2.200 Federal and State Contract Requirements

2.201 Nondiscrimination

In the performance of the Contract, Contractor agrees not to discriminate against any employee or applicant for employment, with respect to his or her hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of race, color, religion, national origin, ancestry, age, sex, height, weight, marital status, or physical or mental disability. Contractor further agrees that every subcontract entered into for the performance of the Contract or any purchase order resulting from the Contract must contain a provision requiring non-discrimination in employment, as specified here, binding upon each Subcontractor. This covenant is required under the Elliot Larsen Civil Rights Act, 1976 PA 453, MCL 37.2101, et seq., and the Persons with Disabilities Civil Rights Act, 1976 PA 220, MCL 37.1101, et seq., and any breach of this provision may be regarded as a material breach of the Contract.

2.202 Unfair Labor Practices

Under 1980 PA 278, MCL 423.321, et seq., the State must not award a Contract or subcontract to an employer whose name appears in the current register of employers failing to correct an unfair labor practice compiled under Section 2 of the Act. This information is compiled by the United States National Labor Relations Board. A Contractor of the State, in relation to the Contract, must not enter into a contract with a Subcontractor, manufacturer, or supplier whose name appears in this register. Under Section 4 of 1980 PA 278, MCL 423.324, the State may void any Contract if, after award of the Contract, the name of Contractor as an employer or the name of the Subcontractor, manufacturer or supplier of Contractor appears in the register.

2.203 Workplace Safety and Discriminatory Harassment

In performing Services for the State, the Contractor must comply with the Department of Civil Services Rule 2-20 regarding Workplace Safety and Rule 1-8.3 regarding Discriminatory Harassment. In addition, the Contractor must comply with Civil Service regulations and any applicable agency rules provided to the Contractor. For Civil Service Rules, see http://www.mi.gov/mdcs/0,1607,7-147-6877---,00.html.

2.204 Prevailing Wage – Delete- Not Applicable

2.210 Governing Law

2.211 Governing Law

The Contract must in all respects be governed by, and construed according to, the substantive laws of the State of Michigan without regard to any Michigan choice of law rules that would apply the substantive law of any other jurisdiction to the extent not inconsistent with, or pre-empted by federal law.

2.212 Compliance with Laws

Contractor must comply with all applicable state, federal and local laws and ordinances in providing the Services/Deliverables.

2.213 Jurisdiction

Any dispute arising from the Contract must be resolved in the State of Michigan. With respect to any claim between the parties, Contractor consents to venue in Ingham County, Michigan, and irrevocably waives any objections it may have to the jurisdiction on the grounds of lack of personal jurisdiction of the court or the laying of venue of the court or on the basis of forum non conveniens or otherwise. Contractor agrees to appoint agents in the State of Michigan to receive service of process.

2.220 Limitation of Liability

2.221 Limitation of Liability

Neither the Contractor nor the State is liable to each other, regardless of the form of action, for consequential, incidental, indirect, or special damages. This limitation of liability does not apply to claims for infringement of United States patent, copyright, trademark or trade secrets; to claims for personal injury or damage to property caused by the gross negligence or willful misconduct of the Contractor; to claims covered by other specific provisions of this Contract calling for liquidated damages; or to court costs or attorneys' fees awarded by a court in addition to damages after litigation based on this Contract.

2.230 Disclosure Responsibilities

2.231 Disclosure of Litigation

(a) Disclosure. Contractor must disclose any material criminal litigation, investigations or proceedings involving the Contractor (and each Subcontractor) or any of its officers or directors or any litigation, investigations or proceedings under the Sarbanes-Oxley Act. In addition, each Contractor (and each Subcontractor) must notify the State of any material civil litigation, arbitration or proceeding which arises during the term of the Contract and extensions, to which Contractor (or, to the extent Contractor is aware, any Subcontractor) is a party, and which involves: (i) disputes that might reasonably be expected to adversely affect the viability or financial stability of Contractor or any Subcontractor; or (ii) a claim or written allegation of fraud against Contractor or, to the extent Contractor is aware, any Subcontractor by a governmental or public entity arising out of their business dealings with governmental or public entities. The Contractor must disclose in writing to the Contract Administrator any litigation, investigation, arbitration or other proceeding (collectively, "Proceeding") within 30 days of its occurrence. Details of settlements which are prevented from disclosure by the terms of the settlement may be annotated. Information provided to the State from Contractor's publicly filed documents referencing its material litigation will be deemed to satisfy the requirements of this Section.

(b) Assurances. If any Proceeding disclosed to the State under this Section, or of which the State otherwise becomes aware, during the term of the Contract would cause a reasonable party to be concerned about:

(i) the ability of Contractor (or a Subcontractor) to continue to perform the Contract according to its terms and conditions, or

(ii) whether Contractor (or a Subcontractor) in performing Services for the State is engaged in conduct which is similar in nature to conduct alleged in the Proceeding, which conduct would constitute a breach of the Contract or a violation of Michigan law, regulations or public policy, then the Contractor must provide the State all reasonable assurances requested by the State to demonstrate that:

(a) Contractor and its Subcontractors must be able to continue to perform the Contract and any Statements of Work according to its terms and conditions, and

(b) Contractor and its Subcontractors have not and will not engage in conduct in performing the Services which is similar in nature to the conduct alleged in the Proceeding.

(c) Contractor must make the following notifications in writing:

(1) Within 30 days of Contractor becoming aware that a change in its ownership or officers has occurred, or is certain to occur, or a change that could result in changes in the valuation of its capitalized assets in the accounting records, Contractor must notify DTMB-Procurement.

(2) Contractor must also notify DTMB Procurement within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership or officers.

(3) Contractor must also notify DTMB Procurement within 30 days whenever changes to company affiliations occur.

2.232 Call Center Disclosure- Deleted Not Applicable

2.233 Bankruptcy

The State may, without prejudice to any other right or remedy, terminate the Contract, in whole or in part, and, at its option, may take possession of the "Work in Process" and finish the Works in Process by whatever appropriate method the State may deem expedient if:

(a) the Contractor files for protection under the bankruptcy laws;

(b) an involuntary petition is filed against the Contractor and not removed within 30 days;

(c) the Contractor becomes insolvent or if a receiver is appointed due to the Contractor's insolvency;

(d) the Contractor makes a general assignment for the benefit of creditors; or

(e) the Contractor or its affiliates are unable to provide reasonable assurances that the Contractor or its affiliates can deliver the services under the Contract.

Contractor will fix appropriate notices or labels on the Work in Process to indicate ownership by the State. To the extent reasonably possible, materials and Work in Process must be stored separately from other stock and marked conspicuously with labels indicating ownership by the State.

2.240 Performance

2.241 Time of Performance

(a) Contractor must use commercially reasonable efforts to provide the resources necessary to complete all Services and Deliverables according to the time schedules contained in the Statements of Work and other Exhibits governing the work, and with professional quality.

(b) Without limiting the generality of **Section 2.241(a),** Contractor must notify the State in a timely manner upon becoming aware of any circumstances that may reasonably be expected to jeopardize the timely and successful completion of any Deliverables/Services on the scheduled due dates in the latest State-approved delivery schedule and must inform the State of the projected actual delivery date.

(c) If the Contractor believes that a delay in performance by the State has caused or will cause the Contractor to be unable to perform its obligations according to specified Contract time periods, the Contractor must notify the State in a timely manner and must use commercially reasonable efforts to perform its obligations according to the Contract time periods notwithstanding the State's failure. Contractor will not be in default for a delay in performance to the extent the delay is caused by the State.

2.242 Service Level Agreements (SLAs)

(a) SLAs will be completed with the following operational considerations:

(i) SLAs will not be calculated for individual Incidents where any event of Excusable Failure has been determined; Incident means any interruption in Services.

(ii) SLAs will not be calculated for individual Incidents where loss of service is planned and where the State has received prior notification or coordination.

(iii) SLAs will not apply if the applicable Incident could have been prevented through planning proposed by Contractor and not implemented at the request of the State. To invoke this consideration, complete documentation relevant to the denied planning proposal must be presented to substantiate the proposal.

(iv) Time period measurements will be based on the time Incidents are received by the Contractor and the time that the State receives notification of resolution based on 24x7x365 time period, except that the time period measurement will be suspended based on the following:

1. Time period(s) will not apply where Contractor does not have access to a physical State Location and where access to the State Location is necessary for problem identification and resolution.
2. Time period(s) will not apply where Contractor needs to obtain timely and accurate information or appropriate feedback and is unable to obtain timely and accurate information or appropriate feedback from the State.

(b) Chronic Failure for any Service(s) is defined as three unscheduled outage(s) or interruption(s) on any individual Service for the same reason or cause or if the same reason or cause was reasonably discoverable in the first instance over a rolling 30 day period. Chronic Failure will result in the State's option to terminate the effected individual Service(s) and procure them from a different vendor for the chronic location(s) with Contractor to pay the difference in charges for up to three additional months. The termination of the Service must not affect any tiered pricing levels.

(c) Root Cause Analysis must be performed on any business critical outage(s) or outage(s) on Services when requested by the Contract Administrator. Contractor must provide its analysis within two weeks of outage(s) and provide a recommendation for resolution.

(d) All decimals must be rounded to two decimal places, with five and greater rounding up and four and less rounding down, unless otherwise specified.

2.243 Liquidated Damages – Delete – Not Applicable

2.244 Excusable Failure

Neither party will be liable for any default, damage, or delay in the performance of its obligations under the Contract to the extent the default, damage or delay is caused by government regulations or requirements (executive, legislative, judicial, military, or otherwise), power failure, lightning, earthquake, war, water or other forces of nature or acts of God, delays or failures of transportation, equipment shortages, suppliers' failures, or acts or omissions of common carriers, fire; riots, civil disorders; strikes or other labor disputes, embargoes; injunctions (provided the injunction was not issued as a result of any fault or negligence of the party seeking to have its default or delay excused); or any other cause beyond the reasonable control of a party; provided the non-performing party and its Subcontractors are without fault in causing the default or delay, and the default or delay could not have been prevented by reasonable precautions and cannot reasonably be circumvented by the non-performing party through the use of alternate sources, workaround plans or other means, including disaster recovery plans.

If a party does not perform its contractual obligations for any of the reasons listed above, the non-performing party will be excused from any further performance of its affected obligation(s) for as long as the circumstances prevail. but the party must use commercially reasonable efforts to recommence performance whenever and to whatever extent possible without delay. A party must promptly notify the other party in writing immediately after the excusable failure occurs, and also when it abates or ends.

If any of the above-enumerated circumstances substantially prevent, hinder, or delay the Contractor's performance of the Services/provision of Deliverables for more than 10 Business Days, and the State determines that performance is not likely to be resumed within a period of time that is satisfactory to the State in its reasonable discretion, then at the State's option: (a) the State may procure the affected Services/Deliverables from an alternate source, and the State is not be liable for payment for the unperformed Services/ Deliverables not provided under the Contract for so long as the delay in performance continues; (b) the State may terminate any portion of the Contract so affected and the charges payable will be equitably adjusted to reflect those Services/Deliverables terminated; or (c) the State may terminate the affected Statement of Work without liability to Contractor as of a date specified by the State in a written notice of termination to the Contractor, except to the extent that the State must pay for Services/Deliverables provided through the date of termination.

The Contractor will not have the right to any additional payments from the State as a result of any Excusable Failure occurrence or to payments for Services not rendered/Deliverables not provided as a result of the Excusable Failure condition. Defaults or delays in performance by Contractor which are caused by acts or omissions of its Subcontractors will not relieve Contractor of its obligations under the Contract except to the extent that a Subcontractor is itself subject to an Excusable Failure condition described above and Contractor cannot reasonably circumvent the effect of the Subcontractor's default or delay in performance through the use of alternate sources, workaround plans or other means.

2.250 Approval of Deliverables

2.251 Delivery Responsibilities

Unless otherwise specified by the State within an individual order, the following must be applicable to all orders issued under the Contract.

(a) Shipment responsibilities - Services performed/Deliverables provided under the Contract must be delivered "F.O.B. Destination, within Government Premises." The Contractor must have complete responsibility for providing all Services/Deliverables to all site(s) unless otherwise stated. Actual delivery dates must be specified on the individual purchase order.

(b) Delivery locations - Services must be performed/Deliverables must be provided at every State of Michigan location within Michigan unless otherwise stated in the SOW. Specific locations will be provided by the State or upon issuance of individual purchase orders.

(c) Damage Disputes - At the time of delivery to State Locations, the State must examine all packages. The quantity of packages delivered must be recorded and any obvious visible or suspected damage must be noted at time of delivery using the shipper's delivery document(s) and appropriate procedures to record the damage.

Where there is no obvious or suspected damage, all deliveries to a State Location must be opened by the State and the contents inspected for possible internal damage not visible externally within 14 days of receipt. Any damage must be reported to the Contractor within five days of inspection

2.252 Delivery of Deliverables

Where applicable, the Statements of Work/POs contain lists of the Deliverables to be prepared and delivered by Contractor including, for each Deliverable, the scheduled delivery date and a designation of whether the Deliverable is a document ("Written Deliverable"), a good ("Physical Deliverable") or a Service. All Deliverables must be completed and delivered for State review and written approval and, where applicable, installed according to the State-approved delivery schedule and any other applicable terms and conditions of the Contract.

2.253 Testing

(a) Before delivering any of the above-mentioned Statement of Work Physical Deliverables or Services to the State, Contractor must first perform all required quality assurance activities to verify that the Physical Deliverable or Service is complete and conforms with its specifications listed in the applicable Statement of Work or Purchase Order. Before delivering a Physical Deliverable or Service to the State, Contractor must certify to the State that (1) it has performed the quality assurance activities, (2) it has performed any applicable testing, (3) it has corrected all material deficiencies discovered during the quality assurance activities and testing, (4) the Deliverable or Service is in a suitable state of readiness for the State's review and approval, and (5) the Deliverable/Service has all Critical Security patches/updates applied.

(b) If a Deliverable includes installation at a State Location, then Contractor must (1) perform any applicable testing, (2) correct all material deficiencies discovered during the quality assurance activities and testing, and (3) inform the State that the Deliverable is in a suitable state of readiness for the State's review and approval. To the extent that testing occurs at State Locations, the State is entitled to observe or otherwise participate in testing.

2.254 Approval of Deliverables, In General

(a) All Deliverables (Physical Deliverables and Written Deliverables) and Services require formal written approval by the State, according to the following procedures. Formal approval by the State requires the State to confirm in writing that the Deliverable meets its specifications. Formal approval may include the successful completion of Testing as applicable in **Section 2.253**, to be led by the State with the support and assistance of Contractor. The approval process will be facilitated by ongoing consultation between the parties, inspection of interim and intermediate Deliverables and collaboration on key decisions.

(b) The State's obligation to comply with any State Review Period is conditioned on the timely delivery of Deliverables/Services being reviewed.

(c) Before commencement of its review or testing of a Deliverable/Service, the State may inspect the Deliverable/Service to confirm that all components of the Deliverable/Service have been delivered without material deficiencies. If the State determines that the Deliverable/Service has material deficiencies, the State may refuse delivery of the Deliverable/Service without performing any further inspection or testing of the Deliverable/Service. Otherwise, the review period will be deemed to have started on the day the State receives the Deliverable or the Service begins, and the State and Contractor agree that the Deliverable/Service is ready for use and, where applicable, certification by Contractor according to **Section 2.253**.

(d) The State must approve in writing a Deliverable/Service after confirming that it conforms to and performs according to its specifications without material deficiency. The State may, but is not be required to, conditionally approve in writing a Deliverable/Service that contains material deficiencies if the State elects to permit Contractor to rectify them post-approval. In any case, Contractor will be responsible for working diligently to correct within a reasonable time at Contractor's expense all deficiencies in the Deliverable/Service that remain outstanding at the time of State approval.

