



City of Kalamazoo

INTER-OFFICEMEMO

To: James K. Ritsema, City Manager, ICMA-CM

From: Reviewed By: James J. Baker, PE, Public Services Director & City Engineer *JJB*
Prepared By: James H. Cornell, Wastewater Division Manager *JHC*

Date: June 17, 2022

Subject: Davis Creek and Spring Valley Interceptor Sewer Odor and Corrosion Modeling

RECOMMENDATION

Approval is requested for a 1 year subscription to Envirosuite's SeweX modelling software for determining odorous gas generation and corrosion potential in the sewer network with Envirosuite, 3333 Queen Mary Rd, Suite 301, Montreal, Quebec, H3V 1A2 Canada for \$60,000.

BACKGROUND

The City of Kalamazoo Wastewater treatment plant has been receiving odor complaints from the public, neighborhoods, and local businesses for decades. These odor complaints have been from all areas of the City and surrounding townships. Odor investigation is elusive in that odors can be very transient and difficult to track down the source. The odor and corrosion modeling system will allow the Wastewater treatment plant to model different treatment options, in the sewer network, to find the most effective and efficient solutions to reduce or eliminate odors and mitigate corrosion of the sewer assets.

ALTERNATIVES:

The alternative is to rely on traditional sewer odor periodic smoke testing, odor sampling, and pilot testing treatment or ventilation options.

COMMUNITY RESOURCES CONSULTED

This recommendation did not require advisory board consultation or additional public input.

FISCAL IMPACTS:

Funds have been budgeted for this expenditure in the Public Services 2022 O/M budget.

ATTACHMENTS:

Quote: City of Kalamazoo- SeweX – Davis Creek & Spring Valley Interceptor

Proposal

for

The City of Kalamazoo

for

EVS Water SeweX

Not yet submitted

Prepared by:

Jason Lake

Proposal is valid for 30 days from date of issue

CONFIDENTIAL INFORMATION



Introduction

The City of Kalamazoo ("City") is facing multiple challenges in managing odor across its sewer network. Investigations into the root cause of the issues are time-consuming and often lead to inconclusive results while monitoring is costly and cannot completely cover the large area of the network. The City is also concerned there may be issues that are yet undiscovered that may lead to future disruption to operations. The City is now evaluating the purchase of an odor mitigation option and wants to ensure the most optimal solution is selected that will reduce complaints and maximize the impact of the investment.

Through our discussions to date, we understand that the key priorities for the City in this project are:

1. Odor mitigation solution modeling for Davis Creek & Spring Valley Interceptors.
2. Corrosion modeling to prioritize maintenance and asset management.
3. Odor source identification for future mitigation planning.

To address these challenges, the City has invested in a variety of monitoring-based methods, which although useful to characterize wastewater quality and levels of sulfide generation in discrete locations, do not fully characterize odor, corrosion, and safety risks in areas where the monitoring has not been undertaken. A hydraulic model of key interceptors is also close to completion and can provide a useful characterization of physical characteristics and flow across the networks.

A number of control methods (odor extraction and treatment, chemical dosing) are under consideration, but it is difficult to properly evaluate the most cost-effective solution for the community without costly physical trials. Design evaluations of control methods are based on static, steady-state models targeted only in the area of control and do not consider impacts across the whole network.

The City is therefore seeking solutions that can:

- More effectively represent odor and corrosion-related risk across the entire network.
- Evaluate the impacts of different control options.
- Better understand the root cause of current complaints and risk for complaints based on proposed upgrades to the network.
- Identify potentially unknown areas of risk associated with current operations and possible future operating scenarios.
- Make better use of monitoring data and hydraulic model information that is currently available for planning and management related to odor and corrosion issues.
- Use taxpayer funds as effectively as possible when selecting control options.

Envirosuite is therefore pleased to present this proposal for SeweX sewer network modeling software. SeweX provides a comprehensive characterization of odor, corrosion, and safety risk across any network under consideration and provides rapid and accurate understanding of the implications of applying new control and operating methods.

The SeweX model will give the City staff and partners an easy-to-use representative baseline model of the current Interceptors' odor and corrosion conditions and a tool to model all odor mitigation options to optimize the most effective and economic investment.

About Envirosuite

Envirosuite (ASX:EVS) is the world's leading provider of environmental solutions, harnessing the power of environmental intelligence, delivered as a managed solution to help customers optimize their operations and grow. Through a unique combination of science and technology, Envirosuite delivers flexible solutions to address challenges of water, air, noise, and vibration, making the world a better place through improved environmental performance.

Built over 30 years partnering with companies across the globe our solutions set the standard to which others are compared, designed to reduce costs and save time for customers.

Envirosuite's world-leading end-to-end solutions are built around the power of prediction, with deterministic and machine learning modeling, hyper-local meteorological forecasting, real-time data management, and response; powerful capability enabling our customers to make fast and responsible decisions. We aim to make the complex easy to use so that anyone in your organization can make the right decision, at the right time, to improve environmental and operational performance.

EVS Water solutions use a combination of machine learning and leading water modelling approaches that have been selected consistent with Envirosuite's philosophy of embedding the world's best science in products that are easy to use and assist the businesses to make better decisions.

