

BSBPMG521

MANAGE PROJECT INTEGRATION

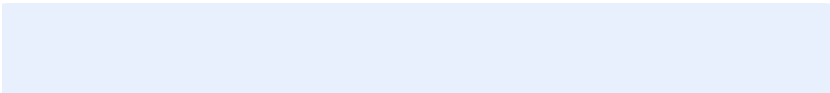
PRACTICAL ASSESSMENT INSTRUCTIONS

- The following practical assessment will require the participant to complete work related activities.
- Observations will be conducted of the participant's work to determine whether they display sufficient practical skills and knowledge.
- Please fill in the details below, providing your name, signature and date of assessment.
 - Your signature acknowledges that the assessor provided clear instructions and the participant understood what was required to complete this assessment.
- The assessor may substitute a Practical Task with another task of equal value.
 - Alternate tasks must be fully documented by the assessor.

Participant name Sarah Conley

Participant signature 

Assessor name _____

Assessor signature 

Date Click here to enter a date.

Number of tasks	Number of tasks completed	Satisfactory?	
		Yes	No
1		☐	☐

ASSESSOR COMMENTS

BSBPMG521 MANAGE PROJECT INTEGRATION

Practical Task 1	
Description of task: A suitable observer is to verify the participant's ability to: - Integrate and balance overall project management functions of scope, time, cost, quality, human resources, communications, risk and procurement across the project life cycle; and - Align and track project objective to comply with organisational goals, strategies and objectives These tasks may be simulated or real. The participant is to gather evidence of how they have completed each component of the Practical Task, which is to be submitted with this Practical Assessment sheet. The observer is to provide detailed comments on the tasks completed by the participant. The assessor is to verify the observer's comments in the Assessor Comments section, and provide the Practical Assessment outcome on the front cover of this document.	
Resources required: Project documentation, Organisational documentation.	
Assessment of task	
Name of participant:	Sarah Conley
Name of observer:	Gavin Bowen
Role of observer (Confirm suitability to sign)	Works Delivery Manager
Email address of observer	Gavin.Bowen@fultonhogan.com.au
Signature of observer:	
Date:	14/12/2020
When completing the task, did the participant:	Tick if satisfactorily completed. Provide comments if left unticked.
1 Establish project	
1.1A. Identify, clarify and prepare project initiation documentation.	☒
1.1B. Identify relationship between the project and broader organisational strategies and goals.	☒
1.1C. Negotiate and document project objectives, outcomes and benefits.	☒
1.1D. Negotiate project governance structure with relevant authorities and stakeholders.	☒
1.1E. Prepare and submit project charter for approval by relevant authorities.	☒
2 Undertake project planning and design processes	
1.2A. Establish and implement a methodology to disaggregate project objectives into achievable project deliverables.	☒
1.2B. Identify project stages, phases and structures – considering key requirements for stage completion against client requirements and project objectives.	☒

1.2C.	Analyse project management functions to identify interdependencies and impacts of constraints.	☒
1.2D.	Develop a project management plan integrating all project-management functions with associated plans and baselines.	☒
1.2E.	Establish designated mechanisms to monitor and control planned activity.	☒
1.2F.	Negotiate approval of project plan with relevant stakeholders and project authority.	☒
3 Execute project in work environment		
1.3A.	Manage the project in an established internal work environment, ensuring effective work throughout the project.	☒
1.3B.	Maintain established links to align project objectives with organisational objectives throughout the project.	☒
1.3C.	Within authority levels, resolve conflicts negatively affecting attainment of project objectives.	☒
4 Manage project control		
1.4A.	Ensure project records remained updated against project deliverables and plans at required intervals.	☒
1.4B.	Analyse and submit status reports on project progress and identified issues with stakeholders and relevant authorities.	☒
1.4C.	Analyse and submit impact analysis of change requests for approval, where required.	☒
1.4D.	Maintain relevant project logs and registers accurately and regularly to assist with project audit.	☒
1.4E.	Ensure associated plans remained updated to reflect project progress against baselines and approved changes.	☒
5 Manage project finalisation		
1.5A.	Identify and allocate project finalisation activities.	☒
1.5B.	Ensure project products and associated documentation were prepared for handover to client in a timely manner.	☒
1.5C.	Finalise financial, legal and contractual obligations.	☒
1.5D.	Undertake project review assessments as input to future projects.	☒
The participant's performance was: ☒ Satisfactory ☐ Not Satisfactory		

OBSERVER COMMENTS

Sarah participated in a number of real and simulated scenarios across the whole program of works, to enable her to complete the practical tasks.

Appendix C - Basis of Schedule
Waste Water Metro Program

Work Pack 02

C1819

REVISION HISTORY

<i>Date</i>	<i>Rev.</i>	<i>Author</i>	<i>Reviewed by</i>	<i>Description</i>
7/04/2020	A	Sarah Conley		Initial Draft

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1 PURPOSE

The purpose of this Basis of Schedule is to provide the schedule rational for the successful delivery of the Waste Water Metro Program (the 'WWM Program') by Urban Utilities (UU), Fulton Hogan (FH) and our design partner SMEC.

The schedule is a tool used to track and measure progress within team. The schedule data is then utilised for reporting purposes.

The basis of the schedule is derived from the following:

- » Scope Definition
- » Project Execution Strategies
- » Planning Assumptions
- » Constraints
- » Duration Estimates

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2 PROJECT SCOPE

Fulton Hogan have been awarded the Contract for the Waste Water Metro Program, by UU, which is a 6-year program of works (3+1+1+1) and have engaged SMEC as their design partner.

The Wastewater Metropolitan Program includes wastewater network assets in QUU's Brisbane catchments (S1 – S5).

This particular document refers to the works delivery of the work pack 02 within in the WWMP contract and consists of the Centenary Highway RM019 Burst Section Refurbishment.

This project has been raised as an emergent project due to the condition of the existing rising main and risk of subsequent failures.

Below diagram shows a graphical representation of the project.



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3 STRATEGY

Primavera P6 will be utilised for all Program and Project scheduling activities in accordance with Requirements for Program Support Services For Framework Contracts. Appendix 2.

The Program Support Services Requirements contain the specific detail for establishing, formatting and maintaining the Program and Project Schedules.

Each works packs have an ECI phase in which the individual projects developed into a reasonable design and RFQ (Request for Quote) from the market.

The development of program commences once the Quotes received from the market for man-hours and pricing. This forms the basis of the schedule for the scope of works and activity duration by man-hours.

The pricing schedule activities are then combined into the schedule with logic in consultation with the engineers and project managers for individual projects within the works package.

The selected subcontractors met with FH to ensure the level of detail required was met and a collaborate approach was taken to finalise a schedule. All schedules have been developed through consultation and engagement with the project specific procurement, design and construction stakeholders.

Construction progress will be monitored by gathering the data from Project Managers updates, documents, project team, and subcontractors. Construction progress is updated in the schedule on a weekly basis based on the individual activity progress and submitted to QUU in the review meeting. Any issues / opportunities arises during the construction is raised in the meetings and discussed.

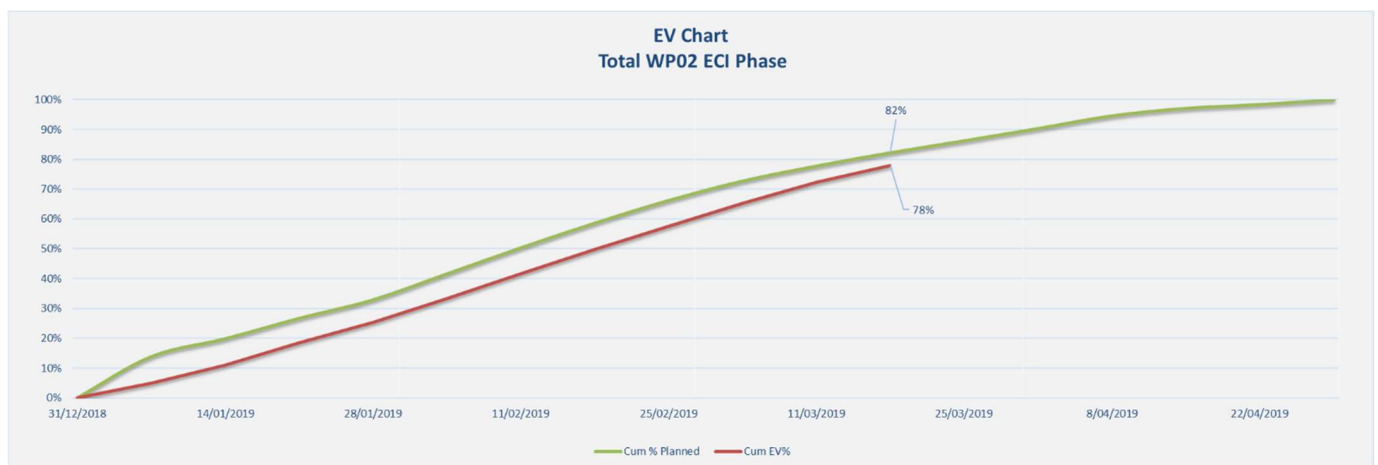


Figure 1 - Example Earned Value chart below

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4 PROJECTS

WWMP works WP 02 consists of 1 projects near Jindalee. The details of the projects and the completion dates are mentioned below as per BWWCAA03A54-QUU-WPR-000001.00

WP02 List of Projects	Location	Commissioning Completion Target Date
BWWCAA03A54 -Centenary Highway RM019 Burst Section Refurbishment	Jindalee	21/10/2020

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5 SCHEDULE

5.1 Schedule Layout

Individual project schedules has developed based on the individual project requirements, however the structure of all schedules are maintained in uniform manner.

The Work Breakdown structure (WBS) covers scope of works, undertaken by the project and represents project team responsible for delivery of that scope of work. A conscious effort has been made to match the WBS structure in the schedule to the Cost Breakdown Structure (CBS) of the RAMP in all possible levels. This will enable a smooth EV analysis for the programme.

General WBS summary is as below.

- » Milestone
- » Approvals
- » Detailed Design
- » Procurement /Contract
- » Construction
- » Commissioning

5.2 Construction Sequence

Initial Design activities will be completed in the ECI phase and upon the RAMP approval, detailed design and long lead procurement items and site establishment will commence followed by the construction & Commissioning.

5.3 Critical Path

The critical path is the sequence of activities that represents the longest path through a project, which determines the shortest possible project duration. For better schedule management, Critical path is identified for this projects and schedule control shall be maintained around the critical path.

Critical path for the projects is in Section 7 of this document.

5.4 Schedule Management

Upon the approval of RAMP, the schedules shall be cost loaded with the agreed contract value. The cost-loaded schedule shall be agreed as the baseline schedule, updated and maintained.

Schedule for the projects will be updated in consultation with Project Managers on a weekly basis and submitted in the weekly review meetings.

Earned value method is utilised to monitor and track the position of individual projects. Earned value analysis is calculated on a monthly basis after the finalisation of claim and the cumulative EV report is attached along with the monthly report.

Any changes to the agreed baseline schedule if required should be agreed between both parties and processed accordingly.

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6 KEY PROJECT DATES

6.1 Project Key Milestones

Key dates for individual project are classified per Projects. Please see below the key dates for individual projects in WP02

6.1.1 BWWCAA03A54 -Centenary Highway RM019 Burst Section Refurbishment Project

Activity ID	Activity Name	Original Duration	Start	Finish
BWWCAA03A54 Centenary Highway RM019 Burst Section Refurbishment		239	24-Mar-20 A	16-Apr-21
Milestones		239	02-Apr-20 A	16-Apr-21
A1840	Pipe Supply Contract Finalise	0		02-Apr-20 A
A2430	NALL GC	0		22-May-20
A2350	DTMR Lease Agreement	0		01-Jun-20
A2420	Sinamon Aged Care Access Agreement	0		01-Jun-20
A1510	RAMP Approval	0	12-Jun-20*	
A2780	BCC Land use (Golf Course)Access agreement	0		30-Jun-20
A1550	Start Construction	0	08-Jul-20	
A2680	DTMR Approval	0		09-Jul-20
A2050	Finish Construction	0		09-Nov-20
A1490	Asset in Service	0		03-Feb-21
A1540	Commissioning Completion	0		16-Apr-21

6.2 Project Working Days

The WWM Program schedule calendar is based on QLD 5 day working week except for Drilling activities. All QLD public holidays are non-working days and Christmas shutdown is a non-working period see below list of non-working days. All activities and resources have the same calendar. In the event of an adverse weather, the time lost to the programme have to be mutually agreed with the client representative. Any additional weather impacts has to be treated accordance with the contract.

Holiday	Date
Labour Day	04 May 2020
Ekka Day	12 August 2020
Queen's Birthday	5 October 2020
Christmas Shutdown	19 December 2020
Reopen after Christmas Shutdown	4 January 2021
Australia Day	26 January 2021
Good Friday	02 April 2021
Easter Monday	05 April 2021
Anzac day	26 April 2021
Labour Day	03 May 2021
Queen's Birthday	4 October 2021

Table 1 Non Working days

6.3 Risk & Adverse weather

- ❖ An allowance for 13 days have been added to the schedule for any Adverse weather which could the schedule.
- ❖ 12 days allowance have been added to the schedule to cover the Risk element added to the RAMP.

7 PROJECT BREAKDOWN

7.1 BWCAA03A54 -Centenary Highway RM019 Burst Section Refurbishment Project

7.1.1 Project Over view

Centenary Motorway Sewer Rising main (RM019) is a DN410 MSCL Pipe which was installed in 1976. It originates from SP019 Centenary Motorway Pump Station and terminates at the discharge maintenance hole MH177147 located adjacent to the Sinnamon Village Aged Care. It is approximately 1515m long with approximately 800m located in the middle of the Centenary Motorway.

Recent expansions to the retirement village have resulted in buildings closer to the main and discharge manhole than when constructed. A recent burst in the rising main occurred near SP19 on the night of 6 February 2020 which severely affected the traffic flow through the Centenary Motorway. It was observed that the MSCL pipe near the high point of the rising main line is severely corroded. This has raised a concern on the risk of failure of the rising main in the middle of the motorway in near future. As result of the above, UU is urgently seeking to relocate the main away from the motorway through the Department of Main Roads (DTMR) Corridor to eliminate the risk of another failure on the motorway.

7.1.2 Critical Path

Critical path for this schedule is along the Approval and lease agreement between various stack holders which shall allow the commencement of the construction and followed by construction and commissioning. Early procurement of pipe have already undertaken to avoid any delay from material supply. Currently the project is achieving the target completion date.

7.1.3 Assumptions

RAMP schedule is based on the following assumption.

- ❖ DTMR Approvals shall not be later than 11th June 2020.
- ❖ Approvals and lease agreements from all stackholders should be completed as per the RAMP schedule.
- ❖ Construction based on HDD on both sections
- ❖ Three section of construction (2 sections of HDD & Open Cut) carried out concurrently.
- ❖ Constrction based on normal working hours without restritcions.

PMA Delivery Framework Vision and Values

***An integrated team that efficiently delivers
capital infrastructure
with a measurable benefit to the community***

One Team

**Customer Focus – Our decisions enhance the
customer experience**

**Integrity – We keep up with our commitments,
are genuine, accountable & true to ourselves**

Transparency – We communicate openly and honestly

**Continuous Improvement and Drive – We look for better
and safer outcomes and are willing to change the norm**

**Leadership – We lead by example and empower
our teams to deliver the outcome**



NP-01-0052: ASH, JOT & YER Sewer Overflow Management Works

WASTE WATER METROPOLITAN PROGRAM

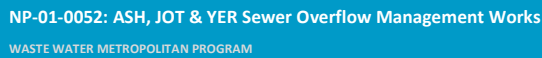


WWMP NP-01-0052: ASH, JOT & YER SEWER OVERFLOW MANAGEMENT WORKS

**WWMP-NP01-0052-RFT-31:
ASH - MICROTUNNELLING PACKAGE**

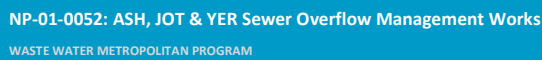
WASTE WATER METROPOLITAN PROGRAM

DOC NO. WWMP- NP01-0052-CV-SOW-00001



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DOCUMENT CONTROL

Document	ASH: Micro Tunnelling
File Location	Teambinder
Project Name	ASH Sewer Overflow Management Works (Package Specific to ASH)
Project Number	NP-01-0052
Revision Number	04

REVISION HISTORY

Table 1 - Document Control

Date	Rev.	Author	Reviewed by	Description
28/04/2020	01	JW		Preliminary document for ECI Phase
20/7/2020	02	KP	Andy Garnsworthy 22/07/2020	Ready for market ECI Phase
29/09/2020	03	SC		Updated document for WD Phase
15/10/2020	04	SC	James Watts 15/10/20	Minor updates made during review for WD Phase

Table 2 - Revision History

ISSUE REGISTER

Distribution List	Date Issued	Number of Copies

Table 3 - Issue Register

1 INTRODUCTION

1.1 OVERVIEW

Queensland Urban Utilities (QUUs) primary role is to deliver drinking water, recycled water and wastewater services to the cities and townships within South East Queensland including Brisbane, Ipswich, Lockyer Valley, Scenic Rim and Somerset.

The Wastewater Metropolitan Program (WWMP) has an estimated five-year investment of \$700M. The scope of the WWMP will be provided by QUU over the term of the Contract and relate to the upgrade and augmentation of the QUU assets within the Networks.

Fulton Hogan invites your organisation to submit a proposal for the associated scope within this Request For Tender (RFT) package. It is recognised that the Tenderer may not have capability across the entire scope, and is invited to provide a proposal pertinent to activities which it has expertise in. This procurement approach contemplates the flexibility to award separable portions to Subcontractors based on their areas of expertise.

1.2 OBJECTIVES OF THESE PROJECTS

ASH (Sewer Overflow Management Works at Amy St, Hawthorne): Implementation of the proposed wet weather pump station and the identified network improvement works can be expected to reduce the impact on customers due to the removal (under most circumstances) of Uncontrolled Sewer Overflows (USOs) from private property and areas accessed by members of the public.

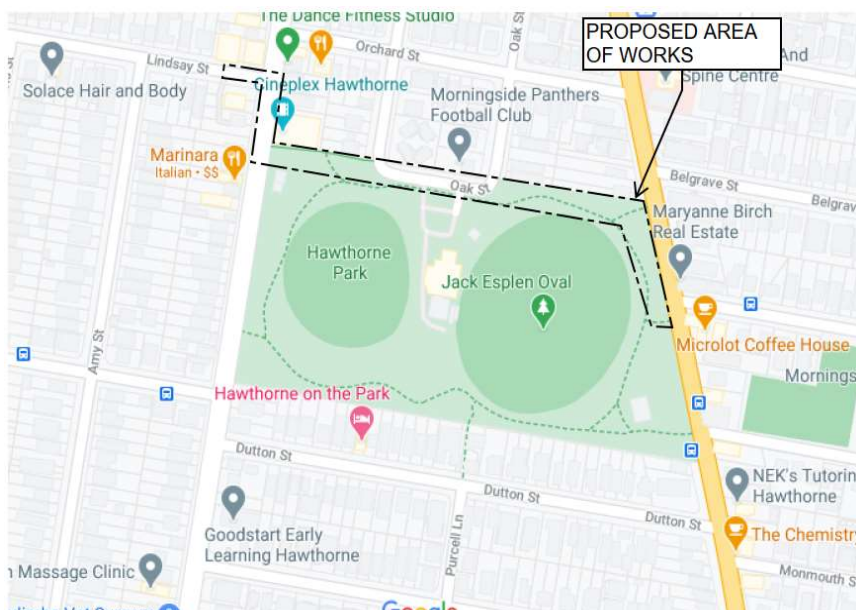
1.3 BENEFITS

These projects aim to reduce USOs improving public health, environmental and residual outcomes.

2 SITE LOCATIONS

The project sites are located as per the location diagram below:

Figure 2.1 ASH Location Map:



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43 PROJECT DELIVERY

4.13.1 PROJECT BACKGROUND

ASH (Sewer Overflow Management Works at Amy St, Hawthorne): USOs have been recorded in and around Amy and Lindsay Streets in Hawthorne. These overflows have been recorded

from a minimum of 10 properties frequently since 2010, generally in conjunction with high rainfall events.

A wet weather pump station, to be located in Hawthorne Park has been designed to reduce the risk of USOs by reducing flow directly within the Amy street catchment and reducing surcharging from the downstream catchments to Barramul Street SPS.

54 SCOPE OF WORKS & REQUIREMENTS

5.14.1 GENERAL: TRENCHLESS INSTALLATION BETWEEN MANHOLE 2/1 AND PUMP STATION PS1

Trenchless installation of the OD272 GRP (including installation of casing to facilitate installation of GRP pipe) gravity sewer between Manhole 2/1 and Pump Station PS1 in line with Specification TMS 1583 'Micro Tunnelling & Pipe Jacking' and all Standards and Specifications referenced within it.

Design and construction of all preparatory works, enabling works and temporary structures required to complete the works. (Note: The support of Energex poles, if required, does not form part of the scope of this package. The Subcontractor would be required to provide details and offer technical support to enable Fulton Hogan to manage this aspect of the project).

Verification that the carrier pipe and casing pipe can withstand all temporary loads it will be subject to during installation into the tunnel bore.

Supply and handling of all permanent materials (including fittings and fixtures required at each end shown on drawings or prescribed in specifications) between abovementioned nodes.

Supply and handling of all temporary or sacrificial materials required to support the Subcontractor's proposed method for installation.

All testing (including CCTV), spoil management and disposal, construction water supply, management and disposal, groundwater management and disposal and the provision of methodologies and plans as outlined in specification TMS1583 and the specifications and standards referenced in it will be the responsibility of the Subcontractor.

