



Gascoyne Waste Management Facility Evaporation Ponds Development

Proposal



Prepared for Shire of Upper Gascoyne

13 August 2024

Project Number: TWP24100

DOCUMENT CONTROL

Version	Description	Date	Author	Reviewer	Approver
0.1	Internal Review	13/08/2024	BH		
1.0	Released to Client	13/08/2024	BH	MH	MH

Approval for Release

Name	Position	File Reference
	Waste Engineer	TWP24100 - Upper Gascoyne Evaporation Ponds_1.0
Signature		

Copyright of this document or any part of this document remains with Talis Consultants Pty Ltd and cannot be used, transferred or reproduced in any manner or form without prior written consent from Talis Consultants Pty Ltd.

Table of Contents

1	Introduction	1
1.1	The Talis Team	1
1.2	Why Talis Consultants?	2
2	Methodology.....	4
2.1	Project Initiation Meeting	4
2.1.1	Project Management	4
2.1.2	Desktop Review.....	4
2.2	Phase 1 – Detailed Design	5
2.2.1	Water Balance	5
2.2.2	Detailed Design	5
2.2.3	Supporting Tender Documentation	6
2.1	Phase 2 – Environmental Approvals	8
2.1.1	Works Approval Application Package	8
2.1.2	Licence Application	10
2.2	Optional Tasks.....	10
2.2.1	Procurement Support	10
2.2.2	Construction CQA Support	11
3	Relevant Experience	12
4	Project Team	19
5	Consultancy Fees	20
5.1	Assumptions.....	20
5.2	Hourly Rates and Disbursements Costs	21
5.3	Project Timeline	21
5.4	Appointment.....	21

Tables

Table 5-1: Fee Breakdown	20
Table 5-2: Hourly Rates for Additional Works	21
Table 5-3: Estimated Project Timeline	21

Appendices

APPENDIX A Confirmation of Appointment

1 Introduction

This Fee Proposal forms an offer from Talis Consultants Pty Ltd (Talis) to provide the Shire of Upper Gascoyne (the Shire) with consultancy services to prepare Detailed Design and Licensing approvals for the development of evaporation ponds to receive RO Plant brine wastewater at the Gascoyne Waste Management Facility (the Site).

Talis has a successful track record in assisting in the delivery of a range of ponds, including evaporative ponds for landfills and other applications. The following provides a list of some of the similar projects that Talis has successfully delivered on behalf of local governments and private waste service providers in recent years:

- Shire of Coolgardie – Coolgardie Waste Facility: Liquid Waste Facility Detailed Design, Works Approval and Licence Application, Surface Water Management Infrastructure Design, DWER Responses, CQA (Construction Quality Assurance) Supervision and Reporting;
- City of Greater Geraldton – Meru Waste Disposal Facility: Wastewater Ponds Condition Assessment, Option Development and Assessment;
- Shire of Kondinin - Hyden Wastewater Pond Assessment: Liquid Waste Pond Compliance Report, Options Assessment and Implementation Plan, and Risk Monitoring Strategy;
- City of Mandurah – Liquid Waste Facility Redesign, Environmental Monitoring Review, EPA and DWER Licence Application;
- City of Karratha - Seven Mile Landfill Development and Capping Works - Approvals, Design, CQA and Superintendent services;
- Shire of Broome – RRRP: Master Planning, Detailed Design, Surface Water Management Plan, Groundwater Management Plan and Approvals; and
- Eastern Metropolitan Regional Council (EMRC) – Red Hill Leachate Ponds, Stage 15 Cell Extension and Stage 14 cell development: Design, CQA and Superintendent services.

Talis believes that we are the ideal project partners to assist the Shire in achieving the desired outcomes from this significant Project. Chris Stannard will be the **Project Director** and will oversee and manage delivery of the project, including final reviews and deliverables. Matthew Hobley will be **Project Manager** and Shire's principal point of contact for the Project.

The Talis Project Team has all the necessary skillsets and experience to assist the Shire in the delivery of all aspects of the Project. If you have any queries regarding our response, please contact:

Matthew Hobley
Waste Engineer
0420 851 858
matthew.hobley@talisconsultants.com.au

1.1 The Talis Team

Talis is a specialised consultancy providing bespoke solutions in Asset, Engineering, Environment, Noise, Spatial, and Waste Management. Our multidisciplinary teams have extensive experience and work with public and private sector clients across Australia, to provide efficient, effective, and economic solutions that benefit all stakeholders of a project. Since its Establishment in 2012, the company has grown exponentially and currently has more than 130 employees.

Talis' consultancy services can be listed under six distinct categories:



We are dedicated to providing tailored solutions to our clients nationwide. By collaborating closely with them to grasp their needs and business goals, we craft innovative strategies that benefit all stakeholders and enhance project outcomes. Serving clients across diverse sectors throughout Australia, our commitment is anchored in our core values: passion, integrity, quality, teamwork, client focus, and employee focus. This commitment is demonstrated in our proven track record of successfully delivering projects across various sectors.

WHAT SETS US APART FROM THE REST?



1.2 Why Talis Consultants?

There are a number of reasons why Talis sets itself apart from other potential candidates for this work, including:

- A Project Team with unrivalled international experience and understanding in waste management facility design, approvals and construction;
- Strong working relationship with relevant Waste Officers within the Department of Water and Environmental Regulation (DWER);
- A leading waste consultancy within Australia that has been frequently recognised with awards in the by the Waste Management and Resource Recovery Association Australia (WMRR) publication Inside Waste;
- Intimate knowledge of local government processes, procedures and legislative requirements;
- A proven track record in representing local governments and similar bodies on infrastructure projects to the relevant regulatory and government authorities; and
- An extremely competitive price based on the experience of the Project Team assembled.

2 Methodology

2.1 Project Initiation Meeting

Following appointment, Talis proposes to commence the Project with a Project Initiation Meeting to discuss with the Shire via Microsoft Teams. Chris Stannard (Project Director) and Matthew Hobley (Project Manager) will represent Talis.

Firstly, discussions at the Project Initiation Meeting will be held around the overall objective of the Project to ensure that the Shire's expectations are fully understood and to ensure that they are satisfied. Talis will also provide a detailed overview of our proposed methodology on a task-by-task basis, to step the Shire representatives through the Project schedule. Prior to the meeting, Talis will release a data request which will guide discussions. Talis will utilise the Project Initiation Meeting to discuss various aspects of the Project as well as our learnings from other similar projects.