(e) If, after three (3) opportunities (the original and two (2) repeat efforts), the Contractor is unable to correct all deficiencies preventing Final Acceptance of a Deliverable/Service, the State may: (i) demand

that the Contractor cure the failure and give the Contractor additional time to cure the failure at the sole expense of the Contractor; or (ii) keep the Contract in force and do, either itself or through other parties, whatever the Contractor has failed to do, and recover the difference between the cost to cure the deficiency and the contract price plus an additional sum equal to 10% of the cost to cure the deficiency to cover the State's general expenses provided the State can furnish proof of the general expenses; or (iii) terminate the particular Statement of Work for default, either in whole or in part by notice to Contractor provided Contractor is unable to cure the breach. Notwithstanding the foregoing, the State cannot use, as a basis for exercising its termination rights under this Section, deficiencies discovered in a repeat State Review Period that could reasonably have been discovered during a prior State Review Period.

(f) The State, at any time and in its reasonable discretion, may halt the testing or approval process if the process reveals deficiencies in or problems with a Deliverable/Service in a sufficient quantity or of a sufficient severity that renders continuing the process unproductive or unworkable. If that happens, the State may stop using the Service or return the applicable Deliverable to Contractor for correction and re-delivery before resuming the testing or approval process.

2.255 Process For Approval of Written Deliverables

The State Review Period for Written Deliverables will be the number of days set forth in the applicable Statement of Work following delivery of the final version of the Deliverable (and if the Statement of Work does not state the State Review Period, it is by default five (5) Business Days for Written Deliverables of 100 pages or less and 10 Business Days for Written Deliverables of more than 100 pages). The duration of the State Review Periods will be doubled if the State has not had an opportunity to review an interim draft of the Written Deliverable before its submission to the State. The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected before approval of the Deliverable (or at the State's election, after approval of the Deliverable). If the State notifies the Contractor about deficiencies, the Contractor must correct the described deficiencies and within 30 Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts must be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State must have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

2.256 Process for Approval of Services

The State Review Period for approval of Services is governed by the applicable Statement of Work (and if the Statement of Work does not state the State Review Period, it is by default 30 Business Days for Services). The State agrees to notify the Contractor in writing by the end of the State Review Period either stating that the Service is approved in the form delivered by the Contractor or describing any deficiencies that must be corrected before approval of the Services (or at the State's election, after approval of the Service). If the State delivers to the Contractor a notice of deficiencies, the Contractor must correct the described deficiencies and within 30 Business Days resubmit the Service in a form that shows all revisions made to the original version delivered to the State. The Contractor's correction efforts must be made at no additional charge. Upon implementation of a corrected Service from Contractor, the State must have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Service for conformity and that the identified deficiencies have been corrected.

2.257 Process for Approval of Physical Deliverables

The State Review Period for approval of Physical Deliverables is governed by the applicable Statement of Work (and if the Statement of Work does not state the State Review Period, it is by default 30 continuous Business Days for a Physical Deliverable). The State agrees to notify the Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by the Contractor or describing any deficiencies that must be corrected before approval of the Deliverable (or at the State's election, after approval of the Deliverable). If the State delivers to the Contractor a notice of deficiencies, the Contractor must correct the described deficiencies and within 30 Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. The Contractor's correction efforts must be made at no additional charge. Upon receipt of a corrected Deliverable from the Contractor, the State must have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

2.258 Final Acceptance

Unless otherwise stated in the Article 1, Statement of Work or Purchase Order, "Final Acceptance" of each Deliverable must occur when each Deliverable/Service has been approved by the State following the State Review Periods identified in **Sections 2.251-2.257**. Payment will be made for Deliverables installed and accepted. Upon acceptance of a Service, the State will pay for all Services provided during the State Review Period that conformed to the acceptance criteria.

2.260 Ownership

2.261 Ownership of Work Product by State

The State owns all Deliverables as they are works made for hire by the Contractor for the State. The State owns all United States and international copyrights, trademarks, patents, or other proprietary rights in the Deliverables.

2.262 Vesting of Rights

With the sole exception of any preexisting licensed works identified in the SOW, the Contractor assigns, and upon creation of each Deliverable automatically assigns, to the State, ownership of all United States and international copyrights, trademarks, patents, or other proprietary rights in each and every Deliverable, whether or not registered by the Contractor, insofar as any the Deliverable, by operation of law, may not be considered work made for hire by the Contractor for the State. From time to time upon the State's request, the Contractor must confirm the assignment by execution and delivery of the assignments, confirmations of assignment, or other written instruments as the State may request. The State may obtain and hold in its own name all copyright, trademark, and patent registrations and other evidence of rights that may be available for Deliverables.

2.263 Rights in Data

(a) The State is the owner of all data made available by the State to the Contractor or its agents, Subcontractors or representatives under the Contract. The Contractor must not use the State's data for any purpose other than providing the Services, nor will any part of the State's data be disclosed, sold, assigned, leased or otherwise disposed of to the general public or to specific third parties or commercially exploited by or on behalf of the Contractor. No employees of the Contractor, other than those on a strictly need-to-know basis, have access to the State's data. Contractor must not possess or assert any lien or other right against the State's data. Without limiting the generality of this Section, the Contractor must only use personally identifiable information as strictly necessary to provide the Services and must disclose the information only to its employees who have a strict need-to-know the information. The Contractor must comply at all times with all laws and regulations applicable to the personally identifiable information.

(b) The State is the owner of all State-specific data under the Contract. The State may use the data provided by the Contractor for any purpose. The State must not possess or assert any lien or other right against the Contractor's data. Without limiting the generality of this Section, the State may use personally identifiable information only as strictly necessary to utilize the Services and must disclose the information only to its employees who have a strict need to know the information, except as provided by law. The State must comply at all times with all laws and regulations applicable to the personally identifiable information. Other material developed and provided to the State remains the State's sole and exclusive property.

2.264 Ownership of Materials

The State and the Contractor will continue to own their respective proprietary technologies developed before entering into the Contract. Any hardware bought through the Contractor by the State, and paid for by the State, will be owned by the State. Any software licensed through the Contractor and sold to the State, will be licensed directly to the State.

2.270 State Standards

2.271 Existing Technology Standards

The Contractor must adhere to all existing standards as described within the comprehensive listing of the State's existing technology standards at http://www.michigan.gov/dmb/0,4568,7-150-56355-108233--,00.html.

2.272 Acceptable Use Policy

To the extent that Contractor has access to the State computer system, Contractor must comply with the State's Acceptable Use Policy, see http://www.michigan.gov/cybersecurity/0,1607,7-217-34395_34476---,00.html. All Contractor employees must be required, in writing, to agree to the State's Acceptable Use Policy before accessing the State system. The State reserves the right to terminate Contractor's access to the State system if a violation occurs.

2.273 Systems Changes

Contractor is not responsible for and not authorized to make changes to any State systems without written authorization from the Project Manager. Any changes Contractor makes to State systems with the State's approval must be done according to applicable State procedures, including security, access, and configuration management procedures.

2.274 Electronic Receipt Processing Standard

All electronic commerce applications that allow for electronic receipt of credit/debit card and electronic check (ACH) transactions must be processed via the Centralized Electronic Payment Authorization System (CEPAS).

2.280 Extended Purchasing Program

2.281 Extended Purchasing Program

The Agreement will be extended to MiDEAL members. MiDEAL members include local units of government, school districts, universities, community colleges, and nonprofit hospitals. A current list of MiDEAL members is available at www.michigan.gov/mideal. Upon mutual written agreement between the State of Michigan and the Contractor, this Agreement may be extended to (a) State of Michigan employees, or (b) other states (including governmental subdivisions and authorized entities

If extended, the Contractor must supply all goods and services at the established Agreement prices and terms. The State reserves the right to negotiate additional discounts based on any increased volume generated by such extensions.

The Contractor must submit invoices to, and receive payment from, extended purchasing program members on a direct and individual basis."

2.290 Environmental Provision

2.291 Environmental Provision

Hazardous Materials:

For the purposes of this Section, "Hazardous Materials" is a generic term used to describe asbestos, ACBMs, PCBs, petroleum products, construction materials including paint thinners, solvents, gasoline, oil, and any other material the manufacture, use, treatment, storage, transportation, or disposal of which is regulated by the federal, State, or local laws governing the protection of the public health, natural resources, or the environment. This includes, but is not limited to, materials such as batteries and circuit packs, and other materials that are regulated as (1) "Hazardous Materials" under the Hazardous Materials Transportation Act, (2) "chemical hazards" under the Occupational Safety and Health Administration standards, (3) "chemical substances or mixtures" under the Toxic Substances Control Act, (4) "pesticides" under the Federal Insecticide Fungicide and Rodenticide Act, and (5) "hazardous wastes" as defined or listed under the Resource Conservation and Recovery Act.

(a) The Contractor must use, handle, store, dispose of, process, transport and transfer any material considered a Hazardous Material according to all federal, State, and local laws. The State must provide a safe and suitable environment for performance of Contractor's Work. Before the commencement of Work, the State must advise the Contractor of the presence at the work site of any Hazardous Material to the extent that the State is aware of the Hazardous Material. If the Contractor encounters material reasonably believed to be a Hazardous Material and which may present a substantial danger, the Contractor must immediately stop all affected Work, notify the State in writing about the conditions encountered, and take appropriate health and safety precautions.

(b) Upon receipt of a written notice, the State will investigate the conditions. If (a) the material is a Hazardous Material that may present a substantial danger, and (b) the Hazardous Material was not brought to the site by the Contractor, or does not result in whole or in part from any violation by the Contractor of any laws covering the use, handling, storage, disposal of, processing, transport and transfer of Hazardous Materials, the State must order a suspension of Work in writing. The State must proceed to have the Hazardous Material removed or rendered harmless. In the alternative, the State must terminate the affected Work for the State's convenience.

(c) Once the Hazardous Material has been removed or rendered harmless by the State, the Contractor must resume Work as directed in writing by the State. Any determination by the Michigan Department of Community Health or the Michigan Department of Environmental Quality that the Hazardous Material has either been removed or rendered harmless is binding upon the State and Contractor for the purposes of resuming the Work. If any incident with Hazardous Material results in delay not reasonable anticipatable under the circumstances and which is attributable to the State, the applicable SLAs for the affected Work will not be counted in **Section 2.242** for a time as mutually agreed by the parties.

(d) If the Hazardous Material was brought to the site by the Contractor, or results in whole or in part from any violation by the Contractor of any laws covering the use, handling, storage, disposal of, processing, transport and transfer of Hazardous Material, or from any other act or omission within the control of the Contractor, the Contractor must bear its proportionate share of the delay and costs involved in cleaning up the site and removing and rendering harmless the Hazardous Material according to Applicable Laws to the condition approved by applicable regulatory agency(ies).

Michigan has a Consumer Products Rule pertaining to labeling of certain products containing volatile organic compounds. For specific details visit http://www.michigan.gov/deq/0,1607,7-135-3310_4108-173523--,00.html

Refrigeration and Air Conditioning:
The Contractor must comply with the applicable requirements of Sections 608 and 609 of the Clean Air Act (42 U.S.C. 7671g and 7671h) as each or both apply to the Contract.

Environmental Performance:
Waste Reduction Program: Contractor must establish a program to promote cost-effective waste reduction in all operations and facilities covered by the Contract. The Contractor's programs must comply with applicable Federal, State, and local requirements, specifically including Section 6002 of the Resource Conservation and Recovery Act (42 U.S.C. 6962, et seq.).

2.300 Other Provisions

2.311 Forced Labor, Convict Labor, Forced or Indentured Child Labor, or Indentured Servitude Made Materials

Equipment, materials, or supplies, that will be furnished to the State under the Contract must not be produced in whole or in part by forced labor, convict labor, forced or indentured child labor, or indentured servitude.

"Forced or indentured child labor" means all work or service: exacted from any person under the age of 18 under the menace of any penalty for its nonperformance and for which the worker does not offer himself voluntarily; or performed by any person under the age of 18 under a contract the enforcement of which can be accomplished by process or penalties.

Attachment A: Proposal Pricing

(Amended 7-23-2013)

	Item	Estimated Annual Quantity	Unit	Estimated Contract Quantity (3 Yr)	Unit Price	Extended Price (3 yr.)	Comments
Equipment							
	Non-WMT AVL Package	NA	Each	2147	$ 484.43	$1,115,916.83	For Non-Winter Maintenance Trucks (NWMTs). Includes smaller AVL controller with modem and on board storage. Also includes sensors and wiring to monitor engine hours and miles traveled. Must be capable of accepting sensors for additional metrics in the future. Must meet the requirements of the RFP.
	WMT AVL Package Breakdown						
	MDC-504 Unit				$ 2,704.46	ea	
	Material Flow Meter Solid				$ 870.15	ea	
	Road Watch Temperature Sensor Connector Box				$ 133.76	ea	For Winter Maintenance Trucks (WMTs). Larger AVL controller with modem with larger onboard storage capacity and more sensor ports. Also includes sensors and wiring harness for hours, miles, air and pavement temp, blade switching (up/down, gate/flow meter, dickey-John controller) material type/rate. Must be capable of accepting sensors for additional metrics in the future. Must meet the requirements of the RFP.
	Gate Sensor				$ 754.25	ea	
	Hydraulic Flow Meter Sensor				$ 321.40	ea	
	Plow Blade Sensors				$ 266.48	ea	
	WMT AVL Package	NA	Each	738	$ 4,250.49	$1,436,966.84	
	In cab Display Screen Package (Optional)	NA	Each	200	$ 270.00	$54,000.00	Optical touch screen and wiring for WMT's. For displaying MDSS recommendations and maps to operator.
	Camera Package (Optional)	NA	Each	200	$ 72.00	$14,400.00	Optional front view camera and wiring for WMT's.
	Miscellaneous Equipment	NA	Each	1	NA	NA	Includes non identified components that are part of the equipment packages that may be purchased by Department individually for replacement parts after equipment warranty period is over. Such as individual sensors and wires, etc.) The vendor shall submit a price per component type before filing an order, for review by the Department.
Communications							
	Monthly WMT High Data Cellular Data Plan	2028	Month	6084	$ 49.50	$ 301,158.00	For WMT's during the winter months (338 WMT * 6 month = 2028). To keep website and MDSS within 1 minute of real time conditions. Data provider invoices must be disclosed to MDOT.
	Monthly WMT Low Data Cellular Data Plan	2028	Month	6084	$ 22.00	$ 133,848.00	For WMT's in summer months (338 WMT * 6 month = 2028). To update website at least once per day. Data provider invoices must be disclosed to MDOT.
	Monthly Non-WMT Low Data Cellular Data Plan	26964	Month	80892	$ 7.76	$ 627,868.43	For non-WMT's year round (2247 Non-WMT * 12 month = 26964). To update website at least once per day. Data provider invoices must be disclosed to MDOT.
MDSS							
	MDSS Annual Service Fee	1	Annual LSUM	3	$ 132,011.85	$ 396,035.56	Forecasting, Decision support tools, and License fees.
	MDSS Route Configuration	NA	Each	150	$ 144.62	$ 21,692.85	One time set up of maintenance route parameters to represent adjacent routes. It is anticipated that 4-5 primary routes will be required per MDOT garage location/geographical region (routes will be determined by CO). MDSS routes must be configured for the MDSS to be considered functional.
	Monthly MDSS 2-Way WMT Communication	1320	Month	3960	$ 5.84	$ 23,068.42	Monthly weather forecasting and treatment recommendations to WMT's within cab display screen (200 WMT * 6 month = 1200).
	Monthly MDSS Website Management Per Truck	2028	Month	6084	$ 54.33	$ 329,333.00	For WMT's and in winter months. To provide treatment recommendations and monitor parameters for each WMT (338 WMT * 6 month = 2028).
Vendor Services							
	Project Management	12	Month	36	$ 9,495.37	$ 341,833.32	Monthly fee for managing aspects of the contract including reports, orders and invoices.
	Installation and Equipment Maintenance Training *Onsite	40	Hour	40	$ 1,397.50	$55,900.00	On site time at MDOT facility for equipment installation and maintenance training. Per MDOT requests. 1 AVL rep per request.
	Contractor Travel Expenses	1	Each	1	NA	NA	Reimbursement of Travel Expenses with receipts per MDOT Travel Regulations see Attachment E.
	Annual Website Usage Training	20	Hour	60	$ 6,364.62	$19,103.86	On site time at MDOT facility to train users on use of AVL site and features. Per MDOT request. 1 AVL rep per request. Must also provide users guide/manual plus video tutorial.
	Annual Technical Support	1	Annual LSUM	3	$ 59,772.00	$179,316.00	Yearly fee for troubleshooting issues with website(s), equipment, data needs, etc. Remote assistance within one hour of problem detected. On-site support must occur within 2 business days if requested by CO.
	Annual Data Storage	1	Annual LSUM	3	$ 83,143.33	$249,429.99	Yearly fee for storing all requested data off MDOT vehicles, on Vendor Servers. Unlimited data capacity is included in this item. Servers must be new.
	Annual AVL Website Management	NA	Each	2585	$ 30.63	$ 79,173.33	Yearly fee for AVL vendor to maintain secure website and form at collected data for mapping and reporting purposes by MDOT for all assets incurred with AVL units. From the site, Unlimited licenses and secure log in will be given to MDOT to use at the Department's discretion.
					Extended Price Total	**$ 5,369,036.35**	