Should the Subcontractor wish to work Nightshift or extended / special hours then this shall be made clear in the response and be allowed for in the rates.

The Subcontractor is invited to price all or part of this package and offer alternative methods for installation where there is a provable benefit to the project be it cost, quality, program or other.

A conforming tender will be looked upon favourably. Innovations which benefit the project as a whole (not just this package) will be looked upon favourably.

The tender submission should include a brief methodology for evaluation to determine viability.

The tender submission should include a program of works for review by Fulton Hogan.

NOTE 1: The section of Gravity Main between Manhole 1/1 and Manhole 2/1 is currently planned for Open Trench Construction and has now been removed from this package.

NOTE 2: Fulton Hogan and our Design Partner SMEC are working to optimise the alignment of the Gravity Main and the final design may differ from that presented here.

5.24.2 SCOPE PART 1

PRE CONTRACT AND TENDER STAGE

1. The Subcontractor is required to visit the site in order to assess the existing topography, location, boundary limits, access, proposed shaft locations, setup room, proposed laydown areas and all other things.
2. The geotechnical long sections are available (Refer SP487-0000-DE-REP-00001 (Rev 05) - SP487 HAWTHORNE - DESIGN DEVELOPMENT REPORT) for the alignment in question. The Subcontractor will need to assess these in order to ensure the methodology chosen to complete the tunnelling works is cognisant to the geology present and hence accept responsibility that the chosen methodology will be adequate to complete the indicated scope of works.
3. Additional geotechnical investigations have since been conducted to determine the presence of ASS, PASS and contaminated soils. The results of these investigations are now available (FH-BCNES-0100-CV-REP-00001_A).
4. The Subcontractor shall ensure that the methodology adopted will not cause any damage to any existing structures or services above or adjacent to the proposed tunnelling drives, launch and receive shaft locations. They will also need to allow for any measures required to protect any existing structures or services.
5. An increase in the diameter of the carrier pipe will be considered if there is some proven benefit (cost, program, quality, other) to the project overall.
6. The Subcontractor will need to determine any temporary installation loads that the casing will be subject to so as to ensure the integrity of the carrier pipe/casing is not compromised during installation.
7. Verification that the wall thickness of the casing pipe is adequate to withstand overburden and live loads assuming the casing is empty (i.e. prior to installation and grouting of the product pipe).
8. The Subcontractor will be given the use of a compound area located adjacent to the Pump Station location. The Subcontractor will provide advice to Fulton Hogan on the size of area required at this location.
9. The compound will be secured with temporary fencing, however no further security measures will be provided and the Subcontractor will be responsible for the protection of their equipment and any materials supplied under this agreement.
10. The Subcontractor shall allow for all risk on ground conditions, as a separate item on the pricing schedule.
11. The Subcontractor is to stipulate on-cost percentage attributable to actual costs for additional works/variations.
12. The Subcontractor is to stipulate day work rates for plant, equipment and personnel. Rates for specialised process and methodology plant, personnel and equipment must be detailed within the schedule document.
13. The Subcontractor is to provide a full and detailed site specific method statement and program for the works including all necessary details and dimensions of the equipment and processes to

be adopted for the installation of the pipeline. Drafted drawings or models will be required for at least the launch and recieval pits.

14. The Subcontractor shall provide a list of the risks associated with the works and detail contingency measures they intend to put in place to manage these risks.

5.34.3 SCOPE PART 2

MOBILISATION AND DELIVERY STAGE

The Subcontractor shall undertake the following in relation to the scope of works:

1. Compile, issue and monitor during the works, all necessary safety, quality and environmental plans and reports, data, KPI's, ITPs and other Contract documentation requirements.
2. Agree condition surveys of land use areas. Required areas shall be marked-up on the land use / GA drawing(s) provided.
3. Mobilise to site all plant, equipment, materials and resources required to carry out the works.
4. Ensure all craneage (including excavators) have the required safe working load capacity to ensure any lifting is conducted safely, and in compliance with all OHS requirements at all times.
5. Upgrade any areas of the site as required to suit the proposed method of work (e.g. provide hardstand).
6. The Subcontractor will be responsible for managing delivery and handling of all permanent, temporary or sacrificial materials and all equipment required to complete the works.
7. Locate all services and have current DBYD plans on-site at all times.
8. Expose and verify all known services that may impact on the proposed works.
9. Design, gain approval for, supply, construct, install and maintain any necessary temporary works (including launch and reception pits and any temporary casing pipe).
10. Launch and recieval pit locations shall be in the approximate locations shown on drawing FH-BCNES-0100-CV-SKT-00036_A. These locations and dimensions maybe amended to facilitate construction. Fulton Hogan and SMEC are currently working on an optimised alignment which may affect the locations of these pits. The final design may differ from that presented here.
11. The recieval pit excavation and temporary supports will be utilised by others to complete the construction of Manhole 2/1. The Subcontractor shall provide a price to continue hire of the temporary supports.
12. Provide security fencing/barriers and handrails to pits as required.
13. Provide steel road plates at the end of each shift for open pits within any trafficable areas to allow for the opening of the road as agreed.
14. Allow for any measures required to protect any existing structures or services.
15. The Subcontractor shall allow for the provision of settlement monitoring.
16. The Subcontractor will be required to supply and install the carrier pipework between MH 2/1 and PS1 (including all fittings and fixtures required at each end shown on drawings or prescribed in specifications).
17. The Subcontractor will be required to supply and install a suitable casing pipe (minimum diameter 380mm) to facilitate the installation of the carrier pipe.
18. Supply and install pipe centralisers for installation of the carrier pipe in accordance with WSAA recommendations, including a maximum 1m spacing.
19. Load and grout carrier pipework as required by the design drawings, and applicable specifications.
20. The Subcontractor will be responsible for all testing required to satisfy the Standards and Specifications.
21. The Subcontractor will be responsible for the supply, management and removal of construction water.

22. The Subcontractor will be responsible for the management and removal of groundwater.
23. The Subcontractor will be responsible for the supply of construction power.
24. The Subcontractor is to allow for all necessary environmental protections in relation to drilling fluid and cleaning/recirculation/disposal, noise, adjacent waterways and wetlands, flora/fauna protected areas, PASS/ASS/contaminated disposal permits and any other environmental aspects not detailed above.
25. The Subcontractor shall allow for all spoil management including removal of excess spoil from site and any associated costs.
26. The Subcontractor shall allow to backfill the launch pit including compaction to the relevant Specifications and Standards. The contractor shall allow to excavate with site excavated material including treatment.
27. The recieval pit will be backfilled by others.
28. Restore the site to the required standards following completion of the works.
29. All Traffic Control to be provided by Fulton Hogan. Subcontractor to provide a construction program for Traffic control coverage.
30. All works to be supervised by an engineer who has relevant RPEQ registration. Engineer to be provided by Fulton Hogan. Subcontractor to provide a construction program for permanent works coverage. – required under drawing 572051003 note G4 for works to be permitted to connect into QUU network.

5.44.4 SCOPE PART 3

COMPLETION AND DEMOBILISATION STAGE

1. The Subcontractor shall complete all outstanding works/defects list.
2. In relation to works under this agreement, the Subcontractor shall provide a product that allows Fulton Hogan to achieve Practical Completion (PC), any defect or omission shall be rectified immediately to avoid any additional costs to Fulton Hogan. Additional costs may be passed on to the Subcontractor per the subcontract agreement.
3. The Subcontractor will be required to return compounds and other areas disturbed by the subcontract works to the state in which they were handed over.
4. The Subcontractor shall submit all required documentation, including as constructed survey, as constructed reports and red line mark-ups for review and approval by Fulton Hogan.

5.54.5 PROGRAM

The Subcontractor shall submit a tender program for consideration with their submission.

Preliminary Program of Works as per figure below:

SEPERABLE PORTION 1: ASH - Sewer Overflow Management Works at Amy Street, Hawthorne

Note these dates are indicative as of 2/10/20.

Activity	Start	Finish
Mobilisation (1wk prior)	04/02/2021	10/02/2021
Launch Pit set-up	11/02/2021	24/02/2021
Microtunnelling	03/03/2021	19/04/2021
Demobilisation (1 wk post)	20/04/2021	26/04/2021

65 BOUNDARY LIMITS AND DESIGN DELIVIERABLES

The boundary limits to the works included in this Contract are as follows:

Boundary Limits	Boundary Limits Description
Trenchless Installation Between Manhole 2/1 and Pump Station PS1 (see supplementary drawing "FH-BCNES-0100-CV-SKT-00037 – Mark Up Option")	
Manhole 2/1	Up to and including all fittings and fixtures required at each end shown on drawings or prescribed in specifications downstream of Manhole 2/1
Pump Station PS1	Up to and including all fittings and fixtures required at each end shown on drawings or prescribed in specifications upstream of Pump Station PS1

Table 4 - Boundary Limits

76 FREE ISSUED MATERIALS AND OR EQUIPMENT

Not applicable to this package.

87 INSPECTION AND TESTING

8.17.1 GENERAL TESTING

As per the requirements of TMS 1583 'Micro Tunnelling & Pipe Jacking' and any other relevant documents whether listed in this document or not.

8.27.2 QUALITY MANAGEMENT

QAntrol

An online Quality Management system to be utilised by all subcontractors.
All construction lots, documentation and related items (HP/WP, NCRs) will be created and progressed via
QAntrol System, which, can be accessed via Computer, IPad or Smartphone.

Inspection and Test Plans (ITPs)

ITPs are to be provided by the subcontractor for review and approval by Fulton Hogan.
Works cannot commence until ITPs are approved for use.
ITPs will be uploaded to FH QA system "QAntrol" for electronic progression.

Hold and Witness Points (HP and WP)

HPs and WPs shall be included within the ITP as required by DTMR, TMS and the Design.
HPs and WPs will be raised and released electronically via QAntrol.

Non Conformance Reports (NCR's)

NCRs will be compiled and submitted to FH by the Subcontractor as required. These NCRs will be reviewed and submitted by FH to the relevant approver via QAntrol.

Punch lists

Punch list walkthroughs will be undertaken prior to completion of the works by FH, the Subcontractor and Client. Items will be agreed upon at the time of inspection with a secondary acceptance inspection undertaken once all items have been verified by the Subcontract as completed. These items will in turn be confirmed by FH and or the Client. The cost of additional inspections due to substandard works will be charged to the Subcontractor.

8.37.3 WITNESS AND HOLD POINTS

Index	Title
	QUU Witness and Hold Points
	FH witness and hold points

Table 5 - Hold Points

98 DRAWINGS

Note: Project specific drawings are highlighted. The other drawings may contain additional information relevant to the scope.

Document Number	Revision	Title
486-5-25-0003-211	A	SP487 HAWTHORNE - GRIT COLLECTOR MAINTENANCE HOLE BAR SCREEN INSTALLATION, GENERAL ARRANGEMENT
486-5-25-0003-212	A	SP487 HAWTHORNE - GRIT COLLECTOR MAINTENANCE HOLE BAR SCREEN INSTALLATION - STEEL WORK DETAILS
486-5-25-0003-221	A	SP487 HAWTHORNE - GRIT COLLECTOR MAINTENANCE HOLE, VALVE INSTALLATION GENERAL ARRANGEMENT
486-5-25-0003-222	A	SP487 HAWTHORNE - GRIT COLLECTOR MAINTENANCE HOLE, RISING SPINDLE MECHANISM ASSEMBLY
486-5-25-0003-223	A	SP487 HAWTHORNE - GRIT COLLECTOR MAINTENANCE HOLE, RISING SPINDLE MECHANISM ASSEMBLY ITEMS 1, 2, 6 AND 13 DETAILS
486-5-25-0003-224	A	SP487 HAWTHORNE - GRIT COLLECTOR MAINTENANCE HOLE, RISING SPINDLE MECHANISM ASSEMBLY ITEMS 3 AND 4 DETAILS
486-5-25-0003-225	A	SP487 HAWTHORNE - GRIT COLLECTOR MAINTENANCE HOLE, RISING SPINDLE MECHANISM ASSEMBLY ITEMS 11, 15 AND 21 DETAILS
486-5-25-0003-226	A	SP487 HAWTHORNE - GRIT COLLECTOR MAINTENANCE HOLE, VALVE SPINDLE PLUMMER BLOCK ASSEMBLY
486-5-25-0003-227	A	SP487 HAWTHORNE - GRIT COLLECTOR MAINTENANCE HOLE, VALVE SPINDLE PLUMMER BLOCK ASSEMBLY, DETAILS OF MARKS 1 TO 5
486-5-25-0003-229	A	SP487 HAWTHORNE - GRIT COLLECTOR MAINTENANCE HOLE, RISING SPINDLE MECHANISM ABOVE GROUND SUPPORT PLINTH
486-5-25-0003-230	A	SP487 HAWTHORNE - GRIT COLLECTOR MAINTENANCE HOLE, INLET PIPE AND VALVE INSTALLATION AND DETAILS

486-5-25-0003-232	A	SP487 HAWTHORNE - GRIT COLLECTOR MAINTENANCE HOLE, EXTENDED VALVE SPINDLE SPLICE DETAILS
486-5-25-0003-341	A	SP487 HAWTHORNE - VALVE PIT SUMP PUMP, INSTALLATION AND DETAILS
486-5-25-0003-342	A	SP487 HAWTHORNE - VALVE PIT SUMP PUMP PRESSURE SENSOR, INSTALLATION AND DETAILS
486-5-25-0003-351	A	SP487 HAWTHORNE - GUIDE RAIL SUBMERSIBLE PUMP TYPICAL INSTALLATION
486-5-25-0003-352	A	SP487 HAWTHORNE - GUIDE RAIL SUBMERSIBLE PUMP VALVE PIT AIR BLEED, INSTALLATION AND DETAILS
486-5-25-0003-361	A	SP487 HAWTHORNE - LEVEL PROBE OPENING WITH HOOKS, INSTALLATION DETAILS
486-5-25-0003-362	A	SP487 HAWTHORNE - CHAIN AND CABLE HOOK, INSTALLATION AND DETAILS
486-5-25-0003-363	A	SP487 HAWTHORNE - PUMP WELL WALL REINFORCEMENT ELECTRICAL CONNECTION BOX DETAILS
486-5-25-0003-601	A	SP487 HAWTHORNE - VACTOR PIPE, INSTALLATION AND DETAILS
486-5-25-0003-612	A	SP487 HAWTHORNE - POTABLE WATER WELL WASHER INSTALLATION GENERAL ARRANGEMENT
486-5-25-0003-613	A	SP487 HAWTHORNE - POTABLE WATER WELL WASHER SWING SUPPORT ASSEMBLY DETAILS
486-5-25-0003-621	A	SP487 HAWTHORNE - VENT POLE DETAILS
486-5-25-0003-631	A	SP487 HAWTHORNE - LADDERS FOR GRIT COLLECTOR MAINTENANCE HOLE AND PUMP WELL, INSTALLATION AND DETAILS
486-5-25-0003-632	A	SP487 HAWTHORNE - LADDER FOR VALVE PIT, LADDER INSTALLATION
486-5-25-0003-633	A	SP487 HAWTHORNE - LADDER FOR VALVE PIT, LADDER COMPONENT DETAILS
512002001	01	SP487 HAWTHORNE - MAINTENANCE HOLES NOTES SHEET 1 OF 3
512002002	01	SP487 HAWTHORNE - MAINTENANCE HOLES NOTES SHEET 2 OF 3
512002003	01	SP487 HAWTHORNE - MAINTENANCE HOLES NOTES SHEET 3 OF 3
512002004	01	SP487 HAWTHORNE - "G" "F" "X" TYPE MAINTENANCE HOLES - TOP SLABS REINFORCEMENT DETAILS
512002005	01	SP487 HAWTHORNE - 1500MM ID & 1800MM ID MAINTENANCE HOLES - TOP SLAB REINFORCEMENT DETAILS
512002006	00	SP487 HAWTHORNE - SULPHIDE CONTROL MAINTENANCE HOLES - TOP SLABS REINFORCEMENT DETAILS
572051001	A	SP487 HAWTHORNE COVER SHEET LOCALITY PLAN AND LEGEND
FH-BCNES-0100-CV-SKT-00002	0	CIVIL AND MECHANICAL WORKS ASSOCIATED DRAWING INDEX
572051003	00	SP487 HAWTHORNE STANDARD NOTES
572051004	00	SP487 HAWTHORNE CONSTRUCTION NOTES SHEET 1 OF 3
572051005	A	SP487 HAWTHORNE CONSTRUCTION NOTES SHEET 2 OF 3

572051006	00	SP487 HAWTHORNE CONSTRUCTION NOTES SHEET 3 OF 3
FH-BCNES-0100-CV-SKT-00007	00	CIVIL AND MECHANICAL WORKS LEVEL INTERACTION DIAGRAM AND LEVELS AND CAPACITIES TABLES
FH-BCNES-0100-CV-SKT-00008	00	CIVIL AND MECHANICAL WORKS PROCESS AND INSTRUMENTATION DIAGRAM
572051009	00	SP487 HAWTHORNE PUMP SYSTEM CURVES
572051010	00	SP487 HAWTHORNE THRUST BLOCK DETAILS
572051011	00	SP487 HAWTHORNE TYPICAL TRENCHING DETAILS
FH-BCNES-0100-CV-SKT-00012	00	CIVIL AND MECHANICAL WORKS OVERALL SITE LAYOUT
FH-BCNES-0100-CV-SKT-00013	00	CIVIL AND MECHANICAL WORKS PUMP STATION SITE CIVIL LAYOUT PLAN
FH-BCNES-0100-CV-SKT-00014	00	CIVIL AND MECHANICAL WORKS PLAN AT TOP LEVEL
FH-BCNES-0100-CV-SKT-00015	00	CIVIL AND MECHANICAL WORKS PLAN AT HEADER PIPE LEVEL
572051016	00	SP487 HAWTHORNE PLAN AT BOTTOM WATER LEVEL
FH-BCNES-0100-CV-SKT-00017	00	CIVIL AND MECHANICAL WORKS PUMP WELL AND VALVE PIT SECTIONS AND DETAILS
FH-BCNES-0100-CV-SKT-00018	00	CIVIL AND MECHANICAL WORKS PUMP WELL SECTIONS AND DETAILS
FH-BCNES-0100-CV-SKT-00019	00	CIVIL AND MECHANICAL WORKS PIPE SCHEDULE SECTIONS AND DETAILS
FH-BCNES-0100-CV-SKT-00020	00	CIVIL AND MECHANICAL WORKS PUMP WELL, VENT PIPE DETAILS
572051021	00	SP487 HAWTHORNE PUMP WELL VALVE PIT CONCRETE SHEET 1
572051022	00	SP487 HAWTHORNE PUMP WELL VALVE PIT CONCRETE SHEET 2
572051023	00	SP487 HAWTHORNE PUMP WELL VALVE PIT REINFORCEMENT
572051024	00	SP487 HAWTHORNE PUMP WELL VALVE PIT REINFORCEMENT 2
572051025	A	SP487 HAWTHORNE SWITCHBOARD LAYOUT AND CONDUIT DETAILS
FH-BCNES-0100-CV-SKT-00026	00	CIVIL AND MECHANICAL WORKS PLAN AND LONG SECTION
FH-BCNES-0100-CV-SKT-00027	00	CIVIL AND MECHANICAL WORKS PIPEWORK AND BENCHING DETAILS

572051028	00	SP487 HAWTHORNE RISING MAIN PLAN AND LONG SECTION SHEET 1 OF 2
572051029	A	SP487 HAWTHORNE RISING MAIN PLAN AND LONG SECTION SHEET 2 OF 2
572051030	A	SP487 HAWTHORNE RISING MAIN DISCHARGE CHAMBER DETAILS
572051031	00	SP487 HAWTHORNE SEWER MANHOLE TOP SLAB DETAILS SHEET 1
572051032	00	SP487 HAWTHORNE SEWER MANHOLE TOP SLAB DETAILS SHEET 2
FH-BCNES-0100-CV-SKT-00033	00	PUMP STATION SP487 ALLOTMENT PROPOSAL PLAN LOT 6S151824
572051052	00	SP487 HAWTHORNE PROPOSAL PLAN 1 LOT 6, S151824
572051053	00	SP487 HAWTHORNE PROPOSAL PLAN 2 LOT 6, S151824
572052002	00	SP487 HAWTHORNE COVERSHEET
572052003	00	SP487 HAWTHORNE POWER DISTRIBUTION SCHEMATIC DIAGRAM
572052004	00	SP487 HAWTHORNE PUMP 1 SCHEMATIC DIAGRAM
572052005	00	SP487 HAWTHORNE PUMP 2 SCHEMATIC DIAGRAM
572052008	00	SP487 HAWTHORNE MTS CONTROL WIRING DIAGRAM
572052009	00	SP487 HAWTHORNE COMMON CONTROLS SCHEMATIC DIAGRAM
572052010	00	SP487 HAWTHORNE COMMON RTU IO SCHEMATIC DIAGRAM
572052011	00	SP487 HAWTHORNE COMMON RTU POWER DIST SCHEMATIC & NETWORK
572052012	00	SP487 HAWTHORNE COMMON RTU POWER DIST SCHEMATIC & NETWORK
572052013	00	SP487 HAWTHORNE RTU DIGITAL INPUTS TERMINATION DIAGRAM 2
572052014	00	SP487 HAWTHORNE RTU DIGITAL INPUTS TERMINATION DIAGRAM 3
572052015	00	SP487 HAWTHORNE RTU DIGITAL OUTPUTS TERMINATION DIAGRAM 1
572052016	00	SP487 HAWTHORNE RTU DIGITAL OUTPUTS TERMINATION DIAGRAM 2
572052017	00	SP487 HAWTHORNE RTU ANALOG INPUTS TERMINATION DIAGRAM
572052018	00	SP487 HAWTHORNE RTU ANALOG OUTPUTS TERMINATION DIAGRAM
572052019	00	SP487 HAWTHORNE COMMON CONTROLS TERMINATION DIAGRAM
572052020	00	SP487 HAWTHORNE EQUIPMENT LIST
572052021	00	SP487 HAWTHORNE CABLE SCHEDULE
572052022	00	SP487 HAWTHORNE SWITCHBOARD LABEL SCHEDULE
572052023	00	SP487 HAWTHORNE SWITCHBOARD CONSTRUCTION DETAILS SHEET 1
572052024	00	SP487 HAWTHORNE SWITCHBOARD CONSTRUCTION DETAILS SHEET 2

