



Department of Administration  
Purchasing Division  
2019 Washington Street East  
Post Office Box 50130  
Charleston, WV 25305-0130

## State of West Virginia Delivery Order

Order Date: 12-01-2021

CORRECT ORDER NUMBER MUST APPEAR  
ON ALL PACKAGES, INVOICES, AND  
SHIPPING PAPERS. QUESTIONS  
CONCERNING THIS ORDER SHOULD BE  
DIRECTED TO THE DEPARTMENT  
CONTACT.

Order Number:	CDO 0803 0081 DOT2200000028 1	Procurement Folder:	973048
Document Name:	DEIGHTON PROFESSIONAL SERVICES PHASE 1A (81220048)	Reason for Modification:	
Document Description:	DEIGHTON PROFESSIONAL SERVICES PHASE 1A (81220048)		
Procurement Type:	Central Delivery Order		
Buyer Name:	Kristine E James		
Telephone:	304-414-7104		
Email:	kristy.e.james@wv.gov		
Shipping Method:	Best Way	Master Agreement Number:	CMA 0803 DOT1800000024 1
Free on Board:	FOB Dest, Freight Prepaid		

VENDOR	DEPARTMENT CONTACT																				
Vendor Customer Code: 000000233045 DEIGHTON ASSOCIATES LTD 223 BROCK ST N UNIT 7  WHITBY ON L1N 4H6 CA Vendor Contact Phone: 9056656605 Extension: 132  Discount Details: <table><thead><tr><th></th><th>Discount Allowed</th><th>Discount Percentage</th><th>Discount Days</th></tr></thead><tbody><tr><td>#1</td><td>No</td><td>0.0000</td><td>0</td></tr><tr><td>#2</td><td>No</td><td></td><td></td></tr><tr><td>#3</td><td>No</td><td></td><td></td></tr><tr><td>#4</td><td>No</td><td></td><td></td></tr></tbody></table>		Discount Allowed	Discount Percentage	Discount Days	#1	No	0.0000	0	#2	No			#3	No			#4	No			Requestor Name: Lisa L DiNallo Requestor Phone: 304-352-0540 Requestor Email: lisa.l.dinallo@wv.gov  <b>22</b> FILE LOCATION _____
	Discount Allowed	Discount Percentage	Discount Days																		
#1	No	0.0000	0																		
#2	No																				
#3	No																				
#4	No																				

INVOICE TO	SHIP TO
STRATEGIC DATA MANAGEMENT & TECHNOLOGY DIVISION DEPT. OF TRANSPORTATION  1900 KANAWHA BLVD E, BLD. 5 RM-720  CHARLESTON WV 25305  US	STRATEGIC DATA MANAGEMENT & TECHNOLOGY DIVISION DEPT. OF TRANSPORTATION  1900 KANAWHA BLVD E, BLD. 5 RM-720  CHARLESTON WV 25305  US

Total Order Amount:	\$1,097,605.38
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Purchasing Division's File Copy

ENTERED

JE 12/21/21

PURCHASING DIVISION AUTHORIZATION  
DATE: *Tara J. [Signature]* 12/22/21  
ELECTRONIC SIGNATURE ON FILE

ENCUMBRANCE CERTIFICATION  
DATE: *Beverly [Signature]* 12-22-21  
ELECTRONIC SIGNATURE ON FILE

**Extended Description:**

Final Year 5 - effective dates 12/1/21 - 11/30/22

Reference contracts: CDO DOT21\*56 (end 11/30/21) &amp; CMA DOT18\*24

Line	Commodity Code	Quantity	Unit	Unit Price	Total Price
1	81112200	0.00000		\$0.0000	\$66,923.68
Service From	Service To	Manufacturer		Model No	Delivery Date
2021-12-01	2022-11-30				2021-12-01

**Commodity Line Description:** PRODUCT DEVELOPMENT YEAR 5 OFFSITE**Extended Description:**

PAVEMENT MANAGEMENT SYSTEM SOFTWARE LICENSE, MAINTENANCE AND SUPPORT:

See Exhibit\_A Pricing Pages CMA DOT18\*24 for Contract Pricing.

Line	Commodity Code	Quantity	Unit	Unit Price	Total Price
2	81112200	0.00000		\$0.0000	\$369,473.12
Service From	Service To	Manufacturer		Model No	Delivery Date
2021-12-01	2022-11-30				2021-12-01

**Commodity Line Description:** SOFTWARE MAINTENANCE PERSONNEL YEAR 5 OFF SITE**Extended Description:**

PAVEMENT MANAGEMENT SYSTEM SOFTWARE LICENSE, MAINTENANCE AND SUPPORT:

See Exhibit\_A Pricing Pages CMA DOT18\*24 for Contract Pricing.

Line	Commodity Code	Quantity	Unit	Unit Price	Total Price
3	81112200	0.00000		\$0.0000	\$138,190.50
Service From	Service To	Manufacturer		Model No	Delivery Date
2021-12-01	2022-11-30				2021-12-01

**Commodity Line Description:** DATA MANAGEMENT PERSONNEL OFF SITE YEAR 5**Extended Description:**

PAVEMENT MANAGEMENT SYSTEM SOFTWARE LICENSE, MAINTENANCE AND SUPPORT:

See Exhibit\_A Pricing Pages CMA DOT18\*24 for Contract Pricing.

Line	Commodity Code	Quantity	Unit	Unit Price	Total Price
4	81112200	0.00000		\$0.0000	\$43,080.33
Service From	Service To	Manufacturer		Model No	Delivery Date
2021-12-01	2022-11-30				2021-12-01

**Commodity Line Description:** TRAINING YEAR 5 OFF SITE**Extended Description:**

PAVEMENT MANAGEMENT SYSTEM SOFTWARE LICENSE, MAINTENANCE AND SUPPORT:

See Exhibit\_A Pricing Pages CMA DOT18\*24 for Contract Pricing.

Line	Commodity Code	Quantity	Unit	Unit Price	Total Price
5	81112200	0.00000		\$0.0000	\$362,015.23
<b>Service From</b>	<b>Service To</b>	<b>Manufacturer</b>		<b>Model No</b>	<b>Delivery Date</b>
2021-12-01	2022-11-30				2021-12-01

**Commodity Line Description:** PROGRAMMER YEAR 5 OFF SITE

**Extended Description:**  
PAVEMENT MANAGEMENT SYSTEM SOFTWARE LICENSE, MAINTENANCE AND SUPPORT:

See Exhibit\_A Pricing Pages CMA DOT18\*24 for Contract Pricing.

Line	Commodity Code	Quantity	Unit	Unit Price	Total Price
6	81112200	0.00000		\$0.0000	\$117,922.52
<b>Service From</b>	<b>Service To</b>	<b>Manufacturer</b>		<b>Model No</b>	<b>Delivery Date</b>
2021-12-01	2022-11-30				2021-12-01

**Commodity Line Description:** PROJECT MANAGER YEAR 5 OFFSITE

**Extended Description:**  
PAVEMENT MANAGEMENT SYSTEM SOFTWARE LICENSE, MAINTENANCE AND SUPPORT:

See Exhibit\_A Pricing Pages CMA DOT18\*24 for Contract Pricing.