By harnessing the power of environmental intelligence, we can build a better world.

www.envirosuite.com

Odor Corrosion and Safety in Sewer Networks

Intermittent flows in rising mains often lead to long sewage retention times under anaerobic conditions, allowing the growth of sulfate-reducing bacteria that convert sulfate to sulfide. In gravity mains, under turbulent conditions, dissolved sulfide passes from the liquid to the gas phase as H_2S , resulting in unpleasant odors if emitted to the external environment. At higher concentrations, H_2S can lead to significant safety risks for anyone working in the sewer environment. Under humid conditions, H_2S may be oxidized to sulfuric acid on the upper surface of the sewer pipe causing corrosion. These same conditions can also lead to elevated levels of methane, which can present significant safety risks to personnel working in or near the network.

Corrosion is traditionally managed in the design phase of a sewer network. Methods of control are established based on assumed flows and network conditions. Potential control measures, if applied dynamically, are still based on many assumptions on the current state of the network or simple, isolated storage and display of monitoring devices. Corrosion issues are often only discovered when costly assets fail, well before the expected life of the equipment.

Significant odor incidents can occur without warning, causing significant nuisance in the community and disruption to the effective management of the network. Traditional methods of management focus on responding to complaints and identifying the source of the issue can be very difficult after the incident has passed. Odor management is further complicated as it is based on a subjective response of the human nose, and it can be difficult to prove with any confidence whether the sewer network has not been the cause of any particular issue.

Safety issues are typically only identified with manual monitoring methods applied prior to work being undertaken. Any issues identified can be disruptive to the business, as well as dangerous to the health and safety of network personnel.

SeweX

SeweX has integrated the complex models traditionally used for the design of sewer networks with real-time data on operational performance and has re-purposed them into a solution that can be used by decision-makers to:

- Quickly and easily pinpoint the source of corrosion, safety, and odor events related to sulfide and methane generation.
- Accurately assess the impacts of different control and operating scenarios **across the whole network**
- Rapidly identify major cost savings in the design and operation of a network.

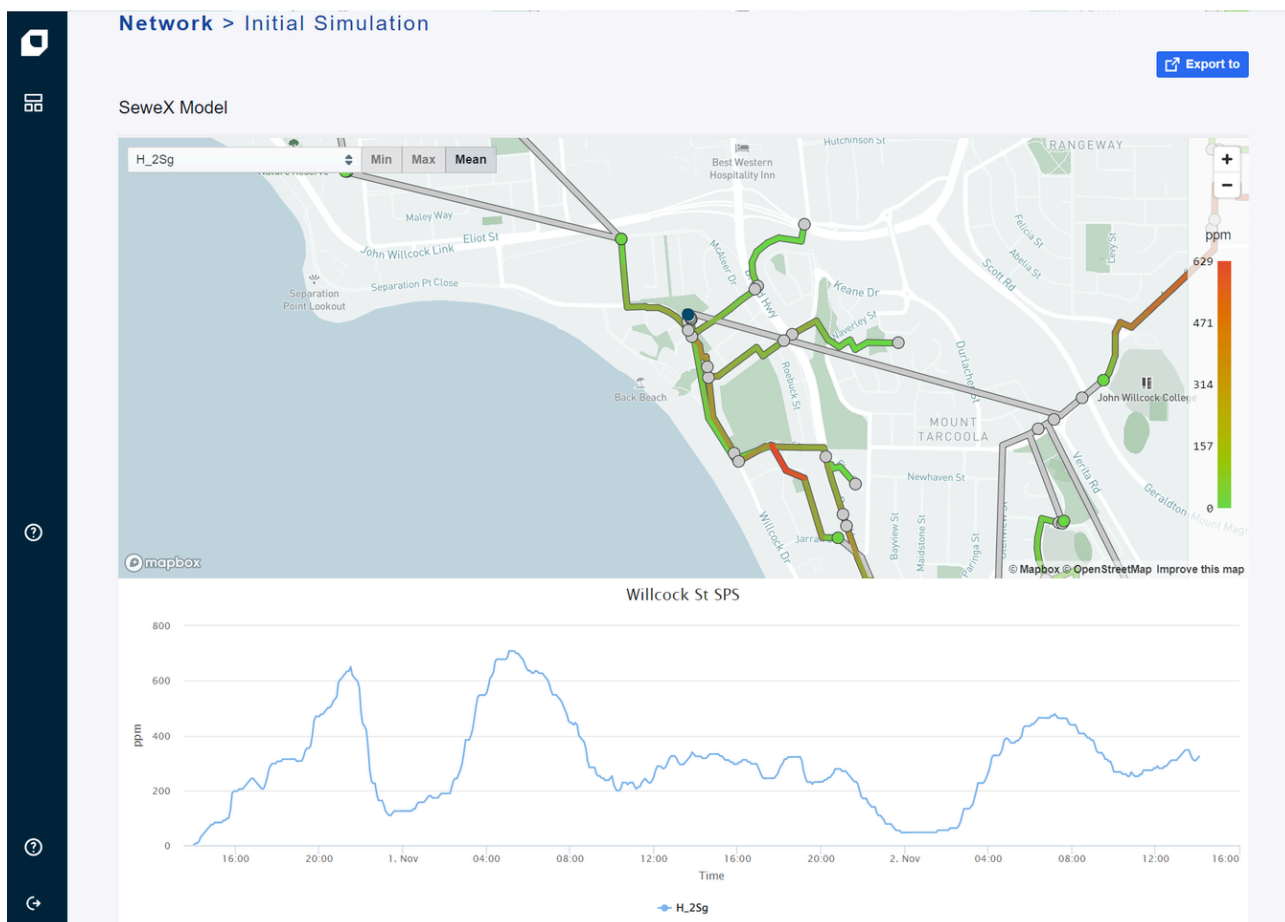
SeweX Capabilities

SeweX is driven by a comprehensive model of sulfide and methane generation that represents:

- Convective transport of wastewater and air.
- Biological carbon transformations under aerobic, anoxic, and anaerobic conditions.
- Biological sulfur transformations sulfate reduction, microbial oxidation of sulfide with oxygen and nitrate, and also sulfur released from hydrolysis of organic sulfur compounds.
- Chemical oxidation of sulfide with oxygen.
- Chemical precipitation of sulfide and several other competing anions by metal ions.
- Gaseous transfer between the liquid and the gas phases (in gravity sewers).
- Uptake of hydrogen sulfide in the headspace.
- Weak acid-base equilibrium chemistry for pH prediction.
- The effects of sewer flow velocity and wastewater pH on in-sewer biological processes.

SeweX then predicts:

- Hydrogen sulfide and methane concentrations in both liquid and gas phases.
- Wastewater composition including pH as a result of the biological, chemical, and physical processes.
- Wastewater composition due to the implementation of a mitigation strategy (e.g. chemical dosing, ventilation) for odor and/or corrosion problems.
- Corrosion rate



Objectives

The objectives of this project are to:

- Provide commercially valuable insights used to select the most economic and efficient odor mitigation solution for the Davis Creek & Spring Valley Interceptors project.
- Easy to use visual model to identify the areas of highest odor generation and corrosion concern.
- Delivery of useful insights much more quickly than traditional methods of management.
- Match control needs more accurately to actual mitigation requirements, reducing costs of control in the network.

Implementation

Task 1: Obtaining and reviewing historical data

The ideal pilot site for SeweX requires the following information as a minimum.

- Network / Hydraulic Data - An export from the hydraulic model for catchment / sub-catchment under consideration.
- Wastewater Quality - None needed. Defaults are used to define priority areas for future measurement. Historical testing for COD (total and soluble), total volatile fatty acid (VFA), sulfate, sulfide, pH, ammonium nitrogen, phosphate, alkalinity, nitrates, water temperature. COD, sulfide, VFA, and temperature are the most important inputs.
- Chemical dosing - Optional - Type, location, regime (constant / flow-paced)
- Ventilation - Defaults can be used if design data are not available.
- Material of construction of the pipes/mains under consideration.

Envirosuite will review available information and suggest alternatives where there are gaps in data.

Task 2: Configure network model

Envirosuite will review the available data and configure the network model for available operating scenarios. Time may be required at this stage to fill gaps in data or seek alternative data where an initial review indicates that data quality is insufficient to provide valuable outputs.

Task 3: Model calibration

Any historical data related to model outputs that are available (e.g. sulfide generation, pH) will be used to calibrate the model for ongoing future use.

Task 4: Model validation

If ongoing data are collected (e.g. real-time liquid sulfide or pH measurement), these data will be imported into the system for periodic validation at the monitoring location.

Task 5: Configure reports

Envirosuite will engage with the City to define the most appropriate reports to be configured in the platform. It is likely that reports will include:

- Map-based visualization of odor and corrosion risk across the sewer network.
- Time series of gaseous H₂S and methane and liquid sulfide generation for the modeled period at locations selected from the map.

Task 6: Product Training

Following completion of Tasks 1-5, considering travel restrictions and the City/Envirosuite company policy at the time of training, on-site training of the platform will be scheduled (4-8 hours). If on-site training is not possible, web-based training will be arranged. As soon as possible following completion of the training, Envirosuite will agree on the official commencement of the 'proof of concept' operational phase of the platform.

Task 7: Operation

Operation of the platform will consist of two phases of operation:

- Proof of concept operation – 3 months (or longer as required)
- Business as usual operation – 9 months

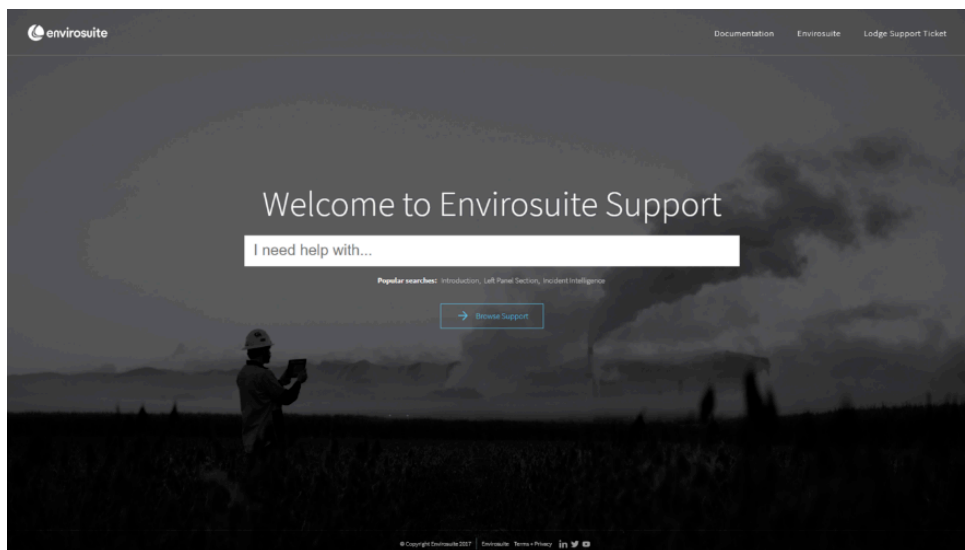
During phase one, weekly project management meetings will occur to discuss feedback on the performance and use of the platform. After 3 months of operation, business-as-usual operation will commence and will continue for a further 9 months (12 months of operations in total). Review meetings will be monthly. The budget for the project covers access to the system until this point, after which the City may elect to fund continued access at agreed rates or discontinue the use of the system.