572052025	00	SP487 HAWTHORNE SWITCHBOARD CONSTRUCTION DETAILS SHEET 3
572052026	00	SP487 HAWTHORNE FIELD INSTRUMENTATION INSTALL DETAILS
572052031	00	SP487 HAWTHORNE SWITCHBOARD GENERAL ARRANGEMENT ELEVATION
572052032	00	SP487 HAWTHORNE SWITCHBOARD GENERAL ARRANGEMENT SECTIONS
572052034	00	SP487 SWITCHBOARD SITE INSTALL CLEARANCE REQUIREMENT
FH-BCNES-0100-CV-SKT-00036	A	CIVIL AND MECHANICAL WORKS PLAN
FH-BCNES-0100-CV-SKT-00037	A	CIVIL AND MECHANICAL WORKS LONG SECTION

QUU Standard Design Drawings (added)

Document Number	Revision	Title
SEQ-SEW-1200-2	.	EMBEDMENT & TRENCHFILL - TYPICAL ARRANGEMENT
SEQ-SEW-1201-1	.	TYPICAL STANDARD EMBEDMENT - FLEXIBLE & RIGID PIPES
SEQ-SEW-1203-1	.	TYPICAL SPECIAL EMBEDMENT CONCRETE AND STABILISED SUPPORTS
SEQ-SEW-1205-1	.	TYPICAL TRENCH AND BEDDING DETAILS WITHIN EXISTING ROADS TYPE 14 TO 17
SEQ-SEW-1301-1	.	CAST IN-SITU MAINTENANCE HOLE - TYPICAL COPING AND ANCHOR BRACKET DETAILS
SEQ-SEW-1301-2	.	"G" TYPE - PE NUSEWERS - TYPICAL MAINTENANCE HOLE DETAILS
SEQ-SEW-1301-6	.	"X" TYPE DEEP MAINTENANCE HOLE TYPICAL ARRANGEMENT
SEQ-SEW-1301-7	.	"X" TYPE DEEP MAINTENANCE HOLE TYPICAL ARRANGEMENT
SEQ-SEW-1301-8	.	"X" DEEP MAINTENANCE HOLE TYPICAL ARRANGEMENT
SEQ-SEW-1301-9	.	"X" TYPE DEEP MAINTENANCE HOLE TYPICAL ARRANGEMENT SEWER 0675 TO 0900 WITH DROP PIPE AND SAFETY CHAIN DETAIL
SEQ-SEW-1301-10	.	"X" TYPE DEEP MAINTENANCE HOLE TYPICAL JUNCTION DETAILS
SEQ-SEW-1301-12	.	TYPICAL M.S AND S.S LADDER AND ASSOCIATED FITTINGS
SEQ-SEW-1304-1	.	MAINTENANCE HOLES SEWERS = DN300 TYPICAL CHANNEL ARRANGEMENTS
SEQ-SEW-1305-1	.	MAINTENANCE HOLES TYPICAL CHANNEL DETAILS
SEQ-SEW-1307-4	.	SULPHIDE CONTROL SEWER MAINTENANCE HOLE - PE LINED CUT-INS
SEQ-SEW-1308-8	.	MAINTENANCE HOLE COVER SEWER - CLASS D BOLT DOWN - TYPICAL BASE FRAME DETAILS
SEQ-SEW-1308-9	.	MAINTENANCE HOLE COVER SEWER - CLASS D BOLT DOWN - TYPICAL RISER RING DETAILS
SEQ-SEW-1308-10	.	MAINTENANCE HOLE COVER SEWER - CLASS D - BOLT DOWN TYPICAL COVER DETAILS

SEQ-SEW-1308-11	.	MAINTENANCE HOLE COVER SEWER - CLASS D - BOLT DOWN TYPICAL COVER DETAILS
SEQ-SEW-1313-1	.	MAINTENANCE HOLE SEWER CONNECTION DETAILS ALL PIPE MATERIALS
SEQ-SEW-1402-1	.	TYPICAL BURIED CROSSINGS MAJOR ROADWAYS
SEQ-SEW-1403-1	.	TYPICAL BURIED CROSSINGS BORED AND JACKED ENCASING PIPE DETAILS
SEQ-SEW-1500-1	.	INSERTIONS AND REPAIR SYSTEMS TYPICAL PIPE CUT-IN METHODS
SEQ-SPS-1407-1	.	POLYETHYLENE LINING - TOP SLAB & WALL - TYPICAL DETAILS
SEQ-SPS-1304-10	.	ALUMINIUM ACCESS COVERS - OPTION 2, NOTES AND PUMP WELL COVER PLAN
SEQ-SPS-1304-11	.	ALUMINIUM ACCESS COVERS - OPTION 2, PUMP WELL FRAME, SAFETY MESH PANELS AND COVER UNDERSIDE DETAILS
SEQ-SPS-1304-12	.	ALUMINIUM ACCESS COVERS - OPTION 2, PUMP WELL HINGE AND SEAL DETAILS
SEQ-SPS-1304-13	.	ALUMINIUM ACCESS COVERS - OPTION 2, PUMP WELL AND VALVE PIT LATCH MECHANISM BOX, GENERAL ARRANGEMENT
SEQ-SPS-1304-14	.	ALUMINIUM ACCESS COVERS - OPTION 2, PUMP WELL AND VALVE PIT LATCH MECHANISM BOX, DETAILS
SEQ-SPS-1304-15	.	ALUMINIUM ACCESS COVERS - OPTION 2, PUMP WELL AND VALVE PIT STRIKER PLATE AND FRAMES DETAILS
SEQ-SPS-1304-16	.	ALUMINIUM ACCESS COVERS - OPTION 2, VALVE PIT GENERAL ARRANGEMENT
SEQ-SPS-1304-17	.	ALUMINIUM ACCESS COVERS - OPTION 2, VALVE PIT SECTIONS AND DETAILS
SEQ-SPS-1308-1	.	RPZ DEVICE, TYPICAL LAYOUT
SEQ-SPS-1407-1	.	POLYETHYLENE LINING TOP SLAB AND WALL, TYPICAL DETAILS
SEQ-SPS-1407-2	.	POLYETHYLENE LINING WALL PIPE PENETRATION, TYPICAL DETAILS
SEQ-SPS-1508-1	.	SURVEY PLATE, PUMP LABEL PLATE, VALVE SPINDLE ACCESS

Table 6 – Drawings

109 TECHNICAL SPECIFICATIONS

Document Number	Revision	Title
TMS1151	10	PREFERRED EQUIPMENT CONTROL SYSTEMS
TMS1200	02	ELECTRICAL INSTALLATION STANDARD TECHNICAL SPECIFICATION
TMS1201	02	INSTRUMENTATION INSTALLATION – STANDARD TECHNICAL SPECIFICATION
TMS1202	04	CONTROL SYSTEM IMPLEMENTATION
TMS1406	04	LOW VOLTAGE VARIABLE SPEED DRIVES
TMS1434	02	TECHNICAL SPECIFICATION FOR CARBON STEEL , STAINLESS STEEL AND ALUMINIUM STRUCTURES

TMS1435	02	TECHNICAL SPECIFICATION FOR DESIGN AND CONSTRUCTION OF WATER AND SEWERAGE MAIN SYSTEMS
TMS1437	02	TECHNICAL SPECIFICATION FOR CIVIL WORKS
TMS1439	03	TECHNICAL SPECIFICATION FOR CONCRETE STRUCTURES
TMS1582	02	TECHNICAL SPECIFICATION FOR HORIZONTAL DIRECTIONAL DRILLING
TMS1583	02	MICROTUNNELLING AND PIPEJACKING SPECIFICATION
TMS1639	02	GENERAL MECHANICAL WORKS STANDARD SPECIFICATION
TMS1647	06	PLANT AND EQUIPMENT TAG NUMBERING TECHNICAL SPECIFICATION
TMS1654	06	PROJECT DOCUMENT NUMBERING AND NAMING REQUIREMENTS
TMS62	20	PREFERRED EQUIPMENT LIST ELECTRICAL AND INSTRUMENTATION
TMS73	02	O&M MANUALS - STANDARD TECHNICAL SPECIFICATION
TMS76	03	CORROSION PROTECTION SUPPLEMENT TO THE WSA 201
TMS849	05	CITECT SCADA CONFIGURATION STANDARD

Table 7 - Technical Specifications

1110 OTHER DOCUMENTATION

Note: Project specific drawings are highlighted. The other drawings may contain additional information relevant to the scope.

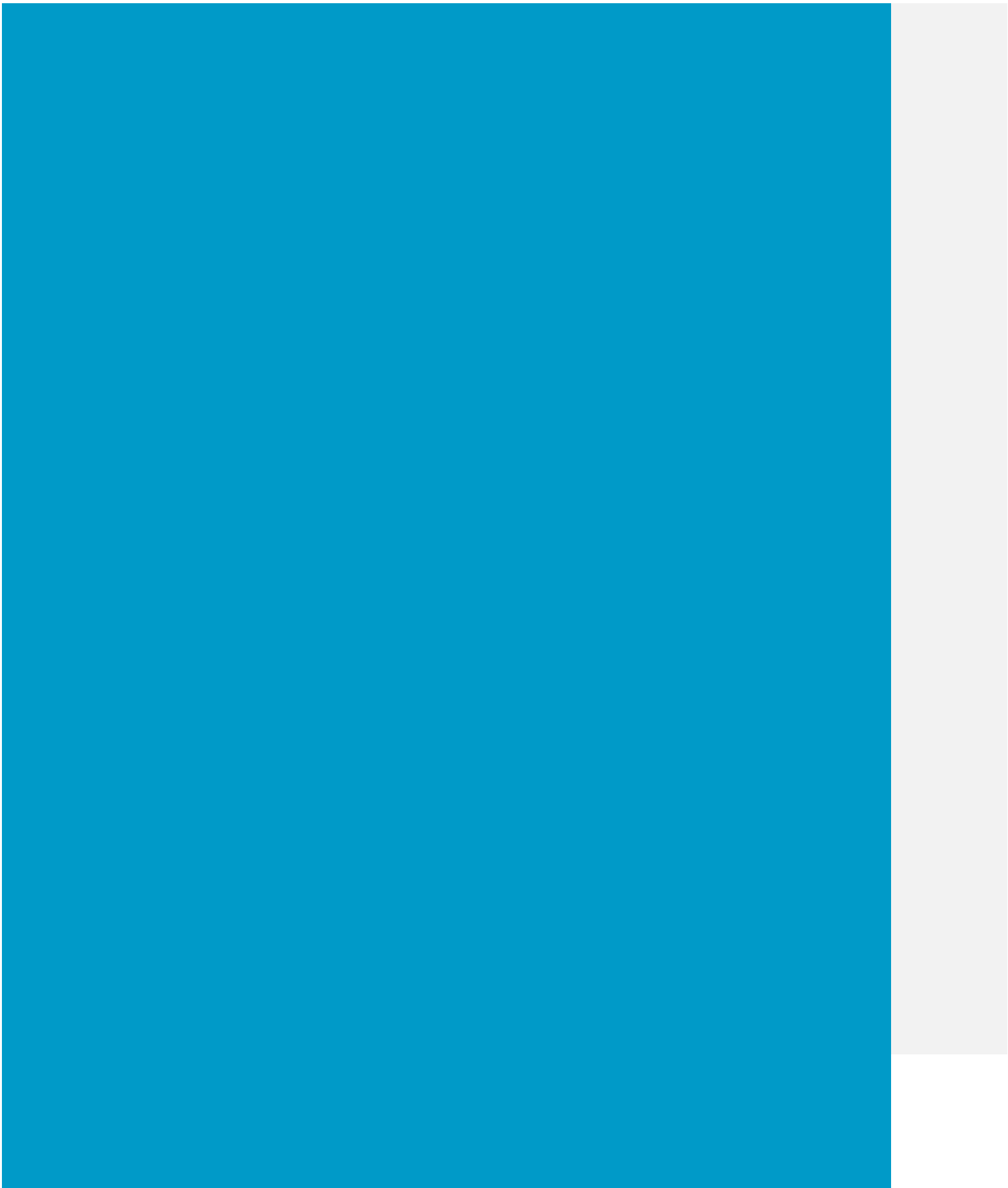
Document Number	Revision	Title
BWWCAA14A17-MD-SOW-00001	00	AMY STREET HAWTHORNE - SEWER OVERFLOW MANAGEMENT - PROJECT SCOPE OF WORK
PRO44	16	AS-CONSTRUCTED DRAWINGS & CCTV PROCESS
PRO662	02	SAFETY IN DESIGN PROCEDURE
SP487-0000-CS-PLN-00001	A	SP487 HAWTHORNE - SPS COMMISSIONING PLAN
SP487-0052-PM-LST-00001	A	SUPPLIER DATA REQUIREMENTS LIST (SDRL)
SP487-0000-EE-LST-00001	A	SP487 RIDING ROAD HAWTHORNE – PHYSICAL I-O SPREADSHEET
SP487-0000-PM-REP-00001	A	AMY STREET HAWTHORNE STEP ASSESSMENT
SP487-0000-DE-REP-00001	05	SP487 HAWTHORNE - DESIGN DEVELOPMENT REPORT
FH-BCNES-0100-CV-REP-00001	A	AMY STREET, HAWTHORNE – GEOTECHNICAL AND CONTAMINATION ASSESSMENT
SP485-0000-EE-SPC-00001	01.05	SP485 MORNINGSIDE - SP485 MORNINGSIDE - SITE SPECIFIC FUNCTIONAL SPECIFICATION
SP485-0000-EE-SPC-00002	O	SP485 MORNINGSIDE - C1542 SEWER OVERFLOW MANAGEMENT – SP485 MORNINGSIDE: LIGHTNING RISK ASSESSMENT

SP485-0052-EE-TST-00001	A	SP485 MORNINGSIDE - STANDARD ELECTRICAL SPECIFICATION: NON-STANDARD FIXED SPEED SEWAGE PUMPING STATION – SAT – CONTROL SYSTEM SITE ACCEPTANCE TEST - TEMPLATE
SP485-0052-OM-PLN-00001	A	SP485 MORNINGSIDE - DRAFT FLOW CONTROL PLAN
SP485-0100-M08-001	A	SP 485 MORNINGSIDE - PUMP DATA SHEET
SP485-0110-E22-00001	B	SP485 MORNINGSIDE - POWER SYSTEM ANALYSIS REPORT
SP485-0052-PM-LST-00001	A	SUPPLIER DATA REQUIREMENTS LIST (SDRL)
SP485-0000-EE-LST-00001	1-03	SP485 BEELARONG ST MORNINGSIDE – PHYSICAL I/O SPREADSHEET
SP485-0000-PM-REP-00001	1	JEREMIAH O'TOOOLE PARK MORNINGSIDE STEP ASSESSMENT
SP487-0000-EE-LST-00001	03	SP487 HAWTHORNE - PHYSICAL I/O SPREADSHEET
SP487-0000-EE-RSK-00001	O	SP487 HAWTHORNE - LIGHTNING RISK ASSESSMENT
SP487-0000-EE-SPC-00001	03	SP487 HAWTHORNE - SITE SPECIFIC FUNCTIONAL SPECIFICATION
SP487-0052-EE-TST-00001	A	SP487 HAWTHORNE - CONTROL SYSTEMS SAT
SP487-0052-OM-PLN-00001	A	SP487 HAWTHORNE - DRAFT FLOW CONTROL PLAN
SP487-0052-PM-LST-00001	A	AMY STREET - HAWTHORNE OVERFLOW MANAGEMENT - BWCA14A17 G01 SUPPLIER DATA REQUIREMENTS LIST (SDRL)
SP487-0100-M08-001	A	SP487 HAWTHORNE PUMP DATASHEET
SP487-0110-E22-00001	B	SP487 HAWTHORNE - POWER SYSTEM ANALYSIS REPORT
UUNES-0000-ME-SCH-00001	ORIG	SP487 HAWTHORNE VALVE SCHEDULE (MORNINGSIDE , NUNDAH & HAWTHORNE)
UUNES-0100-M07-001	01	SP487 HAWTHORNE NUNDAH MORNINGSIDE - MECHANICAL EQUIPMENT SCHEDULE



1211 APPENDICES

12.111.1 SITE LAYOUT AND ACCESS POINTS



PROGRAM MANAGEMENT PLAN
Wastewater Metropolitan Program
C1819

Document No. WWMP-PM-PLN-TBA

REVISION HISTORY

<i>Date</i>	<i>Rev.</i>	<i>Author</i>	<i>Reviewed by</i>	<i>Description</i>
08/04/2020	A	Sarah Conley		Initial Draft

CULTURAL ALIGNMENT AND BEHAVIOURS

All participants involved in the delivery of the WWMP works will pledge their commitment to fulfilling and upholding the collaborative behaviours and goals of the agreed Program Charter.

- *The above is to be advised after workshop on Tuesday 14th April 2020.*

DRAFT

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DRAFT

1 PURPOSE

As a part of Urban Utilities's journey in advancing its Program Management Approach (PMA), Fulton Hogan and our design partner SMEC has been selected as the Delivery Partner to undertake a "One Team" approach to deliver effective and efficient capital works on the Wastewater Metropolitan Program.

The general scope of works for the delivery of WWMP includes but is not limited to:

- Program safety and environmental management including reporting;
- Program and project management for the complete lifecycle of the program;
- Design and construction management of program scope of works from Stage 4 to Stage 5 as per UU's Capital Works delivery process;
- Program progress reporting in accordance with the Program governance requirements;
- Undertaking the ECI concept design including necessary site and engineering investigations;
- Development of Risk Adjusted Maximum Price (RAMP) in collaboration with UU;
- Completion of construction and commissioning of projects in safe manner;
- Completion of project handover and submission of "As Constructed" documentation including relevant operational manuals and staff training as required;
- Undertaking lessons learned review process and implementation of identified efficiencies and improvements;
- Managing internal and external stakeholder interfaces;
- Managing customer interfaces; and
- Managing on site design and construction interfaces with operations including site access and operational permits and approvals.

The WWMP frameworks will focus on delivering a suite of wastewater networks projects across the six metropolitan catchments, S1-S5, which are the catchments feeding and interlinked with the six Metropolitan Treatment Plants for the MTP works. Design works on the first package are to commence in March 2020 and will continue for approx. 6 years. The projects included within each work package of the WWMP will have a goal of delivering against UU's strategic drivers of growth, renewal, compliance, efficiency or service improvement. The WWMP scope is predominantly trunk sewer projects, with some facilities and reticulation. The work will include both greenfield and brownfield network renewals and upgrades. The specific project scope of works under the WWMP will typically be multi-disciplined, involving civil, structural, mechanical, electrical, instrumentation and controls works.

The WWMP program includes renewals projects and programs, and large planned investments in growth driven projects. Efficiency, compliance and service driven projects make up a minor proportion of the program.

Renewals projects typically consist of:

- Creek crossings rehabilitation and renewals;
- Rising mains renewals;
- Sewage pump station rehabilitation and renewals; and
- Electrical and control systems renewals.

The scope of works under this program involves upgrades and renewals in the following asset categories with splits as follows:

- 1) Trunk Sewer Mains (approx 70%);
- 2) Reticulation Sewer Mains (approx 25%); and
- 3) Facilities (approx 5%).

The Trunk Sewer Mains category consists of:

- Trunk sewer main augmentations and upgrades;
- Major trunk sewer mains (\$10M +); and
- Sewer rising mains.

The Reticulation Sewer Mains category consists of:

- Creek crossing renewals; and

- New reticulation mains.

The Facilities category consists of:

- Sewage Pump Station (SPS) renewals and upgrades;
- New SPSs;
- Odour control and ventilation facilities; and
- Electrical and control system upgrades.

The WWMP Program will be delivered in 2 phases:

Phase 1 – Early Contractor Involvement (ECI) Development Phase

- ❖ Clearly review and understand the Benefits and Objectives of each project
- ❖ Identify components of scope to be challenged to provide maximum value for money
- ❖ Determine procurement strategy to allow ECI deliverables to be packaged accordingly to provide clear and concise packages to be issued to subcontractors and suppliers for pricing
- ❖ Collectively review, challenge and develop the Market Ready Designs provided by Urban Utilities to obtain a value-for-money solution that achieves the Benefits and Objectives identified by Urban Utilities.
- ❖ Undertake site investigations as required for the development of a RAMP design including SID/HAZOP and design reviews. The design reviews are to be undertaken in a collaborative manner with a focus on Benefits and Objectives.
- ❖ Clear identification of project delivery risks and opportunities.
- ❖ Develop Works Delivery RAMP in conjunction with Urban Utilities Cost Intelligence and interrogation.

Stage 2 – Works Delivery Phase

Following acceptance of the RAMP developed in the ECI Phase:

- ❖ Develop detailed design including SID/HAZOPS and any preconstruction investigations as required
- ❖ Complete the design, mobilisation of site resources and, construction and commissioning of the works
- ❖ Provide all required handover documentation to enable the asset to be capitalised by Urban Utilities

2 SCOPE

The scope of this document is limited to providing an overarching guideline for the key aspects of the WWMP Works and the processes and tools used to manage the successful delivery of the program achieving program/project objectives and benefits rather than just achieving capital spend in a collaborative manner.