**Pavement Management System  
Software License, Preventative Maintenance and Support**

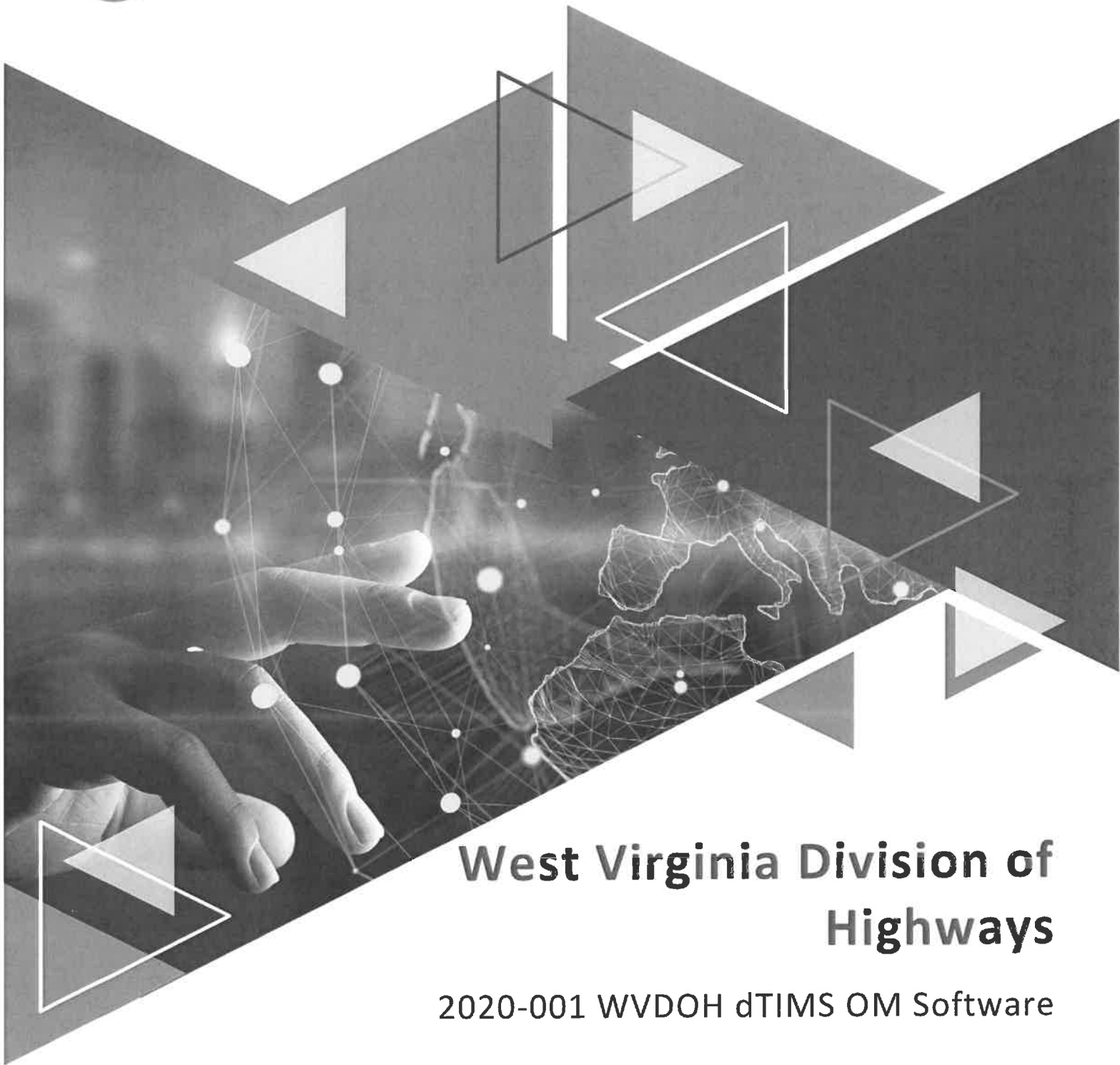
Reference Section	Description	Quantity	Units	Unit Rate	Extended Cost
Vendor Office support - Year 1 (see Section 3.1.6)					
3.1.2; 3.1.3; 3.1.4; 3.1.5	Product Development Personnel		hr	\$ 225.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Software Maintenance Personnel		hr	\$ 150.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Data Management Personnel		hr	\$ 225.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Training Personnel		hr	\$ 150.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Programmer		hr	\$ 150.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Project Manager		hr	\$ 225.00	\$ -
Vendor Office support - Year 2 (see Section 3.1.6)					
3.1.2; 3.1.3; 3.1.4; 3.1.5	Product Development Personnel		hr	\$ 234.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Software Maintenance Personnel		hr	\$ 156.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Data Management Personnel		hr	\$ 234.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Training Personnel		hr	\$ 156.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Programmer		hr	\$ 156.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Project Manager		hr	\$ 234.00	\$ -
Vendor Office support - Year 3 (see Section 3.1.6)					
3.1.2; 3.1.3; 3.1.4; 3.1.5	Product Development Personnel		hr	\$ 243.36	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Software Maintenance Personnel		hr	\$ 162.24	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Data Management Personnel		hr	\$ 243.36	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Training Personnel		hr	\$ 162.24	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Programmer		hr	\$ 162.24	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Project Manager		hr	\$ 243.36	\$ -
Vendor Office support - Year 4 (see Section 3.1.6)					
3.1.2; 3.1.3; 3.1.4; 3.1.5	Product Development Personnel		hr	\$ 253.09	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Software Maintenance Personnel		hr	\$ 168.73	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Data Management Personnel		hr	\$ 253.09	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Training Personnel		hr	\$ 168.73	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Programmer		hr	\$ 168.73	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Project Manager		hr	\$ 253.09	\$ -
Vendor Office support - Year 5 (see Section 3.1.6)					
3.1.2; 3.1.3; 3.1.4; 3.1.5	Product Development Personnel		hr	\$ 263.22	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Software Maintenance Personnel		hr	\$ 175.48	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Data Management Personnel		hr	\$ 263.22	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Training Personnel		hr	\$ 175.48	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Programmer		hr	\$ 175.48	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Project Manager		hr	\$ 263.22	\$ -
<b>TOTAL</b>					<b>\$ -</b>

Notes:

- Units listed as "LS" indicates a Lump Sum
- Units listed as "EA" indicates each
- Units listed as "hr" indicates hours
- Travel rates are invalid without WVDOH prior approval.
- Product Development Personnel refers to the individual(s) responsible for software development and architecture.
- Software Maintenance Personnel refers to the individual(s) responsible for maintaining functionality of the software.
- Data Management Personnel refers to the individual(s) who manipulate and validate information within the software.
- Training Personnel refers to the individual(s) engaged in class and materials for training WVDOH personnel.
- Programmer refers to the individual(s) responsible for developing the computer code and software documentation.
- Project Manager refers to the individual(s) responsible for coordination, cost control, reporting and customer service.
- All associated costs for Alternate 'or equal' products proposed per Section 3.1 shall be included in the dTIMS Version 9 Software Support & Maintenance, Year 1. This cost shall include all travel, meals, incidental expenses, equipment and labor for all personnel required by the vendor to provide this service.
- Hours listed in Exhibit A are estimated amounts and will be used for cost evaluation purposes only.
- Reinstatement fees must be included in Year 1 only. WVDOH Pavement Management System software maintenance expired 06/30/2017