The Project Initiation Meeting will also provide an ideal opportunity to discuss roles and responsibilities of key personnel, make clear the lines of communication and decision-making and to determine the process of data exchange between the various parties.

2.1.1 Project Management

Following the Project Initiation Meeting, the Talis Project Team will hold an internal meeting to discuss and produce an internal project plan defining the tasks that each person will be responsible for and their deadlines. This will ensure timely and accurate delivery of the Project.

Talis will utilise our AS 9001 accredited quality management system to govern the delivery of this Project. This system has been developed by the Directors and Section Leaders of Talis, based on our cumulative experience of well over 100 years in consulting. The system has been established to regulate all types of projects, from our smallest right up to our largest construction projects.

Talis' culture is to keep open lines of communications with our clients throughout the delivery of our various projects. Our Project Manager, Matthew Hobley will oversee the delivery of the Project and will remain the key point of contact throughout.

2.1.2 Desktop Review

Based on our understanding of the Project requirements, Talis recognises that the review will include, but may not be limited to, the following documentation:

- Technical Specifications and previous reports;
- RO Plant effluent data;
- Site Licence and Approvals; and
- Any other relevant documentation or regulatory guidelines.

Prior to the Project Initiation Meeting, Talis will release a Data Request which will outline the data sought from the Shire. This review will provide Talis with a solid foundation of the Project.

2.2 Phase 1 – Detailed Design

2.2.1 Water Balance

Talis will use its excel-based water balance model to simulate inflow and outflow from the evaporation pond system to ensure the pond design will meet the capacity requirements. The water balance model will consider the following inputs/outputs from the system:

- Volume of effluent produced from RO plant (provided by The Shire);
- Rainfall;
- Evaporation; and
- Overflows/Flows between ponds.

Talis will consider consecutive wet years, and a 1-in-20-year, 24-hour storm event check in the modelling to ensure that the ponds can remain operational even during ‘worst case’ weather scenarios.

Arising from the water balance, Talis will prepare a set of master plan style concepts for the Shire to review ahead of the preparation of Detailed Designs.

2.2.2 Detailed Design

The Detailed Design of the facility will be based on the master plan style design as described in Section 2.2. Talis will develop a 3D model, concentrating on the design, including the various environmental controls such as the lining system, inlet pipes, sump and risers, and sludge management controls.

The Detailed Design drawings will consider the following design aspects:

- General Arrangement Design;
- Earthworks;
- Inlet and outlet sizing and location;
- Pond lining system;
- Environmental controls;
- Environmental monitoring locations;
- Stormwater Drainage Design including diversion channels as required; and
- Internal roadways including access and egress from the ponds.

All Detailed Design drawings will be prepared in general in accordance with Australian Standard AS.1100 Part 101 - 1992 and 401 - 1984. The datum to be used shall be the Australian Height Datum (AHD).

All detailed designs will be in general accordance with the Water Corporation’s *Design Guideline DS231: Evaporation Ponds, 2022* (Evaporation Pond Guidelines) and CSIRO’s *Land and Water Technical Report: Guidelines for Basin Use, 2000* (Guidelines for Basin Use).

Talis will prepare a suite of Design Drawings that will be provided in Draft format for the Shire to review and provide comments on. These will include Layout Plan, Cross Sections and Typical Features. Talis has budgeted for a meeting with the Shire to discuss the Draft Design to expedite the finalisation of these drawings.

Talis will issue two sets of drawings in both pdf and digital format: a 'For Tender' issue, and a 'For Construction' issue, which will be included within the Supporting Tender Documents outlined within Section 2.2.3.

2.2.3 Supporting Tender Documentation

Following approval of the Detailed Designs, Talis will prepare a variety of documents which will assist both the DWER in their determination of the Works Approval Application and assist the Shire with the procurement of a Contractor.

Talis' approach to preparing the tender documentation is listed in the following subsections.

2.2.3.1 Technical Specification

After a final review of the selected Detailed Design, Talis will provide detailed documentation on the Technical Specification including design details, materials specification, testing standards and construction techniques which will ensure that the Project objectives are satisfied. The Technical Specification provides key information regarding the Site works, earthworks, drainage and the use and testing of any geomembranes. In addition, it will outline details on the following:

- Compliance with the Licence
- Quality Management
- Programme of Works
- Hours of Operation of the Site
- Time for Completion
- Hold Points
- Site Meetings
- Safe Work Method Statements
- Use of Subcontractors
- Drawings and Schedules
- Surface Water and Groundwater Management
- Site Boundary
- Traffic Requirements
- Engineering Control
- Variations of Work
- Day works
- Control of Environmental Issues
- Occupational Health and Safety
- Containment of Leachate and/or Surface Water Run-Off
- Disposal Areas for Contractor
- Materials Delivered to Site
- Stability of Ground Conditions
- Completion of the Work
- Site Climatic Conditions
- Control of Quantities on Site
- Temporary Accommodation
- Security

The Technical Specification will be tailored for the construction works and will be complemented with a suite of detailed drawings as discussed in Section 2.2.2.

2.2.3.2 Construction Quality Assurance Plan

The Construction Quality Assurance (CQA) Plan outlines the processes required to determine the suitability and integrity of the works including material selection, laboratory testing, transportation and placement. Talis has prepared a variety of these for a range of projects in the past and based on this experience the CQA Plan will include the following as a minimum:

- Introduction and Background

- Definitions and Material Definitions
- Roles of Participants
 - Superintendent
 - Design Engineer
 - CQA Consultant
 - Contractor
 - Materials Testing Laboratory
- Description of Works
- Conformance testing
 - Testing criteria
 - Testing methods and accreditations
 - Testing frequency
- Daily Reporting and Documentation
 - General
 - Daily Record Keeping
 - Construction Issues
 - Photographic Records
 - Design and/or Specification Change
- Requirements of CQA Validation Report

Talis proposes to discuss the DWER's CQA requirements at the Pre-Submission Meeting outlined in Section 2.1.1.1 to ensure that the reporting requirements minimise the impact to the delivery schedule.

Talis will issue any Draft CQA Plans to the Shire for review prior to finalisation.

2.2.3.3 Cost Estimates & Schedule of Rates

Talis has considerable experience in the preparation of cost estimates for critical containment infrastructure projects having undertaken numerous across Australia. Talis' internal database of rates is accurate, reliable and relevant to current market rates and will provide the detail required to deliver the design and quality assurance as per the Technical Specification and Detailed Design of the evaporation ponds.

Detailed listing of all required materials and associated quantities for the Project will be identified and collated. The Schedule of Rates will be prepared in excel format which can be released as part of the tender process for the Tenderers to submit.

