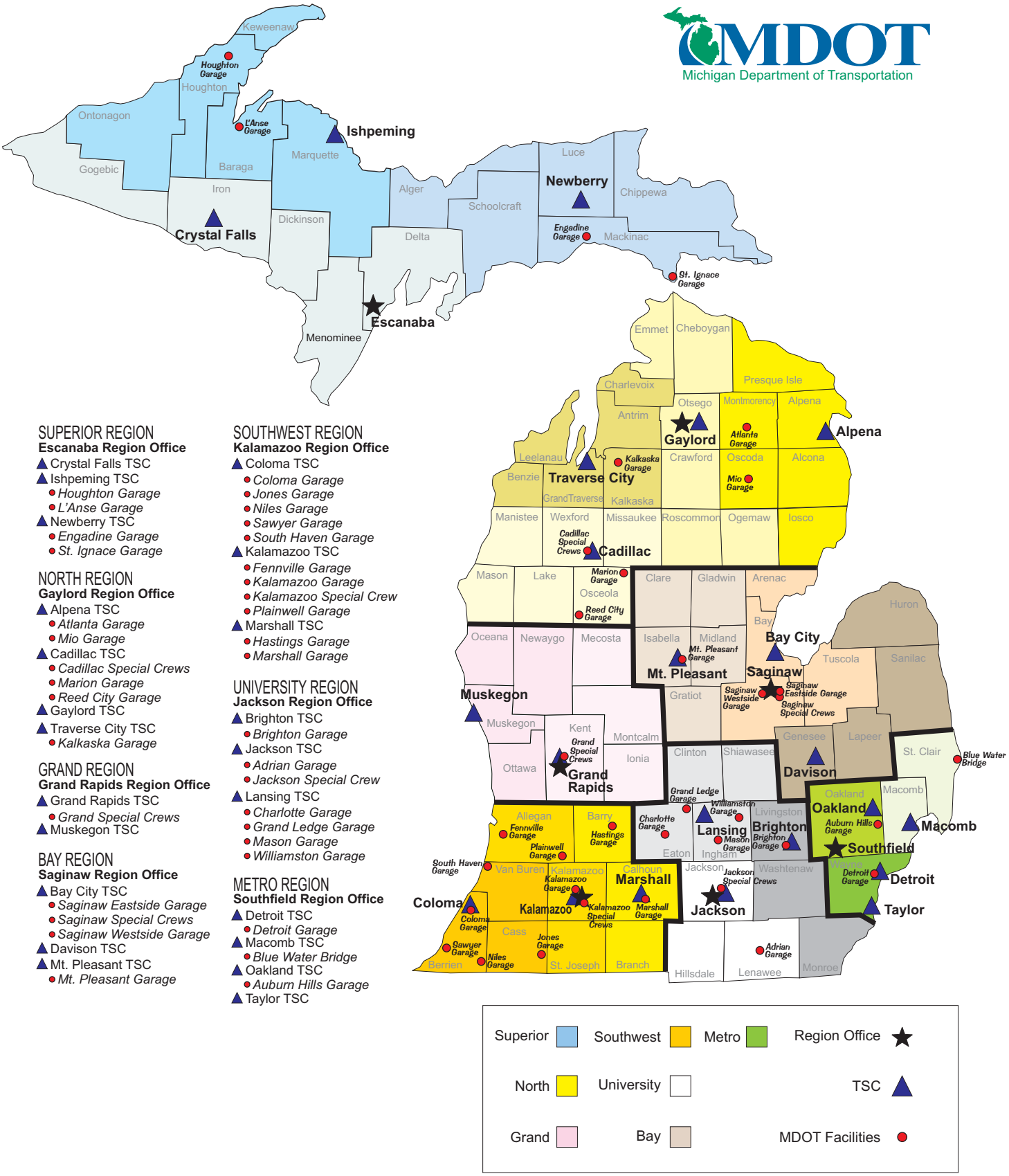
Site Name	Location	County	City/Village/Township	Control Section	Latitude	Longitude	Site Address	Utility Contact Information
Benzonia ESS	SE Corner of US-31 at M-115	Benzie	Joyfield Township	10031	44º35’12.3”	86º05’53.8”	3085 Benzie Highway = Cadillac	Consumers Energy Myron 1-231-882-6002
Cadillac ESS	SW Quadrant of US-131 at M-55 (Exit 180)	Wexford	Clam Lake Township	83033	44º15’05.5”	85º22’17.7”	10254 E M-55 Hwy Cadillac	Consumers Energy Bill Grim 1-231-779-5555
Mason/Scotsville ESS	NE Corner of US-10 at Stiles Rd	Mason	Amber Township	53032	43º57’20.1”	86º20’22.1”	2396 W US-10, Ludington, MI 49431	Great Lakes Energy Larry Phillips 1-888-485-2537 ext. 8285
Reed City ESS	NE Quadrant of US-131 at US-10 (Exit 153) Reed city)	Osceola	Richmond Township	67017	43º53’14.5”	85º31’46.1”	22188 US-10	Consumers Energy Brad Lyonnais 1-231-592-8805
Grand Traverse / Willamsburg ESS	SW Corner of M-72 at Williamsburg Rd	Grand Traverse	Whitewater Township	28042	44º46’15.5”	85º24’14.3”	8490 E M-72, Williamsburg, MI 49690	Cherryland Electric Bruce Stocking 231-486-9228
Charlevoix ESS	NB US-31 near Burgess Rd	Charlevoix	Hayes Township	15012	45º21’40.2”	85º10’38.2”	09910 US-31 North	Consumers Energy John Draper 231-582-8302