**Pavement Management System  
Software License, Preventative Maintenance and Support**

Reference Section	Description	Quantity	Units	Unit Rate	Extended Cost
<b>dTIMS Version 9 Software Support &amp; Maintenance (see Section 3.1.1)</b>					
3.1.1	Year 1 (see note #11 & #13 below)		LS	\$ 90,000.00	\$ -
3.1.1	Year 2		LS	\$ 90,000.00	\$ -
3.1.1	Year 3		LS	\$ 90,000.00	\$ -
3.1.1	Year 4		LS	\$ 90,000.00	\$ -
3.1.1	Year 5		LS	\$ 90,000.00	\$ -
<b>dTIMS Dashboard Software Support &amp; Maintenance (see Section 3.1.1)</b>					
3.1.1	Year 1 (see note #11 & #13 below)		LS	\$ -	\$ -
3.1.1	Year 2		LS	\$ -	\$ -
3.1.1	Year 3		LS	\$ -	\$ -
3.1.1	Year 4		LS	\$ -	\$ -
3.1.1	Year 5		LS	\$ -	\$ -
<b>Per License Cost for Additional Licenses (see Section 3.1.7)</b>					
3.1.1	Year 1		EA	\$ -	\$ -
3.1.1	Year 2		EA	\$ -	\$ -
3.1.1	Year 3		EA	\$ -	\$ -
3.1.1	Year 4		EA	\$ -	\$ -
3.1.1	Year 5		EA	\$ -	\$ -
<b>On-Site Support Costs (4-day trips - see Section 3.1.5)</b>					
3.1.5	Year 1		EA	\$ 9,600.00	\$ -
3.1.5	Year 2		EA	\$ 9,984.00	\$ -
3.1.5	Year 3		EA	\$ 10,383.36	\$ -
3.1.5	Year 4		EA	\$ 10,798.69	\$ -
3.1.5	Year 5		EA	\$ 11,230.64	\$ -
<b>Additional personnel required for On-site Visits - Year 1 (see Section 3.1.5.2)</b>					
3.1.2; 3.1.3; 3.1.4; 3.1.5	Product Development Personnel		hr	\$ 300.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Software Maintenance Personnel		hr	\$ 225.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Data Management Personnel		hr	\$ 300.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Training Personnel		hr	\$ 225.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Programmer		hr	\$ 225.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Project Manager		hr	\$ 300.00	\$ -
<b>Additional personnel required for On-site Visits - Year 2 (see Section 3.1.5.2)</b>					
3.1.2; 3.1.3; 3.1.4; 3.1.5	Product Development Personnel		hr	\$ 312.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Software Maintenance Personnel		hr	\$ 234.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Data Management Personnel		hr	\$ 312.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Training Personnel		hr	\$ 234.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Programmer		hr	\$ 234.00	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Project Manager		hr	\$ 312.00	\$ -
<b>Additional personnel required for On-site Visits - Year 3 (see Section 3.1.5.2)</b>					
3.1.2; 3.1.3; 3.1.4; 3.1.5	Product Development Personnel		hr	\$ 324.48	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Software Maintenance Personnel		hr	\$ 243.36	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Data Management Personnel		hr	\$ 324.48	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Training Personnel		hr	\$ 243.36	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Programmer		hr	\$ 243.36	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Project Manager		hr	\$ 324.48	\$ -
<b>Additional personnel required for On-site Visits - Year 4 (see Section 3.1.5.2)</b>					
3.1.2; 3.1.3; 3.1.4; 3.1.5	Product Development Personnel		hr	\$ 337.46	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Software Maintenance Personnel		hr	\$ 253.09	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Data Management Personnel		hr	\$ 337.46	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Training Personnel		hr	\$ 253.09	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Programmer		hr	\$ 253.09	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Project Manager		hr	\$ 337.46	\$ -
<b>Additional personnel required for On-site Visits - Year 5 (see Section 3.1.5.2)</b>					
3.1.2; 3.1.3; 3.1.4; 3.1.5	Product Development Personnel		hr	\$ 350.96	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Software Maintenance Personnel		hr	\$ 263.22	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Data Management Personnel		hr	\$ 350.96	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Training Personnel		hr	\$ 263.22	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Programmer		hr	\$ 263.22	\$ -
3.1.2; 3.1.3; 3.1.4; 3.1.5	Project Manager		hr	\$ 350.96	\$ -



# **West Virginia Division of Highways**

2020-001 WVDOH dTIMS OM Software

11/19/2021



## Confidentiality Statement

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Website: [www.deighton.com](http://www.deighton.com)

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**West Virginia, Division of Highways**

Re: dTIMS OM Software

This proposal is being provided to the West Virginia Division of Highways (WVDOH) for the provision of additional software and service components to support the work that Deighton Associates Limited (Deighton) does with the WVDOH.

This proposal covers the provision of configuration services for Deighton's dTIMS Business Analytics (BA) and dTIMS Operations Management (OM) applications that WVDOH have acquired from Deighton. WVDOH already owns the dTIMS platform on which both above are based as well as they currently have 10 licenses of dTIMS BA and 10 licenses of dTIMS BI (Business Intelligence). Recently the DOH acquired 25 additional dTIMS BA licenses and 25 new dTIMS OM licenses. The procurement of the additional licenses for BA and OM has been done under a separate agreement and is not included in the cost schedules in this proposal. This proposal is for the configuration of the BA and OM applications according to the WVDOH's requirements.

Deighton is the developer, distributor and sole Certified Consultant in the United States for the dTIMS software platform. The platform is depicted in the following two figures. dTIMS is the software application that provides the platform for WVDOH's current pavement and bridge management systems which are used to provide input to the TAMP. As the developer of this application, Deighton is the most qualified consultant to provide support, maintenance and training services to the Asset and Cross Asset Management Systems that are currently, or in the future will be, defined within the dTIMS framework. Deighton is the only consultant able to add dTIMS OM to the existing dTIMS platform.

Since 1992, Deighton has provided uninterrupted support services to WVDOH and continues to update and enhance the software platform. Deighton also provides technical assistance with regards to transportation asset management and transportation investment strategies.

These products as developed and configured by Deighton are only available from Deighton Associates Limited and no other third-party tools are available.

Sincerely,



Robert Piane, P. Eng.  
President  
Deighton Associates Limited  
rob.piane@deighton.com

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## **This Proposal**

Please refer to the document “Transportation Asset Management System (TAMS) Systems Integrator Scope of Work” for specifics about the TAMS implementation. This proposal covers the provision of the configuration services for Deighton’s dTIMS Business Analytics (BA) and dTIMS Operations Management (OM) applications that WVDOT have acquired from Deighton. WVDOT already owns the dTIMS platform on which both above are based as well as they currently have 10 licenses of dTIMS BA and 10 licenses of dTIMS BI (Business Intelligence). Recently the DOT acquired 25 additional dTIMS BA licenses and 25 new dTIMS OM licenses. The procurement of the additional licenses for BA and OM has been done under a separate agreement and is **not** included in the cost schedules in this proposal. This proposal is for the configuration of the BA and OM applications according to the WVDOT’s requirements.

## **Deighton Profile**

Deighton Associates Limited (Deighton) has established itself as the world leader in providing asset management systems and asset management expertise at the strategic, tactical, and operational levels for agencies around the world.

### **Mission Statement:**

Leveraging global best practices to empower stakeholders through innovation and technology.

### **Vision:**

To be the globally respected leader in management systems.

Deighton started developing and marketing its Asset Management System (AMS) as early as 1983, a few years before Deighton’s incorporation in 1986. Today, Deighton is proud to have more than 400 agencies of all sizes throughout the world using dTIMS (Deighton’s Total Infrastructure Management System) to manage their roads, bridges, and other assets such as culverts, guard rails, signs, sidewalks, underground utilities, and more. Among these are 24 US state DOTs (the largest market share of any asset management software vendor in that market segment) and dozens of American cities and counties.

Deighton Associates Limited is a privately-owned company. Deighton employs an internal corporate governance mechanism consisting of cohesive policies, guidance, processes, and decision-rights for the overall organization. Proper oversight and accountability are monitored through an executive management team consisting of four Directors: two Vice-Presidents, a President, and a CEO.

Deighton is a team of international experts in asset management best practices with offices in Canada, Switzerland, Austria, and Australia. Our head office is based out of Whitby, Ontario, at 223 Brock St. North, while our international offices enable us to gain access to foreign markets. Our office in Austria is ranked one of the top 10 research firms in all of Europe.

Deighton has implemented dTIMS® to be used to manage large infrastructure networks in Africa, Asia,

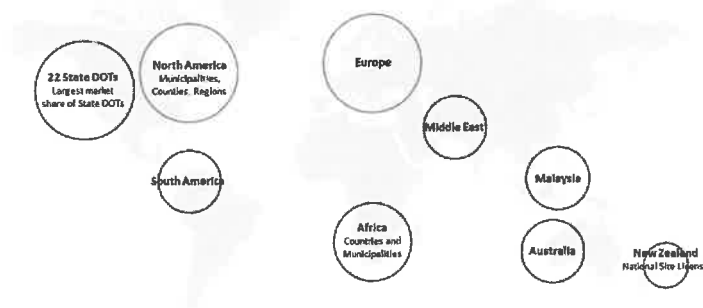


Figure 1: Deighton Market Presence

Australia, Canada, Europe, New Zealand, and the United States. These infrastructure networks include hundreds of thousands of miles of roads, including thousands of bridges, and millions of wastewaters, storm water, and freshwater distribution pipe assets. dTIMS is also used by five Australian state transportation agencies and has been adopted and used by the New Zealand Transport Agency and the NZ Councils to manage state and national roads throughout the country since 1998.

Deighton's first product release was dROAD in 1988. In the beginning, dROAD was primarily a pavement management database and was configured to host pavement network and condition data. Over the many implementations across the globe throughout the early nineties, dROAD evolved to include additional asset management functionality, adapting to the growing needs of the agencies using the solution. As functionality expanded beyond the requirements of a traditional pavement management system, dROAD was given a more suitable name: dTIMS (Deighton Total Infrastructure Management System).