Support

Included as part of the ongoing subscription fee, City staff will have access to Envirosuite's support team for remote support via phone, email, or our online ticketing portal. Envirosuite platform is hosted in the cloud and accessed via any industry-standard web browser.

City will also have local support from the Client Solutions Manager based in West Perth, available via zoom or in-person as required.

City will have access to the EVS Operations Centre which operates 24 hours a day from Monday to Friday in Australia except local public holidays. City staff can also email any support queries to cms@envirosuite.com and will have access to the online support site at <https://support.envirosuite.com>. This site is a rich source of information for training and doubles as a tool to lodge support tickets to the Envirosuite support team.



Envirosuite Support Site

Pricing & Invoicing

The project scope will cover 12 months of SeweX online modeling services subscription for the City's Davis Creek and Spring Valley Interceptors. The subscription starts from the time the first model is configured and delivered to the City.

Implementation and Configuration time before the delivery of the first SeweX model is included in the proposal budget with no additional charge.

Invoices will be charged Quarterly for \$15,000 each starting at the delivery of the first SeweX model and every 3 months thereafter for the remaining 9 months during the 12-month subscription.

Description	Price	Qty	Subtotal
12-Month SeweX Subscription for Two Interceptors Including: 1. Davis Creek Interceptor 2. Spring Valley Interceptor	\$60,000	1	\$60,000 / year
Total per year			\$60,000

Notes:

Minimum one-year term.

The start of the one-year subscription period will begin once the baseline model has been configured and shared with the client. There will be no penalty for the two parties to engage and begin sharing data under contract before all requested data has been gathered, including currently incomplete data such as the Hydraulic Model.

Acceptance of Offer

In witness whereof the parties hereto have accepted this offer and executed this agreement

On Not yet accepted

SIGNED for and on behalf of

VCOK - City of Kalamazoo (The Customer)



SIGNATURE

Jim Cornell

Jim Cornell

Kalamazoo Wastewater Division Manager

SIGNED for and on behalf of the Supplier

Envirosuite Operations Pty Ltd



SIGNATURE

Greg Bracci

Greg Bracci

Vice President – Americas

APPENDIX A
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Envirosuite Service Terms (“Agreement”)

1 Service

1.1 Parties

Envirosuite (“the Supplier”) will provide the Services to the Customer on the terms of this Agreement.

1.2 Acceptance

Any use or access of the Services by the Customer constitutes acceptance of this Agreement.

1.3 Right to Use

The Supplier grants to the Customer a world-wide, non-exclusive, non-transferable right to use the Services and the Documentation for its internal business purposes.

2 Term

2.1 Initial Term

This Agreement commences on the Commencement Date and continues for the Initial Term unless otherwise terminated in accordance with the Agreement.

2.2 Extension

This Agreement will automatically extend for a further period of 12 months upon each anniversary of the Commencement Date unless either party provides at least 30 days prior notice. The Supplier will provide the Customer with reasonable notice of any changes to the pricing for the Services.

2.3 Change to Services

The Customer may request a change to the modules and scope of Services. In the event that pricing and scope of Services is agreed between the parties in writing, this Agreement will automatically apply to any such changes.

3 Use of Subscription Services

3.1 Customer Obligations

The Customer must:

- a. comply with all applicable laws, regulations, licences, in relation to the Services;
- b. ensure that the Customer Data that resides on, and is transmitted and received via the Services does not infringe any Intellectual Property rights of a third party or breach any privacy laws;
- c. not use the Services to store or transmit any viruses or other malicious code;
- d. provide industry standard virus protection mechanisms for its applications;
- e. keep all account identification and log-in information, including passwords, secure and confidential to prevent unauthorised access to or use of the Services and promptly notify Supplier of any unauthorised access or use;
- f. use the Services only for its internal business purposes and not purport to re-sell or licence the Services;
- g. comply with all reasonable and lawful directions of Supplier; and
- h. ensure that any Authorised Users are properly trained in the use of the Services.

3.2 Suspension

The Supplier will have the right to suspend the Customer’s access to the Services to prevent or mitigate damage to the Services or the systems of the Supplier.

4 Intellectual Property Rights

4.1 Ownership and use of Intellectual Property Rights

The parties agree that other than as provided in this clause 4 (Intellectual Property Rights), nothing in this Agreement transfers ownership in, or otherwise grants any rights in, any Intellectual Property Rights of a party.

4.2 Ownership in Services

In using the Services the Customer does not obtain any ownership or interest in the Services and the Customer acknowledges that the Supplier holds all Intellectual Property rights in the Services, including in any upgrade, enhancement or modification of the Services under this Agreement.

4.3 Data

The Supplier acknowledges that the Customer is the owner of the Intellectual Property Rights in the Customer Data. The Customer provides the Supplier with a license to use the Customer Data to provide the Services.