It is recognised that each individual project will require its own detailed Project Specific Coordination Plan (PSCP) to encompass key components that will have a critical impact on their success. Overarching HSE, Quality and Design Management Plans have also been developed to describe the application and impact of statutory authority and the Program Team's Processes and Policies related to governance of Health, Safety, Environmental, Quality and Design.

Project specific risk assessments, Safety, Quality & Environmental management documents, schedules, RAMP's and Organisational charts will be tailored for each works package and will supplement the information already provided in the overarching management plans.

The delivery areas covered by this document are:

- ❖ HSE Management
- ❖ Quality Management
- ❖ Design Management
- ❖ Stakeholder and Communications Management
- ❖ Roles and Responsibilities
- ❖ Performance Tracking, Reporting and Meetings
- ❖ ECI Expenditure Limit
- ❖ ECI Development Phase
- ❖ Works Delivery Phase
- ❖ Commissioning and Handover
- ❖ Estimating
- ❖ Procurement of Sub-Contractors and Suppliers
- ❖ Schedule Management
- ❖ Cost Management
- ❖ Scope Change Management
- ❖ Early Warning Notification
- ❖ Risk Management
- ❖ Document Control and Records

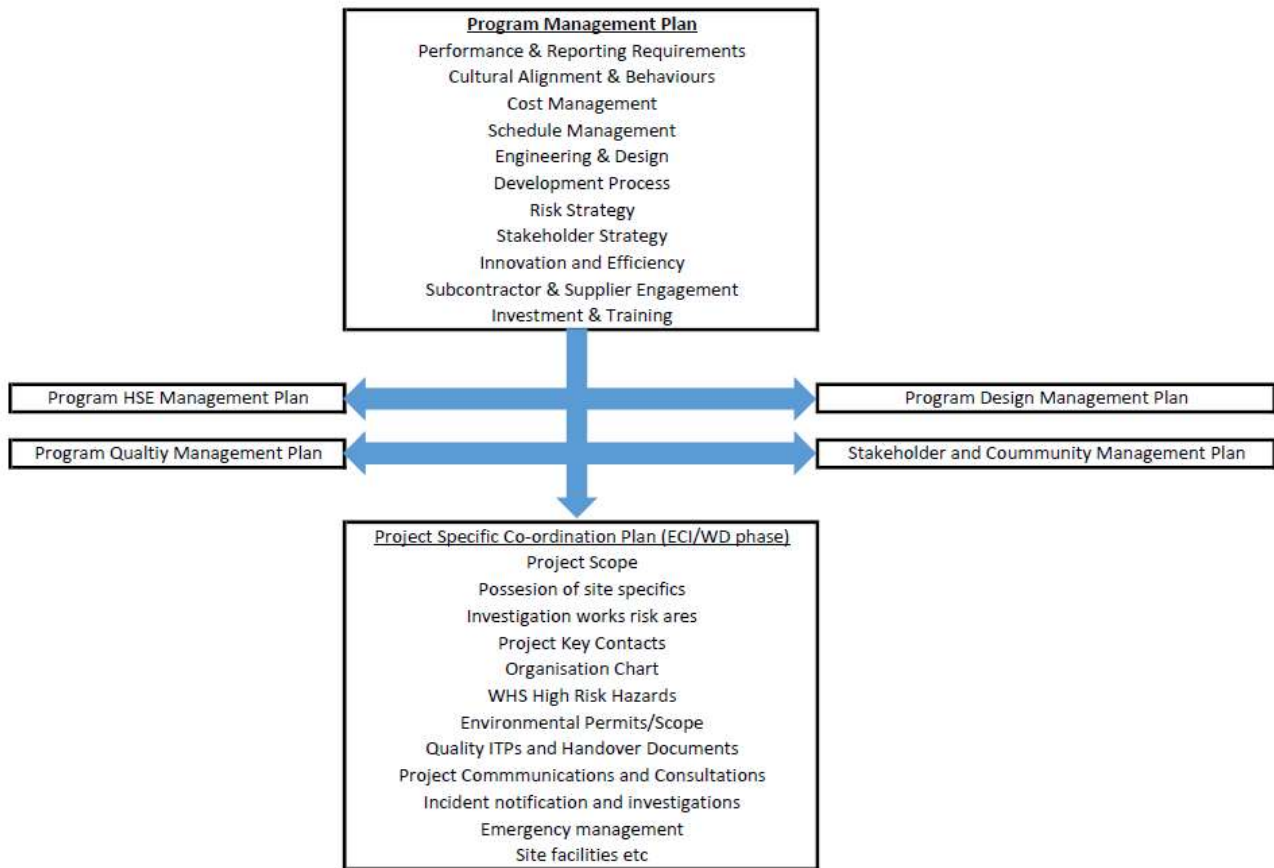


Figure 1 - Hierarchy of Management Plans

3 HEALTH, SAFETY & ENVIRONMENTAL MANAGEMENT

As a minimum, Fulton Hogan will ensure that any agents, employees, consultants and subcontractors or any other persons under the control of Fulton Hogan not only understand their legislative requirements but genuinely appreciate the reasons for its importance. This will be achieved through:

- » A shift from HSE as a target to a Culture that encourages honest and timely reporting.
- » Clear, visual and disciplined Leadership
- » Key focus on critical risk and unwavering commitment to above the line controls
- » Making systems and processes simple so that they add value not just regulatory box ticking
- » Effective planning and setting the project up for success.

An overarching **Health, Safety and Environmental Management Plan** ([NTP-HSE-PLN-00001](#)) has been developed detailing the regulatory, Fulton Hogan and Urban Utilities requirements for the WWMP and MTP Capital Works Program.

The plan has been structured so that it:

- » Defines the key personnel and their roles and responsibilities
- » Provides the overarching guidelines for managing HS&E across the Program
- » Details the relevant safety risks and associated controls and procedures to mitigate or manage these risks
- » Provides overarching guidelines for managing Environmental risks across the Program
- » Defines Incident and emergency management requirements
- » Provides guidance on monitoring and evaluating the performance of the WWMP works

4 QUALITY MANAGEMENT

An overarching **Quality Management Plan** ([NTP-QM-PLN-00001](#)) has been developed to provide guidelines for the WWMP and MTP Delivery Team to perform works in full compliance with Statutory Legislation, the Fulton Hogan Quality Management System and Urban Utilities Requirements. The Quality Management Plan incorporates the requirements of Urban Utilities with Fulton Hogan's Integrated Management System (IMS) which is certified to AS/NZS ISO 9001. The objectives of this management plan include:

- » Ensuring that all work (supply and fabrication, installation and construction, testing and commissioning) undertaken as part of the Program meets all the technical and quality requirements of Urban Utilities
- » Providing documented evidence of conformance with design and technical documentation in relation to Quality Assurance
- » Maintaining effective control of the quality of the work, provide for/conduct all tests and examinations necessary, including those at Supplier's or Subcontractor's facilities, to demonstrate conformance to the requirements of the Program and shall offer for acceptance only work under the Programs that so conforms.

5 DESIGN MANAGEMENT

An overarching **Design Management Plan** ([NTP-PM-PLN-00002](#)) has been developed to provide instruction, direction and guidance to the Design Team throughout the development of design and documentation on the WWMP works. The purpose of this Management Plan is to:

- » Ensure Value Engineering is being undertaken on Projects to address the specific Benefits and Objectives
- » Provide a background to the project and the expectations of stakeholders
- » Challenge requirements of the Scope of Work or Design Basis that doesn't contribute to the Benefits and Objectives
- » Document the procedures, strategies and controls
- » Document the design and verification process
- » Communicate the Design Team Organisation chart
- » Communicate the Design Process from Design Inputs/Activities to the Design Outputs.

6 STAKEHOLDER AND COMMUNITY MANAGEMENT

As a minimum, Fulton Hogan will ensure that any agents, employees, consultants and subcontractors or any other persons under the control of Fulton Hogan not only understand the requirements but genuinely appreciate the reasons for its importance. Community Engagement is vital to uphold Urban Utilities' customer centric values because it allows us to:

- » manage issues and risks
- » minimise the impact to our community and stakeholders
- » build trust and enhance/protect Corporate reputation
- » ensure timely delivery of essential infrastructure and services.

An overarching **Stakeholder and Community Management Plan** (*DOC number TBA*) will be developed detailing the Fulton Hogan and Urban Utilities requirements for the WWMP Works Program.

The plan has been structured so that it:

- » Defines the key personnel and their roles and responsibilities
- » Provides the overarching guidelines for managing Stakeholder and Community Interactions across the Program
- » Details the relevant risks and associated controls and procedures to mitigate or manage these risks
- » Defines Incident and emergency management requirements
- » Provides guidance on engaging, monitoring and evaluating the performance of the WWMP works

7 ROLES AND RESPONSIBILITIES

The roles and responsibilities of staff required for the successful delivery of the Wastewater Metropolitan Capital Works Program are detailed in this section. The structure of the team makes extensive use of experienced project delivery team members that will ensure that Community and Stakeholder Engagement, Safety in Design, Innovation and Constructability are a strong focus of the development in the early design stages. Utilising design and construction team members at all stages of each projects development gives a direct and effective method of communicating lessons learnt on previous projects/programs, so efficiencies, innovations and issues that arose can be accommodated, taken up or mitigated right at the start of each Project.

Initially the lead team members will be involved in the ECI phase of each Work Package to identify which resources will be required throughout the works. As Projects/Works Packages move into the construction phase, personnel will be structured to optimise both the ECI and Works Delivery teams, with shared resources that provide knowledge transfer and consistency.

7.1 Program Director

The responsibilities of the Program Director will include but are not limited to:

- » Guide and provide leadership in the development of collaborative culture from GM level
- » Provide overall governance and leadership to the FH/Design delivery team
- » Resolve escalated issues/conflicts quickly and in the best interests of the overall Program team
- » Participate and actively contribute as a key member of the Program Management Team

7.2 Program Manager

The responsibilities of the Program Manager will include but are not limited to:

- » Interface with Urban Utilities Program Manager on a regular basis to ensure alignment of behaviours and track the overall performance of the Program
- » Oversee the successful delivery of the ECI and Works Delivery phase
- » Ensure the right infrastructure is available to promote collaborative behaviours
- » Ensure resources are made available as required to optimise the resourcing profile
- » Facilitate workshops and discussions
- » Drive the delivery of the program to continually demonstrate value for money to Urban Utilities
- » Participate and actively contribute as a key member of the Program Management Team

7.3 Stakeholder and Community Manager

The responsibilities of the Stakeholder and Community Manager will include but are not limited to:

- » Continuous feedback and interaction with the UU Stakeholder and Community team
- » Managing and leading the Community Relations function through internal and external communications, engaging with the community and marketing activities
- » Manage the development of projects Communication Plans in line with UU corporate strategy and cultural objectives
- » Provide communication advice and support to Project/ECI managers which contribute to effective engagement with customers and the community
- » Provide input into the projects development and construction program, including the preparation and delivery of effective community meetings and discussion with Stakeholder groups
- » Deliver a range of communication materials to meet the needs of each community and its stakeholders

7.4 ECI Manager

The responsibilities of the ECI Manager will include but are not limited to:

- » Manage the development of the ECI Expenditure Limit
- » Manage resources during the ECI phase
- » Participate in client meetings/workshops during the ECI Phase
- » Oversee ECI Phase works, and manage ECI team deliverables
- » Drive the development of RAMP, Scope Change Guidelines and Risk Registers
- » Provide a detailed handover to the Works Delivery Team following RAMP approval

7.5 Works Delivery Manager

The responsibilities of the Works Delivery Manager will include but are not limited to:

- » Ensure construction guidance is provided throughout the ECI phase to the ECI/Design teams
- » Oversee projects in Works Delivery Phase, and provide guidance to the WWMP Project Managers
- » Drive the delivery of all projects to completion to achieve identified benefits of the business case
- » Manage resources efficiently across projects during the Works Delivery Phase
- » Optimise project outcomes by ensuring Project managers manage contractual risks and opportunities under the general conditions of the contract
- » Promote and drive efficient working practices ensuring a high level of time management across the team to prevent any negative impact across the projects in the works delivery phase

7.6 Design Manager

The responsibilities of the Design Manager will include but are not limited to:

- » Manage the design team and identify resourcing requirements required to prepare the agreed deliverables within the agreed timeframe
- » Participate in client meetings/workshops during the ECI and Works Delivery Phases to ensure stakeholders are kept informed on the progression of design as well as areas of design being challenged
- » Ensure key stakeholders are informed, involved and brought in to designs as they develop in conjunction with the ECI/Project delivery team
- » Interface with the Program and Project Manager(s) to ensure design and construction are integrated and contribute to the development of a 'no surprise' culture
- » Ensure designs delivered are fit for the intended purpose
- » Provide leadership to the design team, constructively challenge, promote and encourage innovation and continuous improvement

7.7 Design Engineering Lead (as required)

The responsibilities of the Design Engineering Lead will include but are not limited to:

- » Interface with the ECI Manager and Project Managers to ensure the delivery strategy of the ECI Delivery Phase and Works Delivery Phase are aligned with the design process
- » Support ECI team in the development of prescriptive design deliverables to be undertaken either by the Consultants design team or by the supply chain subcontractors ensuring there are no design gaps.
- » Ensure the output quality of the Consultants design team meets the requirements of the Design Services Agreement and the client's works packages
- » Provide support to interdisciplinary design reviews during all project stages, ensuring value engineering and cost interrogation to manage both design cost reduction and design consultancy scope control.
- » Plan, control and coordinate design and technical support in an efficient and integrated manner, which supports tender and project objectives, interacting closely with the Consultants design management and engineering team

7.8 FH Project Manager(s)

Their responsibilities include but are not limited to:

- » Review and understand required scopes of initial ECI packages, and specific Urban Utilities Benefits and Objectives
- » Provide input into the development of the ECI Expenditure Limit with emphasis on procurement strategy and ECI Development methodology
- » Assist the design team to quantify the level of design detail required in ECI phase in order to develop the RAMP
- » Assist the estimating and procurement teams by providing lessons learnt and constructability input
- » Work as an integrated Design and Construction team to undertake the Detailed Design in the Works Delivery Phase
- » Undertake final selections and engage subcontractors and suppliers required to undertake the site works
- » Oversee the successful project delivery with overall responsibility for Safety, Environment, Quality, Stakeholder and Community Interactions, Time and Cost

7.9 Commissioning Engineering Lead

The responsibilities of the Commissioning Lead include but are not limited to:

- » Provide early input into the ECI phase to ensure Commissioning requirements are included in the final RAMP submission
- » Working closely with client reps, site supervision, subcontractors and key suppliers to ensure effective commissioning outcomes
- » Development of detailed integrated commissioning plans
- » Site based hands on commissioning in accordance with the commissioning plan, ITP's and ITC's including configuration of field equipment and devices
- » Coordination of commissioning and handover of projects aligned to plant requirements in conjunction with client engineers and site team
- » Assisting with practical completion documentation

7.10 Project Controls/ Scheduler

The responsibilities of the Project Controls team include but are not limited to:

- » Develop and main the Master Schedule in accordance with Section 15 of this Management Plan.
- » Develop and maintain the individual ECI schedules
- » Develop and maintain the individual works delivery schedule for each project
- » Liaise with the Design Manager, ECI Manager, Stakeholder and Community Manager, Project Managers and Document Control for updates on progress, and verification using TeamBinder
- » Provide fortnightly Schedule Updates for submittal to Urban Utilities Project Manager

- » Prepare monthly reports in accordance with Section 8.2.2, including reporting Earned Value against Planned Value
- » Collate data for input into monthly dashboards

7.11 Estimators

The responsibilities of the Estimators include but are not limited to:

- » Review and understand required scopes of initial ECI packages
- » Assist the scheduler with inputs on durations for work packages
- » Engage the supply chain, review standard rates, discounts etc. and set up long term procurement strategies
- » Develop estimates using expert estimation software, and transpose into RAMP template
- » Review risk registers with ECI Manager and Project Managers to ensure RAMP risks are identified and quantified

7.12 Project/Site Engineers

The responsibilities of the Project Engineers and Site Engineers will include but are not limited to:

- » Understand and interpret technical drawings and specifications and convey the information to construction delivery team
- » Provide support and constructability input to the designers, project managers, schedulers and site supervisors
- » Engage and manage subcontractors and subcontract works
- » Undertake Quality Control activities to ensure compliance with Technical Standards
- » Engage regularly with the Design Engineers to maintain the design intent
- » Drive the successful project delivery with monitoring/maintaining Safety, Environment, Quality, Stakeholder and Community Interactions, Time and Cost
- » Reporting any deviations/issues with the above to the Project Manager

7.13 Design Engineers

The responsibilities of the Design Engineers will include but not limited to:

- » Develop and deliver the Design to meet the agreed time, cost and quality constraints
- » Ensure design deliverables are fit for the intended purpose
- » Ensure design deliverables and outputs align with the project Objectives and Benefits
- » Set design standards and ensure they are maintained and confirm compliance with Urban Utilities and project specifications
- » Ensure that the design is properly reviewed, verified and approved prior to uploading to TeamBinder.
- » Liaise with Project Engineers and Project Managers to incorporate constructability into the design including managing the Safety in Design Process and also participating in the CHAIR workshops
- » Attend meetings with the broader WWMP Delivery Team as required
- » Be open in communication with all WWMP Stakeholders

7.14 Document Controller

The responsibilities of the Document Controller will include but are not limited to:

- » Management of the WWMP Records Management System (TeamBinder)
- » Ensure compliance with the WWMP Document Control Procedures
- » Filing of documentation and ensuring correct document numbering and distribution
- » Obtaining relevant reports from TeamBinder for input into monthly reports

7.15 Contracts Administrator

The responsibilities of the Contracts Administrator will include but are not limited to:

- » Preparation and management of Contract and Procurement Schedules
- » Preparation of subcontractor tender packages, contract documentation and administer the contracts
- » Evaluation of subcontractor's progress claims, variations and extensions of time
- » Administer the Head Contract including submission of Progress Claims, Scope Change Notices and Extensions of Time
- » Support the Finance team with processing of Purchase Orders and Receipting of Invoices

7.16 HSEQ Operatives

The responsibilities of the HSEQ Operatives will include but are not limited to:

- » Assess the effective implementation of Project Health, Safety, Environment and Quality Plans
- » Help plan, coordinate and manage HSEQ risks on the project
- » Help and monitor subcontractor's adherence to the projects systems of work and work collaboratively to improve HSEQ outcomes
- » Ensure process in place to manage mobile plant and VOC
- » As required mentor or train workplace personnel in regards to the aspects of the project HSEQ systems
- » Conduct HSEQ monitoring activities to assess performance and opportunities for improvement
- » Promote timely incident, non-conformances and near misses reporting and coordinate / participate in incident investigations when required
- » Coordinate data for reporting as required (monthly reports, statistics, etc.)
- » Demonstrate visible leadership through coaching and mentoring the team

8 PERFORMANCE TRACKING, REPORTING AND MEETINGS

8.1 Key Performance Indicators (KPI's)

The WWMP Delivery Team will specifically manage, track and report on performance across the following four strategic objectives areas:

1. Effective Delivery
2. Trusted Partner
3. Efficiency
4. Customer Service

Within the 4 strategic objectives there are 18 Key Performance Indicators (KPI's) as shown in Table 1. KPI performance will be the responsibility of the Program Delivery Team and the overall KPI score will be calculated based on a cumulative weighted score across all KPI's in accordance with Annexure C 'KPI Framework' of the Head Contract.

To further underpin the collaborative contract model, and support the KPI's, Urban Utilities/Fulton Hogan will participate/coordinate Best Practice and lessons learnt forums/workshops, where information and knowledge can be shared which may be relevant to other programs and/or future works.

Strategic Objective	Weighting	KPI Ref.	Overall %	Criteria	Description
Effective Delivery	50%	1.1A	2.5%	Site Safety Lag Indicators	Total Recordable Injury Frequency (TRIFR)
		1.1B	2.5%	Site Safety Lag Indicators	Injury Severity Rate
		1.1C	1.7%	Site Safety Lead Indicators	Visual Safety Leadership Tours
		1.1D	1.7%	Site Safety Lead Indicators	Safety Culture Performance Score
		1.1E	1.7%	Site Safety Lead Indicators	HSEQ Audit Score
		1.1F	1.7%	Site Safety Lead Indicators	Site Safety Lead Indicator - HSEQ Audit Close Out
		1.1G	1.6%	Site Safety Lead Indicators	High potential (HiPo) & recordable Event Investigation Action close out by due date
		1.1H	1.6%	Site Safety Lead Indicators	High Potential incident debriefing and lesson learnt Bulletin Issued within 60 days
		1.2	15%	Environmental Impact	Recordable Environmental Incidents Frequency Rate (REIFR)
		1.3	10%	Annual Cost and Time Variance	Cost Time Variance
		1.4	10%	Data Integrity	Data Integrity

Trusted Partner	10%	2.1	5%	Collaboration	Collaboration and Relationship Survey (CRS)
		2.2	5%	Staff retention	Retention of key and important personnel
Efficiency	20%	3.1	8%	Delivery Efficiency	Delivery Efficiency Ratio (DER)
		3.2	12%	Innovation	ECI Innovation
Customer Service	20%	3.1	8%	Customer Service	Enquiries/Complaints Management
		3.2	6%	Customer Engagement	Stakeholder engagement
		3.3	6%	Customer Service	Network Disruption

Table 1 - Key Performance Indicators

8.2 Monthly Reporting

8.2.1 Overview

The WWMP Delivery Team will prepare a single Monthly Progress Report (in accordance with the Program ECI Agreement) which will also double as the PMT and ELG report. The Monthly Report will be prepared and submitted to Urban Utilities within ten business days of the following month with an emphasis on quantifiable data and visual graphics rather than lengthy worded descriptions. The Project Controls Coordinator will ensure data is collated from the WWMP Delivery Team each month and provided to Urban Utilities in a manner that allows the dashboards to be easily updated.