Deighton employs a holistic asset management philosophy and has developed dTIMS to help agencies persevere beyond the confines of department silos. dTIMS is a fully web-based solution, enabling transparency across all asset classes at the strategic, tactical, and operational asset management levels.

dTIMS is a table-driven solution that will enable WVDOH to store and manage all assets on a single platform. All components of the dTIMS Platform share the same common asset registry. Assets are user-definable and there are no limitations to the way in which WVDOH can manage its assets.

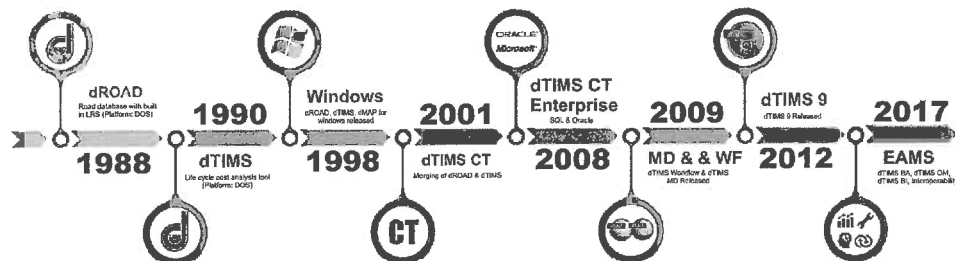


Figure 2: dTIMS Evolution



dTIMS is a fully configurable software solution. dTIMS uses a relational database which allows users to configure agency specific parent-child relationships between an asset and its corresponding components. Additionally, dTIMS allows users to run agency specific analyses to predict the deterioration of assets and develop treatment strategies to ensure conditions are kept at the desired level of service.

dTIMS can be deployed both on-premise, or in a cloud hosted environment. If the solution is deployed on-premise, WVDON's security standards will be enforced through dTIMS. If WVDON prefers a cloud hosted solution, Deighton proposes hosting in a Microsoft Azure datacenter located within the US.

## Platform Overview

The dTIMS Platform is an enterprise asset management solution that encompasses strategic planning with maintenance operations and capital investment decision making. The dTIMS Platform consists of three components: dTIMS Business Analytics (dTIMS BA), dTIMS Operations Management (dTIMS OM), and dTIMS Business Intelligence (dTIMS BI).

At the strategic level, dTIMS is used to perform life-cycle cost analysis to develop asset workplans and optimize investments towards maintenance and rehabilitation projects.

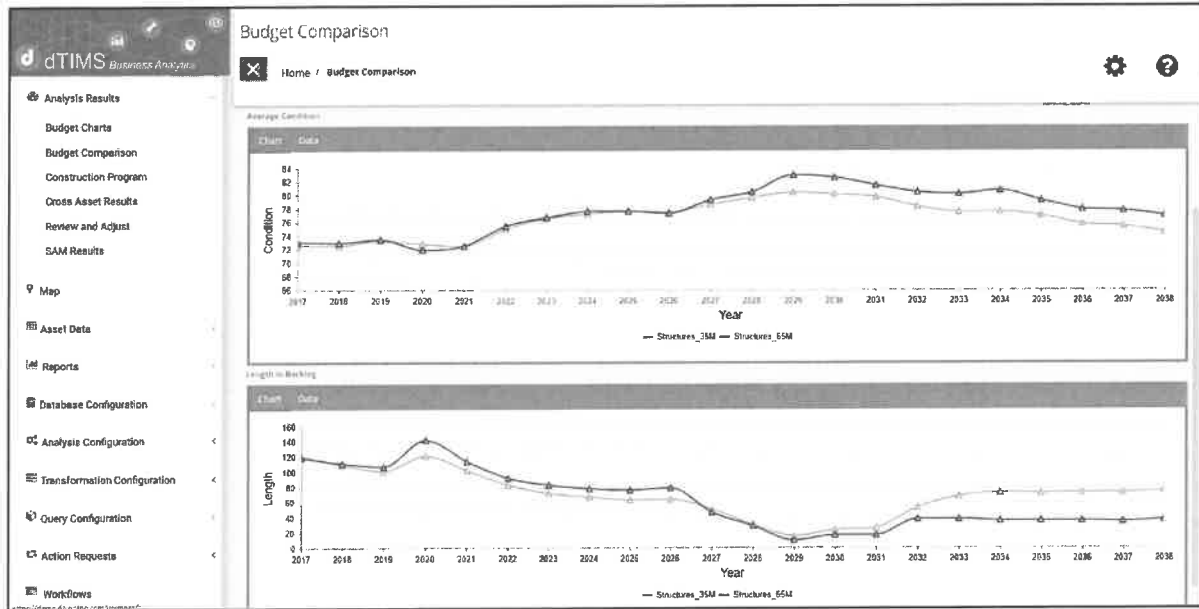


Figure 3: dTIMS Business Analytics

At the operational level, dTIMS is used to schedule all resources for the workplans generated by dTIMS BA, and track and manage defects, activities, events, customer requests, and inspections.

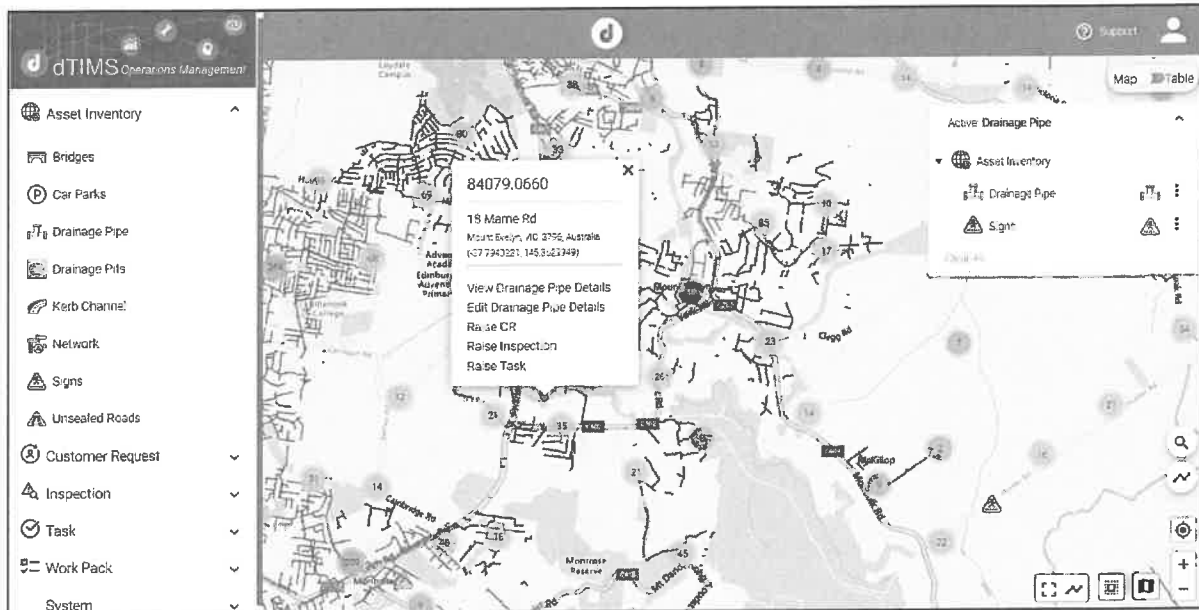


Figure 4: dTIMS Operations Management

dTIMS BI is used to gain insight into network data in a visually comprehensive dashboard. There are no restrictions to the metrics which can be measured using dTIMS BI. dTIMS BI is fully customizable and Deighton will work with WVDOH to establish and configure two simple executive dashboard to meet WVDOH's specific needs.