2.2.3.4 Safety in Design Report

Talis has significant experience in the preparation of Residual Risk Reports in accordance with Regulation 295 of the Work Health and Safety (General) Regulations 2022 and Section 22 (2) of Division 3, Part 2 of the *Work Health and Safety Act 2020*. The reporting will consider as part of the risk assessment:

- The hazards relating to the design of the structure that, so far as the designer is reasonably aware:
 - Create a risk to the health or safety of persons who are to carry out any construction work on the structure or part; and
 - Are associated only with the particular design and not with other designs of the same type of structure.
- Measures taken to ensure, so far as is reasonably practicable, that the plan, substance, or structure is designed to be without risks to the health and safety of persons:
 - Who, at a workplace, use the plant, substance, or structure for a purpose for which it was designed; or
 - Who construct the structure at a workplace; or
 - Who carry out any reasonably foreseeable activity at a workplace in relation to the manufacture, assembly or use of the structure for a purpose for which it was designed or the proper demolition or disposal of the structure.

Talis will determine the preferred risk assessment framework in consultation with the Shire, with additional consideration of *Safe Work Australia – Model Code of Practice: Safe design of structures*.

Talis proposes that the Safety in Design Report will, at a minimum, include:

- Design Assumptions and Criteria;
- Description of the Proposed Works;
- Hazard Identification;
- Risk analysis and Management, including:
 - Risk Analysis and Rating;
 - Risk Management Measures; and
 - Revised Risk Ratings.

A draft of the spreadsheet-based report will be provided to the Shire for comment prior to finalisation.

2.1 Phase 2 – Environmental Approvals

2.1.1 Works Approval Application Package

A Works Approval is required for the Site prior to undertaking any construction. These approvals are granted by DWER. Talis recommends that the Shire includes Time Limited Operations (TLO) within the Works Approval, which will ensure that operations can commence once the ponds have been constructed. Talis will prepare and lodge a Works Approval application on behalf of the Shire, as outlined in the following subsections. Talis proposes to review the tasks required for the Works Approval Package against the Scope of Works that Talis is currently engaged by the Shire to undertake.

2.1.1.1 Pre-Submission Meeting

Talis proposes that an initial engagement meeting is held with the DWER regarding the Project. Talis will lead a discussion on the key environmental impacts associated with the Project and outline the works required to understand these, as well as the proposed mitigation measures to manage potential impacts. Talis will also use this meeting to confirm the DWER's data requirements, assessment pathway as well as anticipated timeframes.

2.1.1.2 Environmental Assessment and Management Plan

An Environmental Assessment and Management Plan (EAMP) will be prepared to address the environmental and social matters that require consideration and management for the evaporation pond system. Talis will build off the existing work being undertaken for the landfill site, and this document will be based on:

- Desktop assessment of social and environmental values;
- Detailed assessment and investigations;
- Identification of key risks; and
- Management of risks.

The EAMP will be utilised to support the Works Approval application and will address all information requirements of the Department of Water and Environmental Regulation (DWER).

The general layout of the EAMP document would be as follows:

- Introduction and background;
- Description of the existing environment on and surrounding the site, including:
 - Environmental values;
 - Planning controls;
 - Social factors;
- Detailed description of the proposal including:
 - Requirements for the ponds;
 - Conceptual designs and operations; and
 - Any monitoring and maintenance of the ponds.
- An outline and evaluation of all potential environmental impacts of the proposal (including findings of specialist studies where relevant);
- Environmental engineering and management measures to be implemented on site to ensure that all potential impacts are controlled to appropriate standards;
- Risk Assessment (as per the DWER requirements);
- Appendices, such as:
 - Figures and conceptual designs relevant to the Proposal;
 - Results of site searches including government department database searches; and
 - Specialist studies (where relevant).

A draft of the EAMP will be released to the Shire for comment prior to finalisation for use to support the relevant approval applications. Talis will finalise the document giving due consideration to the Shire's comments.

2.1.1.3 Works Approval Application Form

Talis will prepare and submit a Works Approval Application Form to the DWER to seek approval for the evaporation ponds construction, comprising:

- EAMP (as prepared in Section 2.1.1.2); and

- Works Approval Application Form.

A draft of the Application Form will be provided to the Shire for comment prior to finalisation. Talis will finalise the Works Approval Application Package taking the Shire's comments into consideration and will submit the package to the DWER on behalf of the Shire.

2.1.2 Licence Application

Talis understands that the Shire wishes to Licence the Site to include the proposed evaporation ponds. The approvals pathway will be discussed with the Shire, noting that Talis has been engaged in another project at the Site and some tasks may overlap depending on the Shire's preferred timeline for implementation. Talis will review and recommend the most suitable option for the Shire, ensuring both projects are developed in a coordinated and timely manner.

A Licence Application Form and submission cover letter will be prepared for the development and alongside the required supporting documentation, which Talis assumes will include the EAMP prepared for the Works Approval Application. Talis has not made any allowance for completing additional supporting documentation beyond completing a submission cover letter as part of this scope.

The Draft Licence Application and covering letter will be released to the Shire for comment prior to finalisation. Talis will finalise the document giving due consideration to the Shire's comments and will submit the supporting documentation and the application form to the DWER on behalf of the Shire.

2.2 Optional Tasks

Talis recognises there may be additional tasks in the procurement and construction of the proposed brine pond for which the Shire may desire additional support. Therefore, at the Shire's discretion, Talis is able to provide assistance in the following scopes of work. Should the Shire wish to appoint Talis for these works, these can be completed under Talis' hourly rates, listed in Table 5-2 or under a lump-sum project variation.

2.2.1 Procurement Support

To enable the Shire to evaluate the returned tenders, Talis can sit in as a technical member of the procurement panel, or assist in running the procurement process by undertaking the following tasks:

- Hold a teleconference with the Shire prior to opening submissions to outline roles, timeline and review the structure and contents of the evaluation spreadsheet using a Shire-developed tender evaluation spreadsheet, or alternatively Talis' evaluation spreadsheet which has been prepared and successfully adopted for similar projects;
- Undertake a detailed review of all submissions received for the works, prepare a review summary and hold teleconference discussions with the Shire to outline any missing information or clarifications;
- Arising from the review process, Talis will commence with the technical and financial review of the submissions received which will be provided to the Shire;
- Once evaluations have been completed, a teleconference with the Shire will be held to review these and resolve on a collective evaluation followed by the recommendation of a Preferred Tender. Talis anticipates that it will be a non-voting member of the review panel and will only provide technical advice on submissions put forward by the tenderers.