4.4 Related Services

The Supplier will irrevocably and unconditionally assign to the Customer on payment, any Customer Specific New Material.

5 Warranties

5.1 Compliance with Specifications

The Supplier warrants that the Services will materially comply with the Specifications and the Documentation when used in accordance with this Agreement.

5.2 Changes to the Services

The Supplier may make changes, modifications or enhancements to the Services and the Documentation upon reasonable notice to the Customer.

5.3 Implied Warranties

If the Supplier is in breach of any non- excludable condition or warranty implied by any statute or law, the Supplier’s liability is limited to:

- 1. where Supplier has supplied Services, the cost of having the Services supplied again; and
- 2. where the Supplier supplied Equipment, the repair or replacement of the Equipment or the supply of equivalent Equipment, for a period of one year from the date of shipment to the Customer .

5.4 Disclaimer

Except as expressly provided in the Agreement, neither the Supplier nor its subcontractors make any representation or warranties, express or implied, statutory or otherwise, regarding any matter, including the merchantability, suitability, originality, or fitness for a particular use or purpose, non-infringement or results to be derived from the use of the Services provided under the Agreement, or that the operation of the Services will be secure, uninterrupted or error free.

6 Confidentiality

6.1 Treatment of Confidential Information

Each party undertakes to keep the Confidential Information of the other party secret and to protect and preserve the confidential nature of all Confidential Information.

6.2 Use of Confidential Information

A Recipient may only use the Confidential Information of the Discloser for the purposes of performing the Recipient’s obligations or exercising the Recipient’s rights under this Agreement.

6.3 Disclosure of Confidential Information

A Recipient may not disclose Confidential Information of the Discloser to any person except to:

- c. Representatives of the Recipient who require it for the purposes of the Recipient performing its obligations or exercising its rights under this Agreement and then only on a need to know basis;
- d. with the prior written consent of the Discloser;
- e. if the Recipient is required to do so by law or a stock exchange; or
- f. if the Recipient is required to do so in connection with legal proceedings relating to this Agreement.

6.4 Disclosure by Recipient

A Recipient disclosing information under clause 6.3(a) or clause 6.3(b) must ensure that persons receiving Confidential Information are aware it is the other party’s Confidential Information and not to disclose the information except in the circumstances permitted in clause 6.3.

6.5 Return of Confidential Information

Subject to clause 6.6, on the Discloser’s request, the Recipient must, deliver to the Discloser or destroy, all documents or other materials containing or referring to the Discloser’s Confidential Information in the Recipient’s possession, power or control; or in the possession, power or control of persons who have received Confidential Information from the Recipient under clause 6.3(a) or clause 6.3(b) .

6.6 Exceptions

The obligation in clause 6.5 does not apply to Confidential Information of the Discloser that the Recipient requires in order to perform its obligations under this Agreement or is otherwise entitled to retain.

7 Fees & Taxes

7.1 Fees

The Supplier must provide the Services for the applicable Fee.

7.2 Fees inclusive of Taxes

All Fees exclude Taxes, whether increased, new or additional amounts and all freight, insurance, delivery and other expenses which may be incurred.

7.3 GST

- a. Unless otherwise expressly stated in this Agreement, prices or other sums payable or consideration to be provided under or in accordance with this Agreement are exclusive of GST.
- b. If a party makes a taxable supply under or in connection with this Agreement, the other party must pay to the supplier at the same time, and in addition to the GST-exclusive consideration, an amount equal to the GST payable on that supply.
- c. The supplier must, as a precondition to the payment of GST under clause 7.3(b), give the other party a tax invoice.
- d. If an adjustment event arises in connection with a supply made under this Agreement, the supplier must give the other party an adjustment note.
- e. If this Agreement requires one party to pay for, reimburse or contribute to any expense, loss or outgoing suffered or incurred by the other party, the amount required to be paid, reimbursed or contributed by the first party will be reduced by the amount of input tax credits (if any) to which the other party is entitled in respect of the reimbursable.

8 Invoicing and payment

8.1 Payment

- a. Customer will pay each invoice within thirty (30) days
- b. If Customer considers that an invoice is not correctly rendered, then Customer will notify the Supplier in writing setting out the reasons why Customer considers that the invoice is not correctly rendered and identifying any amounts which are in dispute.

8.2 Invoice

For the purposes of this Agreement, an invoice is not correctly rendered unless:

- a. the amount specified in the invoice is correctly calculated in accordance with this Agreement; or
- b. the amount claimed in the invoice is due for payment.

9 Equipment

9.1 Equipment Supply

The Supplier will provide the Equipment as set out in the Proposal.

9.2 Title and risk

Title for any Equipment provided as managed Service will remain with the Supplier. The risk of loss or damage to the Equipment passes to Customers on the date the relevant Equipment is delivered to the delivery address. The Customer will ensure that the Equipment is covered by sufficient insurance to cover the full replacement value of the Equipment. The Customer will provide to the Supplier evidence of insurance coverage upon request by the Supplier.