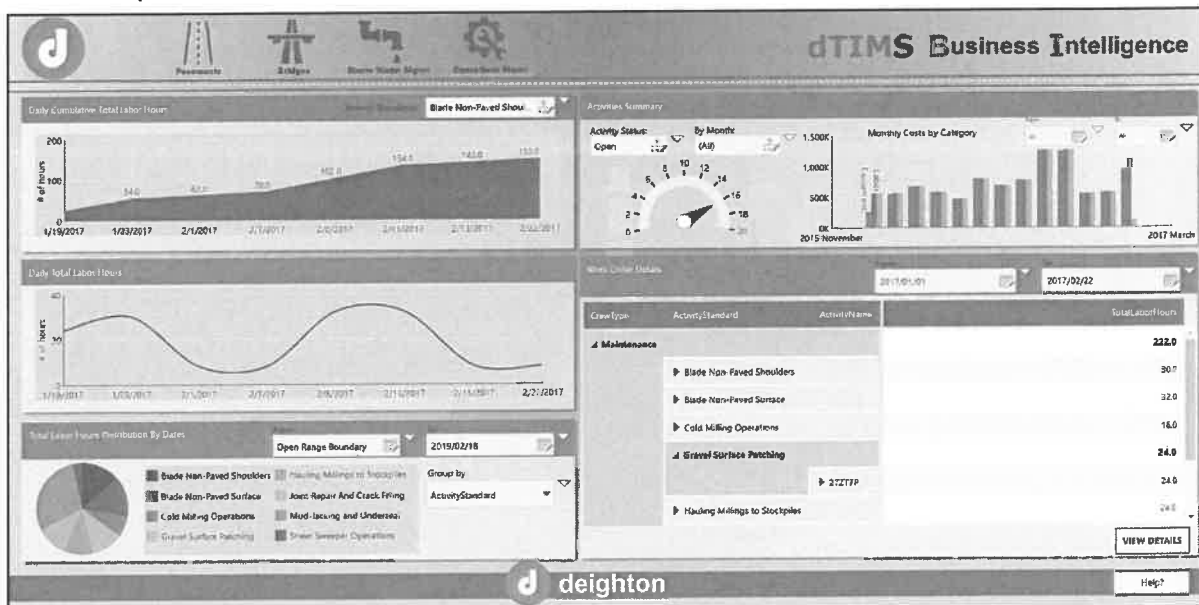


Figure 5: dTIMS Business Intelligence

dTIMS BI displays visual data tiles which can be clicked to open reports and drill-down for further investigation. Fully integrated with the dTIMS common asset registry, dTIMS BI displays accurate, real-time data results which can be published to share dashboards with external users and stakeholders.

dTIMS OM is a highly configurable, commercial off the shelf package for maintenance management. The software includes functionality for managing and monitoring maintenance activities, including - customer requests, inspections, defect management, condition monitoring, tasks, work orders and scheduling.

The Deighton solution would deliver an enterprise asset management solution that encompasses strategic planning with maintenance operations and capital investment decision making.

Unlike many management systems where an organization is expected to change business process to meet software functionality, dTIMS OM is configured to replicate and support organizations current management business processes and operational requirements.

The use of dTIMS OM not only ensures business processes are systemized and followed ensuring data integrity and supporting operational practices, but also ensures efficient use of resources and funding.

The business processes are automated in dTIMS OM using dTIMS Workflow. dTIMS Workflow is a configurable system that systematizes processes. Workflow can be configured to mimic the business process specified by WVDOH and is also used for system integration and data exchange utilizing APIs with other systems such as GIS, asset inventory systems, financial systems, and other corporate systems.

Through mobile technology the system minimizes risks associated with field inspections. Inspections can be undertaken from a vehicle in conjunction with the use of GPS technology for accurate locational information. Workflow technology is also incorporated to automate tasks such as scheduling, again minimizing potential errors, and increasing efficiencies.

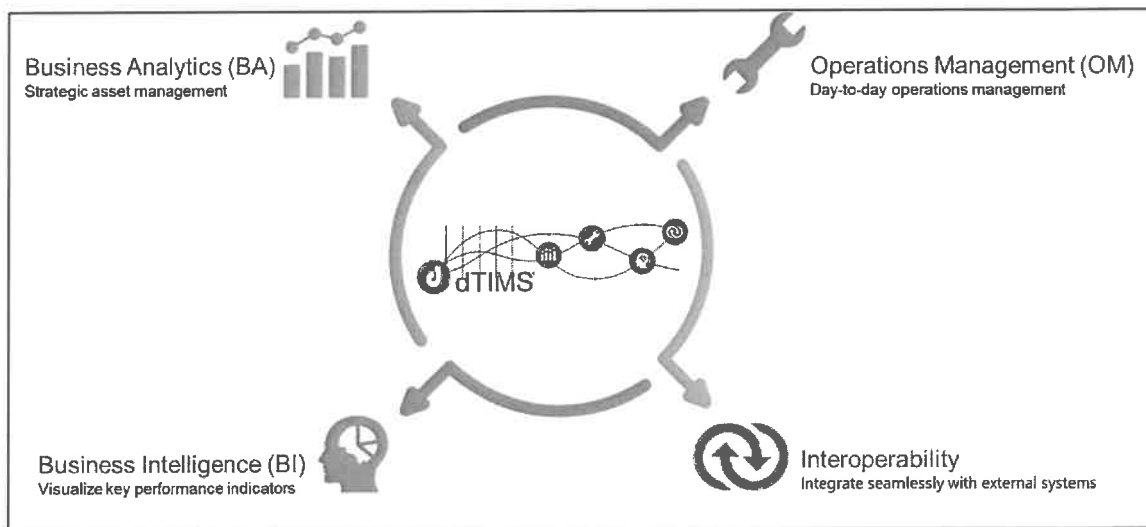


Figure 6: dTIMS Platform

Currently, WVDOH utilizes dTIMS BA for its predictive performance analysis capabilities only. dTIMS BA is the primary software package for preparing optimized forward works programs. dTIMS BA is a web-based platform and is a key component of the dTIMS Platform. The database can be structured to support virtually any attribute that describes the composition or condition of the assets that are being managed. Each component of the dTIMS Platform shares the same common asset registry, where all asset data is stored, which enables each component to push and pull from the same authoritative data source across all asset classes.

By adding dTIMS OM functionality to WVDOH's existing dTIMS implementation, the Deighton solution would deliver an enterprise asset management solution that encompasses strategic planning with maintenance operations and capital investment decision making.

**WVDOH already owns the dTIMS Platform** that supports dTIMS BA, dTIMS BI and dTIMS OM. This proposal demonstrates the functionality of dTIMS OM and provides costing for turning that functionality on. The cost of the platform was already included with the initial acquisition of dTIMS. There is a huge cost savings for WVDOH to simply acquire the additional licenses for dTIMS OM.

Unlike many management systems where an organization is expected to change business processes to meet software functionality, dTIMS OM is configured to replicate and support an organization's current management business processes and operational requirements.

The use of dTIMS OM not only ensures business processes are systemized and followed ensuring data integrity and supporting operational practices, but also ensures efficient use of resources and funding.

The business processes are automated in dTIMS OM using dTIMS workflows. Workflows can be configured to systematize and automate regular processes. Workflows can be configured to mimic the business process specified by WVDOH and can also be used for system integration and data exchange utilizing APIs with other systems such as GIS, Asset Inventory systems, Financial systems and other corporate systems.

For field staff, through mobile technology the system minimizes risks associated with field inspections. Inspections can be undertaken from a vehicle in conjunction with the use of GPS technology for accurate locational information. Workflow technology is also incorporated to automate tasks such as scheduling, again minimizing potential errors and increasing efficiencies.

dTIMS OM is an enterprise operations management system used to track the operation, maintenance, and disposal of assets. Core features include the ability to schedule jobs (work orders), secure resources (labor, equipment, and materials), record costs, and track relevant information such as the cause of an issue, or downtime involved. dTIMS OM encompasses all assets in the same common asset registry as dTIMS BA and is designed to allow every department in your agency to store and



retrieve reliable, accessible, and easily shared information in real-time. Since the same common asset registry is used across dTIMS BA, dTIMS BI and dTIMS OM, there is no need for an external integration to push analytic results from dTIMS BA to dTIMS OM and for completed maintenance activities to be pushed from dTIMS OM to dTIMS BA. This is critical because the strategic system and the maintenance system must constantly share data between the two.