Attachment B:

MDOT AVL-GPS System Requirements

Requirements listed below are minimum specifications for the AVL-GPS System and Services

Category 1	Equipment
	General
B.1.1	Vehicle Mounted Hardware – All equipment must be solid state with no moving parts such as fans and all communication hardware shall be fully integrated into the housing with no openings. The unit will be enclosed by a ruggedized case.
B.1.2	All equipment must be "off the shelf" and currently used by other agencies/ groups for AVL.
B.1.3	All equipment shall be uniform within the two asset classifications (WMT and Non-WMT) and must be operational across all vehicle types.
B.1.4	System Data Storage - The system must support at least 1 GB flash memory for storage of data over extended periods of power loss or 48 hours of observations whichever is greater. (This allows for storing all readings until 802.11 b/g or GPRS coverage is re-established then transmitting the stored data to provide an updated history of the vehicle.)
B.1.5	Delayed Data Transmission - The system must provide *Store and Forward* capabilities capable of storing over 1 GB of information while out of cellular communications coverage and automatically forwarding the same when back in coverage. (System collects vehicle activity data and geo-stamp data and stores onboard until data can be securely transmitted to provide a detailed historical record of activity while in the field.)
B.1.6	Power Loss - The system must provide ability to detect and report previous power loss if unit is disconnected then reconnected. (This reports if someone was to disable the system during their shift whether inadvertent or intentional.)
B.1.7	Power – The unit shall run off the vehicles power system.
B.1.8	Upon vehicle ignition, the vehicle will automatically report to the system. No operator interface will be necessary to begin transmitting position and sensor data. All information on vehicle status shall be stored and accessible on through an online database
B.1.9	AVL control unit must feature a power management feature or "sleep mode" and/or "Charge guard". This is to ensure that the vehicle battery is not discharged, after the vehicle is turned off. The current draw (Amps) of the AVL package must be minimal and allow for vehicles to sit unused for up to 2 months without discharging battery.
B.1.10	Power Surge/Failure – Unit shall have built in protection from low and high voltages.
B.1.11	System Operation - System must meet SAE J1455 environmental specifications and provide +/- 25g shock rating (Provides a ruggedized solution in the high abuse environment that system will be used in.) Operating temperature shall be in the range from -40 F to 140 F and operating humidity up to 95%.
B.1.12	The unit will produce low heat and have a low power consuming processer with a minimum processing speed of 1 Ghz.

B.1.13	GPS unit shall be satellite based GPS with WAAS enhanced accuracy. There will be a 12 parallel channel, Wide Area Augmentation System (WAAS) enabled GPS receiver.
B.1.14	GPS receiver must be accurate to less than 2 meters.
B.1.15	GPS output interval shall be programmable as determined by the Department with collection intervals at least once every second. The ability to remotely configure collection intervals on GPS units shall be available.
B.1.16	Remote Updates - System must support over-the-air firmware updates. (This allows for updating the system without the need to physically connect to each unit to manually update them.)
B.1.17	Antenna – The antenna shall be internal to the system.
B.1.18	Universal Time – System will synchronize both the unit and database to the universal time clock and time stamp all data collected.
B.1.19	System Operation – The system shall transmit from all integrated sensors simultaneously with the timestamp.
B.1.20	All connections between sensors and equipment must be hard-wire ruggedized connections.
B.1.21	System must not interfere with Original Equipment Manufacturer (OEM) electronics
B.1.22	Sensor Output – Capable of sending sensor data in its original format for data integrity and/or processing controller, camera and/or other data for in vehicle display and other purposes.
B.1.23	The system must be able to interface to on-board discrete sensor inputs and 3rd party data logging systems simultaneously.
B.1.24	The AVL control unit must be able to communicate with on-board equipment sensors installed on the vehicle to report their present status and changes to their status in real-time. The sensors, such as proximity switches, infrared, magnetic read switches, micro limit switches or equivalent must be able to communicate their present status to the equipment with necessary cabling connected to onboard equipment when required.
B.1.25	The AVL system shall be programmable in common full programming language such as JAVA, to accept input from sensors provided by the contractor, or third party.
B.1.26	Additional Software – The system will be capable of carrying additional VPN software at the department's discretion.
B.1.27	Troubleshooting – the system shall have self diagnostic capabilities to facilitate troubleshooting and maintenance activities.
B.1.28	Warranty – The system shall be warranted for a two year period following installation and final acceptance of each package as defined in the RFP
B.1.29	The system must allow for future enhancements that can allow for easy configuration, expansion and scalability. (examples include: additional sensors, control units, hardware)
B.1.30	System Transfer – The AVL system must allow for transferal to replacement vehicles with minimal reprogramming and downtime. If a memory chip is used, there must be easy access to it should its replacement or reprogramming be necessary.
	Non-WMT Package Only
B.1.31	*Non-WMT Package AVL Control Unit*: Simple Tracking unit must at a minimum be able to interface to two (2) inputs.

	WMT Package Only
B.1.32	*WMT Package AVL Control Unit (with on-board systems integration functionality)*: AVL control unit must at a minimum be able to interface at least 16 digital sensor inputs, four (4) analog to digital input, four (4) dedicated outputs, two (2) RS232 communication Ports, two (2) USB Ports, and an Ethernet port.
B.1.33	System Display Screen – Internally configured to support an in vehicle display screen, whether screen is used or not.
B.1.34	The display screen shall be sized a minimum of 6 x 8 inches.
B.1.35	In cab display system controls- Any operator controls for the display screen must only be allowed to function when the vehicle is stopped or traveling less than 3 mph.
B.1.36	The AVL system shall include sensors able to collect data from the spreader controller or other supplemental equipment for the following data:
a.	Plow Sensor (front plow, wing, underbody, tow plow)
b.	Pavement Temperature and Ambient Sensor
c.	Auger Feedback Sensor
d.	Gate Sensor
e.	Hydraulic Flow Meter Sensor
f.	Material Flow Meter Sensor (to monitor if material is dispensing from WMT and to verify spreader controller).
B.1.37	For all salt spreader controls, the data should be collected, stored and reported whenever a change to any of the following fields occurs: solid material type (eg salt/sand), solid material spread rate, solid material spread width, gate setting, blast on/off, pause on/off, liquid material spread rate, prewet on/off, and error status – depending on the availability for the particular spreader controller.
B.1.38	The system shall be capable of interfacing to the vehicle's on-board computer to collect engine data available via OBDII and the SAE standard J1708/1587, CANBUS, and J1939 networks. Such information may include but not be limited to: • Engine Speed; • RPM; • Coolant Temperature; • Fuel Level; • Trip Fuel; • Oil Pressure; and • Battery Voltage.
B.1.39	If Engine Hours and Odometer values are unavailable from the vehicle's on-board computer the system must be able to calculate virtual Odometer and Engine Hours based on the reporting of the vehicle and GPS distance. However, The system must provide user-configurable odometer and hour meter synching to the vehicle's actual odometer and hour meter. On board odometer and hour meter takes precedence over any virtual data.
B.1.40	Spreader Controller Integration – The system must integrate with Dickey John Control Point and ICS2000 controllers and the AVL modem. Any modification to the system is at the expense of the contractor.

B.1.41	The system shall allow for an optional front mount camera, to be powered off of the AVL.
Category 2	**Communications**
B.2.1	Communications – The communications technology to be used for transmitting data must be dual mode – 802.11 b/g and GSM/GPRS. System must include all necessary hardware items, processors, antennas, etc. (This provides the flexibility to use either 802.11 b/g wireless or GPRS to do automatic data downloads if necessary.)
B.2.2	Data Transfer – Unit shall transmit data using the TCP/IP protocol. All services used shall be RFC compliant.
B.2.3	Cellular communications – The unit shall be able to operate on multiple major cellular carriers and or private networks, in different parts of the state, with the simple replacement of the communications module.
B.2.4	Cellular Coverage - The AVL system must be able to transmit data from at least 90% of the MDOT roadway network across the state.
B.2.5	Non-WMT Communications– The Cellular data plan must allow for data transmittal to the mapping website at least once per day for non-WMTs from January 1st thru December 31st
B.2.6	WMT Communications– The Cellular data plan must allow for data transmittal to the mapping website at least once per day for WMTs during non-winter months, defined as being from April 30th to October 31st. The cellular data plan must allow for data transmittal to the MDSS provider and the mapping website(s) to be at least 60 seconds within real time conditions for WMTs during winter months, which is defined as being from November 1st thru April 30th. The definition of winter, and non-winter months are subject to change by the CCI.
B.2.7	Communications – Capable of using and changing carriers by changing carrier connection card or module without changing or replacing unit or other equipment.
B.2.8	Communications – Capable of migrating to next generation communication technologies with change of connection card or module without changing or replacing unit or other equipment.
B.2.9	Vehicle remote configuration must be web browser based, which is capable of logging into the AVL control unit to: • Set distance and time reporting intervals • Set destinations for data communications • Detect Sensor status changes and expansion of devices
B.2.10	2 way communication capabilities – provide capability to send messages and images to the vehicle as well as receive data and images from the vehicle when 2-way communication equipment is installed in vehicle.
B.2.11	Individual vs. Group/Fleet messaging – When 2 way communication is set up with vehicle it will provide messaging capabilities for one, all or groups of trucks, without use or additional cost of "text messaging".

B.2.12	The data from the equipment to the database shall include the following near real-time as well as recorded historical information, a) Vehicle speed, direction and location, b) Engine on or off, c) Engine idling vs. running time comparisons, d) Time and distance by each monitored sensor, e) Stop time data.
Category 3	**MDSS (also refer to Attachment D-MDSS System Requirements)**
B.3.1	MDSS Integration
a.	In vehicle mobile data collection units with integrated maintenance decision support systems, in accordance with these Specifications – The unit shall be of such design and construction as to comply with the requirement hereinafter stated and any parts or attachments necessary to form a complete, functioning unit must be furnished, whether specifically mention herein or not.
b.	Required NTCIP Compliance – All equipment and software must be compliant with NTCIP standard 1204.
c.	All costs to enable proper communication between the MDSS and weather forecasting provider and the optional in vehicle display screen will be borne by the contractor. The in vehicle display screen shall display local radar, short term weather forecast and recommended maintenance treatment.
d.	The MDSS shall also conform to specifications detailed in Attachment D
B.3.2	a. The Contractor shall demonstrate an understanding of Michigan weather and climatology, as well as a thorough knowledge of winter weather patterns and the variations within the State. b. The Contractor shall demonstrate an understanding of MDOT's trunk line system and its winter maintenance practices. c. The weather forecasting system shall include integrated MDSS functionality to support appropriate road maintenance actions that result in optimal road surface results with efficient use of resources for specific weather conditions. Treatment recommendations shall be provided for each hour of the forecast when indicated by the current and future pavement and weather forecast parameters. d. The system shall support the FHWA Pavement Recommendation Rules of Practice regime as the default treatment recommendations for specific weather situations. It shall also allow users to incorporate their own customized treatment plan recommendations to reflect individual best practices in chemical application, timing, type and rate as well as plowing actions. Users must also be able to select the appropriate route cycle times or times for their routes. Treatment recommendations must be provided for the next 48 hours to indicate required actions prior to, during, and after a storm.
B.3.3	All forecasts provided by the Contractor will become the property of the Department. The Department may, at its discretion, share the forecast with other agencies as appropriate. A unique forecast shall be provided for each localized area/route.
B.3.4	Maintenance Decision Support tools including road treatment recommendations

	will be required November 1st through April 30th, unless otherwise instructed by the CCI
B.3.5	Short-Term Forecasts Nov 1 to April 30 only- Shall be provided in accordance with Attachment D-MDSS System Requirements.
B.3.6	Long-Term Forecast shall be provided once daily and shall cover a period of 1 to 10 days. The long-term forecast shall be provided year round.
B.3.7	A system shall be provided that allows a user to obtain all forecast and treatment data, both in the office and at home, through an internet connection at all times.
B.3.9	Forecasting parameters shall be selectable enabling each one to be turned on or off.
B.3.10	Forecasts shall be displayed hourly for 48 hours and daily for 10 days.
B.3.11	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, or email
Category 4	**Vendor Services**
B.4.1	As it pertains to this contract Business days are defined as 8:00 a.m. to 5:00 p.m. Eastern Standard Time, Monday thru Friday.
B.4.2	WMT Installation – A minimum of 10 AVL/GPS WMT packages, at two locations (total of 20 equipment packages), shall be installed by Department staff with onsite guidance by the contractor. A detailed installation manual must be provided to Department before installation.
B.4.3	On-site maintenance training – The contractor shall provide at least one on-site, in-person training session on preventative maintenance and basic repairs of AVL equipment packages and any furnished sensors. Site to be determined by CCI
B.4.4	All trainings shall be available on-site and consist of at least ½ day sessions. Training sessions shall accommodate up to 15 people per session. Training materials shall be given as hard copy and available electronically. Site to be determined by CCI
B.4.5	Specialty Installation Tools – The contractor shall provide any and all specialty tools required to perform the installations.
B.4.6	User Training – The contractor shall provide at least one annual training session on how to use all furnished software.
B.4.7	Collected data shall be accessible to Department staff on-line for a period of up to two (2) years from date of collection. Data beyond the 2 year period may be archived but shall be reinstated online and available to the users upon request by the Department. Data shall be archived indefinitely.
B.4.8	Archived Data – All data collected on behalf of the Department shall be stored by the vendor for the entire life of the contract and must be readily accessible on website within 2 business days of a request.
B.4.9	All data collected is the property of the Department and shall be turned over to the Department at the end of the contract.
B.4.10	Technical Support – The contractor shall provide support via telephone and email