Waters ESS	SE Quadrant of I-75 at Marlette Rd (Exit 270)	Otsego	Otsego Lake Township	69013	44º52’38.9”	84º41’12.7”	1037 Marlette Road, Frederic, MI 49733 (Waters)	Consumers Energy Bill Keiser 1-231-582-8303
Grayling ESS	NB I-75 at Grayling Rest Area	Crawford	Weber, Buddy	20014	44º36’46.9”	84º42’27.3”	5010 S. I-75 #B; Grayling, MI	Consumers Energy John Loiacano 1-989-366-4227
Houghton Lake ESS	SE Quadrant of US-27 at M-55 (Exit 194)	Roscommon	City of Houghton Lake	72013	44º20’08.7”	84º48’21.8”	9661 W Lake City Road	Consumers Energy John Loiacano 1-989-366-4227
West Branch ESS	SW Quadrant of I-75 at Cook Rd (Exit 212)	Ogemaw	Horton Township	65041	44º14’42.4”	84º13’38.5”	3136 Cook Rd; West Branch, MI 48661	Consumers Energy Dustie Montbriand 1-989-685-8106
Mackinaw City ESS	SW Quadrant of I-75 at Mackinaw Highway (Exit 337)	Emmet/ Chebo	Wawatam/Mackinac Townships	16092	45º45’40.3”	84º43’50.5”	14542 Makinaw Highway; Mackinaw City	Consumers Energy Gordie Postula 1-231-582-8328
Wolverine ESS	SE Quadrant of I-75 at C-58 (Main St/Afton Rd)	Cheboygan	Nunda Township	16093	45º16’18.8”	84º35’26.4”	30056 N I-75, Wolverine, MI 49799	Presque Isle Electric Andy Bischer 1-989-733-8515 ext. 872