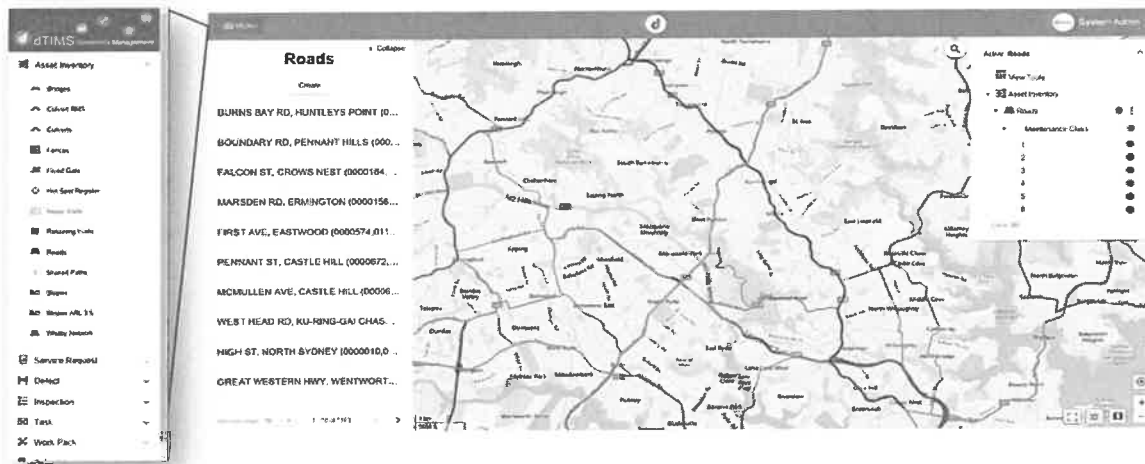


Figure 7: dTIMS Operations Management Network View

Once the asset work plans have been generated and optimized through the strategic analyses in dTIMS BA, dTIMS OM consumes those work plans and they can be plotted on the map, assigned resources, and scheduled. dTIMS OM will have a mappable layer for each asset being managed in dTIMS, including a layer for each year a treatment strategy has been generated. This will allow for transparency across all asset classes and enable WVDOH to combine and schedule maintenance based on all assets within an Area of Interest.

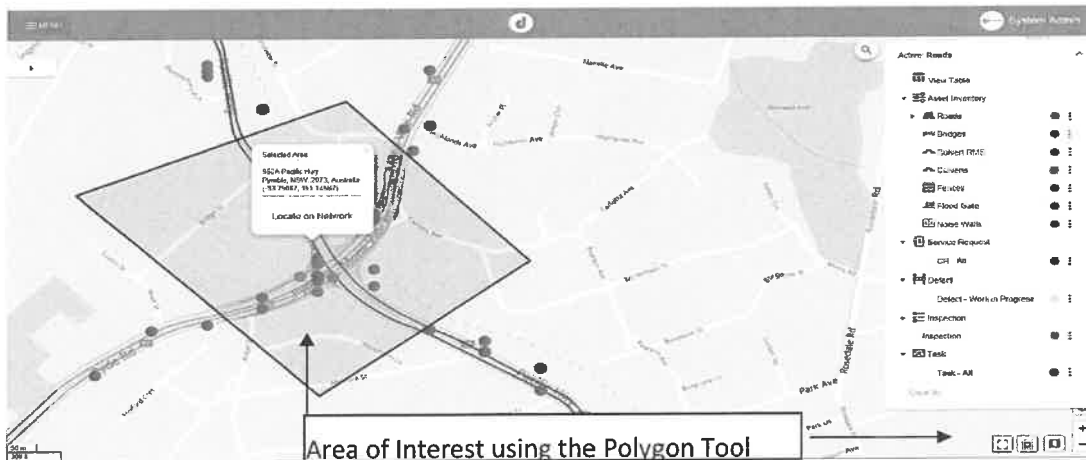


Figure 8: Polygon Selection Tool

## User Interface

dTIMS OM features an HTML 5 responsive web user interface. This means whether you work on a desktop, laptop, tablet or smartphone the screen will automatically adjust so the experience will be the same. dTIMS follows the Google Design Doc Specifications which includes content accessibility guidelines.

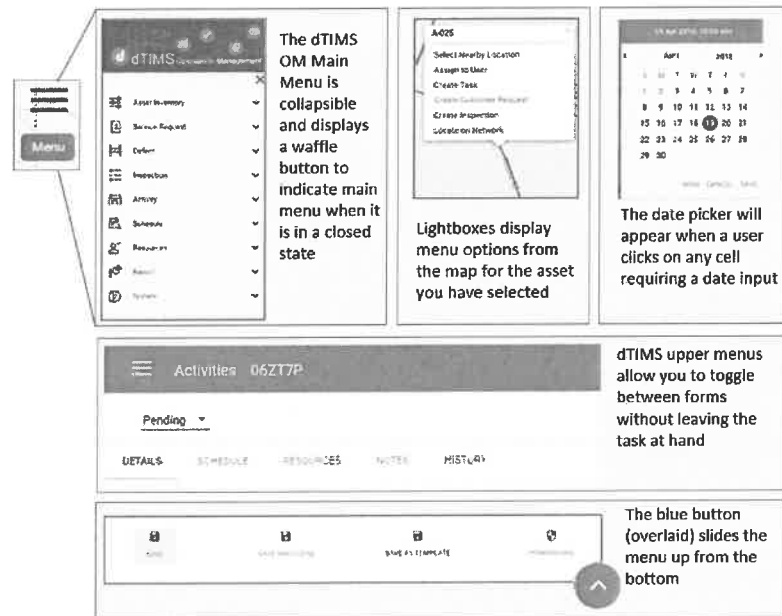


Figure 9: dTIMS User Interface

## Manage Defects

A defect is a flaw in the asset. A defect can result from an inspection, for example, if an inspector identifies that the signal does not work at a rail crossing. A defect may also be created after a customer request, such as a pothole, for example. A defect denotes a problem that must be fixed.

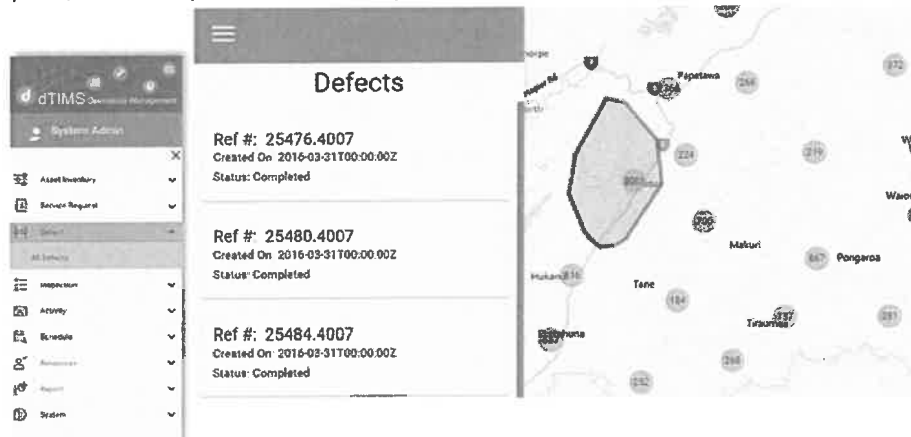


Figure 10: Defects Map

The previous screenshot shows an area of Defects with a small circle. In the example, the number in the circle indicates that the specific area contains 3001 known Defects. To drill into this area and view all defects click on the box. You can keep drilling down by selecting corresponding circles in the area or by zooming in and out. When you have identified the defect on the map, you can click the defect to open the defect details page and schedule the appropriate activity to rectify the issue.

## Manage Activities

Activities are actionable tasks. Activities can result from reactive or proactive asset management, meaning either a defect or customer request has been reviewed/inspected and deemed needing repair, or an asset management work plan has been approved and can now transition from identified planned work to activities needing action. Once an activity is created it will reside in the activity queue to be ready for resources to be secured and scheduled.