	for maintenance problems regarding the AVL system hardware or software and provide remote assistance within one hour of problem detected. On-site support must occur within 2 business days if requested by CCI.
B.4.11	Single Contact – The contractor shall provide a single point of contact for technical support for the entire AVL system, with the exception of non-contractor furnished sensors and communications.
B.4.12	Software Edition or Version – Unless otherwise specified, the software and firmware must be the latest edition or version offered.
B.4.13	Spares – The contractor shall have sufficient amount of replacement AVL equipment packages on hand to provide Department replacement packages within 2 business days of being notified of defective/non-functioning equipment to provide a consistent level of service.
B.4.14	Preventative Maintenance – Documentation on preventative maintenance of hardware will be included with AVL Equipment Packages and be required to occur no more than twice a year.
B.4.15	AVL Data Management and Access – the AVL information collection, storage, and mapping website shall be designed, owned and operated by the contractor at a location of the contractor's choice, outside of the Department network and accessible to the Department and other agencies via the internet, using a standard web-browser.
B.4.16	The contractor server must receive data from all vehicles with AVL purchased to be processed on a secure website.
Category 5	**Website, Mapping, and Reports**
B.5.1	User Website - The system must be a web-hosted solution accessible from any web browser with the appropriate User Name and Login credentials.
B.5.2	User Logins – The system must provide unlimited user names and unlimited access. It is expected that potentially 500 Department staff statewide will require user names and passwords.
B.5.3	Multiple users shall be able to access the information simultaneously from multiple locations.
B.5.4	User privileges shall be based on assigned username and password. System shall allow modification of the number of vehicles to be monitored, sensors to be monitored and monitor characteristics. User access levels shall be configurable for type of user (i.e. administrator, management, various office/agency level), as defined by the CCI.
B.5.5	Database – The AVL database system must have the ability to be in continuous operation 24 hours per day, 365 days per year and must be capable of handling year-end changes and daylight savings changes with no impact to the system.
B.5.6	Database Backup/Recovery – The AVL database system must provide for automatic recovery after any type of network failure. System must allow a means of automatic data archival and backup without system interruption.
B.5.7	Database Access – Data can be accessed, stored and archived by the Department in a relational database. Database should be designed to preserve the integrity of

	collected data, include a dictionary and relationship diagram for translation, and facilitate access and integration into other systems and applications.
B.5.8	Website – Data must be on-line at all times. Vendor must take precautions to prevent downtime.
B.5.9	User interface shall utilize point and click features as much as possible to increase ease of use and limit input user error.
B.5.10	Website - Color coded icons for at-a-glance status will be used.
B.5.11	Data Access - The system must include a web services Application Programming Interface (API) to allow read only secured access for raw data retrieval for use in other relational database applications (such as GIS mapping or other customer uses).
	Mapping
B.5.12	Users shall be able to view the position of their fleet vehicles at any point of time via a standard web browser on from a computer, tablet, and/or smartphone. The primary display shall be a map view of fleet vehicles and indicate the status of vehicles on when it last reported.
B.5.13	Each vehicle on the map should have a unique identifier, such as license plate, as determined by CCI.
B.5.14	The system must provide a minimum of the following mapping and reporting information: a. Last known asset location map view – fleet wide view b. Dispatch map (full screen "live" view) c. Asset last location relative to home (pre-determined address) d. Asset Odometer readings e. Total engine hours f. Last time asset reported in g. Last known location (individual asset map view) h. Historical trip report (individual asset map view) i. Raw data report showing exact data string as it was sent from spreader control (required for analyzing reports) i. Speed ii. Idling iii. Operating during "off" hours iv. Power v. Geo fence (in/out) vi. Temperature (custom attention required) j. View Maintenance History/Update Maintenance Record k. Ping Asset (Short Message Service(SMS) report) n. Distance measurement tool within the fleet-wide map view
B.5.15	The system must also provide the following mapping and reporting information: a. Vehicle Identifier (required) This should be an identifier that is unique to the organization from which the data is being collected. b. Time (required) This should be a complete description of the date and time of the report

	to within 1 second of accuracy. It can be in the form of a string (e.g., "12/20/2013 3:43 AM EST" or "1-20-2005 9:43 UTC") or numeric (such as a Unix timestamp, which is a count of seconds since a certain point in history). The form of string representations of the date & time is flexible, but should include at least the year, month, day, hour, minute, second and time zone of the observation (Eastern Standard Time). c. Location (required) Location information should be provided in the form of a GPS latitude and longitude associated with the vehicle's location at the time of the report. Three or more decimals of accuracy are required. d. Lane Identifier (required) This should be an identifier that can be used to uniquely determine the lane or lanes that a report applies to. e. Maintenance Data i. Plow Position (optional) ii. Scraper/Underbody Position (required) iii. Wing Position (optional) iv. Material Applied (required) v. Material Form (required) vi. Application Rate (required) vii. Application Rate Units (required) viii. Road Temperature (required) ix. Air Temperature (optional) x. Camera Feed (optional) Programmed to collect a time stamped forward camera image when option is installed.
B.5.16	The map display shall be such that vehicle position and status automatically update on screen without any input form the end-user, additionally, end-users shall be able to view the status of monitored on-board vehicle equipment.
B.5.17	The system shall allow viewing of a vehicle in motion leaving tracks or "breadcrumbs" as it travels with arrow indicators for direction and showing all operations (GPS & Telematic data) as they occur including exact street location. Users shall be able to view the above mentioned data for their entire fleet or select a specific vehicle(s) for a login session using a Filter Tool.
B.5.18	User shall be able to toggle back and forth between mapping interface and other features without having to close screens.
B.5.19	The System shall have the capability to enter an address or select a landmark to display at a minimum the 5 closest vehicles to that location including vehicle ID & distance to the specified location.
B.5.20	The system must have the capability to create, edit, and delete landmarks and/or geofences to be displayed on the map. In addition the landmark/geofence shall be identified in the reports.
B.5.21	The system must have an easy 'intuitive' navigation sequence (i.e. navigator bar and/or tabs for easy access to various functional screens). Tools shall include but not be limited to: • Map navigational tools (zoom in/out, center, pan, etc.);

	• Automatic Vehicle Location Tool; • Breadcrumbs; • Filter Tool; • Historical Data; and Reports.
B.5.22	User shall have options to select from different map views of the map in order to accommodate varying business requirements, desktop equipment performance and Internet connectivity.
B.5.23	The system shall include a playback feature allowing users to review historical data for selected vehicle(s), date(s) and timeframe. This data shall be made outputted via map based (graphical) and/or text based report. When reviewing the data graphically, the playback feature shall have pause, fast forward and rewind capabilities for ease of use.
B.5.24	Playback history shall include the ability to leave tracks or "breadcrumbs" depicting progress and direction along a roadway. This function shall enable the user to view data that has been collected from the vehicle (GPS and telematic data).
B.5.25	Maps – fully licensed maps included. Maps must also integrate with the Department's GIS framework which includes all route and mile marker identifications.
B.5.26	Reports shall be available for users by interactively selecting an area using the map interface.
	Reports
B.5.27	Data Exports – Reports must be exportable to Microsoft Excel, Microsoft Word, .csv format , and other relational databases.
B.5.28	Vehicle Usage Report - The system must provide Daily, Weekly, Monthly and Custom usage reports to accurately display vehicle utilization as well as hourly usage reports to reflect how many minutes in each hour a vehicle was in use.
B.5.29	M5 Vehicle Usage Reports - The system must also be capable of formatting the data for vehicle usage according to Attachment C, "M5 Standard Meter Interface Directions".
B.5.30	Vehicle Mileage Report **(All Vehicles)** – The system must provide a vehicle mileage report with user selectable date ranges showing miles traveled per day and first start/last stop times for each day in the selected date range.
B.5.31	Vehicle Hours Report **(All Vehicles)** – The system must provide an engine hour report with user selectable date ranges showing engine hour usage per day and first start/last stop times for each day in the selected date range.
B.5.32	Custom Reports **(WMT Fleet only)** – The system must provide a custom input usage report with user selectable date ranges showing usage of monitored auxiliary equipment such as underbody blades, temperature sensors, and additional components. Report must be able to show all activity or be run on a single auxiliary equipment input such as plow position.
B.5.33	Material Usage Report **(WMT Fleet only)** - System must provide material usage reports to accurately track the amount of granular material, pre-wet and/or direct liquid that was applied to a predefined section of roadway, or "zone". (for spreader integrated equipment only).

B.5.34	Vendor must be able to provide data from all salt spreader controllers into one report. Users shall be able to select all, multiple, or individual vehicles and date(s) and timeframe for each report. Report shall output at a minimum vehicle ID, date/time, vehicle spreading time/distance, deadheading time/distance, vehicle total travel time/distance, dry material usage (pounds / lane mile), liquid material usage, avg. application rate.
B.5.35	The system shall provide easy to use reporting tools to provide all reported data. Reports should have the option of exporting to Excel, .CSV or other relational databases.
B.5.36	The system shall be able to generate summary reports based on the user's input parameters. Each user shall have the ability to configure the parameters included in a report
B.5.37	Reports shall be configured to select either a single vehicle or group of vehicles.
B.5.38	It must be possible to generate additional user defined reports. These include, but are not limited to:
a.	Zone/Route report
b.	Fleet Start/Stop Report
c.	Individual Vehicle Mileage Report
d.	Daily/Weekly/Monthly Asset Usage Report
e.	Custom Asset Usage Report
f.	Custom Input Usage Report (6 discreet inputs)
g.	Asset Distance Report
h.	Exception Reports
B.5.39	In addition to standard reports, the system must be capable of generating exception reports for parameters such as • Stop times • Speed • Idle time • Zones • Input based exceptions (i.e. Panic buttons, PTO times, etc.) • Data logging exceptions (i.e. mileage, odometer value, etc.) • Exception reports
B.5.40	Exception reports shall be configurable by each user and the capability to generate an exception report from a combination of 2 or more parameters must be possible. i.e it must be possible for a user to create an exception report for WMTs that are applying material and traveling above a requested speed.
B.5.41	All exception report shall have the capability to be displayed on the website and as well as being sent automatically to specified users via email and or text message (as defined by the user).
B.5.42	The system shall provide an easy to use reporting tool to provide vehicle and material information such as date, time started, time completed, total miles traveled, total miles spread, total dead head miles, material usage (Ton), application rate, Liquid usage (gal), liquid application rate, and totals of the above information per snow event/storm.

Attachment D:
Maintenance Decision Support System (MDSS) Requirements

The MDSS ("System") shall detect, diagnose, forecast, and display surface transportation weather phenomena, road condition information, and winter maintenance treatment recommendations (described herein) for supporting winter road maintenance operations (e.g., snow plowing, deicing, anti-icing, etc.).

The System shall include the capability to selectively archive data and display archived data and products. The System shall include the capability to routinely monitor the system status. The System shall be fault tolerant with high reliability. The System shall be designed in accordance with standard commercial practices for software development. The System shall be designed to make reasonable allowance for expansion of computing power. The System software shall be designed to ensure that it can run on commercial-off-the-shelf hardware commonly available; that is, no special hardware development will be necessary. The System shall be designed to ensure that it can incorporate weather and road data from disparate sources (e.g., National Weather Service (NWS), Department AVL/GPS, Department Connected Vehicle projects, mesonetworks, RWIS, AWOS, etc.). The System (including all servers and displays) shall be synchronized using a time standard. The System shall include the capability to playback historical data for demonstration, training, and analysis purposes. The System shall use Local Time (LT) for all displays.

The System displays shall be implemented in English with English units as the default setting. The System shall integrate environmental (weather), road condition and transportation operational data in a manner that allows it to provide predictions of pavement conditions (e.g., pavement temperature, precipitation accumulation, anti-icing chemical effectiveness, etc.) associated with winter road maintenance.

Using the pavement condition and environmental prediction information, the System shall provide decision support guidance to winter road maintenance practitioners and the guidance shall include information related to treatment options (e.g., plow, deice, anti-ice, etc.), timing of application, location of application, and amount of application) based on current and predicted weather conditions. The System shall notify users when data updates (e.g., new forecasts) are available and the updates shall be loaded when the user selects to do so.

MDSS Coverage Area

The System shall be designed to operate (via configurable files) in any user-defined region (e.g., state, city, county, etc.) that has input data necessary to support its operations. The System shall generate weather forecasts for zones or regions around the State as identified by the user (e.g., forecast zones, maintenance zones, etc.). The System shall provide weather and road condition products (via configurable files) for road routes (maintenance routes) identified by the user. The System shall be configured to provide weather and road condition products for user identified road maintenance routes.

Weather Forecast Products

Weather forecast products refer to weather elements above the ground. Weather forecast products shall be provided out to at least 48 hours. Weather forecast products shall have a temporal resolution of at least one hour. Weather forecast products shall be updated no less than every three hours; that is, a new 48-hour forecast shall be provided every three hours.

The following weather forecast products shall be provided 2 meters above ground level (AGL), unless otherwise noted:

a) Surface air temperature
b) Surface dew point
c) Surface relative humidity
d) Surface wind speed & direction
e) Surface wind gust
f) Precipitation type
g) Precipitation rate
h) Snowfall accumulation (e.g., 3-hr total, 6-hr total, and total accumulation during the forecast period)
i) NWS watches, warnings and advisories

The weather forecast products shall be geo-referenced to the DOT domain using map overlays that include roads, road designators, political boundaries, etc.

Surface Air Temperature Forecast Product

The output (content) of the Surface Air Temperature Forecast Product on the display shall have the following characteristics:

a) The surface air temperature shall be provided in degrees Fahrenheit
b) Time series information (text and graphical formats) of the surface air temperature shall be provided.
c). Reference lines (configurable) associated with frequent thresholds (e.g., freezing) shall be provided.

Surface Dew Point Temperature Forecast Product

The output (content) of the Surface Dew Point Temperature Forecast Product on the display shall have the following characteristics: a) The surface dew point temperature shall be provided in degrees Fahrenheit b) Time series information (text and graphical formats) of the surface dew point temperature shall be provided.

Surface Wind Speed & Direction Forecast Product

The output (content) of the Surface Wind Speed & Direction Forecast Product on the display shall have the following characteristics:

a) The wind speed shall be provided in statute miles per hour by default
b) The wind direction shall be provided in degrees with respect to true north.
c) Time series information (text and graphical formats) of the wind speed and direction

Surface Wind Gust Forecast Product

The output (content) of the Surface Wind Gust Forecast Product on the display shall have the following characteristics: a) The wind gust speed shall be provided in statute miles per hour. c) Time series information (text and graphical formats) of the wind gust speed shall be provided.

Conditional Probability of Precipitation Type Forecast Product

The conditional probability of precipitation type is a product that describes the probability that a particular precipitation type (e.g., rain, snow, freezing rain, etc.) will occur if there is any precipitation at all.

The Precipitation Type Forecast Product shall include the conditional probability of precipitation type. That is, the user shall be able to view the probability of each type of precipitation as well as the predominant type.

a. The precipitation type shall be provided for at least the following:
    a. Rain
    b. Snow
    c. Ice
    d. Mixed (rain, snow, ice)
b. The predominant precipitation type (the type that the model selects as the most likely kind that will occur) shall be identified.
c. Time series information (text and graphical formats) of the predominant precipitation type shall be provided.

Precipitation Rate Forecast Product
The output (content) of the Precipitation Rate Forecast Product on the display shall have the following characteristics:

a. The liquid equivalent precipitation rate shall be provided in inches per hour (to a precision of a hundredth of an inch).
b. The snowfall precipitation rate shall be provided in inches per hour (to a precision of a tenth of an inch).
c. Time series information (text and graphical formats) of the precipitation rate shall be provided.

Snowfall Accumulation Forecast Product
The Snowfall Accumulation Product shall indicate the amount of snow that is expected to reach the surface (ground) over a specified period. Melting of precipitation due to warm surface conditions is not considered in this product.