2.2.2 Construction CQA Support

Talis also recognises that the Shire may need some consultancy support during the construction stage of the Project, particularly with CQA Validation. The objective of the CQA services is to record the testing methods and quality assurance procedures for the supply and installation of the lining system in accordance with the Specification and approved CQA Plan that will be prepared by Talis. Based on experience with similar projects, the key tasks involved in CQA works are outlined as follows:

- Conformance Testing:
 - Remote overseeing of the sampling of materials at the manufacturers premises, or collection of samples from Site;
 - Overseeing of laboratory testing of samples and reporting results;
- Site Supervision:
 - Review manufacturer's and installer's plans, and Quality Assurance testing results;
 - Inspect delivery and storage of materials to Site; and
 - Supervise the pond lining works;
- CQA Certification Report:
 - CQA documentation for manufacture and installation of lining system

3 Relevant Experience

The Talis Project Team has vast experience in the delivery of similar projects, which is demonstrated in the following section.

PROJECT: Coolgardie Liquid Waste Facility Design

CLIENT: Shire of Coolgardie

Talis was commissioned by the Shire of Coolgardie to undertake Detailed Design and Environmental Approvals for the development of a modular, expandable Liquid Waste Facility at its Coolgardie Waste Facility. As part of the works, Talis was commissioned to develop:

- Detailed Designs;
- Technical Specification;
- Construction Quality Assurance Plan;
- Bill of Quantities;
- Cost Estimate;
- Environmental Assessment and Management Plan; and
- Approvals Forms.

The project is currently going through the approvals process, with the Works Approval anticipated to be issued within a number of weeks.

PROJECT: Geraldton Meru Wastewater Pond Review

CLIENT: City of Greater Geraldton

The City is currently in the process of developing a new Master Plan for the Liquid Waste Facility (LWF) at its Meru Waste Disposal Facility (the Site) and wishes to consider the impact of the ponds and their location relative to key infrastructure, including the Site weighbridge and Waste Transfer Station (WTS). And additionally, investigate options to reduce the odours generated from the LWF or minimise their impact on staff and site users.

As part of the project, Talis has produced a report that summarises the assessment and strategy for potential future improvements to the design and management of the LWF at the Site. The report also presented development three options for the Site, including a water balance assessment with estimated capital cost for each option. The options include:

- Option 1 LWF Improvement
- Option 2 LWF Relocation
- Option 3 Weighbridge Relocation

Talis has also determined that strong odours were generate from the LWF due to the accumulation of solid materials above the water line, lack of maintenance – lack or regular desludging and overall due to the poor design of the facility.

PROJECT: Hyden Liquid Waste Pond Assessment

CLIENT: Shire of Kondinin

Talis was commissioned by the Shire of Kondinin to undertake an inspection and compliance audit of its liquid waste pond in Hyden, WA. As part of these works Talis provided an options assessment for four potential solutions to replace the liquid waste pond. As part of these works, Talis undertook the following key tasks:

- Site Inspection;
- Compliance Review;
- Options Conceptualisation;
- Operational and Capital Cost Estimates;
- Financial Assessment;
- Options Assessment; and
- Implementation Plan.

Talis has recently been engaged to provide a risk management strategy and inspection checklist for the pond.

PROJECT: McIntosh Road – Sullage Ponds Remediation Plan

CLIENT: Shire of Denmark

The Shire of Denmark commissioned Talis Consultants to prepare a remediation plan for their sullage ponds at their Mc Intosh waste facility. As part of these works, Talis assessed a variety of options including design and cost estimates. Talis also provide an implementation plan on the preferred options including construction and operational advice.

PROJECT: Liquid Waste Facility Upgrade

CLIENT: City of Mandurah

The City of Mandurah commissioned Talis Consultants to prepare the Detailed Design and documentation for the upgrade and license amendment for an upgrade to their sullage disposal facility at Tim's Thicket. As part of the project, Talis performed an options appraisal and made recommendations for treated effluent disposal and associated treatment system, as well as treatment system upgrades and remediation works.

PROJECT: Red Hill Waste Management Facility – Master Plan, Leachate Ponds & CQA Services

CLIENT: Eastern Metropolitan Regional Council

Talis was commissioned by the Eastern Metropolitan Regional Council (EMRC) to undertake the Master Plan, Works Approvals, Detailed Design, and Technical Specification for Stage 14 & 16 Landfill Cells, leachate ponds, as well as CQA and Geotechnical Inspection and Testing Authority (GITA) services for the construction of Stage 14 Landfill. The works included the following:

- Master Plan and Landfill Development Plan:
 - Current and Site Uses sizing;

PROJECT: Red Hill Waste Management Facility – Master Plan, Leachate Ponds & CQA Services

CLIENT: Eastern Metropolitan Regional Council

- Projections and Capacity Modelling;
- Site Master Plan; and
- Landfill Development Plan including Phasing;
- Design of leachate evaporation ponds:
 - Water balance;
 - Detailed designs;
 - Technical specification;
 - Cost Estimates;
 - CQA Supervision (future); and
 - Development of a Leachate Management Plan;
- Design of future landfill cells:
 - Detailed designs;
 - Geotechnical slope stability report;
 - Technical Specification;
 - CQA Plan;
 - Bill of Quantities; and
 - Support during Procurement process;
- CQA Supervision (Stage 14):
 - Conformance Testing;
 - In factory sampling of materials;
 - Responsibility for laboratory testing of samples;
 - Reported and reviewed testing results;
 - Site Supervision;
 - Review of manufacturer's and installer's plans;
 - Inspected delivery of all liner rolls to site;
 - Inspected on-site storage of all rolls;
 - Supervised lining system installation;
 - CQA Certification Report; and
 - CQA documentation for manufacture and installation of new cells (draft and final report).