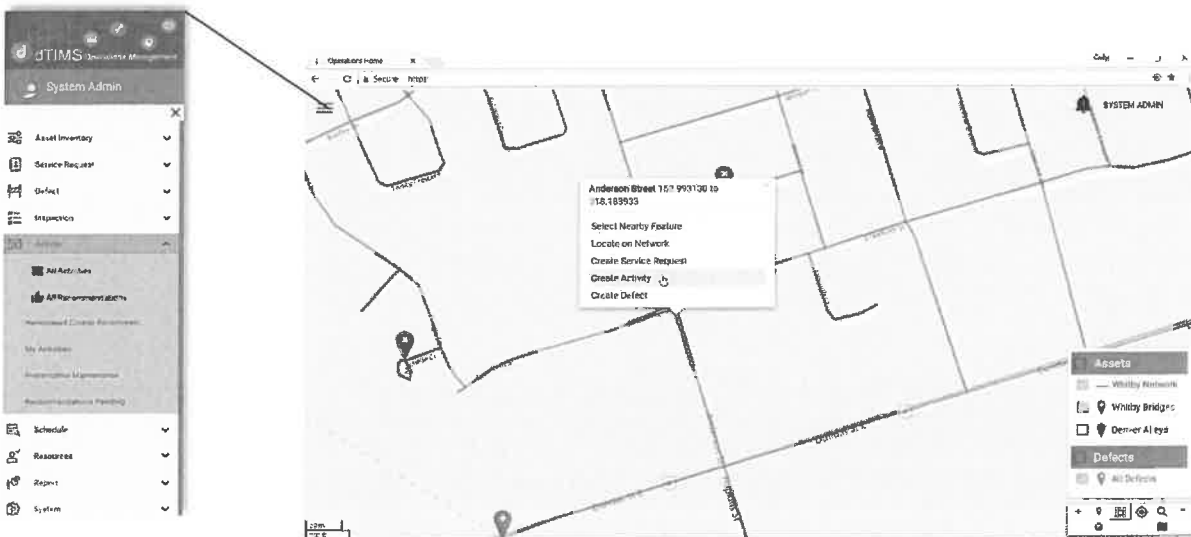


Figure 11: dTIMS Activities Map

## Resources

Labor hours are the hours workers need to perform work activities. Equipment is defined by the machinery or tools that workers use to perform work activities, such as fleet vehicles (snowplows, dump trucks, street cleaners), and specialty tools, for example.

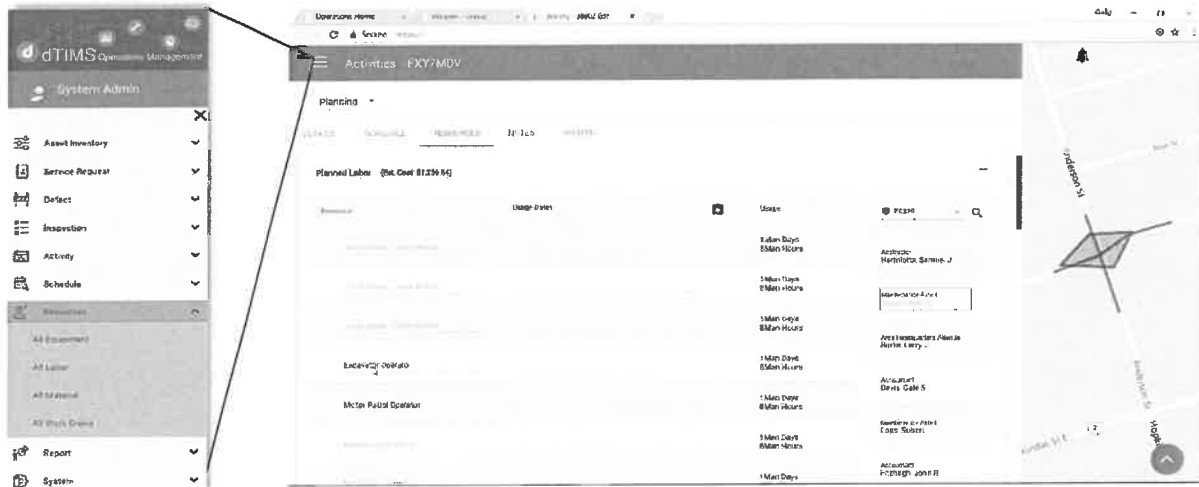


Figure 12: dTIMS Resources

## Scheduling

Scheduling functionality in dTIMS OM allows users to take the recommendations from dTIMS and create an effective, optimized, long term maintenance strategy, which can be used by dTIMS OM to develop a schedule of work. Assign crews and employees to work orders and geographically schedule work. Alternatively, dTIMS can also consume work plans created outside of dTIMS.

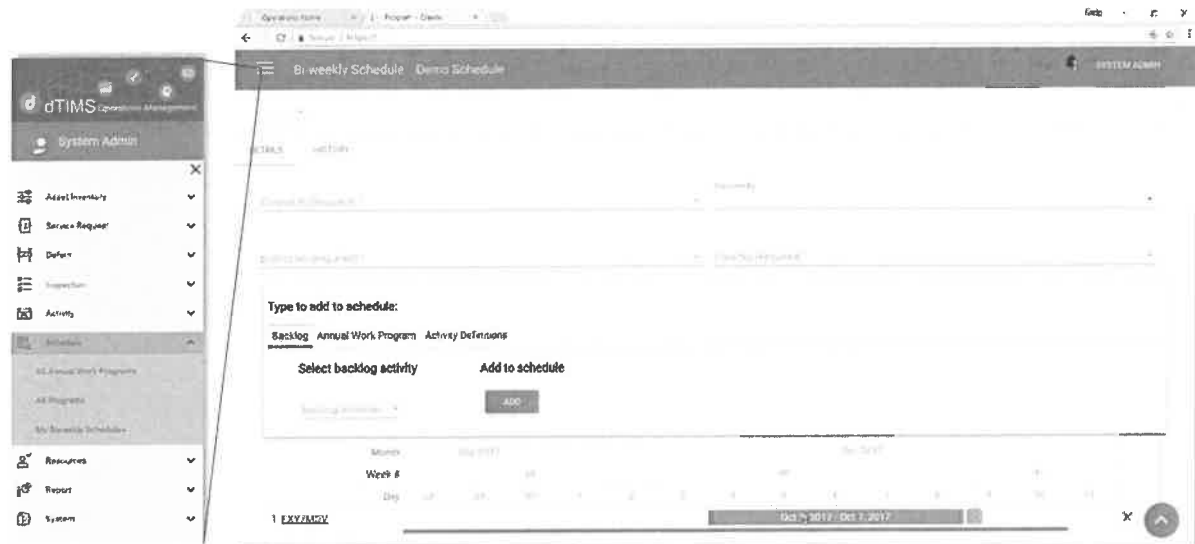


Figure 13: dTIMS Scheduler

## Reporting

Get a view of which work orders have been scheduled, completed, and past due. Managing the backlog of work requests is a key responsibility of maintenance department leaders. Making decisions based on priority work and keeping the schedule up to date is critical. The most valuable insights from dTIMS OM come from reports generated, and the collaboration of the people using the system.

dTIMS also integrates seamlessly with dTIMS BI as well as external business intelligence tools such as MS Power BI.

## Implementation Phasing

As outlined in TAMS SOW document, WVDOT plans to implement TAMS in three phases as follows:

**Phase 1** – Implementation of Maintenance Management, Facilities, Signs and Signals and TAI functionality for those asset classes needed to enable production operations for the Maintenance Management, Facilities, and Signs and Signals functionality. Phase 1 will be completed within 15 months of project start. For the deployment of the TAI assets in Phase 1, Deighton will have primary responsibility, with WVDOT staff assisting from the perspective of extracting data from existing systems and data clean-up. The objective of Phase 1 is to allow for decommissioning of REMIS as the system of record for WVDOT activities.

In subsequent conversations with WVDOT, it was decided to split Phase 1 into Phase 1a and Phase 1b. The dividing line was Phase 1a would focus on those requirements that were necessary to replace REMIS. Whereas Phase 1b was all other Phase 1 requirements.

**Phase 2** – Implementation of TAI for other high priority asset classes. Phase 2 will be completed within 18 months of project start. For Phase 2, it is envisioned that the TAI effort will be a shared responsibility between Deighton and WVDOT to provide WVDOT staff with the appropriate knowledge to perform Phase 3 in a lead role.

**Phase 3** – Implementation of TAI for remaining priority asset classes. *This phase is not currently included with the SOW except to the extent that Deighton shall ensure design decisions made during Phase 1 and Phase 2 take into consideration the planned Phase 3.* In addition, Deighton is responsible during Phase 1 and Phase 2 for teaching, coaching and mentoring WVDOT staff to allow WVDOT to perform Phase 3 within internal resources. It is envisioned that WVDOT will primarily perform Phase 3 with internal resources, with as required advisory and technical support from Deighton to be procured as required through a modification to this SOW or a separate SOW.