8.2.2 Report Template

Input will be required from multiple members of the WWMP Delivery Team, and will be collated by the Program Manager and Project Controls Coordinator. This includes both dashboard data and written content within the monthly report.

The format of the report is to be agreed by the PMT.

8.3 Progress Meetings

Reporting through regular meetings/workshops will take place at a number of levels within the Program Delivery structure and each level will convey the relevant information, based on the defined criteria for the respective report.

At commencement of the program the frequency and type of forums including expected attendees for each of the meeting levels are defined as per Table 2 below. Throughout the program of works the meetings will develop:

Forum	Nominal Frequency	Key Attendees						
		Executive Leadership Group (ELG)	Program Management Team (PMT)	Program Manager	ECI Manager	Design Manager	Project Manager(s)	Engineer(s)
General Progress Meetings/ Status Meeting • ECI Progress • Design • Project	Weekly			✓	✓	✓	✓	✓
Job Status Review (JSR) • General Progress • Cost Forecasting • Schedule • Risk	Monthly			✓	✓		✓	
Program Management Team (PMT) Meeting	Fortnightly		✓					
Executive Leadership Group (ELG) Meeting	Monthly	✓						

Table 2 - Progress Meeting Frequency

Meeting minutes, actions and outcomes will constitute a component of the written reporting requirements and will be issued to all relevant stakeholders.

8.3.1 General Progress/ Status Meetings

Agenda items should cover the following, as a minimum:

- » Safety Share
- » Status
- » Design and deliverable progress measurement (as applicable)
- » Progress measurement and productivity (as applicable)
- » Risks and key issues
- » Subcontractor/Supplier Contract notices (delay, variation or other)
- » Schedule, particularly deliverable dates related to key milestones
- » Budget and Cost Estimates (as applicable)
- » HSE performance in design and execution.
- » RFIs(as applicable)
- » Early Warning Notifications(as applicable)
- » Scope Change(as applicable)
- » Isolation/shutdown register review(as applicable)

8.3.2 Job Status Review

Agenda items should cover the following, as a minimum:

- » Safety Share
- » Status update (Design, Construction, Safety, Quality, Environment)

- » Risks/Scope Changes and key Issues (recorded on Project Risk Registers)
- » Schedule milestones
- » Detailed cost to date overview
- » Detailed forecast cost review

8.3.3 PMT Meeting

The Role of the PMT is to:

- » Endorse Program Delivery documents in line with Urban Utilities Investment Approval Procedures for presentation to ELG
- » Monitor and assesses progress and ensure Program outcomes are achieved
- » Maintain and manage an Issue Register, escalating to ELG as appropriate
- » Monitor Program Risk and notify ELG of impact on the Program
- » Evaluate any Change Proposals and approve any Scope Change requests for submission to ELG
- » Monitor KPI performance and approves performance payment for submission to ELG
- » Ensure projects are delivered in accordance with the benefits framework
- » Review the Program delivery risks and assist in developing risk mitigation strategies
- » Manage the relevant stakeholder interfaces within Urban Utilities to ensure the objectives of WWMP works (i.e. Planning, Engineering Partner, etc.)
- » Provide leadership across the Program
- » Resolve issues at an appropriate level

The Agenda for the PMT meetings will be developed by the PMT and amended as required in order to fulfill their role.

8.3.4 ELG Meeting

The Role of the ELG is:

- » To provide leadership and strategic direction for the Program
- » Endorsement of Program Delivery documents in line with Urban Utilities Investment Approval Procedures e.g. ECI Development Phase expenditure, RAMP, Procurement Plan (subcontractors)
- » To monitor and assess performance of the PMT
- » Agrees actions to resolve any issues escalated from the PMT
- » To monitor and manage the Program Risk Bank
- » To endorse Contractor Pain/Gain share adjustment and performance payment
- » To approve Program and scope changes
- » Drive collaboration, innovation and continuous improvement to ensure the provision of a best value service to Urban Utilities customers
- » Provide mentoring and support for the PMT
- » Establish and maintain appropriate high performance and collaborative culture
- » Establish key result areas and KPIs

The Agenda for the ELG meetings will be developed by the ELG and amended as required in order to fulfill their role.

9 ECI EXPENDITURE UPPER LIMIT

9.1 Overview

The preparation of the ECI Expenditure Limit is the first stage of the ECI Delivery Phase, highlighted in the diagram below:

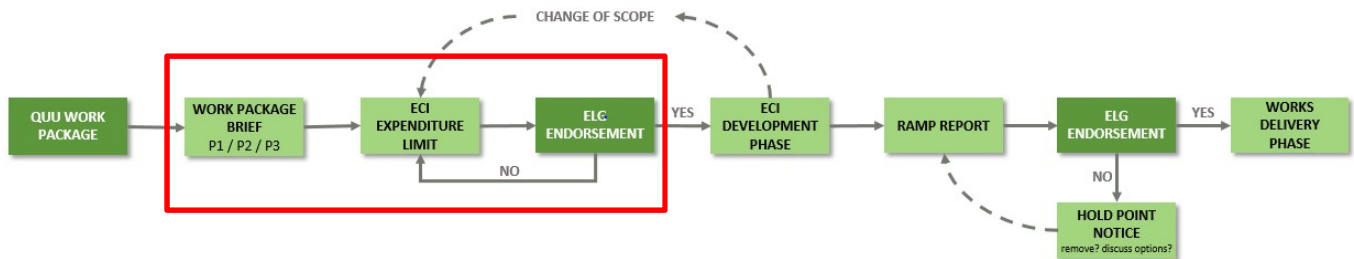


Figure 2 – ECI Expenditure Limit Development Stage of WWMP Program

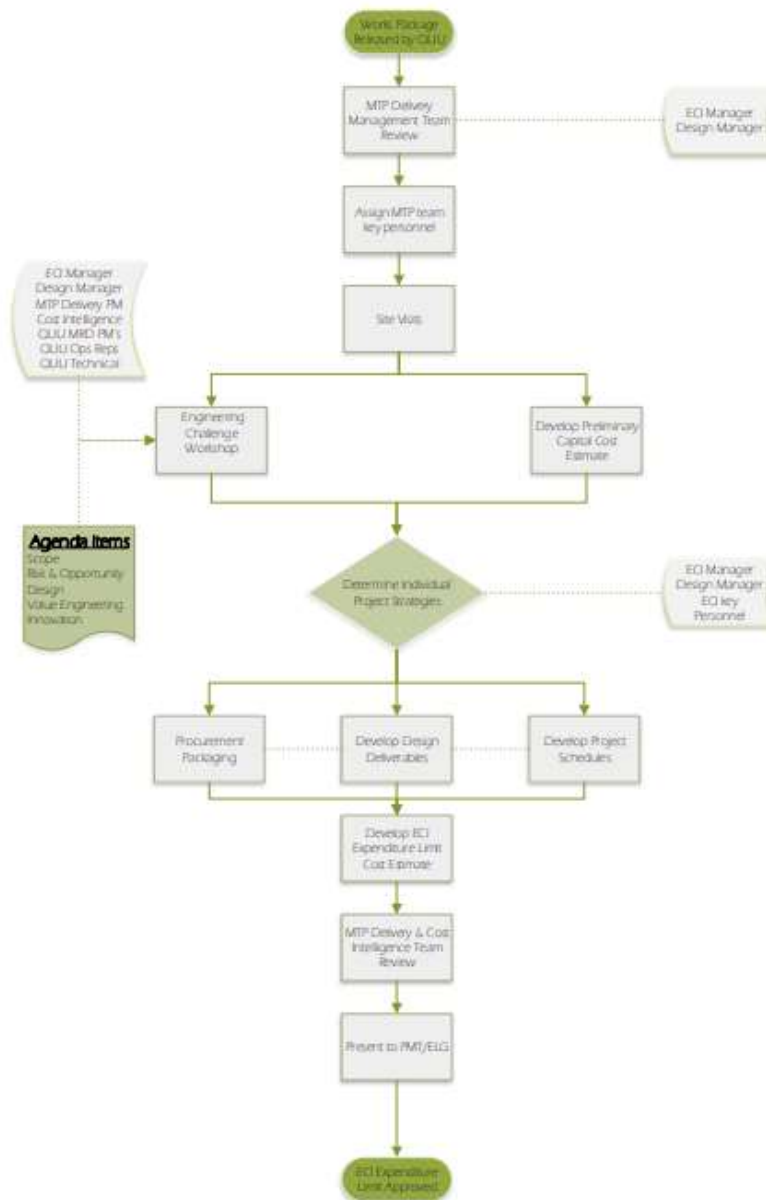
The purpose of the ECI Expenditure Limit is to provide an Upper Limiting Fee for performing the works in the ECI Development Phase. A collaborative approach will be taken by Fulton Hogan to review and understand the market ready documentation and develop an ECI Deliverables List which will be used as the basis for developing the ECI Expenditure Limit. The process flow

diagram is shown in

ECI Expenditure Limit Development Process

NTP-PM-WI-0000 | Rev 1

Typical Duration: 4-6 weeks



ECI Expenditure Limit Development Outputs



Figure 3.

A series of workshops and briefings will be conducted during this phase to ensure a comprehensive handover from Urban Utilities to the WWMP Delivery Team. These include:

- » Project Handover Briefing
- » Site Visits for scope clarification
- » Potential Design Challenge Workshops
- » UU/FH Combined review and RACI spreadsheet allocation of STEP

Following the completion of the workshops, the WWMP Delivery Team will develop documentation to be used as a basis for preparing the ECI Expenditure Limit. These include:

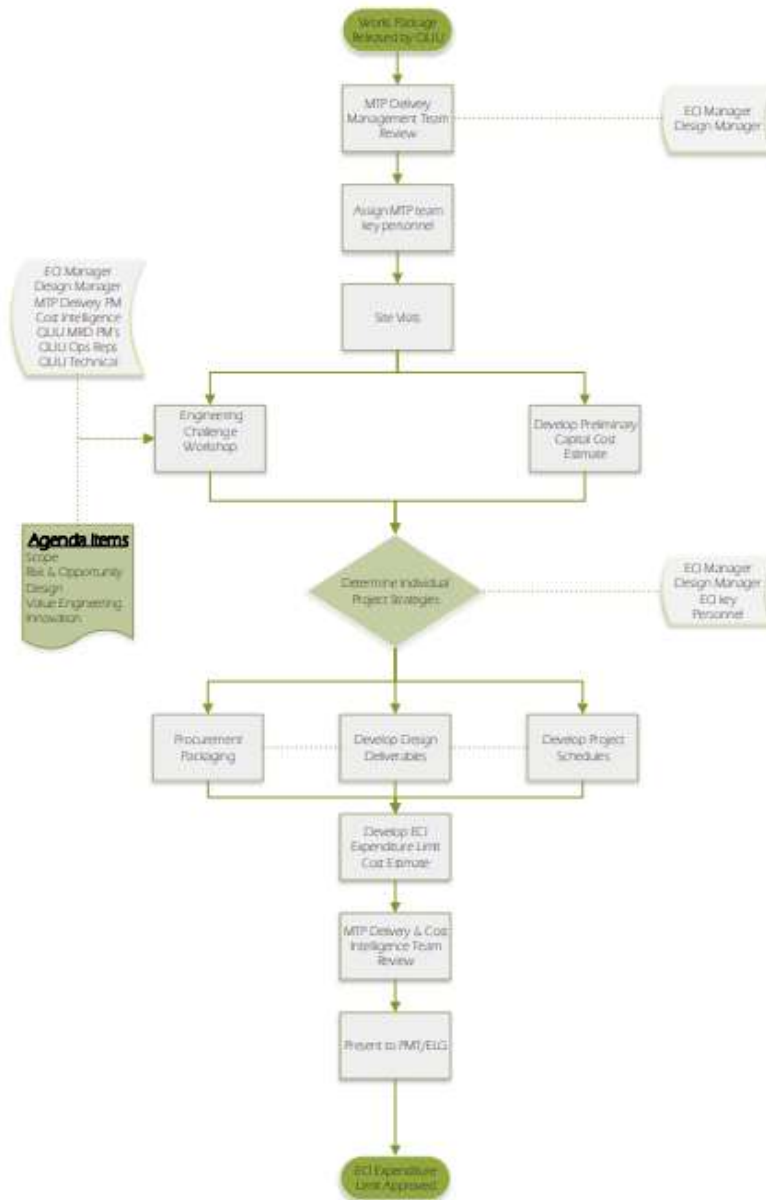
- » Procurement Schedule
- » Challenge Workshop Report
- » ECI Site Investigation Schedule
- » Preliminary Capital Cost Estimate
- » Engineering Design Deliverables & ECI Expenditure Limit Cost Schedule
- » ECI Schedule
- » Project Specific Co-ordination Plan – ECI phase only
- » ECI Expenditure Limit Presentation

Using the documentation above, the ECI Expenditure Limit will be prepared and submitted to the PMT for review and agreement. Following unanimous agreement by the PMT, a recommendation will be provided to the ELG for endorsement. Subject to endorsement from the PMT and ELG a notice will be issued by UU confirming the ECI Development Expenditure Limit Endorsement and confirming Principle Contractor status for FH in reference to the agreed location diagrams typically contained in the Project Specific Coordination Plan.

ECI Expenditure Limit Development Process

NTP-PM-WI-00001 Rev 1

Typical Duration: 4-6 weeks



ECI Expenditure Limit Development Outputs



Figure 3 - ECI Expenditure Limit Process Flow

Please refer to TeamBinder document [NTP-PM-WI-00001](#) for latest revision.

10 ECI DEVEMOPLENT PHASE

10.1 Overview

The ECI Delivery Phase is highlighted in the diagram below:

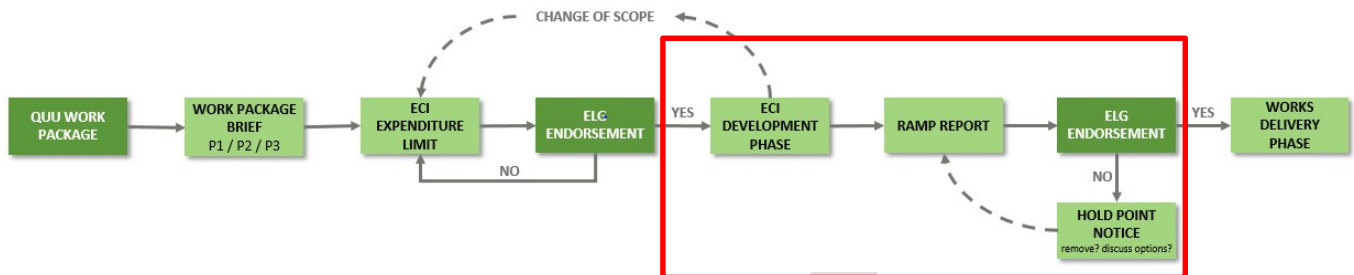


Figure 4 -ECI Development Stage of WWMP Program

The purpose of the ECI development phase is to review, challenge (where appropriate) and further develop the available design documentation to enable the development of a Risk Adjusted Maximum Price (RAMP). The ECI Development Phase is preceded by the development of an ECI Expenditure Limit submission which details the cost, time and other relevant information required during the ECI Development Phase.

Specific activities that form part of the ECI Development Phase include:

- » Detailed site investigations to better inform the design, mitigate risks and quantify residual risks.
- » Workshops with Design and Urban Utilities Engineering and relevant Operations staff to review each project and agree on design Requirements.
- » Development of the Market Ready Design to a level that can underpin the RAMP
- » During the development and scheduling stage of each of the WWMP work packages, an extensive review of timing should happen and be read in conjunction with other WWMP work packages so continuity works can be achieved staging the projects.
- » Agree on reasonable timeframes for design reviews, approvals, etc. and include the relevant Urban Utilities stakeholders in progressive design reviews
- » Develop an interfacing procedure that governs the best way to establish and prioritise order of works and what needs to be agreed on a site basis.
- » Coordination with the Urban Utilities operations team to establish an intimate knowledge of the processes and agree with Urban Utilities on the methodology of the shutdowns, development of Interface Registers and Shutdown Registers.
- » Preparation of a preliminary commissioning and handover strategy.
- » The Works Delivery Manager shall designate an appropriately skilled Project Manager to deliver the project through to the Works Delivery Phase of the project.

The Process flow diagram for the ECI Development Phase is shown in

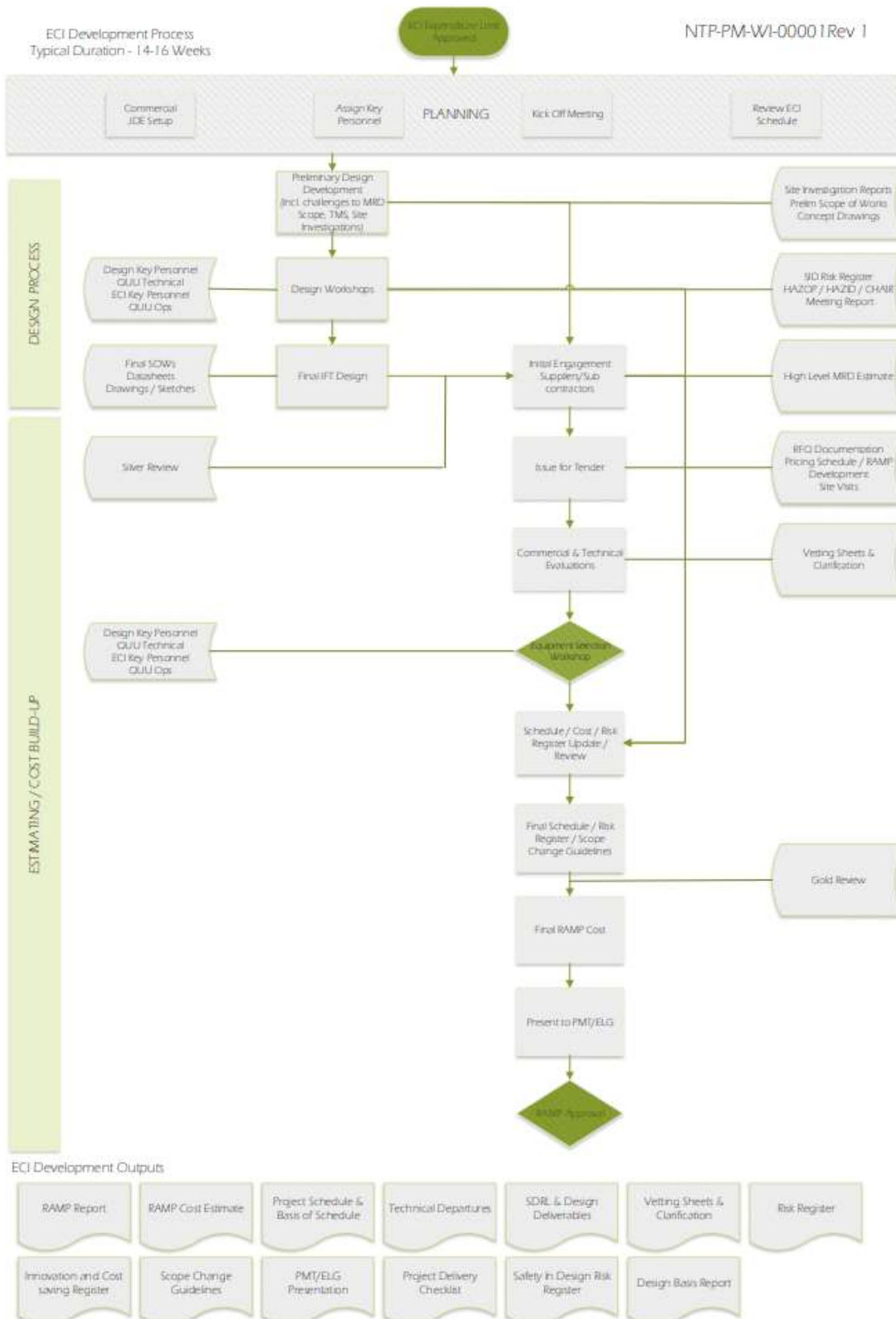


Figure 5.