PROJECT: Seven Mile Landfill Development and Capping Works - Approvals, Design, CQA and Superintendent services

CLIENT: City of Karratha

Talis was engaged by the City of Karratha to provide Design, environmental approvals, CQA services and Superintendent support for the construction of Cells 1 and 2 and the capping of Cell 0 at the Seven Mile Waste Facility. Talis assisted the City with appointing a preferred Contractors to undertake the construction works for the projects. This included the preparation of the Technical Specification and providing support during the Tender Evaluation. Talis undertook the following as part of the CQA consultancy services:

- Conformance Testing;

PROJECT: Seven Mile Landfill Development and Capping Works - Approvals, Design, CQA and Superintendent services

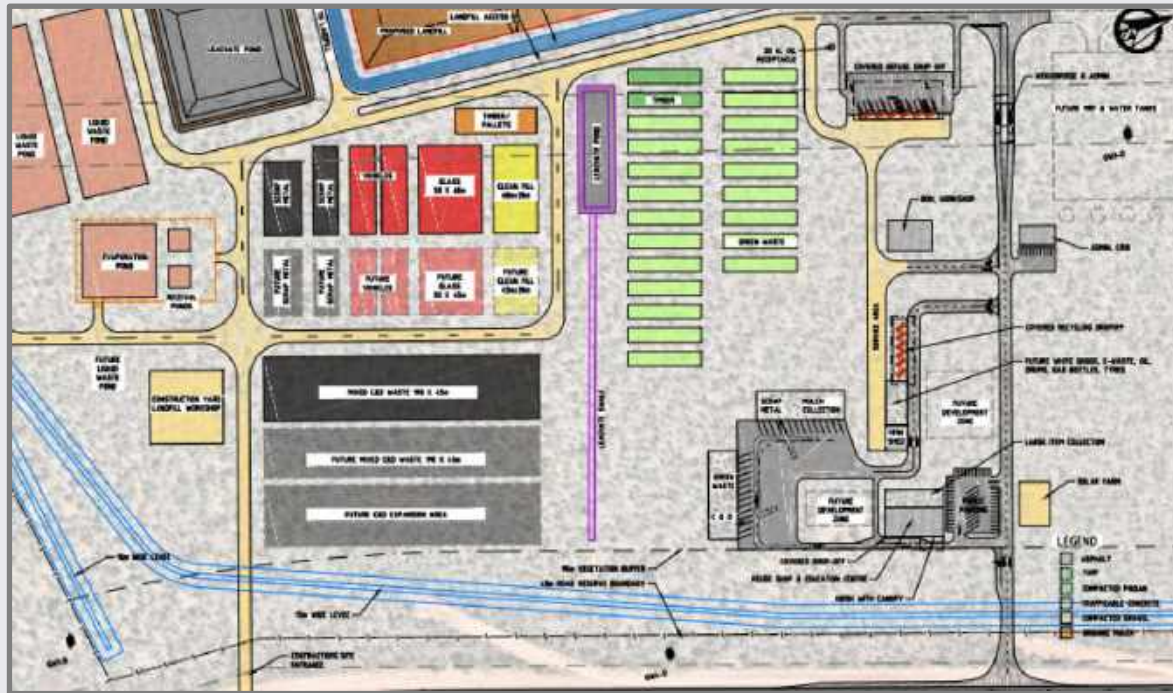
CLIENT: City of Karratha

- In factory sampling of materials;
- Responsibility for laboratory testing of samples;
- Reported and reviewed testing results;
- Site Supervision;
- Review of manufacturer's and installer's plans;
- Inspected delivery of all liner rolls to site;
- Inspected on-site storage of all rolls;
- Supervised lining system installation;
- CQA Certification Report; and
- CQA documentation for manufacture and installation of new cells (draft and final report).

Talis undertook the following as part of Superintendent consultancy services:

- Resolution of any contractual or technical matters with the Preferred Contractor;
- Contract initiation meeting with the Contractor and the City;
- Onsite meetings during the term of the contract;
- Technical site inspections;
- Review and approval of relevant work method statements and similar documentation;
- Response to technical queries / requests for information from the Contractor and construction crews;
- Drafting and design support in collaboration with the Designer including:
 - Design alterations;
 - 3D modelling (including verification of construction levels); and
 - As Built Drawings verifications.
- Construction method and technical advice;
- Progress tracking, reporting and forecasting against programme and budget, assessment of Notice of Delay claims;
- Assessment of Progress Claims and variations, with provision of advice as necessary;
- Practical Completion inspection and certification; and
- Any other support required by the City.

CLIENT: Shire of Broome



Talis has assisted the Shire with the development of the Shire's Broome Regional Resource Recovery Project (RRRP) from as early as 2014. This commenced with an extensive Site Selection Study and lead to providing ongoing technical support to narrow the options available to the Shire to two sites (referenced as Site G1 and D2). Talis was commissioned in November 2019 to progress the project into the next phase of works, which would see the assessment of two development options:

- Sites D2 and G1 were assessed to determine their compliance with relevant criteria as determined by the relevant government agencies and complimented by some key factors relevant to the Shire. This allowed for a comparison of both sites across a range of set criterion to highlight the technical strengths and weaknesses as well as points of difference between each other. Site D2 was identified as being the most preferred site for the following key reasons:

- Greater separation to groundwater which would ensure compliance with the 3m separation distance from groundwater;
- Provided greater volume of soils (on average 14m) below the landfill for natural attenuation to reduce the risk to groundwater;
- The site can satisfy the Shire's desires to achieve a material balance and excavate surplus pindan soils for engineering purposes;
- The site is in a smaller surface water catchment area, resulting in:
 - Less risk of flooding; and
 - Will requiring less engineering and maintenance requirements to mitigate flooding risks.
- Meets all recommended separation distances to sensitive receptors; and
- A vegetation buffer can be maintained to maintain visual amenity.

PROJECT: Broome Regional Resource Recovery Park Development (2014-ongoing)

CLIENT: Shire of Broome

In April 2021, following extensive community consultation, the Shire of Broome Council voted on the preferred location and approved Option 1 for an integrated Site D2 and further studies were progressed on this basis (<https://www.rrrp.com.au/resources>). A summary of the scope of works for both Sites included the following tasks:

- Preliminary Site Selection;
- Detailed Site Investigations;
 - Installation and sampling of groundwater monitoring wells;
 - Completion of Level 1 Flora & Fauna Survey to support Clearing Permit required for groundwater monitoring well installation;
 - Completion of Level 2 Detailed Flora & Vegetation Survey;
 - Intrusive Site Investigations to assess the suitability of the sites; and
 - Financial Review and Assessment of the Development options
- Community Engagement;
- Preparation of several documents as part of the Detailed Site Investigations, including:
 - Site Comparison Report;
 - Site Investigation Report for each Site;
 - Groundwater Monitoring Data Memorandum;
 - Hydrological Assessment and comparison; and
 - Level 1 and Level 2 Flora & Vegetation Reports.
- Development of Master Plan and preliminary cost estimates.