10 Registration of Security Interests

- a. For the purposes of this clause 10:
 - i. "PPSA" means the Personal Property Securities Act 2009 (Cth) of Australia;
 - ii. "Security Interest" has the meaning given to that term in the PPSA and also includes any other mortgage, pledge, lien, charge, encumbrance or other arrangement of any kind which in substance secures the payment of money or the performance of an obligation, or that gives a creditor priority over unsecured creditors; and
 - iii. the terms "Financing Change Statement", "Financing Statement", "PPS Lease", "PPSR", "Proceeds", and "Security Agreement" have the meanings given to those terms in the PPSA.
- b. The Customer unconditionally and irrevocably acknowledges and agrees that if the Equipment is supplied to a Customer within Australia:
 - i. this Agreement constitutes a Security Agreement which creates (or may create) a Security Interest and PPS Lease in favour of the Supplier in the Equipment;
 - ii. the Security Interest in the Equipment includes all Proceeds of any kind from the Equipment;
 - iii. the Supplier may without notice to the Customer seek registration of its Security Interest in the Equipment on the PPSR;
 - iv. to the extent that Chapter 4 of the PPSA would otherwise apply to enforcement by the Customer of any Security Interest arising pursuant to this Agreement, the parties agree that the following provisions of the PPSA are excluded:
- c. to the extent permitted by section 115(1) of the PPSA: sections 95, 96, 118, 125, 132(3)(d), 132(4), 135, 142, and 143 PPSA; and
- d. to the extent permitted by section 115(7) of the PPSA: sections 129(2) and (3), 132, 133(1)(b) (as it relates to the Security Interest of the Customer), 134(2), 135, 136(3), (4) and (5), and 137; and any other provision of the PPSA notified to the Supplier by the Customer after the date of this Agreement.
- e. If the Equipment is supplied to a site outside of Australia, the Customer and the Supplier unconditionally and irrevocably agree that to the extent there is legislation in that jurisdiction that is equivalent to the PPSA or otherwise has the effect of protecting the Supplier's rights as owner and licensor of the Equipment:
- f. the Supplier is entitled to exercise all of the rights specified in clause 10(b) in that jurisdiction to the extent legally permissible and in accordance with that jurisdiction's legislative requirements; and
- g. the Customer agrees to do all things, and waive all equivalent rights and exclude all equivalent provisions as specified in clause 10(b) to the extent legally permissible in the jurisdiction

11 Liability and indemnity

11.1 Liability

Subject to clause 11.2 (No limitation):

- h. neither party will be liable to the other party under or in respect of this Agreement for any Consequential Loss arising from negligence or breach of contract;
- i. the aggregate liability of either party whether in contract, tort (including negligence), statute or any other cause of action (other than the obligation to pay Fees) is limited to the amount paid by the Customer to the Supplier in the 12 months prior to the cause of action arising.

11.2 No limitation

Nothing in this Agreement operates to limit or exclude:

- a. liability that cannot be limited or excluded by law;
- b. Either party's liability in respect of the indemnity in clause 11.3 or 11.6; and
- c. Either party's liability resulting from its fraudulent or unlawful act or omission or any act or omission that results in personal injury, death or property damage.

11.3 Indemnity

- a. Supplier will defend Customer against claims brought by any third party alleging that Customer's use of the Services infringes any Intellectual Property Rights.
- b. The Supplier's obligations under Clause 11.3(a) will not apply to the extent the claim results from:
 - i. Customer's breach of the Agreement; or
 - ii. use of the Services in conjunction with any product or service not provided or recommended by the Supplier.
- c. In the event a claim is made or likely to be made, the Supplier may:
 - i. procure for Customer the right to continue using the Services under the terms of the Agreement, or
 - ii. replace or modify the Services to be non-infringing without material decrease in functionality.

11.4 Notification of a Claim

Customer will notify the Supplier in writing promptly after becoming aware of any Claim which might give rise to an indemnity by Supplier under clause 11.3.

11.5 Customer obligations

In respect of any Claim notified under clause 11.4, Customer will provide the Supplier with reasonable assistance in conducting the defence of the Claim.

11.6 Customer Indemnity

The Customer will indemnify the Supplier for any loss suffered by the Supplier or its Representatives due to the Customer's breach of this Agreement.

11.7 Contribution

Any amount claimed by either party pursuant to the indemnities in clause 11.3 or 11.6 will be reduced proportionally to the extent the loss, damage, liability, claim or expense is directly caused by the negligence of the other party or its Representatives.

12 Termination

12.1 Termination for cause

Either party may terminate in whole or in part this Agreement immediately by giving notice in writing to the other party if:

- a. the other party commits a breach of this Agreement and the breach is incapable of remedy;
- b. the other party commits a breach of this Agreement that is capable of remedy and does not rectify that breach within 7 Business Days of first party issuing a notice of the breach; or
- c. a party is Insolvent.

12.2 Termination for Convenience

After the Initial Term, the Customer may terminate this Agreement on 30 days' notice without cause.

12.3 No other right of either party to terminate.

Other than as set out in this Agreement neither party may terminate this Agreement.

13 Consequences of termination

13.1 Payments and obligations on expiry or termination

Upon termination of this Agreement by Customer under clause 12.1, the Supplier will reimburse the Customer for the unused portion of any Fees paid in advance by Customer. To avoid doubt, the Customer will have no right to be reimbursed the unused portion of any Fees paid in advance by Customer upon termination of this Agreement by Customer under clause 12.2.

13.2 Preservation of rights

- a. Termination of this Agreement for any reason does not extinguish or otherwise affect any rights or remedies of either party which arose prior to the time of termination, or the provisions of this Agreement which by their nature survive termination.
- b. Without limiting the above, clause 4 (Intellectual Property Rights), 6 (Confidentiality), 8 (Invoicing and payment), 11 (Liability and indemnity), 13 (Consequences of termination), 17 (Assignment), 18 (Governing law), 19 (General) and 20 (Interpretation) survive termination of this Agreement.