The output (content) of the Snowfall Accumulation Forecast Product on the display shall have the following characteristics:

a. The snowfall accumulation shall be provided in inches (to a precision of a tenth of an inch).
b. Time series information (text and graphical formats) of the snowfall accumulation shall be provided.
c. Snowfall accumulation shall be provided at user-defined temporal increments out to 48 hours (e.g., 3-hour, 6-hour, 12-hour accumulation, etc.).

Weather Observation Products
Weather observation products shall be provided by the System. The weather observations products shall be geo-referenced to the DOT domain using map overlays that include roads, road designators, political boundaries, etc.

Weather observation products shall include, but not be limited to, observations from the following sources: NWS, DOT, FAA, and other sources as available.

Weather observation products shall include the following parameters, where available:

a. Air temperature (degrees F)
b. Relative humidity (percent)
c. Dew point (degrees F)
d. Wind speed & wind direction (miles per hour & degrees with respect to true north)
e. Radar Imagery

The weather observation products shall update as new data arrive. The output (content) of the weather observation products on the display shall have the following characteristics:

a. The surface observation data shall expire off the screen after a configurable number of minutes.
b. The expiration time shall be independently configurable for each observation product.
c. Time series (text and graphical formats) shall be provided.
d. Animation of the observations shall be provided.

adar Product

The radar product shall be based on data provided by NOAA. Other radar data sources may be used if applicable (e.g., FAA Terminal Doppler Weather Radar, local media owned radars). The radar product shall be based on the reflectivity (intensity) field. The radar product shall update as new data arrive.

The output (content) of the radar product on the display shall have the following characteristics:

- The radar reflectivity (intensity) field shall be displayed (plus color legend).
- Radar products shall be provided for user-defined domains.

NWS Watch, Warnings and Advisories Product

NWS watch, warnings and advisories for the DOT domain shall be provided.

The NWS watch, warnings and advisories shall include, but not limited to:

a. Winter storm watches and warnings
b. Flood watches and warnings
c. Flash flood watches and warnings
d. Severe thunderstorm watches and warning
e. Tornado watches and warnings
f. High wind watches and warnings
g. Special weather statement
h. Freeze watches and warnings
i. Winter weather advisories
j. Dense fog advisories
k. Snow advisories

The NWS watch, warning and advisory product shall be provided in text format. Graphical depictions of NWS watches and warnings may be provided, where applicable.

When an NWS watch, warning or advisory is in effect for an area (configurable) that covers the DOT domain, the display shall provide an indicator (e.g., highlighted button).

Road Condition Observation Products

Road condition observation products shall be provided and shown on the display.

Road condition observation products may include, but not be limited to, observations or measurements from the following sources:

a. Environmental Surface Stations (ESS)
b. Road Weather Information Systems (RWIS)
c. GPS/AVL data and Connected Vehicle data from Department fleet

(The CCI will decide which sources are used, and how).

Road condition observation products shall include the following parameters, where available

a. Road temperature (degrees F)
b. Subsurface temperature (degrees F)
c. Chemical concentration on road (percent by weight)
d. Freeze point temperature (degrees F)
e. Pavement condition as: Wet, Dry, or Chemically Wet
f. Snow, frost, and ice depth (inches
g. Blowing snow (yes/no)
h. Visibility (miles or fractions of miles)

The road condition observation products shall update as new data arrive. The output (content) of the road condition observation products on the display shall have the following characteristics:

a. The surface observation data shall expire off the screen after a configurable number of minutes
b. The expiration time shall be independently configurable for each observation product.
c. Viewing of the product shall be user selectable.
d. Time series (text or graphical formats) of the observations shall be provided.
e. Animations of the road condition products shall be provided.

Road Condition Prediction Products

The road condition prediction products shall be provided out to at least 48 hours. The road condition prediction products shall have a temporal resolution of at least one hour. The road condition prediction products shall be updated every three hours; that is, a new 48-hour forecast shall be provided no less than every three hours.

The following road condition prediction products shall be provided:

a. Road temperature
b. Road chemical concentration
c. Snow depth on road
d. Blowing snow potential
e. Pavement frost potential
f. Pavement condition

Road Temperature Prediction Product

The Road Temperature Prediction Product shall be provided at predefined (configurable) locations associated with each DOT maintenance route. The Road Temperature Prediction Product shall be based on a thermal energy balance model and/or empirically based model.

The output (content) of the Road Temperature Prediction Product on the display shall have the following characteristics:

a. The road temperature shall be provided in degrees F
b. The road temperature shall be presented graphically at each forecast location within the chosen (configurable) maintenance routes.
c. Time series information (text and graphical formats) shall be provided.

Road Snow Depth Prediction Product

The Road Snow Depth Prediction Product shall provide information that describes the amount of snow that is predicted to accumulate on a road surface without traffic and for specific winter maintenance treatments

Calculation of the Road Snow Depth Prediction Product shall take into account (at a minimum) the forecasted precipitation type and rate, and road temperature to estimate the amount of snow that will accumulate on the road surface.

The Snow Depth Prediction Product shall be provided at predefined (configurable) locations within each DOT maintenance route.

Calculation of the Snow Depth Prediction Product shall take into account treatment options including the amount of snow expected to accumulate on the road when; a) no treatment is performed, b) the recommended treatment is performed, and c) a user-defined treatment is performed.

The output (content) of the Snow Depth Product on the display shall have the following characteristics:

a. The snow/ice amount shall be given in inches by default (to a tenth of an inch)
b. The snow depth shall be shown for various treatment options including: no treatment, recommended treatment, and user-defined treatment.
c. The road snow depth shall be presented graphically at each forecast location associated with the chosen (configurable) maintenance routes.
d. Time series information (text and graphical formats) of the road contamination accumulation shall be provided.

Blowing Snow Potential Product

The Blowing Snow Potential Product shall provide information that describes the likelihood for blowing snow (e.g., low, medium, high). Calculation of the Blowing Snow Potential Product shall take into account (at a minimum) recent snowfall characteristics, the forecasted precipitation type and rate, predicted wind speed, local topography, and predicted air temperature. The Blowing Snow Potential Product shall be provided at predefined (configurable) locations within each DOT maintenance route.

The output (content) of the Blowing Snow Potential Product on the display shall have the following characteristics:

a. The likelihood value for blowing snow (e.g., low, medium, high or as a percentage)
b. Likelihood values shall be provided at hourly increments.
c. Likelihood values shall be provided at hourly increments.
d. Time series information (text and graphical formats) shall be provided.

Pavement Frost Potential Product

The Pavement Frost Potential Product shall provide information that describes the likelihood for frost on the pavement surface (road and/or bridges) (e.g., low, medium, high or as a percentage). Calculation of the Pavement Frost Potential Product shall take into account (at a minimum) predicted pavement temperature, predicted precipitation type and rate, predicted wind speed, predicted relative humidity (considerations of dew point/frost point), and predicted air temperature. The Pavement Frost Potential Product shall be provided at predefined (configurable) locations within each DOT maintenance route.

The output (content) of the Pavement Frost Potential Product on the display shall have the following characteristics:

a. The likelihood value for pavement frost (e.g., low, medium, high or as a percentage)
b. Likelihood values shall be provided at hourly increments
c. Likelihood values shall be provided for each road forecast segment (e.g., plow route).
d. Time series information (text and graphical formats) shall be provided.

Pavement Condition Prediction Product

The Pavement Condition Prediction Product shall provide information on the predicted state of the pavement and include:

a. Wet
b. Dry
c. Chemical wet
d. Percent coverage of snow and
e. Snow, frost, and ice depth (inches)

The output (content) of the Pavement Condition Prediction Product on the display shall have the following characteristics:

a. The pavement condition shall be presented in text format indicating the pavement condition (e.g., wet, dry, chemical wet, etc.) for each road forecast location (e.g., plow routes).
b. Time series information (text and graphical formats) shall be provided.

Calculation of the Pavement Condition Prediction Product shall take into account the pavement condition when; a) no treatment is performed, b) the recommended treatment is performed, and c) a user-defined treatment is performed.

Forecast Confidence Product

A measure of confidence shall be provided for the following weather forecast and road condition prediction products:

a. Snow accumulation
b. Precipitation type
c. Road temperature

The calculation of prediction confidence shall take into account recent statistical performance of each parameter and other appropriate metrics.

The output (content) of the Prediction Confidence Product on the display shall have the following characteristics:

a. The prediction confidence shall be given as a percentage, and shall be able to be displayed graphically.

b. Error statistics shall be calculated that reflect recent skill.
c. Time series information of the prediction confidence or error statistics shall be provided for the above-mentioned products.

Generation of Treatment Recommendation Predictions
The System shall provide treatment recommendation predictions for winter road maintenance at user defined (configurable) locations (e.g., plow routes).

The System shall provide treatment recommendation predictions out to no less than 24 hours into the future.

The winter maintenance rules of practice used in the System shall be based on the Manual of Practice for Effective Anti-Icing Program and NCHRP report #526 - Snow & Ice Control: Guidelines for Materials and Methods, and be configurable, as necessary, to reflect local DOT practices.

Treatment recommendations shall include the following for each user defined route:

a. Recommended initial treatment start time
b. Recommended subsequent treatment start time
c. Recommended treatment type (e.g., chemical, abrasives, plow)
d. Recommended chemical type based on available chemicals as identified by the Department
e. Recommended material rate (e.g., amount per lane mile)
f. Recommended pre-treatment type (solid or liquid), where applicable

The System shall have a capability to incorporate constraints (configurable) for each route so that irrelevant treatment recommendations are not provided. For example, the use of NaCl should not be recommended if the user does not use that chemical. Constraints may include:

a. Available materials (e.g., NaCl, $MgCl_2$, $CaCl_2$, abrasives etc.)
b. Application rate limits (based on truck spreading limits)
c. Route cycle limits (minimum turn around time to repeat treatments)

Treatment recommendations shall be calculated, to the greatest extent possible, using a combination of current observational data on the state of the roadway and predicted weather and road conditions.

Treatment recommendation calculations should consider, to the greatest extent possible, factors that impact treatment effectiveness (e.g., chemical scatter, splatter, traffic impacts, spreader characteristics, etc.).

System Alert Function
The System shall provide a capability to alert the user when specific data thresholds (configurable) have been exceeded. Users shall be able to query the System and view the information related to an alert.

The System shall indicate that an alert is active by one or more of the following methods: a) Highlighting an alert button b) Changing the color of an alert button c) Flashing an alert button d) Audible alert (finite series of beeps or tones) The System shall include a capability to send e-mail or text message notices or cell phone calls (to a configurable list of aliases) when specific alerts (configurable) are generated.

Display

The display shall have the following general capabilities:

a. Ability to view plan-view graphics
b. Ability to view time-series information
c. Animation
d. Time selection whereby the user can select the time period for data viewing
e. Print function
f. Alert function
g. Ability to review historical data
h. Ability to select viewing area
i. Ability to select products for viewing
j. Help function
k. Ability to combine data on time series plots
l. Ability to configure data ranges (scale) for each time series plot
m. Ability to overlay and combine graphical products

In vehicle display:

a. Ability to view plan view graphics
b. Ability to view local radar
c. Ability to view route specific treatment recommendations
d. Ability to view route specific weather and pavement forecast

Map Overlays

The System shall make it straightforward (e.g., via configuration files) to incorporate new map data.

Map overlays shall be available for the following:

a. Roads (State and local highways and secondary roads)
b. Road designators (e.g., route numbers, etc.)
c. Road Control section and mile marker identification.
d. Political boundaries (e.g., States, counties, maintenance zones, MDOT region and TSC area, etc.)
e. Cities
f. Weather and road condition observation sites

Data Archive and Historical Data Review

The System shall include a short and long-term data storage capability. The process of saving data shall not interfere with the normal operation of the System.

Short-Term Archive

The short-term archive shall consist of the latest fourteen (14) days of data. The oldest stored data shall be routinely (scrubbed) overwritten by new incoming data, such that the integrity of incoming data is preserved. Data within the short-term archive shall be viewable by selecting the date and time of interest from the display interface.

Long-Term Archive

The long-term archive shall consist of data sets specifically saved by the user. The System shall not delete (scrub) data within the long-term archive. The user shall have the capability to select the date, time, and filename for the long-term archive. The System shall provide a capability for the user to

review data from the long-term archive. This review shall not interfere with the operation of the real-time system. This requirement could be met by having a separate System available to view data from the historical archive.

Historical Data Viewer
The system shall have a capability to view (recent) historical weather and road condition prediction products together with actual observational data to give the user an indication of the performance of the weather and road condition predictions.

Users shall have the ability to select any of the forecasts from the previous 24-hour period. For example, the user shall be able to select a forecast 6 hours previous and compare the predicted conditions to the actual conditions.

Security
Means shall be provided to prevent the unauthorized use or misuse of the facilities provided in the System. This particularly applies to those functions that can be used to reconfigure or change the operating status of the System or subsystems.

Security shall be provided (e.g., password protection) to ensure that the System cannot be accidentally disabled from any display device or network system.

Form No. DTMB-3521 (Rev. 4/2012)
AUTHORITY: Act 431 of 1984
COMPLETION: Required
PENALTY: Contract change will not be executed unless form is filed

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
Bureau of Finance and Administration
Contract Services Division
Van Wagoner Building
425 W. Ottawa Street
P.O. BOX 30050
LANSING, MI 48909

CHANGE NOTICE NO. 1
to
CONTRACT NO. 591B3200466
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Delcan Technologies	Mark Neill	m.neill@delcan.com
2055 Sugarloaf Circle, Suite 500	TELEPHONE	CONTRACTOR #, MAIL CODE
Duluth, GA 30097	(770) 831-3370	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR	MDOT	Justin Droste	(517) 636-0518	drostej@michigan.gov
BUYER	MDOT	Terry Harris	(517) 335-2507	harrist@michigan.gov

CONTRACT SUMMARY:

DESCRIPTION: **PROVIDE A BASIC BUT COMPREHENSIVE DESCRIPTION OF SERVICES**
Automated Vehicle Location (AVL)/Global Positioning System (GPS) for Michigan Department of Transportation (MDOT)

INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
September 13, 2013	September 12, 2016	Two-one options	September 12, 2013
PAYMENT TERMS	**F.O.B**	**SHIPPED**	**SHIPPED FROM**
Net 45 Days	Destination	Various	N/A

ALTERNATE PAYMENT OPTIONS:			AVAILABLE TO MiDEAL PARTICIPANTS	
☐ P-card	☐ Direct Voucher (DV)	☐ Other	☐ Yes	☒ No

MINIMUM DELIVERY REQUIREMENTS:
N/A

DESCRIPTION OF CHANGE NOTICE:

EXTEND CONTRACT EXPIRATION DATE	EXERCISE CONTRACT OPTION YEAR(S)	EXTENSION BEYOND CONTRACT OPTION YEARS	LENGTH OF OPTION/EXTENSION	EXPIRATION DATE AFTER CHANGE
☒ No ☐ Yes	☐	☐		

VALUE/COST OF CHANGE NOTICE:	ESTIMATED REVISED AGGREGATE CONTRACT VALUE:
$0.00	$5,365,036.35

Effective September 25, 2013, this Contract is hereby adding Attachment C, E, F, and G.
All other terms, conditions, and specifications remain the same.