Following the Shire's approval of Site D2, the Shire engaged Talis to proceed with progressing the project through preparation of designs, providing procurement assistance and to an approvals stage. The scope of works included the following tasks:

- Several Workshops with the Shire;
- General Project Management and Administration tasks, including:
 - Preparation of monthly progress reports;
 - Reviewing project deliverable timelines and preparation of Gantt Charts;
 - Attending monthly meetings via tele/videoconference; and
 - Liaising and management of subconsultants, contractors, stakeholders and approval authorities.
- Preparation and submission of Clearing Permit Application for the CRC Works Approval Application;
- Review and revision of Master Plan and preliminary cost estimates;
- Preparation of several management plans to support the CRC Works Approval Submission, including:
 - Bushfire Management Plan;
 - Bushfire Risk – Assessment & Management Plan;
 - Draft Surface Water Management Plan;
 - Groundwater Management Plan;
 - Feral Animal and Vermin Control Management Plan;
 - Weed Management Plan;
 - Asbestos Management Plan;
 - Construction & Demolition Management Plan;

PROJECT: Broome Regional Resource Recovery Park Development (2014-ongoing)

CLIENT: Shire of Broome

- o Odour Impact Assessment; and
- o Noise Impact Assessment
- Development of the CRC Environmental Assessment and Management Plan to support the CRC Works Approval Submission;
- Development of CRC Conceptual Design and cost estimates, including supporting infrastructure i.e. Liquid Waste Facility, tyre monocell, surface water management system, road network etc.;
- Submission of CRC Works Approval Applications;;
- Landfill Conceptual Design and cost estimates; and
- Preparation of additional information (as required) to response to any Request(s) for Information from approval authorities.

Detailed Design:

Talis is fulfilling the role of lead designer, providing engineering consultancy services for civil, waste & structural works. This is in addition to coordinating and managing sub-consultants for building designs and services engineering designs. As part of the works, Talis is preparing civil and structural detailed designs for all site infrastructure including internal public roadways and service lanes, stormwater drainage infrastructure, stormwater retention infrastructure, multitiered drop-off areas, a household hazardous waste facility, back of house workshop and wash bay, a reuse shop / education centre, a transfer station, Liquid Waste Facility, Tyre and Asbestos Monocells and the Landfill and supporting infrastructure.

Environmental Assessments, Plans and Approvals:

Talis was engaged to support the Shire prepare two Works Approval Applications, one (1) for the CRC (as associated infrastructure) and the second (2) for the Landfill Works Approval Application. In general, the environmental assessments required to support the environmental approval applications include (at a minimum) the preparation of Environmental Noise Impact Assessment (ENIA), Odour Impact Assessment (OIA), Preliminary Surface Water Modelling, Bushfire Management Plan, Leachate and Surface Water Management Plans, Traffic Management Plan and, Environmental Assessment and Management Plans The Landfill CRC Works Approval Application (once finalised) will be submitted to the DWER, referred to the Environmental Protection Authority (EPA) and will require a Licence amendment.

4 Project Team

As discussed previously, Talis has amassed a Project Team that has significant experience in the delivery of waste management projects similar to that desired by the Shire. In addition, workloads will be spread across the team, to ensure that the Project is delivered cost effectively and on time.

Chris Stannard is a Senior Landfill Engineer who will act as the **Project Director**. Chris is a chartered waste professional with 20 years of international experience in landfill engineering including basal and capping systems as well as leachate, landfill gas and surface water systems. Chris leads Talis' Waste Infrastructure Team and is also the Chair of the Western Australia Landfill Working Group on behalf of the Waste Management and Resource Recovery Association of Australia (WMRR).

Matthew Hobley is a **Waste Engineer** who will act as **Project Manager** and lead the delivery of the project. Matthew's key areas of expertise include landfill gas management, leachate and surface water management, landfill closure, modelling and landfill CQA. Matthew is a member of Engineers Australia and is the Vice-Chair of the Western Australia Landfill Working Group on behalf of WMRR.

Bella Hughes is a **Waste Engineer** and will provide support on the reporting, site investigations, data analysis and modelling works for the Project as required. Bella has been involved in Landfill Design and Closure Plans, Liquid Waste Pond projects, and Community Recycling Centre design projects.

Immanuella Basuki is a **Graduate Waste Engineer** and will provide support on the reporting, data analysis and preparation of the technical documentation. Immanuella has been involved in a range of landfill design and closure plans, landfill gas management projects and landfill environmental management plans. Immanuella has also been involved in Liner Integrity Survey projects.

Armand Bester is a **Senior Civil Designer/Modeller** with over 20 years' experience on the design and drafting of waste infrastructure particularly landfills. Armand will provide design and drafting support our project team as required.

Yulha Jeong is a **Civil Drafter** and will act as **Draftsperson** for this Project. Yulha has experience in 2D and 3D designs of roads, stormwater management systems and landfill sites. Yulha has acquired knowledge of quantities, cost estimates and technical drawings for Main Roads, Water Corporation as well as various other cities and shires.

Talis has the largest Waste Consultancy Team within Western Australia. Therefore, there are a variety of other senior and junior staff members that can provide support to key Project Team members listed above. Curriculum Vitae for the key Project Team members can be provided on request.

5 Consultancy Fees

Talis' lump sum cost to complete the works as outlined in Section 2 of this Proposal is summarised in Table 5-1. If the Shire elects for Talis to undertake the optional tasks, these can be completed under Talis' hourly rates, listed in Table 5-2 or under a project variation.

Table 5-1: Fee Breakdown

Description	Cost (ex. GST)
Project Management and Initiation Desktop Review	
Phase 1 – Detailed Design <i>Water Balance</i> <i>Detailed Design</i> <i>Detailed Design Meeting</i> <i>Technical Specification</i> <i>CQA Plan</i> <i>Cost Estimates</i> <i>Safety in Design Report</i>	
Phase 2 – Environmental Approvals <i>DWER Pre-submission Meeting</i> <i>EAMP Preparation</i> <i>Works Approval Application Form</i> <i>Cover Letter Preparation</i> <i>Licence Application Form</i>	
TOTAL (ex. GST)	

5.1 Assumptions

Talis' cost estimates are based on the following assumptions:

- Talis will undertake the scope of works undertaken in Section 2 of this Proposal, only undertaking optional tasks at the Shire's discretion;
- The Shire will make available to Talis all relevant documents and data for the Project;
- All work detailed in this document is based on our understanding of the Project at the time of writing and information provided;
- Talis has assumed that no Site visit will be required, nor any intrusive Site investigations or specialist studies;
- Talis has not made any allowance for engagement with the DWER beyond the pre-submission meeting and submission of the application;
- Unless otherwise noted, all meetings shall be undertaken via Microsoft Teams (or similar);
- Talis assumes the works will be performed under Talis' standard terms of appointment; and
- Talis reserves the right to review and amend, if required, this Fee Proposal if the scope of works change or the Shire requests an(y) amendment(s).