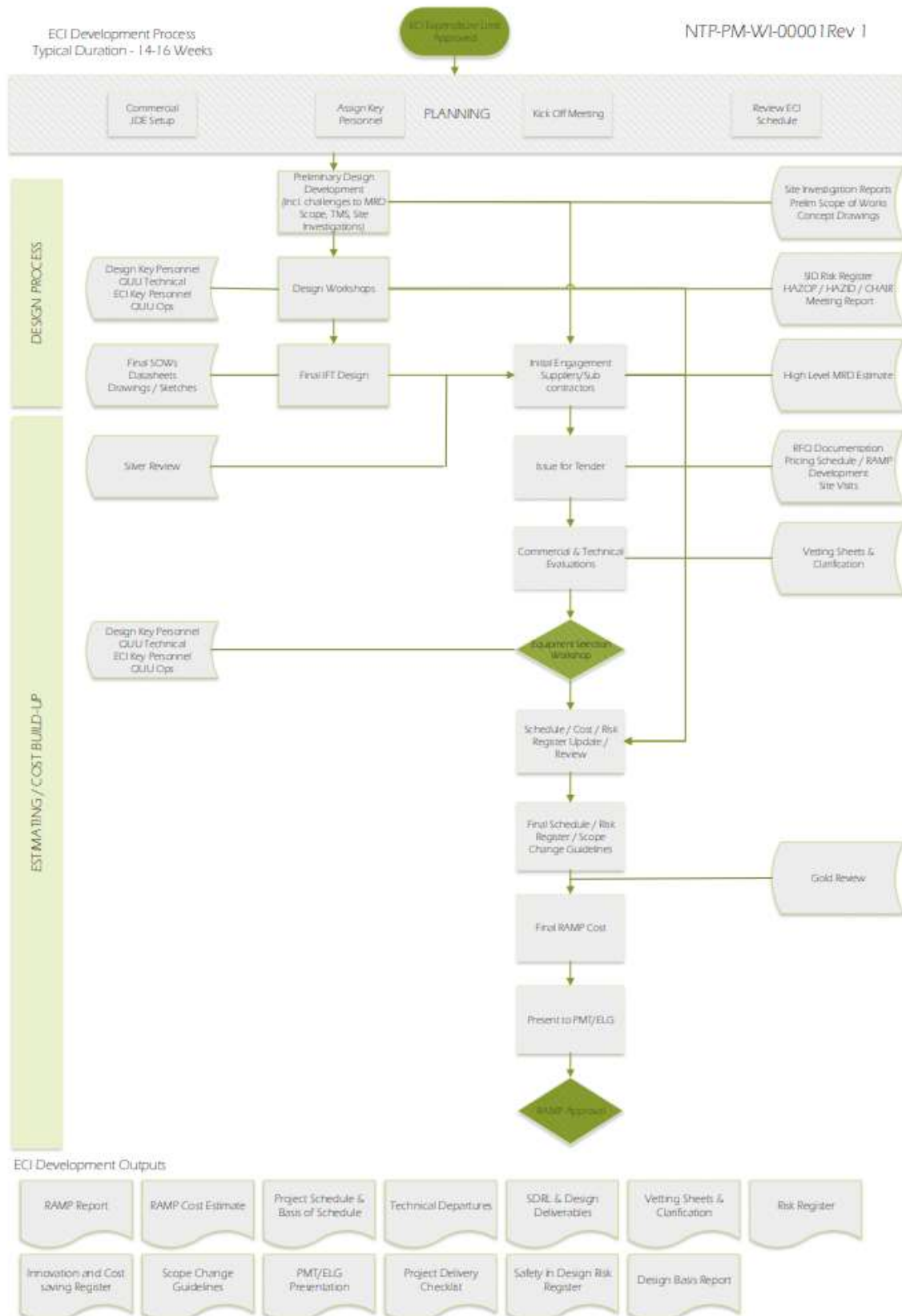


Figure 5 - ECI Development Phase Process Flow

Please refer to TeamBinder document [NTP-PM-WI-00001](#) for latest revision.

10.2 ECI Investigations

Upon review of the work package concept designs FH and the design team, areas will be identified that require more in-depth analysis. These will be recorded on the ECI Plan which provides details of the ECI procurement strategy as well as areas that can be value engineered to provide cost/time savings in the Works Delivery Phase. The ECI plan will also detail components of the design that the team believe is already optimised (little or no room for value engineering), and only requires a verification.

- » Depending on the nature of the investigation we will engage the Operations team to gain a better understanding of the issues or requirement.
- » Where required we will bring in specialised subcontractors i.e.: Geotech, Thermal imaging, Non-destructive excavations, testing, sampling etc.

10.3 ECI workshops

For each work package we envisage carrying out at a minimum of 2 workshops. The first workshop will be a kick off workshop; this will commence once FH and SMEC have a consistent understanding of the scope and its key deliverables. It is at this meeting that the delivery team will try to understand and ascertain those items of scope that are fixed and not subject to challenge, and those areas which the team should consider if there are more viable solutions in terms of CAPEX, OPEX, reliability, robustness, etc.

The second workshop will encompass a design agreement criteria where all parties agree and understand what the design deliverables are for this stage of works and the number of formal intervention or review periods.

An output of the initial 2 workshops will be the development of a Detailed Deliverables List including identification and agreement of key design areas to be challenged and opportunities for innovation.

A plan will then be developed which details requirement of other applicable workshops/meetings such as:

- » Safety in Design (SID)
- » Stakeholder and Community Plan for investigation works
- » HAZOP
- » CHAIR
- » Constructability Reviews
- » Operability Reviews
- » Operations Input for Major Equipment Selection
- » Bronze, Silver and Gold reviews are to be conducted throughout the ECI process to ensure all parties are clear on the current High Level estimate, risks and potential opportunities. This allows for guidance throughout the ECI phase.

In addition to the above the commissioning lead will be involved at this stage to ensure the project is "commenced with the end in mind". The intent of the early involvement of the commissioning lead is to ensure no key information/sequencing is missed which will play an important role in commissioning the project upon completion.

Based on the outcomes of the above workshops and as the design is progressively developed, Project and Program level risk registers will be prepared and reviewed during the Risk Workshops.

10.4 ECI Design development

The Development of the Design solutions that achieve the Benefits and Objectives of each project will be in accordance with the **Design Management Plan (Document number TBA)**.

Development of the ECI design and cost estimate shall be performed in an open-book, collaborative manner with Urban Utilities. Through the workshops and collaborative interactions, the project objectives will be met. We will integrate innovations into our design by working in a one-team environment and undertaking formal and informal Design and Constructability reviews and Value Engineering reviews to ensure the Benefits and Objectives of each project are being met whilst cost and time during the Works Delivery phase are minimised.

Furthermore, constructability input in the Value Engineering reviews will be provided to ensure detailed construction methodologies are developed to deliver value.

10.5 ECI Timeframes and Approvals

With the collaborative approach through the ECI process i.e.: workshops, office interactions, general reviews, Bronze/Silver/Gold reviews we expect the agreements and contractual approvals to occur during this ECI period. This, together with the escalation of any critical issues will follow the process of:

1. Submission of deliverables/issue by the Delivery Team to the PMT for review and approval
2. Submission of a recommendation from the PMT to the ELG for endorsement
3. Approval of endorsement by Urban Utilities (if applicable)

If during the course of our evaluation, we discover a critical issue which may have an impact on the scheduled works i.e.: long lead equipment, the delivery team will follow the escalation procedure above and seek approval from the PMT on how to proceed.

10.6 ECI Scheduling

Throughout the ECI phase, Primavera P6 will be utilised for all scheduling activities in accordance with Section 15 of this Management Plan, and the Program Brief Appendix A – Program Support Services Requirements.

The ECI Schedule will be produced as Level 3, and be rolled up to inform the overall Level 2 WMMP program schedule as defined in the Program Support Services Requirements document.

The ECI Schedule will be updated weekly by the FH Scheduler, and presented as part of the weekly Project/Program progress meetings. Updates on progress will be measured on the Key Deliverables List by the Delivery Team to provide a Physical Percentage Complete measurement to the FH Scheduler as well as a forecast completion date at a deliverable level. The updated Schedule will be accompanied by supporting reports/P6 Views that will verify or clarify discrepancies or significant variances on the overall Project/Program schedule, as well as Earned Value graphs to show progress against the agreed baseline, agreed at ECI Expenditure Limit Approval.

10.7 RAMP Report Development

The RAMP Report will be progressively developed and collectively reviewed throughout the ECI Development Phase to arrive at the Final RAMP Report in the following format:

Section	Sub-Headings	Outline
Work Package	1 Executive Summary	- Summary of WP project key outputs - Summary of project RAMP's (Can reference in Presentation)
	2 ECI Development Summary	- RAMP development - ECI Expenditure (identify savings, if any) - Design Development - Procurement Strategy - Key Challenges - Overview of Key Achievements
	3 Works Delivery (WP Program Level)	- Works Delivery Org Chart. - Design (Summary of key design stakeholders) - Operational Interfaces - Shutdowns
	Schedule Summary	Work Package level schedule
	Key Risks	Work Package key risks and opportunities
	Scope Change Guidelines	Population and update of the Scope Change Guidelines
Project Delivery (Repeated for each project)	4 Project Scope and Benefits Realisation	- Background - Project Scope - Benefits Realisation - Value Added through ECI phase
	Project Delivery Methodology	Delivery methodology including - Design Advancement (Summary of key items of design report) - Construction Methodology to ensure benefits are achieved. - Milestones schedule - Cut over plan and methodology - Commissioning Sequence
	Project Design	Prepare a design basis report schedule with reference to TeamBinder

	Documentation	• Updated Safety in Design Reports compliant with TMS1436.
Appendix (as applicable)		
Appendix A:	RAMP Cost Estimate	
Appendix B:	Works Delivery Project Schedules	
Appendix C:	Basis of Schedule	
Appendix D:	Technical Departures (Can reference to TeamBinder)	
Appendix E:	Procurement Schedule	
Appendix F:	Risk Register and Monte Carlo Output	
Appendix G:	Innovations and Cost Savings Register	
Appendix H:	Scope Change Guidelines	
Appendix I:	SDRL's (Can reference to TeamBinder)	
Appendix J:	Design Basis Report (Can reference to TeamBinder)	

Table 3 - RAMP Report Format

11 WORKS DELIVERY PHASE

11.1 Overview

The Works delivery phase will commence upon the receipt of an Endorsement of the RAMP Report from the ELG.

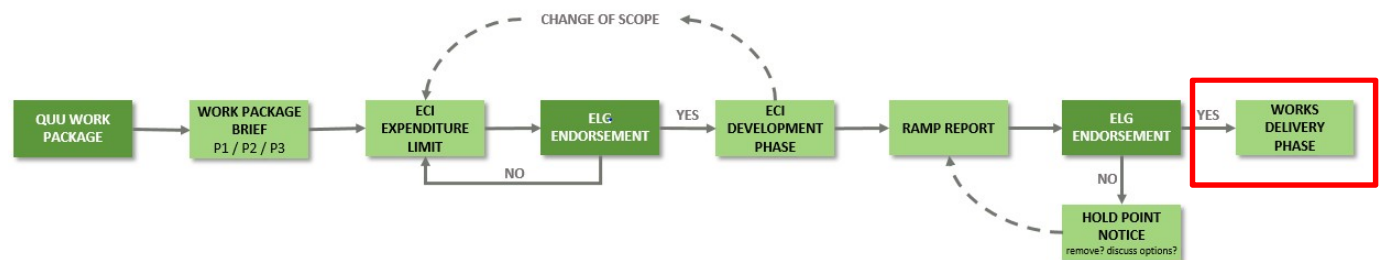


Figure 6 - Works Delivery Stage of WWMP Works

An initial kick-off meeting will be facilitated by the ECI Manager to ensure the details from the ECI and RAMP Report are clearly understood by the Works Delivery Team. Specific agenda items will include the following as a minimum:

- » Safety Management and Specific Safety Risks
- » Operational/Maintenance Interfaces
- » Key Stakeholder and Community Interfaces
- » STEP/Approvals RACI
- » Innovations carried through into the RAMP
- » Schedule Management
- » Cost Build Up
- » Key Risks and Opportunities
- » Administrative requirements (Meetings, Reporting, Roles and Responsibilities, etc.)

Within one week of the initial kick off meeting facilitated by the ECI Manager, the designated Project Manager shall facilitate a secondary kick off meeting with all key stakeholders for the successful delivery of the project.

The Process flow diagram for the Works Delivery Phase is shown in Figure 7.

WORKS DELIVERY PROCESS

NTP-PM-WI-00001 Rev 1

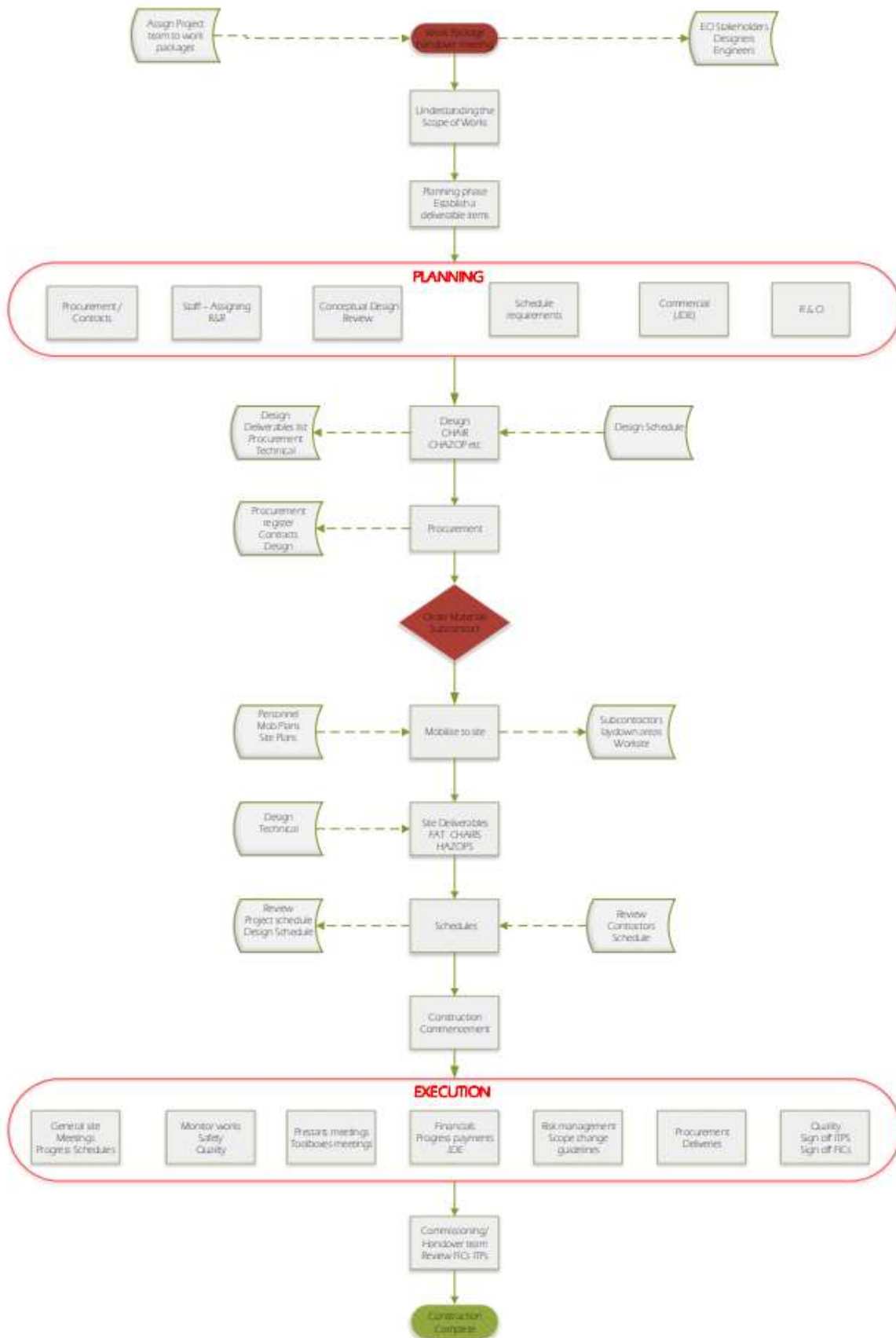


Figure 7 – Works Delivery Process

Please refer to TeamBinder document [NTP-PM-WI-00001](#) for latest revision.

11.2 Design Development and Verification

The Detailed Design development will be undertaken in accordance with the Design Management Plan (Document Number TBA).

Design will be developed utilising input from Subcontractors and Suppliers through the various review stages through to the final 'Issued For Construction' stage, and uploaded to TeamBinder, at which point they will be authorised for use by the Construction team.

Throughout the Detailed Design Development, Urban Utilities Operations and Maintenance will be engaged in various workshops including Coordination Meetings, HAZOP workshops, CHAIR workshops and generally throughout the design process.

Design Verification against the Basis of Design as well as the defined Benefits and Objectives will be undertaken by the WWMP Delivery Team in consultation with the Urban Utilities Technical Manager.

To ensure visibility of design progress, and solutions being developed, there will be a minimum of 3 distinct phases at which drawings, documents, calculations and other documents will be uploaded to TeamBinder:

1. Issued for Review (IFR) i.e. prior to HAZOP, SID, Value Engineering or when deliverable has been developed sufficiently to warrant the review process. This deliverable will typically be 65% to 80% developed at this stage. Note that for some deliverables there may be a number of revisions Issued for Review before proceeding to Issued for Construction
2. Issued for Construction (IFC) – This issue mainly applies to drawings and specifications. Deliverables will typically be 90% to 100% complete and may be awaiting vendor input or may require site design / modifications.
3. As-Constructed – Final update of drawing modified to reflect actual construction activities on site

Where deemed necessary, meetings will be arranged to talk through the design to explain the thought process, assumptions and the basis for the design development.

11.3 Project Specific Coordination Plan

After the kick-off meeting and during the Detailed Design development, a Project Specific Coordination Plan specific to the Works Delivery phase will be developed to address the specific aspects of project delivery. These include:

- » Scope of Work
- » Project Specific Risks
- » Construction Methodology
- » Emergency Contact Details
- » Stakeholder and Community Interface
- » Traffic Management
- » Permits

The construction methodology and CEMP will be in line with the pricing in the Project RAMP to ensure the budgets align with the actual costs.

11.4 Construction

Construction will be performed by direct labour and subcontractors, and be supervised by a Fulton Hogan Supervisor. The Fulton Hogan Supervisor will be responsible for coordinating works and be responsible for managing the day to day Safety and Quality on the site.

All works are to be performed in accordance with approved documents, and IFC drawings.

Verification of construction works will be undertaken during site visits by the Project Engineer and Project Manager, with progress reported to the Scheduler who will maintain a progressive assessment of construction progress. Urban Utilities representatives will also verify construction progress against the latest construction schedule.

Where required and identified in the ITP, the design Engineer will inspect the construction activity to ensure compliance with the design and ensure RPEQ verification.

11.5 Construction Completion

Upon completion of all construction activities for each individual project the Works delivery Manager shall verify that all key deliverables and project objectives to achieve construction completion have been achieved and furthermore agreed with the clients on-site Project Manager.

The WWMP Works Delivery Manager shall provide a certificate of construction completion to the PMT supported by a key deliverables checklist at the earliest opportunity once construction is completed.

12 COMMISSIONING AND HANDOVER

12.1 Overview

Commissioning is the process of checking, inspecting and testing every operational component of the project and progressively checking and testing their collective operation as an integrated system to ensure conformance with technical and operational requirements.

At the completion of commissioning, the project is ready to enter the final operator training and handover stages with the equipment and systems ready to operate under intended working conditions.

A **Commissioning Plan** will be developed for each project to detail the commissioning and handover process.

The Process flow diagram for the Commissioning and Handover Phase is shown in Figure 8.

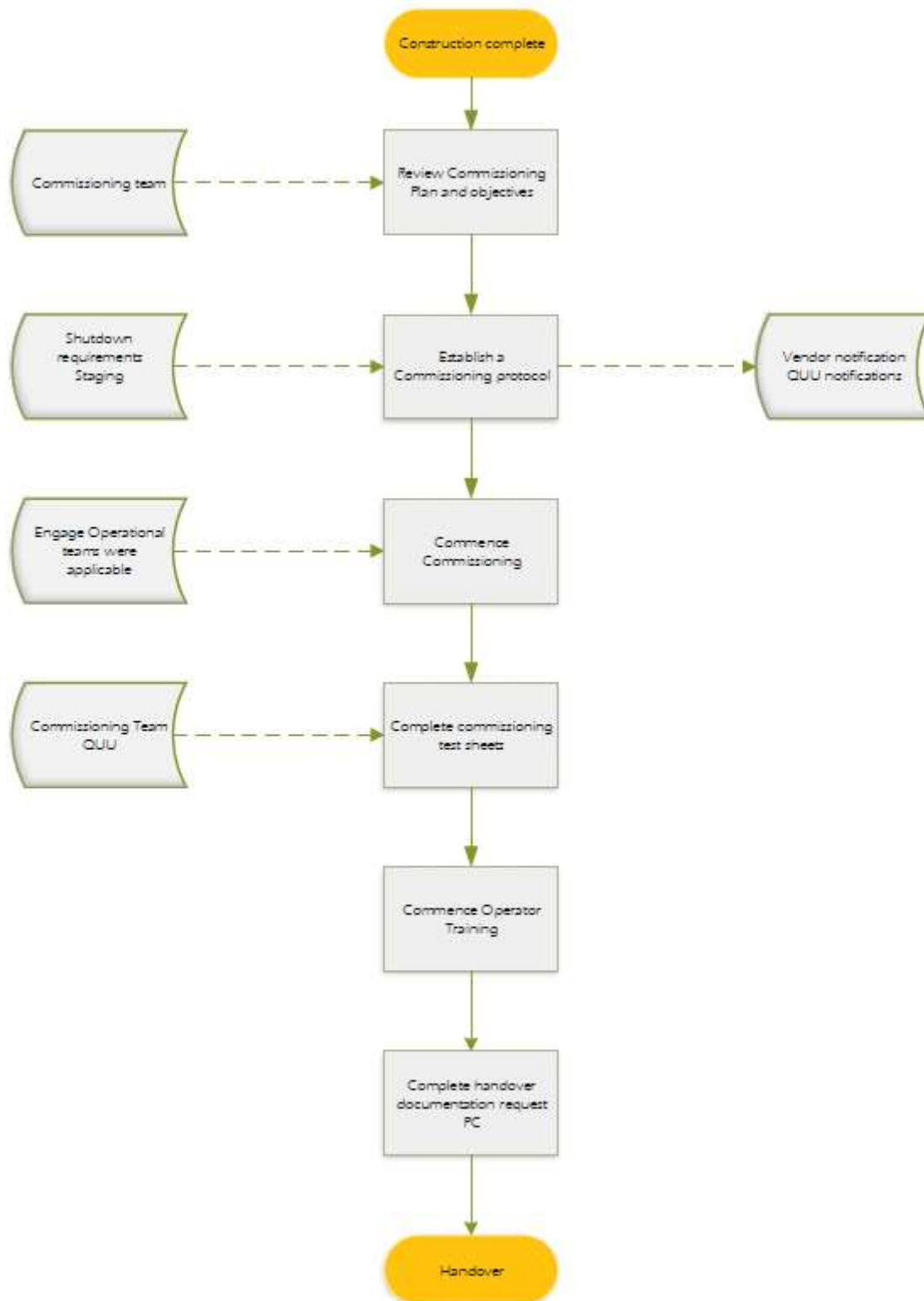


Figure 8 – Commissioning and Handover Phase

Please refer to TeamBinder document [NTP-PM-WI-00001](#) for latest revision.