Siteid	Site Name	Sensor	Name Brand	Manufacturer	Model #
705000	**Harvey**	Air Sensor	RM Young AT/RH	RM Young	1.1005.60.952
		Wind Sensor	RM Young WS/WD	RM Young	05103-15
		Surface Sensor	FP2000	SSI	FP2000
		Subsurface Sensor	Sub Probe	SSI	Sub-Surface Probe
		Precipitation Sensor	WIVIS	OSI	
		Visibility Sensor	Sentry		
		Camera	PTZ Camera	Axis	Axis232D
		Bar Metric	Met One	Met One	
Siteid	**Site Name**	**Sensor**	**Name Brand**	**Manufacturer**	**Model #**
705001	**Au Train**	Air Sensor	RM Young AT/RH	RM Young	1.1005.60.952
		Wind Sensor	RM Young WS/WD	RM Young	05103-15
		Surface Sensor	FP2000	SSI	FP2000
		Subsurface Sensor	Sub Probe	SSI	Sub-Surface Probe
		Precipitation Sensor	WIVIS	OSI	
		Visibility Sensor	Sentry		
		Camera	PTZ Camera	Axis	Axis232D
		Bar Metric	Met One	Met One	
Siteid	**Site Name**	**Sensor**	**Name Brand**	**Manufacturer**	**Model #**
705002	**Engadine**	Air Sensor	RM Young AT/RH	RM Young	1.1005.60.952
		Wind Sensor	RM Young WS/WD	RM Young	05103-15
		Surface Sensor	FP2000	SSI	FP2000
		Subsurface Sensor	Sub Probe	SSI	Sub-Surface Probe
		Precipitation Sensor	WIVIS	OSI	
		Visibility Sensor	Sentry		
		Camera	PTZ Camera	Axis	Axis232D
		Bar Metric	Met One	Met One	
Siteid	**Site Name**	**Sensor**	**Name Brand**	**Manufacturer**	**Model #**
705003	**Brevort**	Air Sensor	RM Young AT/RH	RM Young	1.1005.60.952
		Wind Sensor	RM Young WS/WD	RM Young	05103-15
		Surface Sensor	FP2000	SSI	FP2000
		Subsurface Sensor	Sub Probe	SSI	Sub-Surface Probe
		Precipitation Sensor	WIVIS	OSI	
		Visibility Sensor	Sentry		
		Camera	PTZ Camera	Axis	Axis232D
		Bar Metric	Met One	Met One	
		Traffic Sensor	SmartSensor HD	Wavetronics	SS-126
Siteid	**Site Name**	**Sensor**	**Name Brand**	**Manufacturer**	**Model #**
705004	**Escanaba**	Air Sensor	RM Young AT/RH	RM Young	1.1005.60.952
		Wind Sensor	RM Young WS/WD	RM Young	05103-15
		Surface Sensor	FP2000	SSI	FP2000
		Surface Sensor	Sensit	QTT	Sensit
		Surface Sensor	Ground Hog	Nu-Metrics	Ground Hog
		Subsurface Sensor	Temp Data Probe		TDP
		Precipitation Sensor	WIVIS	OSI	430
		Camera	PTZ Camera	CoHu	Cohu PTZ
		Bar Metric	Met One	Met One	
		Traffic Sensor	Ground Hog	Nu-Metrics	Ground Hog
Siteid	**Site Name**	**Sensor**	**Name Brand**	**Manufacturer**	**Model #**
705005	**Seney**	Air Sensor	RM Young AT/RH	RM Young	1.1005.60.952
		Wind Sensor	RM Young WS/WD	RM Young	05103-15
		Surface Sensor	FP2000	SSI	FP2000
		Surface Sensor	Ground Hog	Nu-Metrics	Ground Hog
		Subsurface Sensor	Temp Data Probe		TDP
		Precipitation Sensor	R2S	Luft	
		Visibility Sensor	Sentry		
		Camera	PTZ Camera	Axis	Axis232D
		Bar Metric	Met One	Met One	
		Traffic Sensor	Ground Hog	Nu-Metrics	Ground Hog
Siteid	**Site Name**	**Sensor**	**Name Brand**	**Manufacturer**	**Model #**
705006	**Cooks**	Air Sensor	RM Young AT/RH	RM Young	1.1005.60.952
		Wind Sensor	RM Young WS/WD	RM Young	05103-15
		Surface Sensor	FP2000	SSI	FP2000
		Surface Sensor	Ground Hog	Nu-Metrics	Ground Hog
		Subsurface Sensor	Temp Data Probe		TDP
		Precipitation Sensor	R2S	Luft	
		Visibility Sensor	Sentry		
		Camera	PTZ Camera	Axis	Axis232D
		Bar Metric	Met One	Met One	
		Traffic Sensor	Ground Hog	Nu-Metrics	Ground Hog
Siteid	**Site Name**	**Sensor**	**Name Brand**	**Manufacturer**	**Model #**
705007	**Twin Lakes**	Air Sensor	RM Young AT/RH	RM Young	1.1005.60.952
		Wind Sensor	RM Young WS/WD	RM Young	05103-15
		Surface Sensor	FP2000	SSI	FP2000
		Surface Sensor	Ground Hog	Nu-Metrics	Ground Hog
		Subsurface Sensor	Temp Data Probe		TDP
		Precipitation Sensor	R2S	Luft	
		Visibility Sensor	Sentry		
		Camera	PTZ Camera	Axis	Axis232D
		Bar Metric	Met One	Met One	
		Traffic Sensor	Ground Hog	Nu-Metrics	Ground Hog
Siteid	**Site Name**	**Sensor**	**Name Brand**	**Manufacturer**	**Model #**