Change Notice Number 1
Contract Number 591B3200466

FOR THE CONTRACTOR:	FOR THE STATE:
Delcan Technologies	
Firm Name	Signature
Authorized Agent Signature	Demetrius Parker, Administrator
	Name/Title
MICHAEL HOWARTH ROBERTO PEREZ	D.P.
Authorized Agent (Print or Type)	MDOT Contract Services Division
	Enter Name of Agency
9/26/13 9/24/13	9-30-13
Date	Date

Form No. DTMB-3522 (Rev. 4/2012)
AUTHORITY: Act 431 of 1984
COMPLETION: Required
PENALTY: Contract will not be executed unless form is filed

STATE OF MICHIGAN
DEPARTMENT OF Transportation
Bureau of Finance and Administration
Contract Services Division
Van Wagoner Building
425 W. Ottawa Street
P.O. BOX 30050
LANSING, MI 48909

NOTICE OF CONTRACT NO. 591B3200466
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR:	PRIMARY CONTACT	EMAIL
Delcan Technologies 2055 Sugarloaf Circle, Suite 500 Duluth, GA 30097	Mark Neill	m.neill@delcan.com
	TELEPHONE	CONTRACTOR #, MAIL CODE
	(770) 831-3370	

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
CONTRACT COMPLIANCE INSPECTOR:	MDOT	Justin Droste	517-636-0518	drostej@michigan.gov
BUYER:	MDOT	Terry Harris	517-335-2507	harrist@michigan.gov

CONTRACT SUMMARY:

DESCRIPTION: Descriptive Contract Title (Not always the same language as provided in MAIN)

Automated Vehicle Location(AVL)/Global Positioning System(GPS) for Michigan Department of Transportation(MDOT)

INITIAL TERM	EFFECTIVE DATE	INITIAL EXPIRATION DATE	AVAILABLE OPTIONS
3 year	9/13/2013	9/12/2016	Two-one year options
PAYMENT TERMS	**F.O.B**	**SHIPPED**	**SHIPPED FROM**
Net 45	Destination	Various	N/A

ALTERNATE PAYMENT OPTIONS:	AVAILABLE TO MiDEAL PARTICIPANTS
☐ P-card ☐ Direct Voucher (DV) ☐ Other	☐ YES ☒ NO

MINIMUM DELIVERY REQUIREMENTS:

N/A

MISCELLANEOUS INFORMATION:

N/A

ESTIMATED CONTRACT VALUE AT TIME OF EXECUTION:	$5,365,036.35

THIS IS NOT AN ORDER: This Contract Agreement is awarded on the basis of our inquiry bearing the solicitation RFP-591150113B0000129. Orders for delivery will be issued directly by the Department of Technology, Management & Budget through the issuance of a Purchase Order Form.

Form No. DTMB-3522 (Rev. 4/2012)

Notice of Contract #: 591B3200466

FOR THE CONTRACTOR:	FOR THE STATE:
Firm Name	Signature
Authorized Agent Signature	Name/Title
Authorized Agent (Print or Type)	Enter Name of Agency
Date	Date

STATE OF MICHIGAN
Department of Technology Management and Budget
DTMB-Procurement

Request For Proposal AVL/GPS/MDSS Operational Management Solution for the Michigan Department of Transportation

Buyer Name: Terry Harris
Telephone Number: (517) 335-2507
E-Mail Address: harrist@michigan.gov

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Attachment A, Pricing

DEFINITIONS

24x7x365 means 24 hours a day, seven days a week, and 365 days a year (including the 366th day in a leap year).

Additional Service means any Services within the scope of the Contract, but not specifically provided under any Statement of Work.

Audit Period means the seven year period following Contractor's provision of any work under the Contract.

AVL means Automated Vehicle Location Services

Bidder(s) are those companies that submit a proposal in response to this RFP.

Business Day means any day other than a Saturday, Sunday or State-recognized legal holiday from 8:00am EST through 5:00pm EST unless otherwise stated.

Blanket Purchase Order is an alternate term for Contract and is used in the Plan Sponsors' computer system.

CCI means Contract Compliance Inspector.

Days means calendar days unless otherwise specified.

Deleted – N/A means that section is not applicable or included in this RFP. This is used as a placeholder to maintain consistent numbering.

Deliverable means physical goods and/or services required or identified in a Statement of Work.

DTMB means the Michigan Department of Technology Management and Budget.

Environmentally Preferable Products means a product or service that has a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. Such products or services may include, but are not limited to: those which contain recycled content, minimize waste, conserve energy or water, and reduce the amount of toxics either disposed of or consumed.

GPS means Global Positioning System

Hazardous Material means any material defined as hazardous under the latest version of federal Emergency Planning and Community Right-to-Know Act of 1986 (including revisions adopted during the term of the Contract).

Incident means any interruption in any function performed for the benefit of a Plan Sponsor.

Key Personnel means any personnel identified in **Section 1.031** as Key Personnel.

MDSS means Maintenance Decision Support System for providing roadway maintenance treatment recommendations

New Work means any Services/Deliverables outside the scope of the Contract and not specifically provided under any Statement of Work, such that once added will result in the need to provide the Contractor with additional consideration. "New Work" does not include Additional Service.

Ozone-depleting Substance means any substance the Environmental Protection Agency designates in 40 CFR part 82 as: (1) Class I, including, but not limited to, chlorofluorocarbons, halons, carbon

tetrachloride, and methyl chloroform; or (2) Class II, including, but not limited to, hydrochlorofluorocarbons.

Post-Consumer Waste means any product generated by a business or consumer which has served its intended end use; and which has been separated or diverted from solid waste for the purpose of recycling into a usable commodity or product, and which does not include post-industrial waste.

Post-Industrial Waste means industrial by-products which would otherwise go to disposal and wastes generated after completion of a manufacturing process, but does not include internally generated scrap commonly returned to industrial or manufacturing processes.

Recycling means the series of activities by which materials that are no longer useful to the generator are collected, sorted, processed, and converted into raw materials and used in the production of new products. This definition excludes the use of these materials as a fuel substitute or for energy production.

Reuse means using a product or component of municipal solid waste in its original form more than once.

RFP means a Request for Proposal designed to solicit proposals for services.

Services means any function performed for the benefit of the State.

SLA means Service Level Agreement.

Source Reduction means any practice that reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment prior to recycling, energy recovery, treatment, or disposal.

State Location means any physical location where the State performs work. State Location may include state-owned, leased, or rented space.

Subcontractor means a company selected by the Contractor to perform a portion of the Services, but does not include independent contractors engaged by Contractor solely in a staff augmentation role.

Unauthorized Removal means the Contractor's removal of Key Personnel without the prior written consent of the State.

Waste Prevention means source reduction and reuse, but not recycling.

WMT means Winter Maintenance Truck or Snowplow

Pollution Prevention means the practice of minimizing the generation of waste at the source and, when wastes cannot be prevented, utilizing environmentally sound on-site or off-site reuse and recycling. The term includes equipment or technology modifications, process or procedure modifications, product reformulation or redesign, and raw material substitutions. Waste treatment, control, management, and disposal are not considered pollution prevention, per the definitions under Part 143, Waste Minimization, of the Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451, as amended.

Work in Progress means a Deliverable that has been partially prepared, but has not been presented to the State for Approval.

Work Product refers to any data compilations, reports, and other media, materials, or other objects or works of authorship created or produced by the Contractor as a result of an in furtherance of performing the services required by the Contract.

Article 1 – Statement of Work (SOW)

1.010 Project Identification

1.011 Project Request

This Contract is for a comprehensive Automated Vehicle Location (AVL)/Global Positioning System (GPS) fleet tracking system for the Michigan Department of Transportation (MDOT). This Contract is all encompassing: including but not limited to; AVL/GPS hardware, firmware, software, installation support, communication/data transfer, training support, secure website for displaying mapped assets in near real-time, data management, data reporting and data storage, and ongoing technical support for implementing an AVL/GPS fleet tracking solution on the Departments fleet. All data collected is to be stored on non-state owned servers provided by the contractor. This Contract also includes a weather forecasting and Maintenance Decision Support System (MDSS) tool for the Departments maintenance garages and fleet of winter maintenance trucks (WMTs). The MDSS will be a web-based solution available to all of MDOTs maintenance facilities for providing weather forecasts, pavement condition forecasts, and maintenance treatment recommendations. The MDSS must also be capable of providing treatment recommendations and local radar and weather information to the operator of a WMT (if equipped with the optional display screen).

1.012 Background

The Michigan Department of Transportation currently owns and operates 2,585 vehicles/equipment assets. The vehicle/equipment inventory below is current as of April 2013 but subject to change:

- 338 Winter Maintenance Trucks (WMTs)

- 271 Medium Duty vehicles (1 ton)

- 890 Light Duty cars vans and trucks (under 1 ton)

-169 Other Heavy Duty Trucks (Miscellaneous large trucks)

-917 Large Equipment (trailers, chippers, graders, etc.)

The Department has grouped the assets into the two levels of implementation as described below. It is the Departments desire to instrument all of these assets with GPS/AVL hardware, however, the Departments initial priority will be to instrument and collect data from the 338 WMTs located throughout the state.

1) **Winter Maintenance Trucks** (WMTs) shall receive AVL/GPS equipment and services, and must be configured to record and report on the vehicle's operating engine hours, miles driven, and engine idle time. The WMTs will require additional features, such as an interface to the WMTs material application controllers, (Dickey John Control Point or ICS2000) to collect material application rates and other operational data, an optional in cab display screen and the ability to interface and collect data from other on-board devices such an air and pavement temperature sensor.

2) **All other assets listed (light, medium, other heavy duty trucks, and large equipment)** shall receive AVL/GPS equipment and services capable of providing the assets operating engine hours, miles driven, engine idle time and location.

Currently, the utilization of the Departments fleet is tracked by staff manually entering data and reporting into the M5 Fleet Management Software. By utilizing AVL technology to automatically report vehicle miles driven and engine hours, potential errors and time spent on manually logging fleet utilization could be nearly eliminated.

By monitoring and collecting data from the material controllers and other on-board equipment on the WMTs, additional time and potential error can be eliminated by automatically collecting and reporting winter material usage and displaying in near real-time the location, material application rates, plow

position, current air and pavement temperature of the Departments fleet of WMTs . Also, by communicating this additional operational data from the WMTs to a MDSS provider and receiving maintenance treatment recommendations back from the provider, efficiencies in maintenance operations can be increased.

1.020 Scope of Work and Deliverables

1.021 In Scope

Provide the necessary hardware package for each vehicle (the numbers listed in 1.012 are estimates only.) The contractor shall oversee and provide onsite training to Department staff during the installation of the initial 20 WMT AVL packages at 2 separate locations two days in a row (10 installations at each location), locations as determined by the CCI. The remaining units will be installed by Department staff but contractor shall provide installation training, an installation manual, and technical support to Department staff during and after the installation process. The contractor shall oversee and provide onsite training to Department staff during the installation of the initial 10 non-WMT equipment packages at a location to be determined by the CCI.

WMT equipment package:

Mobile Data Collector (MDC) – 004 unit

- Ruggedized Enclosure containing:
  - Cellular modem
  - Mobile data collector computer hardware
- Magnetic, Roof mount GPS antenna
- Power Harness
- I/O Cable, for connection to sensors
- DB9 Connector cable for communication with the Dickey-john Spreader Controller
- DB9 Connector cable for communication with temperature sensor
- Road Watch Temperature Sensor converter box for 3rd party data logging
- Magnetic, roof mount cellular antenna
- Installation hardware kit (all necessary screws, bolts, nuts, lock washers, etc.)
- Sensors from Dickey-john as Delcan Technologies (DTI's) response to Requirement B.136 indicates and as shown in Exhibit B.

Non-WMT Equipment Package:

Mobile Data Collector (MDC) -006 unit

- Ruggedized Enclosure containing:
  - Cellular modem
  - Mobile data collector computer hardware
- Power Harness
- Cellular magnetic, roof mount antenna
- Installation hardware kit (all necessary screws, bolts, nuts, lock washers, etc.)
- GPS magnetic, roof mount antenna

The Department requires that all 338 WMTs be instrumented within 60 days of contract execution, with the initial 20 being installed within 10 business days of contract execution. One quarter of the WMT AVL equipment packages ordered must be delivered to the Department within 30 days of contract execution and the remaining WMT AVL equipment packages ordered delivered within 60 days of contract execution. The vendor will have in place all MDC-004 (WMT) units to be functional as described in Attachment B-AVL GPS System requirements operational by November 15th 2013. Required data must be collected from WMTs and displayed on website by contractor within 5 days of Department staff installing the equipment packages.

The non-WMT assets will be instrumented as funding becomes available within the duration of the contract. The numbers of assets listed in 1.012 are estimates only and the Department cannot guarantee that it will purchase these quantities.

The will provide the MDC-006 (non-WMT) unit equipment package as funding is available to the Department for Purchasing of the non-WMT equipment packages to be functional as described in Attachment B-AVL GPS System requirements.

The Maintenance Decision Support System (MDSS) component of the Contract must be operational by November 15, 2013. The MDSS is expected to be used at all 30 MDOT maintenance garages. The MDSS is to be web based and a secure login must be provided. It is anticipated that up to 500 staff statewide will utilize the MDSS. The Department will provide the vendor the initial list of staff statewide that will require secure logins by November 1st.

The vendor must provide a secure website with unlimited unique login IDs to display asset current location and previous location (breadcrumb trail), speed, material application rates, plow position, pavement/air temperature readings, and liquid application rates. Website shall be operational in accordance to the specifications by November 15, 2013.

The vendor will provide the Intelligent NETworks® Winter Maintenance Module, a secure web-based solution, used to collect and display information from any asset equipped with either a WMT or non-WMT equipment package. Information collected and displayed on the Intelligent NETworks® Winter Maintenance Module website includes current location and previous location (breadcrumb trail), speed, material application rates, plow position, pavement/air temperature readings, and liquid application rates. The website will be operational with all functionality described in Attachment B-AVL GPS System Requirements by November 15th, 2013. The Intelligent NETworks® Winter Maintenance Module website can support unlimited unique login ID's. The Department will provide the vendor an initial list of all staff statewide that will require secure logins by November 1st.

The vendor is responsible for data storage, reporting capabilities, alerting capabilities as detailed in Attachment B-AVL GPS System Requirements and must be fully operational by November 15th, 2013.

1.022 Work and Deliverable

Contractor must provide Deliverables/Services and staff, and otherwise do all things necessary for or incidental to the performance of work, as set forth below:

This Contract is composed of several deliverables, each with multiple tasks. Detailed specifications are located in Attachment B-AVL GPS System Requirements. Below is a summary of each deliverable and an approximate timeline and anticipated number of hours or days for each deliverable.

Deliverable 1. Equipment

Task 1: Provide 20 WMT AVL equipment packages to department within 10 business days of contract execution.

Task 2: Contractor staff must be present for onsite installation for a minimum of the initial 20 WMT AVL packages by Department staff and provide timely phone, email and video conference support to Department staff performing installation.

Task 3: Provide, at a minimum, 25 percent of the WMT AVL equipment packages ordered by the Department within 30 days of contract execution.

Task 4: Provide all WMT AVL equipment packages ordered by the Department within 60 days of contract execution.

Task 5: Provide non-WMT equipment packages within 30 days of receiving a purchase order from the Department.

Task 6: Keep a sufficient amount of spare parts and units on hand to supply Department new units to replace any that are deficient or become inoperable during the 2 year warranty period.

See Attachment B-AVL GPS System Requirements for specific system requirements.

Deliverable 2 Communications

Task 1: Provide cellular data service to all AVL equipment packages within 2 days of being notified by Department that the equipment package was installed

Task 2: Provide cellular data service that has the coverage and ability to transmit data from at least 90% of the MDOT roadway network statewide.

See Attachment B-AVL GPS System Requirements for specific system requirements

Deliverable 3 Maintenance Decision Support System

The MDSS shall forecast, and display surface transportation weather events, road condition information, and winter maintenance treatment recommendations for supporting winter road maintenance operations. Using the pavement condition and environmental prediction information, the System shall provide decision support guidance to winter road maintenance practitioners and the guidance shall include information related to treatment options (e.g., plow, deice, anti-ice, etc.), timing of application, location of application, and amount of application) based on current and predicted weather conditions. The system shall also have the capability provide decision support guidance for non-winter maintenance activities.