12.2 Construction Verification

As construction activities are progressively completed, the commissioning team will verify that individual equipment and assemblies have been installed correctly. The process involves the checking of individual components and cabling prior to energizing electrical systems or introducing testing water.

Verification of the construction works will be documented on Commissioning Inspection & Test Plans and Checklists, and will be filed in the Operating and Maintenance Manuals. Inspection and Test Plans will contain all relevant Hold and Witness points.

Punchlist items identified during this phase that affect the operability, the safe working or the general construction will be recorded on a Defects List. The Punchlist will contain records of all issues found during inspection and testing of the installed equipment.

A Category will be identified to Punchlist Items which will determine if the System Verification can proceed. The Categories are as follows:

- » A = Priority High item - do not proceed with commissioning until defect corrected.
- » B = Priority medium - to be completed prior to asset in service.
- » C = Priority Low – to be completed prior to practical completion.

All Construction Verification documentation will be stored and tracked on the Lot Management Module (QAntrol) to ensure an audit trail is available.

12.3 System Verification

Following completion of construction verification, the System will be verified. System verification involves checking and making related adjustments necessary to establish that the collective equipment is operating as an integrated system, as intended and is ready for commissioning. This will cover mechanical, electrical, instrumentation and control systems.

Because the integrated equipment will be operated for the first time during the system verification process, particular care must be taken to ensure that all necessary safety precautions are taken and hazards related to moving and rotating mechanical equipment and live electrical installations are taken into account.

All System Verification documentation will be stored and tracked on the Lot Management Module (QAntrol) to ensure an audit trail is available.

12.4 Operational Testing & Proving

Live process testing will prove systems operation and performance to the extent possible in the operational environment prevailing at the time. The Commissioning Manager will ensure all ITP's and ITC's are signed and closed out, and any outstanding defects deemed to impact the commissioning process are closed out.

For commissioning activities that include livening up of electrical equipment, additional controls will be documented in the Project Specific Commissioning Plan to ensure a safe start-up.

For process commissioning requiring the introduction of sewage, if possible this will be done initially with the introduction of clean water to prove the overall equipment integration in a relatively clean environment, and allow corrective actions to be undertaken safely, promptly and cost effectively.

Following the completion of clean water testing (if applicable), sewage will be introduced to undertake Operational Testing in a real-life operational environment.

12.5 Training

Upon completion of all commissioning activities, and prior to handover of the plant and equipment to Operators, all persons required to interact with the newly installed equipment will receive training. A training schedule, included in the Project Specific Commissioning Plan will identify proposed dates and required attendees in advance of the planned session(s) to allow sufficient time for Operators to make themselves available.

A Project Specific Training pack will also be provided containing materials to support the presented content.

12.6 Operating & Maintenance Manuals

Prior to the handover of any project, an Operating and Maintenance manual, developed in accordance with Urban Utilities Technical Specification '[TMS73](#) – Operations and Maintenance Manuals – Technical Specification'. As part of the project specific Commissioning Plans, a draft O&M Manual will be provided for review /comment. This document will then be progressively updated to allow a collated set of documents to be formally submitted to Urban Utilities at handover stage, formally closing out the project.

12.7 Commissioning Completion

Upon completion of all commissioning activities for each individual project the Works delivery Manager shall verify that all key deliverables and project objectives to achieve commissioning completion have been achieved and furthermore agreed with the clients on-site Project Manager.

The WWMP Works Delivery Manager shall provide a certificate of commissioning completion to the PMT supported by a key deliverables checklist at the earliest opportunity once construction is completed.

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13 ESTIMATING

The Estimate development will be a value engineered process where solutions and innovations (technical, commercial and procurement) will be identified and incorporated progressively into the estimate and the final RAMP to ensure benefit is derived across the individual projects resulting in overarching benefits to the Program. Regardless of whether these projects are within the same Work Package or not, where economies of scale can provide opportunities across multiple projects (temporary works, equipment, supply chain, etc.) these will be assessed holistically to ensure overall framework value is of prime consideration.

The Budgets provided to the WWMP Delivery Team as part of the Market Ready Design will be used as a baseline estimate.

A high level first pass estimate will be carried out prior to the development of the ECI Expenditure Limit. The purpose of this is to provide a 'gut feel' estimate based on historical experience from the WWMP Delivery Team, as well as to identify potential areas of scope challenge to inform the ECI Expenditure Limit.

Throughout the ECI Delivery Phase, as the Value Engineering component is completed, design deliverables issued, and Vendor Pricing input received, this estimate will be progressively refined until the final RAMP estimate is agreed.

Feedback and review will be a key feature of the approach to estimating and RAMP development. It is critical to identify areas where value adding design, construction, management or procurement solutions have been realised, quantify the saving, and ensure the savings are passed back to Urban Utilities through incorporation into the development of RAMPs on future projects.

13.1 Estimating Process

To promote a collaborative approach and streamline the durations required to complete the estimating tasks, a detailed estimate will be developed using progressive design submissions, as it develops to a point deemed acceptable by the Estimating Team.

The estimate will be prepared from first principles if self-supporting using labour, plant, materials and subcontract direct costs. Where applicable, the estimate will include options for identified alternatives.

The cost estimate will be prepared using the Expert Estimation software program, using the Layout, Price Code structure and Resources list compiled by the Lead Estimator. This information will then be exported into the RAMP spreadsheet, in a manner that requires minimal data re-configuration to ensure values remain

In developing the ECI Expenditure Limit and RAMP, the Estimator shall undertake the following:

- » ECI Manager and Lead Estimator to develop a procurement list during the ECI Expenditure Limit Development phase
- » Undertake a first pass, high level estimate prior to the development of the ECI Expenditure Limit to highlight areas of risk/opportunity
- » Develop a procurement schedule to identify subcontractors and suppliers to prepare estimates for each work package.
- » Liaise with the Contracts Administrator to develop and transmit all Request for Quotation (RFQ) documents including technical documents, engagement pro-formas and returnable schedules via Team Binder to avoid disputes at a later stage
- » Obtain multiple subcontractors and suppliers prices
- » Prepare subcontractor and supplier price comparisons and review them for conformance as quotes are submitted
- » Maintain a running list of assumptions and clarifications during the estimate development phase for all team members to access in order to capture risks and opportunities in the Risk Register
- » Price all work and follow up as necessary to obtain conforming support prices from subcontractors and suppliers
- » In conjunction with the Program and Project Manager(s), develop the preliminaries and site running costs
- » Provide input and review the Risk Register with Program & Project Manager(s). Once agreed, the ECI team will undertake a Monte Carlo simulation. The result of the Monte Carlo simulation will be included in the RAMP.
- » On finalisation of the estimate complete the RAMP template, and input into the RAMP report.

13.2 Identification and Selection of Subcontractors and Suppliers

Subcontractors and suppliers are required to be selected based on their ability to deliver services/products/works on time, according to the specification, acceptance of commercial terms and conditions, and at a competitive price. Depending on the size and importance of the item being procured, the selection process is required to involve:

- » Identification of potential suppliers

- » Development of selection criteria for suppliers
- » Preparation of the documentation required
- » Specification of dates and lead times for schedules, technical evaluations including compliance to specification, program, safety, environmental and quality requirements, as well as whole of life cost minimisation
- » Commercial evaluations

Prior to the finalisation of Subcontractors and Suppliers, an Equipment Selection Workshop shall be held. Equipment from the procurement schedule deemed 'Major' by the stakeholders will undergo a further collaborative review with FH/SMEC/Urban Utilities to ensure all stakeholders have had sufficient input into the final selection.

13.3 Request for Quotations

The RFQ will set out the technical and commercial requirements specific to the work package, including but not limited to:

- » General and special terms and conditions of agreement;
- » Scope of Work, drawings, specifications and standards and other documents necessary to define the Work
- » Programme, key dates and delivery dates and essential terms and conditions, any special terms and conditions applicable to the work package, including criticality of Works, spares, warranties and guarantees
- » Requirements for insurances, Health and Safety, Workforce Participation, Quality assurance, Environmental and Sustainability performance
- » Returnable Schedules including a pricing schedule compatible with the RAMP to allow proposals to be assessed against the overall Project RAMP and ensure all relevant costs are captured.

Each Proponent's response to the RFQ will be assessed by the Estimator/Contracts Administrator against the following criteria, as applicable:

- » Extent of conformance to the submission requirements set out in the RFQ, including detailed evaluation of the Proponents compliance with commercial requirements and essential terms and conditions.
- » Price (compared relative to budget and/or similar completed works)
- » Ability to meet Program Milestones and/or key dates including demonstrating a logical sequence to undertaking the work
- » Proponent's location
- » Proponent's Financial and Legal Capacity to undertake the works including evidence of Insurance Policies applicable to the scope
- » General technical capability / competency and experience in the technical field
- » Quality, Safety, Environmental Management, sustainability and Industrial Relations and history of implementation
- » Proposed methodology and availability of resources to deliver the work or supply package

13.4 Short listing

Prospective Subcontractors/Suppliers are to be initially selected from the Subcontractors/Suppliers that have committed to FH in the tender process and or other companies who may be recommended by Urban Utilities or other relevant WWMP Program Managers from their previous experience and knowledge.

Particular to any subcontract the requirement for a Pre-Award Assessment and Interview and/or Subcontractor Capability Assessment is agreed between the Estimator / Project Manager(s) and is part of the requirements of the Subcontractor Vetting Form.

13.5 Interviewing Shortlisted Subcontractors

Throughout the ECI Development Phase, interviews with high risk shortlisted subcontractors or suppliers will be held to verify that the subcontract scope of work and Fulton Hogan subcontract conditions are clearly understood by the subcontractors.

Issues identified for discussion at the pre-award meeting are listed in Pre-Award Interview Assessment Form. This form is required to be forwarded to the subcontractor and suppliers for information and verification prior to interview.

Fulton Hogan's procurement assessment procedures and pre-award meeting requirements do not apply to local market organisations that may be used by the site staff from time to time to procure the following:

- Off the shelf proprietary products and consumables.
- Local plant hire and other construction support services including the services of local tradesmen.

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14 PROCUREMENT OF SUBCONTRACTORS AND SUPPLIERS

14.1 General

The Fulton Hogan Subcontracting, Purchasing and Hiring Procedure ([FHLIB-1677224255-7716](#)) describes the manner in which Fulton Hogan procures subcontractors and suppliers to supply goods and services for the Project.

Initial assessment and surveillance of a subcontractor/supplier's Management System in any of their performance in past projects prior to engagement as well as an on-going assessment of performance during the currency of the contract between the Company and the subcontractor/supplier will determine their suitability for this Project.

The Request for Quotation Process, detailed in Section 12 will be completed and a Preferred Subcontractor or Supplier selected in conjunction with UU with their proposals included within the RAMP.

Major Subcontractors and Suppliers selected during the ECI Development Phase, and whose pricing is included in the RAMP will be deemed accepted by the PMT in accordance with clause 15.2(b) of the Head Contract. Approval from the PMT will be sought for any change to the selected Subcontractors or Suppliers.

14.2 Procurement Management

Procurement of Goods and Services for the WWMP Capital Works will be using one of the following Forms of Agreement:

- Major Works Subcontract
- Minor Works Subcontract
- Plant Hire Agreement
- Supply Agreement
- Design Services Agreement
- Purchase Order

The pro-forma developed for each Form of Agreement shall include all minimum requirements as set out by the Program ECI Agreement and no departure from these requirements shall be permitted without the express authorisation of the PMT.

The General Conditions shall be supplemented by Annexures which detail the specific requirements of the scope or work package. The requirements for completing the Annexure can only be completed correctly by referring to the related clauses within the General Conditions.

The Commercial team shall determine which Agreement will be used for the procurement of goods, hiring of resources or subcontracting of the works, and shall review the Agreement to ascertain if any modifications are necessary to align with the current obligations of the Head Contract. Where modifications are required, these will be detailed in the relevant annexures or included as additional Special Conditions.

The choice of agreement shall be determined by the relevance to the type of services provided and in alignment with guidelines provided within this management plan and Fulton Hogan procedure.

If the Project/Department Manager determines that any Agreement is unsuitable, the matter shall be referred to the Commercial Manager for the drafting of additional Special Conditions. Where a project/site specific alternative agreement is required, the review and approval of the Commercial Manager shall be obtained.

The general format of the Subcontract Agreements will be;

- Cover page
- Index (where applicable)
- Instrument of Agreement (signing page)
- General Conditions and;
- Annexure or Schedules

The annexures or parts shall detail the business and/or project/site-specific requirements. Where an Annexure/part does not apply to the specific subcontract then this may be excluded from the Subcontract Agreement.

14.2.1 Major Works Subcontract

A Major Works Subcontract shall be used for any services (which may include the supply of goods) on Site, or those services which are deemed to carry significant risk to the Project, and are typically greater than \$50k in value. The terms and conditions of this form of Agreement as a base pro-forma include:

Terms of Payment	35 days after the end of the month during when compliant claim submitted
Insurance Requirements (as applicable)	Public and Product liability insurance – minimum \$20m Plant & Equipment insurance - Plant & equipment insured for market value. Minimum Public Liability \$10m Motor Vehicle insurance – Vehicles insured for market value. Minimum Public Liability \$10m Workers Compensation – In accordance with current law (WorkCover Queensland) Professional Indemnity - \$20m for any one claim and in the annual aggregate
Passing of Property & Risk	Subcontract allows that; (1) Title to the Subcontract Works and all materials or equipment forming part of the Subcontract Works will pass to and vest in Fulton Hogan free and clear of all liens or charges on the earlier of; (a) the date upon which they are incorporated into the Subcontractor works or affixed to the site; and (b) the date upon which Fulton Hogan pays the Subcontractor for the relevant part of the Subcontract Works, materials or equipment (2) the Subcontractor warrants that; (a) no materials or equipment which are the subject of payment claim will have been acquired by the Subcontractor (or by any subcontractor) under an agreement under which an interest in the materials or equipment or any other lien or charge would survive transfer of title to Fulton Hogan; and (b) to the extent that ownership has not already passed to Fulton Hogan, the title to the Subcontract Works will vest in Fulton Hogan at Substantial Completion of the Project, free of encumbrances or any claim by any person Notwithstanding the passing of ownership in the Subcontract works or materials forming or intended to form part of the Subcontract Works, the risk in and responsibility for care of the Subcontract Works or materials remains with the Subcontractor until Substantial Completion of the Project.
Ownership of Intellectual Property Rights	Ownership of all present and future copyright and other intellectual property rights of the Subcontractor's in all drawings, reports, specifications, calculations, documents and other materials provided or prepared by the Subcontractor or its Personnel in connection with the Subcontract Works, including the Design Documentation (if any) vests with Fulton Hogan. Without limiting the above; 1. Ownership of and copyright in all documents provided to the Contractor by the Subcontractor for the purposes of this Subcontract vest in Fulton Hogan immediately upon delivery to Fulton Hogan

	Ownership of and copyright in all documents provided to the Subcontractor by Fulton Hogan for the purpose of this Subcontract remain vested with Fulton Hogan.
Defects Liability & Warranties	DLP: minimum of 24 months from Substantial Completion
Securities and Retention	2 x Bank Guarantees, Insurance Bonds or Cash retention each to the value of 2.5% of the Subcontract Price. 50% Released at Substantial Completion of Subcontract Works, and remainder released at Completion of Defects Liability Period.
Probity & Ethical Principles for Procurement	In accordance with FH Subcontracting, Purchasing & Hiring Procedure

14.2.2 Minor Works Subcontract

A Minor Works Subcontract shall be used for any incidental works which carry minimal risk to the Project and are typically less than \$50k in value. The terms and conditions of this form of Agreement include:

Terms of Payment	30 days after end of month in which a valid payment claim is submitted
Insurance Requirements (as applicable)	Public Liability Insurance - \$20 million Professional Indemnity Insurance - \$20 million Workers Compensation – In accordance with current law (WorkCover Queensland)
Passing of Property & Risk	The Subcontract allows that the Subcontractor: (a) warrants to Fulton Hogan that when payment is made to the Subcontractor or title otherwise passes to Fulton Hogan in respect of any goods supplied under this Contract that are to be incorporated in the Project or in any temporary works or facilities for the Project, those goods will be free and clear of any encumbrance and free of any Security Interests held or claimed by any third parties; and (b) must, if requested by Fulton Hogan, provide Fulton Hogan with a statutory declaration or evidence to Fulton Hogan 's satisfaction that such goods are free and clear of any encumbrance
Ownership of Intellectual Property Rights	The Subcontract allows that; (a) The Subcontractor warrants that it will not infringe any third party's intellectual property rights in performing the Works. (b) As between Fulton Hogan and the Subcontractor, ownership of any intellectual property rights in any materials produced as a consequence of the performance of the Works will be the property of Fulton Hogan upon the creation of those materials. Fulton Hogan may transfer or licence the ownership of any intellectual property rights in any material produced as a consequence of the performance of the Works to the Principal. Fulton Hogan hereby grants to the Subcontractor, a non-exclusive and royalty-free licence to use those materials (including by copying or reproducing) for the purpose of performing the Works.
Defects Liability	Defect Liability Period: 24 months from Substantial Completion
Securities and Retention	Not applicable under Minor Works Subcontracts. To be negotiated on a case by case basis

Probity & Ethical Principles for Procurement	In accordance with FH Subcontracting, Purchasing & Hiring Procedure
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14.2.3 Plant Hire Agreement

A Plant Hire Agreement shall be used for the long-term hire of plant & equipment. The terms and conditions of this form of Agreement include:

Terms of Payment	30 days after end of month in which a valid payment claim is submitted
Insurance Requirements (as applicable)	Contractors Works Insurance - to be taken out by the Supplier in accordance with all current laws Workers Compensation - In accordance with current law (WorkCover Queensland) Public Liability - \$20 million Plant & Equipment Insurance: Market Value with PL of \$20 million Motor Vehicle Insurance: Market Value with PL of \$20 million Professional Indemnity – Not Required
Passing of Property & Risk	Not Applicable
Ownership of Intellectual Property Rights	Subcontractor indemnifies Fulton Hogan and each of its related entities, officers, employees, contractors, servants and agents against: Liability for infringement of any intellectual property right relating to the supply
Defects Liability & Warranties	Not Applicable
Securities and Retention	Not Applicable
Probity & Ethical Principles for Procurement	In accordance with FH Subcontracting, Purchasing & Hiring Procedure

14.2.4 Supply Agreement

A Supply Agreement shall be used for the supply only of equipment and materials not classed as “off the shelf”. The terms and conditions of this form of Agreement include:

Terms of Payment	30 days after end of month in which a valid payment claim is submitted
Insurance Requirements (as applicable)	Public Liability - \$20 million Professional Indemnity - \$5 million Plant and Equipment – Market Value Motor Vehicle – Market Value
Passing of Property & Risk	Title shall pass upon the earlier of delivery, acceptance or payment. Risk passes upon the later of delivery, acceptance or passing of ownership.
Ownership of Intellectual Property Rights	Ownership remains vested in Supplier, who shall assign full assignable and perpetual rights to Fulton Hogan.
Defects Liability & Warranties	Defect Liability: 24 Months from acceptance.
Securities and Retention	Two 2.5% BG's, released at Substantial Completion and after the Defect Liability Period
Probity & Ethical Principles for Procurement	In accordance with FH Subcontracting, Purchasing & Hiring Procedure

14.2.5 Design Services Agreement

A Design Services Agreement shall be used to engage the design services of a company without the inclusion of supply or installation. The terms and conditions of this form of Agreement include:

Terms of Payment	30 days after end of month in which a valid payment claim is submitted
Insurance Requirements (as required)	Public Liability - \$20 million Professional Indemnity -\$20 million Workers Compensation - In accordance with current law (WorkCover Queensland)
Passing of Property & Risk	Ownership of any intellectual property created in the performance of the design passes to Fulton Hogan upon its creation or discovery
Ownership of Intellectual Property Rights	Subcontract allows for The Consultant agrees that all Intellectual Property created, discovered or coming into existence as a result of, for the purposes of or in connection with, the performance of the Services in accordance with the Agreement, including in respect of the Documents, will be vested in and owned by the Contractor upon their creation or discovery. The Consultant must do everything necessary to perfect such vesting. The Consultant is granted a royalty free licence to use such Intellectual Property for the purposes of the Services. In respect of all pre-existing Intellectual Property used by the Consultant for the purposes of or in connection with the performance of the Services, the Consultant grants to the Contractor, from the Execution Date, an irrevocable, transferable, perpetual, non-exclusive, royalty free, worldwide licence to use any and all pre-existing Intellectual Property for any purpose whatsoever including: any purpose associated with the Services including further design work, construction of, subsequent repairs or additions to, or alterations of, the Project; and for any other purpose or project to be undertaken by or for the Contractor. The Consultant warrants that the Services (including the Documents) do not and will not infringe any Intellectual Property of a third party.
Defects Liability & Warranties	Not applicable. Subcontractors is to ensure its works are free from defects. Overall responsibility for the accuracy of the documents remain with the Subcontractor even if FH review
Securities and Retention	Not Applicable
Probity & Ethical Principles for Procurement	In accordance with FH Subcontracting, Purchasing & Hiring Procedure

14.2.6 Purchase Order

A Purchase Order shall be used for purchasing of incidental "off the shelf" items. The following table provides some guidance on what can be procured through a Purchase Order and what must be procured through a Subcontract/Supply Agreement.