14 Force majeure

14.1 Effects of Event

A party does not breach this Agreement and is not liable to the other party for a delay or failure to perform an obligation to the extent it results from a Force Majeure Event.

14.2 Obligation of affected party

The party affected by the Force Majeure Event must notify the other party of the Force Majeure Event as soon as reasonably practicable and must take all reasonable steps to limit the effects of Force Majeure Event.

14.3 Termination

If a Force Majeure Event occurs and its effect continues for a period of 20 Business Days, the Services affected by the Force Majeure Event may Be terminated at any time thereafter by either party giving written notice to the other party.

15 Notices

15.1 Form

Unless expressly stated otherwise in this Agreement, all notices, certificates, consents, approvals, waivers and other communications in connection with this Agreement must be in writing, signed by the sender (if an individual) or a person appointed as an authorised officer of the sender and marked for the attention of the person identified by the other party as the contact person or, if the recipient has notified otherwise, then marked for attention in the way last notified.

15.2 Delivery

A communication must be:

- a. Left or mailed to the address notified by the recipient;
- b. sent by email to the email address notified by the recipient; or
- c. given in any other way permitted by law.

15.3 When effective

1. A communication will take effect from the time it is received unless a later time is specified.
2. If sent by post, a communication is taken to be received three days after posting (or seven days after posting if sent to or from a place outside Australia).
3. If sent by email, when the sender receives an automated message confirming delivery; or 30 minutes after the time sent (as recorded on the device from which the sender sent the email) unless the sender receives an automated message that the email has not been delivered, whichever happens first.

16 Disclosure or Promotion of this Agreement

The Customer agrees that the Supplier may from time to time disclose certain details regarding this Agreement (including but not limited to, the Customer's name, the Fees and a description of this Agreement):

- a. as required by any stock exchange or law; or
- b. for promotional purposes on the Supplier's website, in promotional materials, press releases or other documents.

17 Assignment

17.1 Consent

Subject to clause 17.2, Customer must not assign, transfer, novate, encumber or otherwise deal with all or part of its rights or obligations under this Agreement without the Supplier's prior written consent.

17.2 Void Assignments

Any purported assignment, transfer, novation or other dealing with the rights under this Agreement that does not comply with clause 17.1 is void and has no effect.

18 Governing law

This Agreement is governed by the law in force in the State of Delaware, United States of America. Each party submits to the non-exclusive jurisdiction of the courts of that place.

19 General

19.1 Discretion in exercising rights

A party may exercise a right or remedy or give or refuse its consent in any way it considers appropriate (including by imposing conditions), unless this Agreement expressly states otherwise.

19.2 Partial exercising of rights

If a party does not exercise a right or remedy fully or at a given time, the party may still exercise it later.

19.3 No liability for loss

A party is not liable for loss caused by the exercise or attempted exercise of, failure to exercise, or delay in exercising a right or remedy under this Agreement.

19.4 Approvals and consents

By giving its approval or consent a party does not make or give any warranty or representation as to any circumstance relating to the subject matter of the consent or approval.

19.5 Remedies cumulative

The rights and remedies provided in this Agreement are in addition to other rights and remedies given by law independently of this Agreement.

19.6 Rights and obligations are unaffected

Rights given to the parties under this Agreement and the parties' liabilities under it are not affected by anything which might otherwise affect them by law.

19.7 Variation and waiver

A provision of this Agreement or a right created under it, may not be waived or varied except in writing, signed by the party or parties to be bound.

19.8 Indemnities

The indemnities in this Agreement are continuing obligations, independent from the other obligations of the Supplier under this Agreement and continue after this Agreement ends. It is not necessary for a party to incur expense or make payment before enforcing a right of indemnity under this Agreement.

19.9 Further steps

Each party agrees, at its own expense, to do anything the other party asks (such as obtaining consents, signing and producing documents and getting documents completed and signed):

- a. to bind the party and any other person intended to be bound under this Agreement;
- b. to enable the party to exercise its rights; and
- c. to show whether the party is complying with this Agreement.

19.10 Prompt performance

If this Agreement specifies when the party agrees to perform an obligation, the party agrees to perform it by the time specified. Each party agrees to perform all other obligations promptly.

19.11 Construction

No rule of construction applies to the disadvantage of a party because that party was responsible for the preparation of, or seeks to rely on, this Agreement or any part of it.

19.12 Costs

The parties agree to pay their own legal and other costs and expenses in connection with the preparation, execution and completion of this Agreement and other related documentation except for stamp duty.

19.13 Entire agreement

This Agreement constitutes the entire agreement of the parties about its subject matter and supercedes all previous agreements, understandings and negotiations on that subject matter.

19.14 Severability

If the whole or any part of a provision of this Agreement is void, unenforceable or illegal in a jurisdiction it is severed for that jurisdiction. The remainder of this Agreement has full force and effect and the validity or enforceability of that provision in any other jurisdiction is not affected. This clause has no effect if the severance alters the basic nature of this agreement or is contrary to public policy.

19.15 No relationship

Nothing in this agreement will be taken to constitute the Supplier as an employee, agent, partner or joint venturer of Customer nor is the Supplier authorised to represent itself as acting, or to incur any obligation, on behalf of Customer.