The System shall be designed to operate (via configurable files) in any user-defined region (e.g., state, city, county, etc.) that has input data necessary to support its operations. The System shall generate weather forecasts for zones or regions around the State as identified by the user (e.g., forecast zones, maintenance zones, etc.). The System shall provide weather and road condition products (via configurable files) for road routes (maintenance routes) identified by the user. The System shall be configured to provide weather and road condition products for user identified road maintenance routes.

Task 1: Must be operational before November 15, 2013 and provide weather and pavement forecasts and treatment recommendations..
Task 2: Provide snow route specific treatment recommendations, weather maps and local radar to display screen in WMTs, if equipped.
Task 3: Provide treatment recommendations, weather maps, local radar and weather forecasts specific to each garage location on a web based system with a secure login provided. It is anticipated that up to 500 staff statewide will utilize the MDSS.
Task 4: Provide training and software support throughout the duration of the contract.

Exact specifications are located in Attachment B-AVL GPS System Requirements and Attachment D-MDSS System Requirements

Deliverable 4 Additional Vendor Services

Provide the Department implementation support and on-going support throughout the duration of the contract. Develop and deliver to Department staff training programs related to the installation of the AVL equipment packages, training related to on-going maintenance and preventative maintenance of the AVL equipment packages, training related to the usage of the Contractor provided website for displaying asset locations and reporting functionality, training associated with the usage of MDSS. Provide server space for all data collected as part of this contract. Data older than 2 years may be archived; however, archived data must be available to Department within 48 hours of a request for the data.

Task 1: Installation and equipment maintenance training at MDOTs request. At this time it is anticipated the contractor will be on site on 2 separate occasions to provide installation training.

Task 2: Provide Department staff training on using website for monitoring fleet usage and reporting features. This shall be an annual training with the location and format of the training at the discretion of the CCI.

Task 3: Data storage on contractor servers

See Attachment B-AVL GPS System Requirements for specific system requirements.

1.030 Roles and Responsibilities

1.031 Contractor Staff, Roles, and Responsibilities

A. PERSONNEL

1. Contractor shall identify personnel requirements by number and skill including names and proposed physical location of executive and professional personnel who would be employed in this project in its work-plan (and shall indicate through the use of organizational diagrams and/or narrative statements, the specific functions of each assigned individual with detailed qualifications of employees and subcontractors assigned to his project), for at least the following:

    - Project Manager
    - Staff Support

2. The State reserves the right to approve personnel for this project and to require replacement of personnel found to be unacceptable at any time during the project. (See §2.040).

3. Contractor shall be responsible for repair, replacement, or cleanup as necessary due to carelessness or negligence on the part of the Contractor and its personnel.

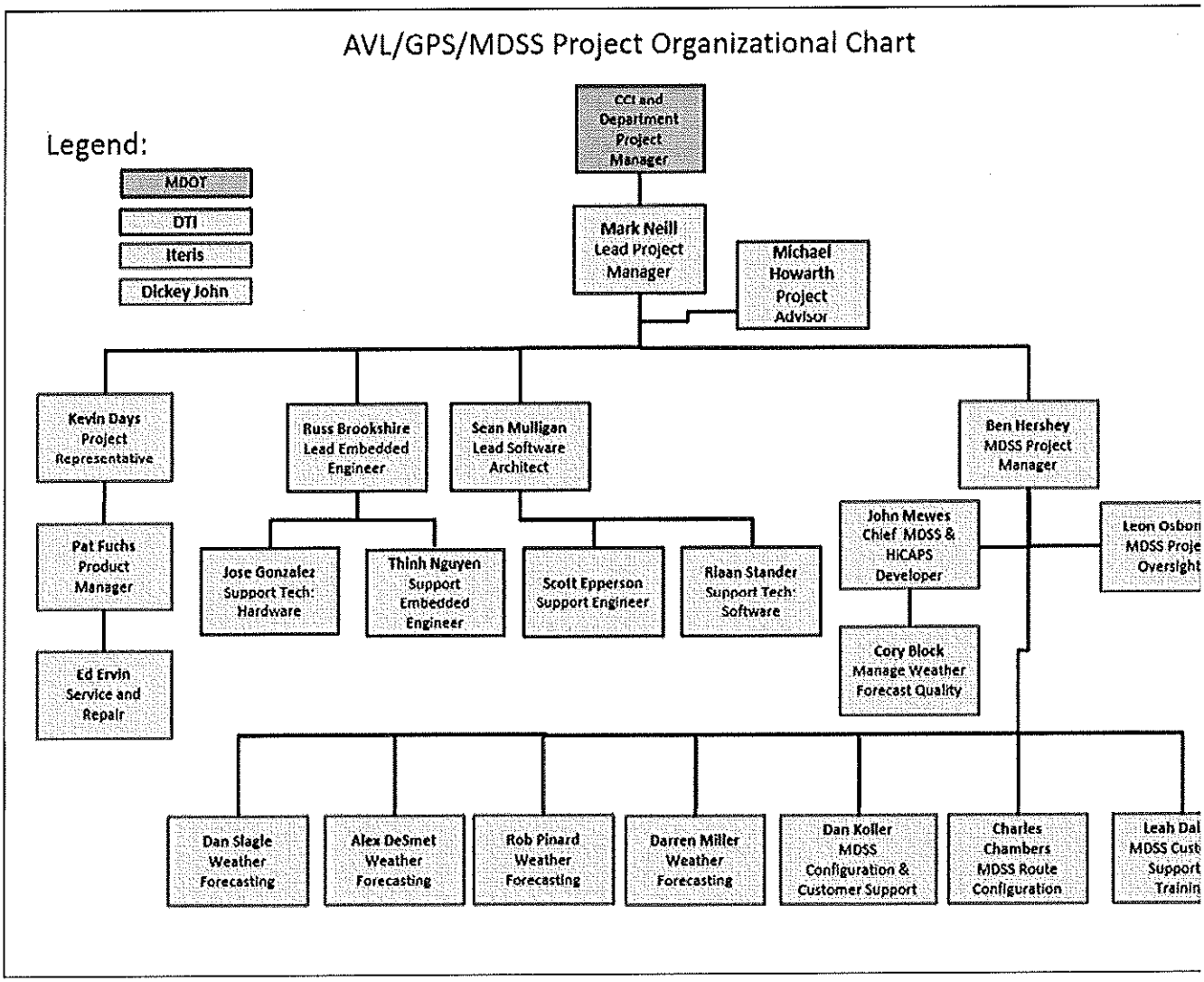
B. SUPERVISION

Contractor shall provide all supervision as may be necessary to oversee its personnel:

1. Contractor shall exercise all supervisory control and general control over all day-to-day operations of his/her employees, including control over all workers duties. At the conclusion of each service, the Contractor shall inspect the route for completion and performance quality of the required services. The Contractor shall also be responsible for payment of all wages to employees, taxes, and fringe benefits, sick leave, pension benefits, vacations, medical benefits, life insurance or unemployment compensation or the like. The Contractor shall discipline his/her employees, as needed, including firing and hiring.

2. The CCI may require that Contractor immediately remove any Contractual employee(s) from the agency's premises for just cause. The Contractor will assume any and all responsibilities relating to this removal. Any employee so removed may not be placed in another state agency.

3. The CCI shall make final determination of a contractual employee's suitability for assignment to a specific location. Problems of this nature will be addressed with the Contractor's management.



Delcan Technologies, Inc (Prime Contractor, WTM equipment Package, & Mapping Website)			
Name	Title	Role & Skills	Location
Mark Neill	Lead Project Manager	Overall Project Management and Supervision	Atlanta, GA
Michael Howarth	Vice President	Project Advisor	Atlanta, GA
Sean Mulligan	Lead Software Architect	Oversees Software Quality and Reliability	Atlanta, GA
Scott Epperson	Senior Software Engineer	Software Deployment, Troubleshooting, & Fixes	Atlanta, GA
Riaan Stander	Support Tech: Software	Technical Support by Phone and E-mail	Atlanta, GA
Russ Brookshire	Lead Embedded Engineer	Oversees Hardware Quality and Reliability	Atlanta, GA
Thinh Nguyen	Support Embedded Engineer	Supports Hardware Troubleshooting	Atlanta, GA
Jose Gonzalez	Support Tech: Hardware	Technical Support by Phone and E-mail	Atlanta, GA

Iteris, Inc. (Subcontractor for MDSS Services & MDSS Website)			
Name	Title	Role & Skills	Location
Ben Hershey	Associate VP of Weather Services Operations	MDSS Project Manager	Grand Forks, ND
John Mewes	Vice President	MDSS Chief Scientist and HiCAPS™ Developer	Grand Forks, ND
Leon Osborne	Senior Vice President	MDSS project oversight	Grand Forks, ND
Cory Block	Quality Control Manager	Mange Weather Forecasting Quality	Grand Forks, ND
Charles (Adam) Chambers	Senior Road Weather Specialist	MDSS Route configuration manager and customer support	Grand Forks, ND
Dan Koller	Road Weather Specialist	MDSS configuration support and customer support	Grand Forks, ND
Leah Dailey	Road Weather Specialist	MDSS customer support and training support	Grand Forks, ND
Rob Pinard	Lead Forecast Meteorologist	Weather Forecasting	Grand Forks, ND
Darren Miller	Lead Forecast Meteorologist	Weather Forecasting	Grand Forks, ND
Alex DeSmet	Forecast Meteorologist	Weather Forecasting	Grand Forks, ND
Dan Slagle	Forecast Meteorologist	Weather Forecasting	Grand Forks, ND

DICKEY-john (Subcontractor for WMT Equipment Package Sensor)			
Name	Title	Role & Skills	Location
Kevin Days	Sales Manager	Project Representative	Aurora, IL
Pat Fuchs	Product Manager	Management of Product Development	Aurora, IL
Ed Ervin	Technical Support Manager	Manage the Service and Repair Departments	Aurora, IL

1.040 Project Plan

1.041 Project Plan Management

A. For each location, a project work plan for managing implementation of the services shall be specified and submitted to the CCI for review and approval.

B. Project management plan shall identify methods, tools, and processes proposed to oversee the project, address issues and changes as may arise, and keep the appropriate parties apprised of progress.

C. Contractor will carry out this project under the direction and control of the specified CCI for the respective locations where services are to be performed.

D. Contractor shall meet with the CCI and other agency or departmental project-leads, on a basis to be established by CCI and Contractor, but shall meet quarterly at a minimum, for the purpose of reviewing progress and providing necessary guidance to the Contractor in solving problems that arise, as well as continuously communicate with the agency/departmental project-lead.

E. Annual Service Review and Progress Meeting

1. The CCI may request an audit of the services provided each year under the specifications, terms, and conditions of this Contract. The audit will be a joint activity of MDOT and Purchasing Operations.

2. An unsatisfactory audit will result in cancellation of this Contract under the terms of the Cancellation Clause in this Contract. Further, should this Contract be cancelled for cause, the Contractor so cancelled will not be allowed to participate in request(s) for continuation of this service.

3. The audit will consist of an evaluation of the total service quality, including responsiveness, timeliness of required reporting, and any other specifics as required under the terms of this Contract. The results of the audit along with Contract recommendations will be published by Purchasing Operations and distributed to the respective Agency(s).

4. Should the Contractor desire, a meeting will be arranged between all concerned parties within 10 calendar days of the date the Contractor received, or could have reasonably been expected to receive, their copy of the audit. This meeting will provide an opportunity for the Contractor to present their reactions to audit recommendations.

1.042 Reports

Monthly reporting will be required. The report shall include at a minimum the number of contacts made by Department staff for customer service and technical support. A short description of the reason for contact should also be provided in the monthly report. The vendor uses the Mantis Bug Tracker system to record and track each time a technical support issue or customer service request is received by DTI staff.

The Department also requests a report confirming which assets were transferring data during the previous month. The vendor will provide a report from the Intelligent NETworks® Winter Maintenance Module confirming which WMT and non-WMT equipped vehicles were transferring data during the previous month.

The contractor shall provide a report detailing miles driven and engine hours for all assets equipped with AVL/GPS on a weekly basis to the Department in the format specified in Attachment C M5 Standard Interface program. Both the WMT and non-WMT are capable of collecting engine code values including

miles driven and engine hours A monthly report detailing the Contractors cellular communications invoices is also required.

Additional reports may be required by the CCI or Project Manager.

1.050 Acceptance

1.051 Criteria

The following criteria will be used by the State to determine Acceptance of the Services or Deliverables provided under this SOW:

The GPS/AVL hardware packages will not be considered accepted until Department can verify that all requested data is being transmitted to, processed and displayed by the vendor on their secure web portal.

MDSS will be accepted once it is operational and meets the requirements defined in this RFP.

Training and other vendor services will be accepted after completion of the materials and delivered to Department staff.

Bidder shall provide additional acceptance criteria as part of their response.

1.052 Final Acceptance-Reserved

1.060 Proposal Pricing

1.061 Proposal Pricing

For authorized Services and Price List, see Attachment A.

Contractor's out-of-pocket expenses are not separately reimbursable by the State unless, on a case-by-case basis for unusual expenses, the State has agreed in advance and in writing to reimburse Contractor for the expense at the State's current travel reimbursement rates. See **www.michigan.gov/dtmb** for current rates.

Extended purchasing program volume requirements are not included, unless stated otherwise.

1.062 Price Term

MDOT-Purchasing reserves the right to consider various pertinent information sources to evaluate price increase requests (such as the CPI and PPI, US City Average, as published by the US Department of Labor, Bureau of Labor Statistics). MDOT-Purchasing also reserves the right to consider other information related to special economic and/or industry circumstances, when evaluating a price change request. Requests for price changes must be RECEIVED IN WRITING AT LEAST TEN DAYS PRIOR TO THEIR EFFECTIVE DATE, and are subject to written acceptance before becoming effective. In the event new prices are not acceptable, the Contract may be cancelled. **The Contractor remains responsible for performing according to the Contract terms at the Contract price for all orders received before price revisions are approved or before the Contract is cancelled.**

1.063 Tax Excluded from Price

(a) Sales Tax: For purchases made directly by the State, the State is exempt from State and Local Sales Tax. Prices must not include the taxes. Exemption Certificates for State Sales Tax will be furnished upon request.

(b) Federal Excise Tax: The State may be exempt from Federal Excise Tax, or the taxes may be reimbursable, if articles purchased under any resulting Contract are used for the State's exclusive use. Certificates showing exclusive use for the purposes of substantiating a tax-free or tax-reimbursable sale will be sent upon request. If a sale is tax exempt or tax reimbursable under the Internal Revenue Code, prices must not include the Federal Excise Tax.

1.064 Holdback - Reserved

1.070 Additional Requirements

1.071 Additional Terms and Conditions specific to this RFP-Deleted Not Applicable

Article 2, Terms and Conditions

2.000 Contract Structure and Term

2.001 Contract Term
The Contract is for a period of 3 years beginning 9/13/2013) through 9/12/2016 All outstanding Purchase Orders must also expire upon the termination (cancellation for any of the reasons listed in **Section 2.150**) of the Contract, unless otherwise extended under the Contract. Absent an early termination for any reason, Purchase Orders issued but not expired, by the end of the Contract's stated term, will remain in effect for the balance of the fiscal year for which they were issued.

2.002 Options to Renew
The Contract may be renewed in writing by mutual agreement of the parties not less than 30 days before its expiration. The Contract may be renewed for up to 2 additional 1 year periods.