5.2 Hourly Rates and Disbursements Costs

Any additional works beyond the scope of this Proposal outlined within Section 2, undertaken following approval from the Shire, will be subject to Talis' hourly rates, which are provided in Table 5-2.

Table 5-2: Hourly Rates for Additional Works

Item	Role (where relevant)	Rate (ex. GST)
Chris Stannard	Project Director, Superintendent and Lead CQA	
Matthew Hobley	Waste Engineer and Project Manager	
Bella Hughes	Waste Engineer	
Immanuella Basuki	Graduate Waste Engineer	
Armand Bester	Civil Designer	
Yulha Jeong	Civil Drafter	

5.3 Project Timeline

Talis proposes to discuss the Project timeline with the Shire during the Project Inception Meeting and confirm key dates for the construction of the evaporation ponds. Talis proposes to undertake Project as outlined within Table 5-3 .

Table 5-3: Estimated Project Timeline

Tasks	Estimated Timeframe
Project Initiation Meeting	Week 1
Desktop Review and Water Balance	Week 2
Master Plan Layout	Week 5
Detailed Design and Meeting	Week 10
EAMP	Week 12
Approvals and Licence Application Package	Week 14

Based on current workloads and staff member availability, Talis has the capacity to commence the Project upon commissioning by the Shire to ensure that the Project progresses in a timely manner. In addition, Talis can call upon additional members of the staff to ensure that the Project is completed within the designated timeframes.

Should additional tasks be required, Talis reserves the right to review this timeline.

5.4 Appointment

If you wish to appoint Talis to complete the works as outlined within this Fee Proposal, please complete and return the Confirmation of Appointment within Appendix A.

APPENDIX A

Confirmation of Appointment

CONFIRMATION OF APPOINTMENT

I/We wish to commission Talis Consultants to provide the services detailed within the Service Brief (TWP24100 - Upper Gascoyne Evaporation Ponds_1.0) subject to the matters contained within that Service Brief.

Signature Date/...../.....:

I am authorized to complete and sign this form on behalf of the person/entity listed as the Client below.

Please complete the following information in relation to the Client for these services:

Client	
Postal Address	
Billing Address	
ABN	
Project Contact Person	
Email Address	
Contact Number	
Accounts Contact Person	
Email Address	
Contact Number	

Terms of Appointment

The Client hereby agrees with Talis Consultants (Talis) that in consideration of Talis agreeing to provide The Services, as defined in the Service Brief, the Client will perform and observe all the terms and conditions set out as follows:-

1. On execution of the Service Brief the client covenants and agrees with Talis to perform and observe the express and implied provisions of these terms and conditions.
2. The Client shall as soon as practicable:
 - a. provide to Talis all information, documents and particulars relating to the Client's requirements;
 - b. obtain all approvals, authorities, licences and permits which may be required for the lawful implementation and provision of the services;
 - c. give written notice to Talis of the person appointed to act as its representative, and who has authority to act on behalf of the Client for all purposes in connection with this agreement; and
 - d. give written notice to Talis of any matter which may affect the scope or timing of the services .
3. Except where otherwise specified in writing in the Service Brief the fee for the services provided by Talis shall be calculated by reference to the applicable hourly charge rate for the person undertaking the services as specified in the Schedule of Hourly Rates.
4. Unless otherwise specified in writing in the Service Brief the person to provide the services shall be determined by Talis at its discretion.
5. Any estimate, quote or statement of range of the cost of services specified by Talis will not limit the charges that may be charged by Talis unless Talis has in writing agreed to fix or limit charges by reference to an estimate, quote or range of cost, signed by a director of Talis.
6.
 - a. In addition to charges for services the Client will pay disbursements incurred by Talis plus an administration charge of 10%, including without limiting the generality of the foregoing travel, telephone, facsimile, courier, postage, accommodation, copying, application fees and sub-contractor fees, without supporting documents being furnished.
 - b. The client agrees to pay for travelling expenses at the rate per business kilometre for travel of less than 5,000 km per annum applicable from time to time pursuant to the Income Tax Assessment Act 1936 as amended.
7. Accounts may be issued by Talis on a monthly basis and are payable within 30 days of the date of account;
 - a. Unless disputed in writing within 30 days of the date of the account the amount stated on accounts shall be deemed correct and conclusive.
 - b. The Client agrees to pay accounts notwithstanding any counterclaim or set-off the Client may claim to have against Talis.
8. Interest will be paid on any fees or disbursements due and payable which are outstanding for more than 30 days, calculated from the date of the account at 14% per annum on a daily basis, plus an accounting fee of \$30 per month for each month or part month that fees or disbursements are outstanding. Collection costs incurred in recovering overdue debts including, but not limited to, collection agency commission, summons fees, legal cost etc, will also be paid
9. Talis reserves the right to require from time to time money on account of services to be provided and disbursements to be incurred.

10. Talis retains copyright in all drawings, reports, specifications, bills of quantities, calculations and other documents produced, prepared or provided by Talis to or for the use of the Client and the Client shall not publish nor use nor make copies of the said documents unless approval in writing is given by Talis.
11. The Client shall have a licence to use the documents referred to in Clause 10 PROVIDED THAT if the Client at any time breaches this agreement then Talis may immediately revoke or suspend the licence until the breach is rectified and Talis will not be liable for any loss or damage suffered by the Client in consequence of the revocation or suspension of the licence, absolutely.
12. Talis has a lien over all documents being the property of the Client and held by Talis until payment in full of all accounts issued by Talis.
13. The Client may terminate this agreement at any time by written notice but without affecting the liability of the Client to pay for all the services provided and disbursements incurred by Talis to the date of termination and (if applicable) any loss or damage suffered by Talis in consequence of the termination.
14. Talis may suspend performance of the services or terminate this agreement at any time if:-
 - a. the Client breaches any provision of this agreement;
 - b. the Client does not give necessary instructions and information within a reasonable time of requests to do so;
 - c. Talis has the opinion that mutual confidence and trust no longer exists between Talis and the Client;
 - d. Talis decides that continuing to provide services may breach professional ethics or ethical rules of conduct;
 - e. the Client being a company goes into liquidation or has a receiver or manager or administrator appointed;
 - f. the Client being a person is declared bankrupt or becomes subject to Part X of the Bankruptcy Act;
 - g. the Client gives written notice of dispute of an account issued.
15. The maximum liability of Talis to the Client arising out of the performance or non-performance of the services by Talis or arising out of this agreement or any other act or omission by Talis pursuant to common law or equity or any statute, the amount agreed in writing between the Client and Talis, or [REDACTED] whichever is the lesser amount.
16. Talis shall be deemed to have been discharged absolutely from all liability arising from the services or arising from any act or omission relating directly or indirectly to the services pursuant to common law or equity or by any statute, at the expiration of one year from the completion of the services or the occurrence of the act or omission from which the liability arises and the Client and any persons or entities claiming through or under the Client shall not be entitled to commence any action or claim whatsoever against Talis or any employee or agent of Talis in respect of services or acts or omissions after that date, with it being deemed the date of completion of the services is either the date the service which is the subject of an action or claim was completed, or the date of the invoice issued by Talis for that service, whichever is the earlier date.
17. The Client shall indemnify and hold harmless Talis from all liability arising from the services provided by Talis or arising from any act or omission by Talis relating directly or indirectly to the services pursuant to common law or equity or by any statute except to the extent caused or contributed to by breaches of this agreement by Talis, and to the extent Talis is liable to pay damages, compensation or expenses to the Client because of breaches of this agreement by Talis the amount will be reduced by the extent the Client caused or contributed to the damages, compensation or expenses subject always to the limitations and exclusions expressed in Clauses 14 and 15 hereof.