20 Interpretation

20.1 Definitions

Authorised Users means the employees or contractors of the Customer who are entitled to use the Subscription Services.

Business Day means a day other than a Saturday, Sunday or public holiday in:

- a. the place of the Governing law; or
- b. where an obligation under this agreement is required to be performed in a particular place, that place.

Claim means any allegation, debt, cause of action, liability, claim, proceeding, suit or demand of any nature whatsoever arising and whether present or future, fixed or unascertained, actual or contingent whether at law, in equity, under statute or otherwise.

Commencement Date means the date specified under that heading in the Details. If there is no Commencement Date specified, then the Commencement Date is the date on which the last party executes this Agreement.

- c. **Confidential Information** means:
 - d. all confidential, non-public or proprietary information, regardless of how the information is stored or delivered, exchanged between the parties or their Representatives before, on or after the Commencement Date relating to the business, technology or other affairs of the Discloser of the information, including the details of the Services; and
 - e. in the case of Customer, all Customer Data;
 - f. but does not include information:
 - g. which is in or becomes part of the public domain other than through breach of this Agreement or an obligation of confidence owed to the Discloser; which the Recipient can prove by contemporaneous written documentation was:
 - h. already known to it at the time of disclosure by the Discloser (unless such knowledge arose from disclosure of information in breach of an obligation of confidentiality); or
 - i. independently developed by the Recipient without reference to the Confidential Information of the Discloser; or
 - j. which the Recipient acquires from a source other than the Discloser or any of its representatives where such source is entitled to disclose it on a non-confidential basis.

Consequential Loss means any indirect or consequential loss or damage which, although in the contemplation of the parties at the time they entered into this Agreement, is not a loss or damage which may fairly and reasonably be considered to arise naturally (that is, in the usual course of things) from the breach including, but not limited to, loss of profits, loss of data, loss of revenue, loss of opportunity or loss of goodwill.

Contract Representative means a person appointed by each party to be their representative for the purpose of managing this Agreement and any disputes arising under it.

Customer means the entity receiving the Services.

Customer Data means all data, information, text, drawing or other material which is provided to the Supplier, or inputted into the Services, by the Customer.

Customer Specific New Material means any material created by the Supplier in the course of providing the Related Services that is based on or is a modification or enhancement of, the Customer Data.

Discloser means the party disclosing Confidential Information.

Documentation means any documentation provided by the Supplier which sets out the details of the Services.

Fee means the fee for the Services and any Equipment calculated in accordance with the Proposal.

Force Majeure Event means any of the following causes provided that they are outside the reasonable control of the affected party and could not have been prevented or avoided by that party taking all reasonable steps including:

- a. act of God, earthquake, cyclone, fire, explosion, flood, landslide, lightning, storm, tempest, drought, pandemic or meteor;
- b. war (declared or undeclared), invasion, act of a foreign enemy,

Government Agency means any governmental, semi-governmental, administrative, fiscal, judicial or quasi-judicial body, department, commission, authority, tribunal, agency or entity.

GST means any goods and services or value added tax.

A person is Insolvent if:

- a. it is (or states that it is) an insolvent under administration or insolvent;
- b. it is subject to any arrangement, assignment, moratorium or composition, protected from creditors under any statute or dissolved (in each case, other than to carry out a reconstruction or amalgamation while solvent on terms approved by the other parties to this Agreement); or an application or order has been made (and in the case of an application, it is not stayed, withdrawn or dismissed within 30 days), resolution passed, proposal put forward, or any other action taken, in each case in connection with that person, which is preparatory to or could result in any of (a), (b) or (c) above; or
- c. it is otherwise unable to pay its debts when they fall due; or
- d. something having a substantially similar effect to (a) to (d) happens in connection with that person under the law of any jurisdiction.

Initial Term means, unless stated otherwise in the Proposal, 12 months.

Intellectual Property Rights means all intellectual property rights including current and future registered and unregistered rights in respect of copyright, designs, circuit layouts, trade marks, trade secrets, know-how, confidential information, patents, invention and discoveries and all other intellectual property as defined in article 2 of the convention establishing the World Intellectual Property Organisation 1967.

Moral Rights means any moral rights including the rights described in Article 6b of the Berne Convention for Protection of Literary and Artistic Works 1886 (as amended and revised from time to time), being "droit moral" or other analogous rights arising under any statute that exist or that may come to exist, anywhere in the world.

Proposal means an order or proposal provided by the Supplier or the Reseller which sets out the details of the order to which this Agreement applies.

Receiver includes a receiver or receiver and manager.

Recipient means the party receiving Confidential Information.

Related Services means the professional services agreed in the Proposal.

Representative of a party includes an employee, agent, officer, director, auditor, advisor, partner, consultant, contractor or sub-contractor of that party.

Reseller means an authorised reseller of the Supplier who has the direct relationship with the Customer.

Service Levels mean the Service Levels set out in the Documentation.

Services means all Subscription Services and Related Services required to be provided by the Supplier under this Agreement.

Subscription Services means the Software as a Service modules provided by the Supplier to the Customer as set out in the Proposal.

Taxes means taxes, levies, imposts, charges and duties (including stamp and transaction duties) imposed by any authority together with any related interest, penalties, fines and expenses in connection with them except if imposed on, or calculated having regard to, the net income of Supplier.

Term means the Initial Term as extended if applicable.

20.2 Headings

Headings are included for convenience only and are not to affect the interpretation of this Agreement.