2.003 Legal Effect
Contractor must show acceptance of the Contract by signing two (2) copies of the Contract and returning them to the Contract Administrator. The Contractor must not proceed with the performance of the work to be done under the Contract, including the purchase of necessary materials, until both parties have signed the Contract to show acceptance of its terms, and the Contractor receives a Contract release/purchase order that authorizes and defines specific performance requirements.

Except as otherwise agreed in writing by the parties, the State assumes no liability for costs incurred by Contractor or payment under the Contract, until Contractor is notified in writing that the Contract (or Change Order) has been approved by the State Administrative Board (if required), approved and signed by all the parties, and a Purchase Order against the Contract has been issued.

2.004 Attachments & Exhibits
All Attachments and Exhibits affixed to any and all Statement(s) of Work, or appended to or referencing the Contract, are incorporated in their entirety and form part of the Contract.

2.005 Ordering
The State will issue a written Purchase Order, Blanket Purchase Order, Direct Voucher or Procurement Card Order, which must be approved by the Contract Administrator or the Contract Administrator's designee, to order any Services/Deliverables under the Contract. All orders are subject to the terms and conditions of the Contract. No additional terms and conditions contained on either a Purchase Order or Blanket Purchase Order apply unless they are also specifically contained in that Purchase Order's or Blanket Purchase Order's accompanying Statement of Work. Exact quantities to be purchased are unknown, however, the Contractor must furnish all such materials and services as may be ordered during the CONTRACT period. Quantities specified, if any, are estimates, and the State is not obligated to purchase in these or any other quantities.

2.006 Order of Precedence
(a) The Contract, including any Statements of Work and Exhibits, to the extent not contrary to the Contract, each of which is incorporated for all purposes, constitutes the entire agreement between the parties with respect to the subject matter and supersedes all prior agreements, whether written or oral, with respect to the subject matter and as additional terms and conditions on the purchase order must apply as limited by **Section 2.005.**

(b) In the event of any inconsistency between the terms of the Contract and a Statement of Work, the terms of the Statement of Work will take precedence (as to that Statement of Work only); provided, however, that a Statement of Work may not modify or amend the terms of the Contract, which may be modified or amended only by a formal Contract amendment.

2.007 Headings
Captions and headings used in the Contract are for information and organization purposes. Captions and headings, including inaccurate references, do not, in any way, define or limit the requirements or terms and conditions of the Contract.

2.008 Form, Function & Utility
If the Contract is for use of more than one (1) State agency and if the Deliverable/Service does not the meet the form, function, and utility required by that State agency, that agency may, subject to State purchasing policies, procure the Deliverable/Service from another source.

2.009 Reformation and Severability
Each provision of the Contract is severable from all other provisions of the Contract and, if one (1) or more of the provisions of the Contract is declared invalid, the remaining provisions of the Contract remain in full force and effect.

2.010 Consents and Approvals
Except as expressly provided otherwise in the Contract, if either party requires the consent or approval of the other party for the taking of any action under the Contract, the consent or approval must be in writing and must not be unreasonably withheld or delayed.

2.011 No Waiver of Default
If a party fails to insist upon strict adherence to any term of the Contract then the party has not waived the right to later insist upon strict adherence to that term, or any other term, of the Contract.

2.012 Survival
Any provisions of the Contract that impose continuing obligations on the parties, including without limitation the parties' respective warranty, indemnity and confidentiality obligations, survive the expiration or termination of the Contract for any reason. Specific references to survival in the Contract are solely for identification purposes and not meant to limit or prevent the survival of any other section.

2.020 Contract Administration

2.021 Issuing Office
The Contract is issued by the Michigan Department of Transportation (collectively, including all other relevant State of Michigan departments and agencies, the "State"). MDOT-Purchasing is the sole point of contact in the State with regard to all procurement and contractual matters relating to the Contract. MDOT-Purchasing and the Contract Compliance Inspector (CCI) **is the only State office authorized to change, modify, amend, alter or clarify the prices, specifications, terms and conditions of the Contract.**

Terry Harris
MDOT, Procurement
P O Box 30050
425 West Ottawa St.
Lansing, MI 48909
Email: Harrist@michigan.gov

2.022 Contract Compliance Inspector
After MDOT-Purchasing receives the properly executed Contract, it is anticipated that the MDOT-Purchasing, in consultation with MDOT Operations Field Services, will direct the person named below, or any other person so designated, to monitor and coordinate the activities for the Contract on a day-to-day basis during its term. However, monitoring of the Contract implies **no authority to change, modify, clarify, amend, or otherwise alter the prices, terms, conditions and specifications of the Contract as that authority is retained by MDOT Purchasing**. The CCI for the Contract is:

Justin Droste P.E.
Roadway Operations Engineer
Michigan Department of Transportation
(517) 636-0518
drostej@michigan.gov

2.023 Project Manager
The following individual will oversee the project:

Tim Croze P.E.
Region Support Engineer
Michigan Department of Transportation
(517) 322-3394
crozet@michigan.gov

2.024 Change Requests
The State reserves the right to request, from time to time, any changes to the requirements and specifications of the Contract and the work to be performed by the Contractor under the Contract. During the course of ordinary business, it may become necessary for the State to discontinue certain business practices or create Additional Services/Deliverables. At a minimum, to the extent applicable, the State would like the Contractor to provide a detailed outline of all work to be done, including tasks necessary to accomplish the services/deliverables, timeframes, listing of key personnel assigned, estimated hours for each individual per task, and a complete and detailed cost justification.

If the Contractor does not so notify the State, the Contractor has no right to claim thereafter that it is entitled to additional compensation for performing that service or providing that deliverable.

Change Requests:

(a) By giving Contractor written notice within a reasonable time, the State must be entitled to accept a Contractor proposal for Change, to reject it, or to reach another agreement with Contractor. Should the parties agree on carrying out a Change, a written Contract Change Notice must be prepared and issued under the Contract, describing the Change and its effects on the Services and any affected components of the Contract (a "Contract Change Notice").

(b) No proposed Change may be performed until the proposed Change has been specified in a duly executed Contract Change Notice issued by the MDOT-Purchasing.

(c) If the State requests or directs the Contractor to perform any activities that Contractor believes constitute a Change, the Contractor must notify the State that it believes the requested activities are a Change before beginning to work on the requested activities. If the Contractor fails to notify the State before beginning to work on the requested activities, then the Contractor waives any right to assert any claim for additional compensation or time for performing the requested activities. If the Contractor commences performing work outside the scope of the Contract and then ceases performing that work, the Contractor must, at the request of the State, retract any out-of-scope work that would adversely affect the Contract.

2.025 Notices
Any notice given to a party under the Contract must be deemed effective, if addressed to the State contact as noted in Section 2.021 and the Contractor's contact as noted on the cover page of the contract, upon: (i) delivery, if hand delivered; (ii) receipt of a confirmed transmission by facsimile if a copy of the notice is sent by another means specified in this Section; (iii) the third Business Day after being sent by U.S. mail, postage pre-paid, return receipt requested; or (iv) the next Business Day after being sent by a nationally recognized overnight express courier with a reliable tracking system.

State:
State of Michigan
Contract Services Division-Purchasing
Attention: Terry Harris
PO Box 30050
425 West Ottawa St.
Lansing, Michigan 48909

Contractor:
Delcan Technologies
Attn: Mark Neill
2055 Sugarloaf Circle, Suite 500
Duluth, GA 30097

Telephone: (770) 831-3370
Cell Phone: (678) 730-7434
Fax: (770) 831-3533

Either party may change its address where notices are to be sent by giving notice according to this Section.

2.026 Binding Commitments
Representatives of Contractor must have the authority to make binding commitments on Contractor's behalf within the bounds set forth in the Contract. Contractor may change the representatives from time to time upon written notice.

2.027 Relationship of the Parties
The relationship between the State and Contractor is that of client and independent contractor. No agent, employee, or servant of Contractor or any of its Subcontractors must be deemed to be an employee, agent or servant of the State for any reason. Contractor is solely and entirely responsible for its acts and the acts of its agents, employees, servants and Subcontractors during the performance of the Contract.

2.028 Covenant of Good Faith
Each party must act reasonably and in good faith. Unless stated otherwise in the Contract, the parties must not unreasonably delay, condition, or withhold the giving of any consent, decision, or approval that is either requested or reasonably required of them in order for the other party to perform its responsibilities under the Contract.

2.029 Assignments
(a) Neither party may assign the Contract, or assign or delegate any of its duties or obligations under the Contract, to any other party (whether by operation of law or otherwise), without the prior written consent of the other party; provided, however, that the State may assign the Contract to any other State agency, department, division or department without the prior consent of Contractor and Contractor may assign the Contract to an affiliate so long as the affiliate is adequately capitalized and can provide adequate assurances that the affiliate can perform the requirements of the Contract. The State may withhold consent from proposed assignments, subcontracts, or novations when the transfer of responsibility would operate to decrease the State's likelihood of receiving performance on the Contract or the State's ability to recover damages.

(b) Contractor may not, without the prior written approval of the State, assign its right to receive payments due under the Contract. If the State permits an assignment, the Contractor is not relieved of its responsibility to perform any of its contractual duties, and the requirement under the Contract that all payments must be made to one (1) entity continues.

(c) If the Contractor intends to assign the Contract or any of the Contractor's rights or duties under the Contract, the Contractor must notify the State in writing at least 90 days before the assignment. The Contractor also must provide the State with adequate information about the assignee within a reasonable amount of time before the assignment for the State to determine whether to approve the assignment.

2.030 General Provisions

2.031 Administrative Fee And Reporting-Deleted Not Applicable

2.032 Media Releases
News releases (including promotional literature and commercial advertisements) pertaining to the RFP and Contract or project to which it relates must not be made without prior written State approval, and then only in accordance with the explicit written instructions from the State. No results of the activities associated with the RFP and Contract are to be released without prior written approval of the State and then only to persons designated.

2.033 Contract Distribution
MDOT-Purchasing retains the sole right of Contract distribution to all State agencies and local units of government unless other arrangements are authorized by MDOT-Purchasing.

2.034 Permits
Contractor must obtain and pay any associated costs for all required governmental permits, licenses and approvals for the delivery, installation and performance of the Services. The State must pay for all costs and expenses incurred in obtaining and maintaining any necessary easements or right of way.

2.035 Website Incorporation
The State is not bound by any content on the Contractor's website, even if the Contractor's documentation specifically referenced that content and attempts to incorporate it into any other communication, unless the State has actual knowledge of the content and has expressly agreed to be bound by it in a writing that has been manually signed by an authorized representative of the State.

2.036 Future Bidding Preclusion
Contractor acknowledges that, to the extent the Contract involves the creation, research, investigation or generation of a future RFP, it may be precluded from bidding on the subsequent RFP. The State reserves the right to disqualify any bidder if the State determines that the bidder has used its position (whether as an incumbent Contractor, or as a Contractor hired to assist with the RFP development, or as a Vendor offering free assistance) to gain a competitive advantage on the RFP

2.037 Freedom of Information
All information in any proposal submitted to the State by Contractor and the Contract is subject to the provisions of the Michigan Freedom of Information Act, 1976 PA 442, MCL 15.231, et seq (the "FOIA").

2.038 Disaster Recovery
Contractor and the State recognize that the State provides essential services in times of natural or man-made disasters. Therefore, except as so mandated by Federal disaster response requirements, Contractor personnel dedicated to providing Services/Deliverables under the Contract must provide the State with priority service for repair and work around in the event of a natural or man-made disaster.

2.040 Financial Provisions

2.041 Fixed Prices for Services/Deliverables
Each Statement of Work or Purchase Order issued under the Contract must specify (or indicate by reference to the appropriate Contract Exhibit) the firm, fixed prices for all Services/Deliverables, and the associated payment milestones and payment amounts. The State may make progress payments to the Contractor when requested as work progresses, but not more frequently than monthly, in amounts approved by the Contract Administrator, after negotiation. Contractor must show verification of measurable progress at the time of requesting progress payments.

2.042 Adjustments for Reductions in Scope of Services/Deliverables
If the scope of the Services/Deliverables under any Statement of Work issued under the Contract is subsequently reduced by the State, the parties must negotiate an equitable reduction in Contractor's charges under such Statement of Work commensurate with the reduction in scope.

2.043 Services/Deliverables Covered
For all Services/Deliverables to be provided by Contractor (and its Subcontractors, if any) under the Contract, the State must not be obligated to pay any amounts in addition to the charges specified in the Contract.

2.044 Invoicing and Payment – In General
(a) Each Statement of Work issued under the Contract must list (or indicate by reference to the appropriate Contract Exhibit) the prices for all Services/Deliverables, equipment and commodities to be provided, and the associated payment milestones and payment amounts.

(b) Each Contractor invoice must show details as to charges by Service/Deliverable component and location at a level of detail reasonably necessary to satisfy the State's accounting and charge-back requirements. Invoices for Services performed on a time and materials basis must show, for each individual, the number of hours of Services performed during the billing period, the billable skill/labor category for such person and the applicable hourly billing rate. Prompt payment by the State is contingent on the Contractor's invoices showing the amount owed by the State minus any holdback amount to be retained by the State in accordance with **Section 1.064**.

(c) Correct invoices will be due and payable by the State, in accordance with the State's standard payment procedure as specified in 1984 PA 279, MCL 17.51 et seq., within 45 days after receipt, provided the State determines that the invoice was properly rendered.

(d) Contract Payment Schedule

1. Contractor request for performance-based payment.
   The Contractor may submit requests for payment of performance-based payments not more frequently than monthly, in a form and manner acceptable to the CCI. Unless otherwise authorized by the CCI, all performance-based payments in any period for which payment is being requested must be included in a single request, appropriately itemized and totaled.

2. Approval and payment of requests.
   a) The Contractor is not entitled to payment of a request for performance-based payment prior to successful accomplishment of the event or performance criterion for which payment is requested. The CCI must determine whether the event or performance criterion for which payment is requested has been successfully accomplished in accordance with the terms of the Contract. The CCI may, at any time, require the Contractor to substantiate the successful performance of any event or performance criterion, which has been or is represented as being payable.

   b) A payment under this performance-based payment clause is a contract financing payment under the Quick Payment Terms in **Section 1.061** of the Contract.

   c) The approval by the CCI of a request for performance-based payment does not constitute an acceptance by the State and does not excuse the Contractor from performance of obligations under the Contract.

2.045 Pro-ration
To the extent there are any Services that are to be paid for on a monthly basis, the cost of such Services must be pro-rated for any partial month.

2.046 Antitrust Assignment
The Contractor assigns to the State any claim for overcharges resulting from antitrust violations to the extent that those violations concern materials or services supplied by third parties to the Contractor, toward fulfillment of the Contract.

2.047 Final Payment
The making of final payment by the State to Contractor does not constitute a waiver by either party of any rights or other claims as to the other party's continuing obligations under the Contract, nor will it constitute a waiver of any claims by one (1) party against the other arising from unsettled claims or failure by a party to comply with the Contract, including claims for Services and Deliverables not reasonably known until after acceptance to be defective or substandard. Contractor's acceptance of final payment by the State under the Contract must constitute a waiver of all claims by Contractor against the State for payment under the Contract, other than those claims previously filed in writing on a timely basis and still unsettled.

2.048 Electronic Payment Requirement
Electronic transfer of funds is required for payments on State contracts. The Contractor must register with the State electronically at http://www.cpexpress.state.mi.us. As stated in 1984 PA 431, all contracts that the State enters into for the purchase of goods and services must provide that payment will be made by Electronic Fund Transfer (EFT).

2.050 Taxes

2.051 Employment Taxes
Contractors are expected to collect and pay all applicable federal, state, and local employment taxes.

2.052 Sales and Use Taxes