Original Phases	New Phases
Phase 1	Phase 1a – REMIS replacement
	Phase 1b
Phase 2	Phase 2
Phase 3	Phase 3 – out of TAMS scope



## Software Components in This Proposal

The software components required to support this proposal are discussed in this section. The cost of all software licenses for Phase 1a has been accommodated under a separate contract. This proposal is for the configuration services only.

### dTIMS Business Analytics

As mentioned earlier, dTIMS BA is currently being used by WVDOH to strategically manage the agency's pavement and bridge assets. WVDOH currently has 10 named users of dTIMS BA.

This software component consists of providing the WVDOH with an additional 25 named licenses of dTIMS BA. The cost of the additional licenses has been accommodated under a separate contract. This proposal is for the configuration services only.

### dTIMS Operations Management

As mentioned earlier, dTIMS OM is used to schedule all resources for the workplans generated by dTIMS BA, and track and manage defects, activities, events, customer requests, and inspections. WVDOH currently has not initiated these licenses yet in dTIMS.

This software component consists of providing the WVDOH with 25 new named licenses of dTIMS OM. The cost of the additional licenses has been accommodated under a separate contract. This proposal is for the configuration services only.

### Annual Software Subscription

The annual software subscription covers the yearly fee for the use of dTIMS BA and OM. This entitles WVDOH to receive software upgrades as they become available. The fee is based on the number of named users WVDOH requires.

### Annual Software Support

The annual software support subscription covers the yearly fee for software support based on the Premier support plan.

## Proposed Cost

The following cost table is based on the hours remaining for this ongoing project as of November 1<sup>st</sup>, 2021. As per the Master Agreement, Year 5 rates have been used for the following project roles.

DO Reference Line	ADO Summary	Hours	Rates	Total Price
1	Product Development Personnel	254.25	\$263.22	\$66,923.68
2	Software Maintenance Personnel	2105.50	\$175.48	\$369,473.12
3	Data Management Personnel	525.00	\$263.22	\$138,190.50
4	Training Personnel	245.50	\$175.48	\$43,080.33
5	Programmer	2063.00	\$175.48	\$362,015.23
6	Project Manager	448.00	\$263.22	\$117,922.52
<b>Total</b>		<b>5,641</b>		<b>\$1,097,605.39</b>

Figure 14: Cost Table



State of West Virginia  
Purchasing Division**RELEASE ORDER**

Release No.: 81220048

Req. Date: 12/01/2021

Buyer:

Fund Accounting Information:

Agency/Invoice To:

Dept. Code:

WVDOT/HIGHWAYS

ATTN: John Toomey

1900 Kanawha Blvd. E. Building 5, Room 730

Charleston, WV 25305

Ship To:

WVDOT/HIGHWAYS

ATTN: John Toomey

1900 Kanawha Blvd. E. Building 5, Room 730

Charleston, WV 25305

Vendor Name and Address:

DEIGHTON ASSOCIATES LTD.

223 BROCK ST N. UNIT #7

WHITBY ON CANADA L1N 4H6

wvOASIS Vendor Customer No.: 000000233045

Terms:

F.O.B.:

<u>Item No.</u>	<u>Quantity</u>	<u>Description</u>	<u>Unit Price</u>	<u>Amount</u>
		Agency or Central Master Agreement Number (AMA/CMA #) CMA DOT18*24		
		Year 5 - DEIGHTON PROFESSIONAL SERVICES 12/1/21 - 11/30/22		
1	1	PRODUCT DEVELOPMENT PERSONNEL	\$ 66,923.68	\$66923.68
2	1	SOFTWARE MAINTENANCE PERSONNEL	\$ 369,473.12	\$369473.12
3	1	DATA MANAGEMENT PERSONNEL	\$ 138,190.50	\$138190.50
4	1	TRAINING PERSONNEL	\$ 43,080.33	\$43080.33
5	1	PROGRAMMER	\$ 362,015.23	\$362015.23
6	1	PROJECT MANAGER	\$ 117,922.52	\$117922.52

Authorized Signature:

*Humeini S Elk Ramah*

Total Amount: \$1097605.38

Title: Director - SDM&amp;T Division

Telephone: 304-414-6911

Original: Vendor

Copy: Auditor's Office

Copy: Purchasing Division



STATE OF WEST VIRGINIA  
DEPARTMENT OF ADMINISTRATION  
OFFICE OF TECHNOLOGY


State Capitol  
Charleston, West Virginia 25305

Allan L. McVey  
Cabinet Secretary

Joshua D. Spence  
Chief Technology Officer

**MEMORANDUM**

**TO:** Mark Waid, HDIMGR2  
Department of Transportation

**FROM:** Joshua D. Spence, Chief Technology Officer  
Office of Technology 

**SUBJECT:** INFORMATION TECHNOLOGY PROCUREMENT  
63210059; IS&C NUMBER: 2021-2628

**DATE:** March 8, 2021

West Virginia Code §5A-6-4(a)(3) permits the Chief Technology Officer to "evaluate the economic justification, system design and suitability of information equipment and related services, and review and make recommendations on the purchase, lease or acquisition of information equipment and contracts for related services by the state spending units."

West Virginia Code §5A-6-4c requires that the Chief Technology Officer review and approve "a major information technology project."

West Virginia Code §5A-6-5 requires that "any state spending unit that pursues an information technology purchase that does not meet the definition of a 'major technology project' and that is required to submit a request for proposal to the State Purchasing Division prior to purchasing goods or services shall obtain the approval of the Chief Technology Officer, in writing, of any proposed purchase of goods or services related to its information technology and telecommunication systems."

After conducting a review of your request for direct award for Business Intelligence Annual Maintenance from Deighton effective 04/01/2021 - 03/31/2022, the Office of Technology has determined:

**X** That your request is approved.

That your request is not subject to the review and approval provisions contained in Chapter 5A, Article 6 of the Code, therefore, it does not need approval by the Office of Technology.

This memorandum constitutes this office's official review and a copy should be attached to your purchase order and any other correspondence related to this request.

If you have questions, or need additional information, please contact Consulting Services at [Consulting.Services@wv.gov](mailto:Consulting.Services@wv.gov).

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## West Virginia Secretary of State — Online Data Services

### Business and Licensing

Online Data Services Help

### Business Organization Detail

*NOTICE: The West Virginia Secretary of State's Office makes every reasonable effort to ensure the accuracy of information. However, we make no representation or warranty as to the correctness or completeness of the information. If information is missing from this page, it is not in the The West Virginia Secretary of State's database.*

#### DEIGHTON ASSOCIATES LTD.

Organization Information								
Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
C   Corporation	5/13/1992		5/13/1992	Foreign	Profit			

Organization Information			
<b>Business Purpose</b>	5415 - Professional, Scientific and Technical Services - Professional, Scientific and Technical Services - Computer Systems Design and Related Services (design, programming, facilities mgmt)		<b>Capital Stock</b> 0.0000
<b>Charter County</b>			<b>Control Number</b> 0
<b>Charter State</b>	ONT	<b>Excess Acres</b>	0
<b>At Will Term</b>	<b>Member Managed</b>		
<b>At Will Term Years</b>			<b>Par Value</b> 0.000000
<b>Authorized Shares</b>	0	<b>Young Entrepreneur</b>	Not Specified

## Addresses

Type	Address
<b>Mailing Address</b>	223 BROCK ST. N. UNIT 7 WHITBY, ON, L1N4H6 CAN
<b>Notice of Process Address</b>	CORPORATION SERVICE COMPANY 209 WEST WASHINGTON STREET CHARLESTON, WV, 25302
<b>Principal Office Address</b>	223 BROCK ST. N. UNIT 7 WHITBY, ON, L1N 4H6 CAN
Type	Address

## Officers

Type	Name/Address
<b>Director</b>	ROBERT PIANE 223 BROCK ST. N. UNIT 7 WHITBY, ON, L1N4H6
<b>President</b>	VICKI DEIGHTON 223 BROCK ST. N. UNIT 7 WHITBY,, ON, L1N4H6
Type	Name/Address

## Annual Reports

Filed For
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Date filed

For more information, please contact the Secretary of State's Office at 304-558-8000.

Tuesday, December 21, 2021 — 4:19 PM

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