705008	**Rudyard**	Air Sensor	RM Young AT/RH	RM Young	1.1005.60.952
		Wind Sensor	RM Young WS/WD	RM Young	05103-15
		Surface Sensor	FP2000	SSI	FP2000
		Surface Sensor	Ground Hog	Nu-Metrics	Ground Hog
		Subsurface Sensor	Temp Data Probe		TDP
		Precipitation Sensor	R2S	Luft	
		Visibility Sensor	Sentry		
		Camera	PTZ Camera	Axis	Axis232D
		Bar Metric	Met One	Met One	
		Traffic Sensor	Ground Hog	Nu-Metrics	Ground Hog
Siteid	**Site Name**	**Sensor**	**Name Brand**	**Manufacturer**	**Model #**
705009	**Gwinn**	Air Sensor	RM Young AT/RH	RM Young	1.1005.60.952
		Wind Sensor	RM Young WS/WD	RM Young	05103-15
		Surface Sensor	FP2000	SSI	FP2000
		Surface Sensor	Ground Hog	Nu-Metrics	Ground Hog
		Subsurface Sensor	Temp Data Probe		TDP
		Precipitation Sensor	R2S	Luft	
		Visibility Sensor	Sentry		
		Camera	PTZ Camera	Axis	Axis232D
		Bar Metric	Met One	Met One	
		Traffic Sensor	Ground Hog	Nu-Metrics	Ground Hog
Siteid	**Site Name**	**Sensor**	**Name Brand**	**Manufacturer**	**Model #**
705010	**Golden Lake**	Air Sensor	RM Young AT/RH	RM Young	1.1005.60.952
		Wind Sensor	RM Young WS/WD	RM Young	05103-15
		Surface Sensor	FP2000	SSI	FP2000
		Surface Sensor	Ground Hog	Nu-Metrics	Ground Hog
		Subsurface Sensor	Temp Data Probe		TDP
		Precipitation Sensor	R2S	Luft	
		Camera	PTZ Camera	Axis	Axis232D
		Bar Metric	Met One	Met One	
		Traffic Sensor	Ground Hog	Nu-Metrics	Ground Hog
Siteid	**Site Name**	**Sensor**	**Name Brand**	**Manufacturer**	**Model #**
705011	**St. Ignace**	Air Sensor	RM Young AT/RH	RM Young	1.1005.60.952
		Wind Sensor	RM Young WS/WD	RM Young	05103-15
		Surface Sensor	FP2000	SSI	FP2000
		Surface Sensor	Ground Hog	Nu-Metrics	Ground Hog
		Subsurface Sensor	Temp Data Probe		TDP
		Precipitation Sensor	R2S	Luft	
		Visibility Sensor	Sentry		
		Camera	PTZ Camera	Axis	Axis232D
		Bar Metric	Met One	Met One	
		Traffic Sensor	Ground Hog	Nu-Metrics	Ground Hog
Siteid	**Site Name**	**Sensor**	**Name Brand**	**Manufacturer**	**Model #**
705012	**Michigamme**	Air Sensor	RM Young AT/RH	RM Young	1.1005.60.952
		Wind Sensor	RM Young WS/WD	RM Young	05103-15
		Surface Sensor	FP2000	SSI	FP2000
		Surface Sensor	Ground Hog	Nu-Metrics	Ground Hog
		Subsurface Sensor	Temp Data Probe		TDP
		Precipitation Sensor	R2S	Luft	
		Visibility Sensor	Sentry		
		Camera	PTZ Camera	Axis	Axis232D
		Bar Metric	Met One	Met One	
		Traffic Sensor	Ground Hog	Nu-Metrics	Ground Hog