18. a. Talis does not give any warranty nor accept any liability in relation to the performance or non-performance of the service, except to the extent, if any, required by law or specifically provided for in this agreement.
- b. Any warranty which is implied by law, custom or otherwise or by any statute is to the fullest extent permitted by law, hereby excluded.
- 19 If circumstances arise which require expertise outside the field of practice of Talis then Talis may with the written approval of the Client engage a subcontractor to provide the relevant service.
- 20 Talis shall not have any liability in relation to work performed by any third party save where the third party is engaged or employed by Talis and subject to that exception the Client shall indemnify and hold harmless Talis against all claims, cost and demands by any third party in respect of or in connection with the work provided by any third party.
- 21 The Client and Guarantors jointly and severally represent and warrant to Talis having obtained prior to the execution of this agreement independent legal advice as to the meaning and application of the provisions of this agreement and that they have had unlimited opportunity to obtain that advice.
 - a. If either party is in breach of any of the express or implied provisions of this agreement then the party alleging the breach shall serve a default notice on the other party setting out the full particulars of the alleged breach and the acts required to rectify the breach.
 - b. Within 7 days of service of a default notice by the Client, Talis shall be entitled to elect to have the dispute resolved by arbitration.
 - c. Unless Talis serves written notice on the Client electing to resolve the dispute by arbitration then the dispute shall unless otherwise agreed in writing between the parties be resolved by litigation.
 - d. If a dispute is to be resolved by arbitration it shall be in accord with the provisions of the Commercial Arbitration Act 1985 with either party being entitled to be represented by a legal practitioner and the arbitrator shall be a person nominated by the President for the time being of The Institution of Engineers, Australia at the request of either party and the determination of the appointed arbitrator shall be final and binding upon the parties and the arbitrator deemed to be acting as an expert.
 - e. An election by Talis pursuant to Clause 21(b) shall be binding and conclusive against the Client.
- 22 Talis reserves the right to adjust its rates for services at July 1st in each year by an amount not less than the change in the Consumer Price Index (All Groups) Perth in the preceding year.
- 23 a. In this agreement:
 - GST law means A New Tax System (Goods and Services Tax) Act 1999 (Cth) as amended or replaced from time to time and any associated legislation including without limitation delegated legislation.
 - GST means the goods and services tax as provided for by the GST law.
 - Any expression used that is defined in the GST law has that defined meaning.
 - rate of GST means the rate of GST payable by Talis under the GST law.
- b. Talis and the Client agree that the moneys payable by the Client under this agreement are exclusive of GST.
- c. Talis and the Client further agree that if Talis is liable to pay GST in respect of services provided by Talis under this agreement or in respect of moneys payable by the Client under this agreement, the amount payable by the Client will be increased by the amount
- d. Calculated as $A \times R$, where:
 - A is the amount on which Talis is liable to pay GST;
 - R is the rate of GST

- e. The Client must pay to Talis the GST under clause 25 (c) within 30 days of the date of a tax invoice issued by Talis, or, at the same time Talis is required to pay any GST relating to this agreement, whichever is the earlier date.
- f. A written statement given to the Client by Talis of the amount of GST that Talis is liable to pay under this agreement is conclusive between the parties except in the case of an obvious error.
- 24. Any omission by Talis to enforce any of the provisions of this agreement shall not operate as a waiver by Talis and will not prejudice the rights of Talis to enforce any of the provisions.
- 25. Reference to:
 - a. the singular shall be deemed to include the plural and reference to the masculine shall be deemed to include the feminine.
 - b. any party to this agreement shall mean and include the party and the successor, administrator, personal representative, transferees and assigns of the party.
 - c. 'liability' means any claim, demand, action, suit, proceeding, loss or damage.
 - d. the 'Service Brief' means the document entitled "Service Brief" to which this agreement is annexed.
 - e. 'services' means the work to be carried out as described in the Service Brief.
- 26. A notice to be served under this agreement shall be deemed to have been duly served if in writing and sent to the usual business address or the registered office of the Client by certified mail, facsimile or personal delivery.
- 27. Neither party may assign, transfer or sub-let any obligation under this agreement without the written consent of the other.
- 28. Nothing in this agreement shall constitute or create the relationship of partnership, employment, agency or joint venture between Talis and the Client.
- 29. If any provisions or part provisions of this agreement are invalid, unenforceable or illegal then it shall be deemed deleted from this agreement and the remaining provisions and part provisions continue to apply with full force and effect.
- 30. Talis shall have the power to act as the Client's agent in emergency situations where danger to persons or damage to property appears imminent but Talis shall be under no obligations to the Client to act as its agent.
- 31. These terms and conditions constitute the entire agreement between the Client and Talis and apply to all work undertaken by Talis for the Client.



Assets | Engineering | Environment | Noise | Spatial | Waste

Talis Consultants
ABN 85 967 691 321

Head Office
Level 1, 604 Newcastle Street,
Leederville
Western Australia 6007

PO Box 454,
Leederville
Western Australia 6903

NSW Office
5/62 North Street, Nowra
New South Wales, 2541

PO Box 1189, Nowra
New South Wales, 2541

P: 1300 251 070
E: info@talisconsultants.com.au