Region Offices, Transportation Service Centers and Maintenance Facilities

MDOT
Michigan Department of Transportation



SUPERIOR REGION
Escanaba Region Office

- ▲ Crystal Falls TSC
- ▲ Ishpeming TSC
  - ● *Houghton Garage*
  - ● *L'Anse Garage*
- ▲ Newberry TSC
  - ● *Engadine Garage*
  - ● *St. Ignace Garage*

NORTH REGION
Gaylord Region Office

- ▲ Alpena TSC
  - ● *Atlanta Garage*
  - ● *Mio Garage*
- ▲ Cadillac TSC
  - ● *Cadillac Special Crews*
  - ● *Marion Garage*
  - ● *Reed City Garage*
- ▲ Gaylord TSC
- ▲ Traverse City TSC
  - ● *Kalkaska Garage*

GRAND REGION
Grand Rapids Region Office

- ▲ Grand Rapids TSC
  - ● *Grand Special Crews*
- ▲ Muskegon TSC

BAY REGION
Saginaw Region Office

- ▲ Bay City TSC
  - ● *Saginaw Eastside Garage*
  - ● *Saginaw Special Crews*
  - ● *Saginaw Westside Garage*
- ▲ Davison TSC
- ▲ Mt. Pleasant TSC
  - ● *Mt. Pleasant Garage*

SOUTHWEST REGION
Kalamazoo Region Office

- ▲ Coloma TSC
  - ● *Coloma Garage*
  - ● *Jones Garage*
  - ● *Niles Garage*
  - ● *Sawyer Garage*
  - ● *South Haven Garage*
- ▲ Kalamazoo TSC
  - ● *Fennville Garage*
  - ● *Kalamazoo Garage*
  - ● *Kalamazoo Special Crew*
  - ● *Plainwell Garage*
- ▲ Marshall TSC
  - ● *Hastings Garage*
  - ● *Marshall Garage*

UNIVERSITY REGION
Jackson Region Office

- ▲ Brighton TSC
  - ● *Brighton Garage*
- ▲ Jackson TSC
  - ● *Adrian Garage*
  - ● *Jackson Special Crew*
- ▲ Lansing TSC
  - ● *Charlotte Garage*
  - ● *Grand Ledge Garage*
  - ● *Mason Garage*
  - ● *Williamston Garage*

METRO REGION
Southfield Region Office

- ▲ Detroit TSC
  - ● *Detroit Garage*
- ▲ Macomb TSC
  - ● *Blue Water Bridge*
- ▲ Oakland TSC
  - ● *Auburn Hills Garage*
- ▲ Taylor TSC

Prepared By: rlf-Specialized Technology
Revised January 2012
pjb-Operations Field Services
Maintenance