Purchase Order (Simple Purchases)	Subcontract (Complex Purchases)
Stationery Non-permanent materials such as silt fences, bunting, survey pegs, star pickets Vehicle servicing Small tools and equipment Straps and slings PPE Uniforms Safety (non-permanent) road signs	Permanent materials forming part of the Project Works including quarry products, drainage pipes Anything involving site based labour Anything requiring a warranty Anything that must be designed Anything that is critical to the Project Works Anything that requires the business to be conforming with the Building Code 2016

The commercial team will be responsible for determining if a purchase order or supply agreement is to be used. The terms and conditions of a purchase order include:

Terms of Payment	45 days from end of month in which an invoice issued by the Supplier to FH is dated following delivery of the Goods or Services to the Site
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Insurance Requirements	PL in respect of personal injury, death or property damage arising out of the Goods or services Loss and Damage insurance until the goods are delivered
Passing of Property & Risk	Title passes on delivery or payment of the goods whichever is earlier.
Ownership of Intellectual Property Rights	Not applicable
Defects Liability & Warranties	12 months
Securities and Retention	Not applicable
Probity & Ethical Principles for Procurement	In accordance with FH Subcontracting, Purchasing & Hiring Procedure

14.3 Recommendation and Acceptance

Prior to the formal engagement of the Subcontractor or Supplier, and once the commercial negotiations are complete, the Estimator/Project Manager in conjunction with the Contracts Administrator will prepare a Subcontractor Recommendation Form with supporting documentation detailing each offer and comparison to budget. Particular to any subcontract the requirement for a Pre-Award Assessment and Interview and or Subcontractor Capability Assessment is agreed between the Project/Program Manager(s) and is part of the requirements of the Subcontractor Recommendation Form. This interview will be conducted prior to their engagement, their previous Work Health and Safety, Quality, Environmental and Industrial Relations performance is discussed and reviewed. The outcome of the interview is recorded on the Pre-Award Interview and Assessment Form.

14.4 Completing a Subcontractor Agreement

On receipt of the approved signed documentation, the relevant person with the Delegated Limit of Authority shall sign the Agreement and the executed agreement shall be transmitted to the subcontractor/supplier.

The subcontractor/supplier shall not be permitted to commence work prior to undertaking all agreed pre-requisites, which may include the following:

- » Signing the Agreement
- » Producing evidence of required insurances
- » Producing evidence of paid-up contributions to any prescribed fund as required by the subcontractor/supplier Workplace Agreement.
- » Completing the necessary site induction requirements

Once the Agreement has been finalised, the Project Manager shall convene meetings, as necessary, to ensure the works progress in accordance with the required program.

14.5 Emergency Purchases

'Off-the-shelf' goods need no prior supplier approval, provided that the goods are non-critical, standard items from a production line manufacturing process.

Where items which are not 'off-the-shelf' are urgently purchased without prior assessment of the supplier, the items should be 'quarantined' until they are inspected and approved for incorporation in the works, or identified so that they can be subject to a positive recall process and replaced if a fault or non-conformance is subsequently identified.

14.6 Placement of Orders

Orders will be placed in alignment with the agreed delivery schedule. A Purchase Requestion will be forwarded to the Contracts Administrator/Purchasing Team who will review and generate a Purchase Order using JDE prior to sending to the supplier. Once on-site, the item will be receipted in JDE, and await the invoice.

14.7 Quality Assurance and Management of Supply Contracts

Once an order is placed, the site team will then ensure that the material is delivered, unloaded, stored and finally incorporated into the works in accordance with the supply agreement, the relevant specifications and drawings.

14.8 Off-Site / Unfixed Materials and Equipment

Selected subcontract and supply agreements may require upfront milestone payment(s) by Fulton Hogan for various materials and equipment prior to delivery to Site. Fulton Hogan will negotiate such payment terms with the Subcontractor / Supplier on a best for project basis for incorporation into each respective subcontract / supply agreement.

Upon payment of each Milestone payment by Fulton Hogan, Fulton Hogan will claim such costs as a Direct Cost under the Program ECI Agreement. Payment of such amounts by Urban Utilities to Fulton Hogan will be subject to Fulton Hogan demonstrating to the reasonable satisfaction of Urban Utilities that such payments align with the requirements of the relevant subcontract / supply agreement.

15 SCHEDULE MANAGEMENT

Primavera P6 will be utilised for all Program and Project scheduling activities in accordance with the Program Brief Appendix A – Program Support Services Requirements. The Program Support Services Requirements contains the specific detail for establishing, formatting and maintaining the Program and Project Schedules which will be the responsibility of the Fulton Hogan Scheduler.

The Schedule(s) will be developed and Baselined at the following 2 stages:

1. ECI Expenditure Limit Approval for the ECI Delivery Phase
2. RAMP Report Approval for the Works Delivery Phase

All schedules for packages of work produced by Fulton Hogan for the duration of the WWMP works will be built as a Level 3, unless otherwise directed and will ensure the following key aspects have been met:

1. Indicate Fulton Hogan's bona fide planned work activities and sequences for bringing the work to Handover by the agreed date for Practical Completion
2. Indicate the Critical Path from Contract Award to Handover, or separable portions thereof
3. Include all key and significant tasks and milestones
4. Include witness and hold points as required
5. Show sufficient detail in order to effectively manage the works
6. Provide progress updates at suitable intervals as agreed with the Urban Utilities Program Manager

In addition to the above, the schedule will:

1. Be logic driven with only one fixed date – START
2. Select appropriate calendars and, where appropriate, select constraints on tasks/milestones
3. Include projected progress of the work under the Contract which is capable of graphical presentation
4. Include allowance for reasonable inclement weather & risk of the project
5. Be capable of estimating the Value of Work throughout the duration of the Contract
6. Include a recovery schedule for any delay.
7. Project level schedules shall not be replicated in the Program Schedule in their entirety – however at Level 2 the Project schedules should replicate the Program schedule
8. Include interfaces with other non-project activities that may affect the delivery of the project (e.g.: planned shut-downs, known activities by other projects, etc.)

16 COST MANAGEMENT

JDE version 9.1 (Oracle) will be utilised as the financial and cost management system. It is an integrated system solution designed to deliver Construction Management, Accounting and Operations information in a timely and accurate manner on the progress of all projects in a consolidated format.

A new project number will be raised for each Project, and cost codes will generally align with the RAMP Schedule.

Cost control will be conducted on all cost codes at varying levels of detail and in accordance with the Fulton Hogan Cost Planning, Costing and Forecasting Procedure but as a minimum as follows:

- » Daily / weekly productivity checks on direct labour and material usage
- » Monthly analysis of all cost centres including expenditure-to-date and forecast expenditure with comparison to the project budget.

Approved budgets (whether ECI or Works Delivery) will be loaded into JDE by the Contracts Administrator to allow comparison of approved budgets and actual spend.

The Contract Management Process Flow is shown in Figure 9.

16.1 Subcontractor and Supplier Costs

Control of Subcontractor and Supplier costs will be undertaken in accordance with the Fulton Hogan Subcontracting, Purchasing and Hiring Procedure ([FHLIB-1677224255-7716](#)).

Subcontract and Supplier costs shall be collected via subcontract progress claims and invoices, evaluated by measure of work completed, variations approved and back charges incurred. Any back charges shall be included in a standard credit claim book with a copy forwarded to the relevant subcontractor / supplier for its record.

16.2 Forecasting

Primary responsibility for cost forecasting rests with the Project Manager however the Program Manager shall review the forecasts and assume accountability for their accuracy. The forecast will be supported by data from the Resource Loaded schedule which will provide the Project Manager with a greater level of detail to develop the forecast.

The Project Manager (with input from the Project Engineer(s)) shall review the budget and estimates at the beginning of the project and develop the forecast cost-at-completion. This will be developed from first principles and in line with the Contract Management System (JDE JSR) diagram shown below. The original budget shall not be changed.

Cost forecasting is not simply a mathematical process where productivity rates are multiplied by quantities. 'Common sense' must prevail. For example, the forecast costs must also take into account the robustness of the budget, job-to-date and period rates in the context of the schedule, the scale of the ongoing work and any other particular or unique aspects of the project.

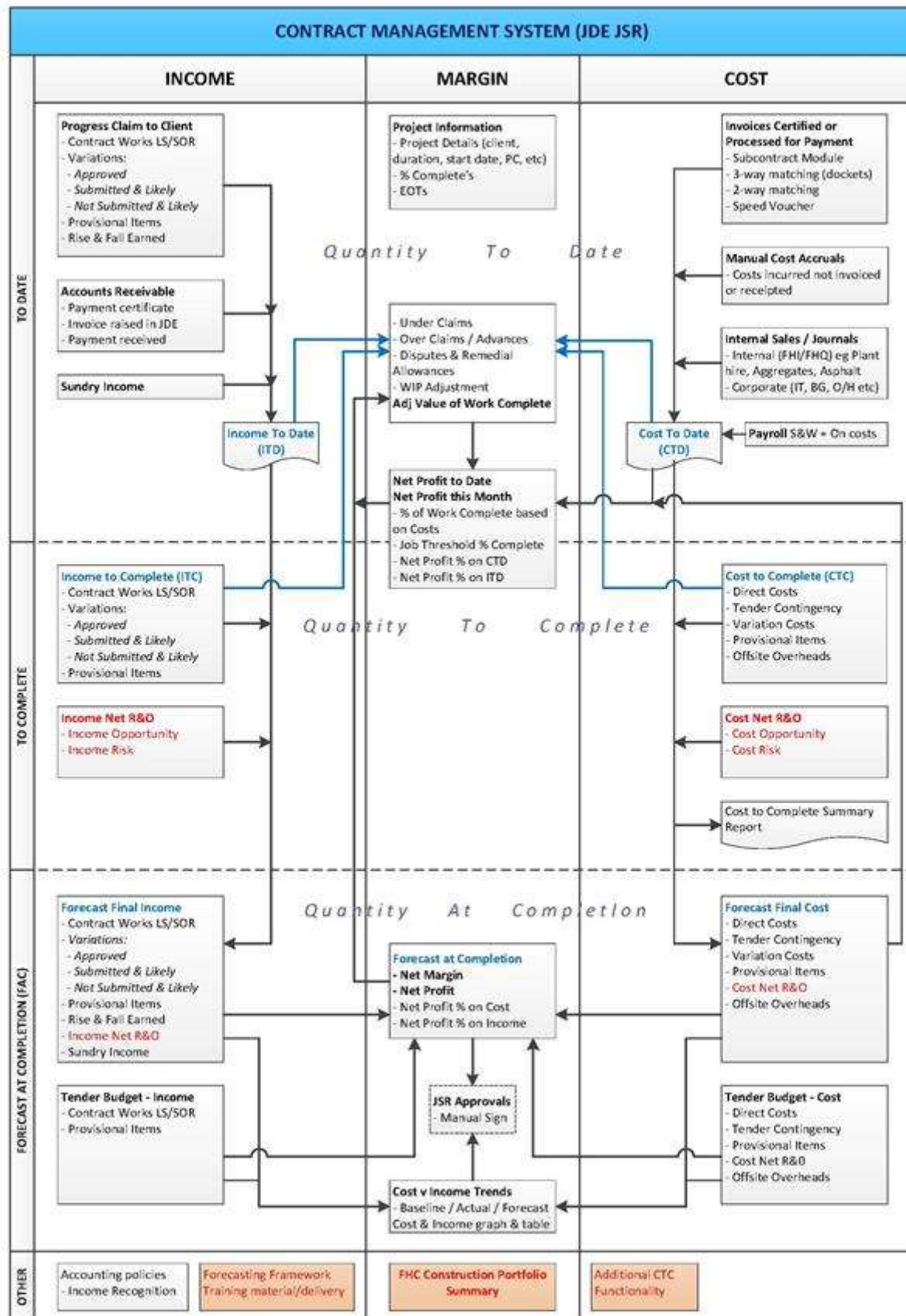


Figure 9 - Contract Management System Process Flow

17 SCOPE CHANGE MANAGEMENT

Any Change will be managed through its various stages from Change Proposal, Change Response, evaluation and approval as specified in Clauses 42.2 to 42.5 of the Program ECI Agreement.

A permanent record of approved Changes shall be kept by the Principal via a Change Register.

Conditions may arise where a Scope Change is deemed to be acceptable and considered outside of the agreed RAMP; some examples may include:

- i. The case where UU wants to include additional scope or remove scope that was not contemplated to be part of the RAMP.
- ii. Where Change is a necessary provision for a risk that is accepted does occur and has extreme consequences.

The WWMP delivery team have developed an internal work instruction for the scope change process which is available on TeamBinder and by using the following link [NTP-CON-WI-00001](#), and is also available in Figure 10.

Any proposed scope change should be drafted on the Scope Change Proposal Template which is available on TeamBinder and by using the following link [NTP-CON-TMP-00003](#).

If the ELG agrees the Scope Change it must create a permanent record of the approved changes to the Program Delivery Documents and agreed changes to the Scope Change Guidelines, and the adjustments (if any) to the Program Brief or the Project Brief, ECI Development Expenditure Limit, TDC, RAMP or Target Date. That record may be a minute of a meeting of the ELG.

Scope Change Process

Document Number NTP-CON-WI-00001 Rev 0

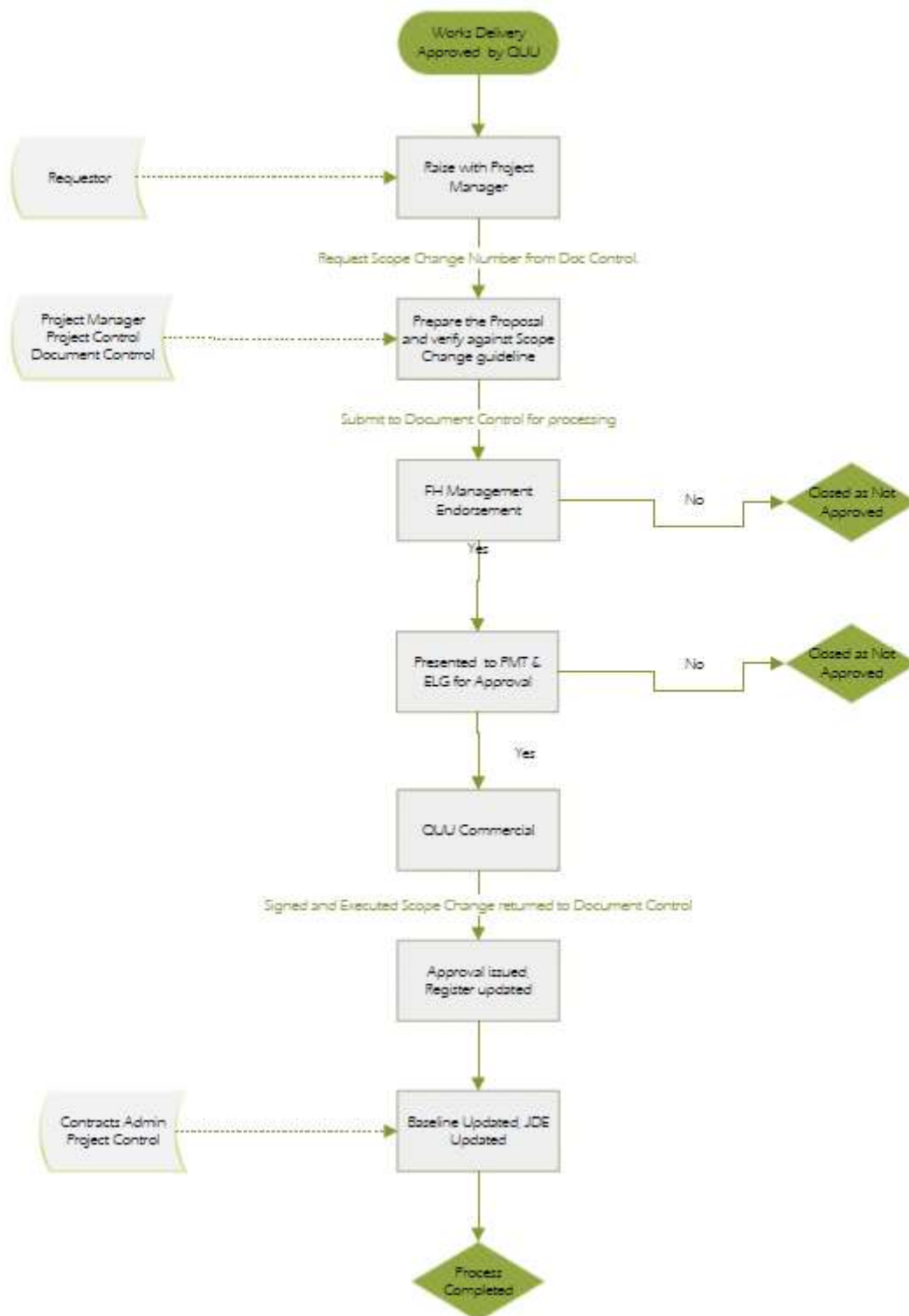


Figure 10 – Scope Change Process Flow

Please refer to latest revision of NTP-CON-WI-00001 on TeamBinder.

18 EARLY WARNING NOTIFICATION

Each party must do all it reasonably can to immediately inform the other of any fact, matter or thing of which it becomes aware which is likely to affect the timing, cost or quality of the ECI Development or Works Delivery Phases of a project. The parties must then investigate how to avoid or minimise any adverse effect on the Program.

When developing an Early Warning Notification a key focus of this should be assigning accountability to the relevant body to mitigate or minimise any adverse impact to the program, including the realisation of identified RAMP risks.

All Early Warning notifications should be submitted to the relevant UU Project/Program Manager

An Early Warning Notification can be raised by contacting the document control administration team whom shall provide the next number in the series on the register. The Early Warning Register can be located within the TeamBinder Documents module, with document number series TBA XXX-XX-XXX-XXXX.

19 RISK MANAGEMENT

AS/NZS ISO 31000:2009 – Risk Management Standard defines risks as effect of uncertainty on objectives. Hence any effect (either positive or negative) of uncertainty that may impact on the WWMP objectives needs to be managed effectively. An example of the project risks and opportunities to be covered in table below:

Categories	Risk and Opportunities Example
Design	Approvals, Delays, Fit for purpose, Value engineering
Finance	AUD\$ fluctuations, Commodity prices, Escalation, Currency
Contract Terms	Form of contract, Incentives, Payment/termination terms, Withholding tax, Duties, Escalation, Liquidated damages.
Site	Site access, Interfaces, Stakeholders, Location, Latent conditions, Groundwater/dewatering, Geotechnical conditions, Transport, operational requirements of incumbent.
Procurement	Local Industry Participation, Delivery, Transport, Lead times, Delivery dates, Escalation, Monopoly source, Amortization of plant, Location, Plant mobilization, Local content, Import duties
Industrial Relations (IR)	Relevant Agreements, Awards, Union coverage, Productivity, Allowances (e.g. Site, Living Away From Home etc.).
Stakeholder and Community	Chance to have little effort for a community benefit.
Plant	Special plant, Fit for purpose
Staff	Availability of suitable and competent personnel, Manning levels, Overruns,
Labour	Site allowance, Availability of suitable and competent personnel, Overruns, Cost escalation, Training
Safety	Legislation, Contract requirements, Labour force, Location, High risk
Environment	Legislation, Licenses, Permits, Geography of site, Geology, Climate, High risk activities, Heritage issues
Process Control	Familiar processes, New untried processes, Quality of completed work, Technical complexity, Traceability
Project Schedule	Flow control delays on the network, Milestone dates, Unrealistic completion
Temporary works	Design, Fabrication, Installation, Removal
Acceptance	Warranties, Handover, O&M manuals, Contract completion
Commissioning	Shutdown, Access

Table 4: Examples of Project Risks and Opportunities

19.1 Risk Registers

Four risk registers will be maintained during the program of works, whilst there is no distinct hierarchy, the program risk register will be the overarching document and all other registers will dovetail. The relationship of all the registers will be explained below and within the Urban Utilities Program of Works Risk Management Lifecycle diagram illustrated in Figure 11. Figure 11

Risk Registers for the Program include:

- » Program Risk Register
- » Project specific Risk Registers
- » SID Risk Register
- » HSE Risk Register

19.1.1 Program Risk Register

Shall be developed and maintained for the overall WWMP Works and will be the responsibility of the Fulton Hogan program manager. All risks shall be coded to enable reporting at a Program level and are those that may have an effect on the ability to deliver the overall performance criteria. The Program Risk Register will be in an excel format and be maintained by the Program manager and filed in the G Drive 04 Legal and Commercial folder.

19.1.2 Project Operational Risk Registers

Shall be developed and maintained for every project within each work package and will be the responsibility of the Fulton Hogan project manager responsible for the works. This register captures risks that are a material threat to the HSE, cost, schedule or technical outcomes of the project and aligns with the RAMP Report and program risk register. Risks realised during construction and are not captured in the RAMP Report must also be captured and managed through this register.

19.1.3 Safety in Design (SID) Risk Register

Shall be developed and maintained for every project within each work package and will be the responsibility of the SMEC Design Manager. This register will be a direct output of the design process and Safety in Design risks identified through collaborative workshops with Operations, construction and HSE operatives. These risks would not typically be reflected in the Program or Project Delivery Risk Registers unless they have a reasonable likelihood of a quantifiable effect on the cost, schedule or performance criteria of the project. Some risks will have an impact and be transferable in the HSE Risk register.

19.1.4 Health, Safety & Environment (HSE) Risk Register

Shall be developed for every project within each work package and will be the responsibility of the Fulton Hogan Project Manager responsible for the works with guidance from the HSE Manager. Risks identified in the SID Risk Register need to be considered in the development of this register.

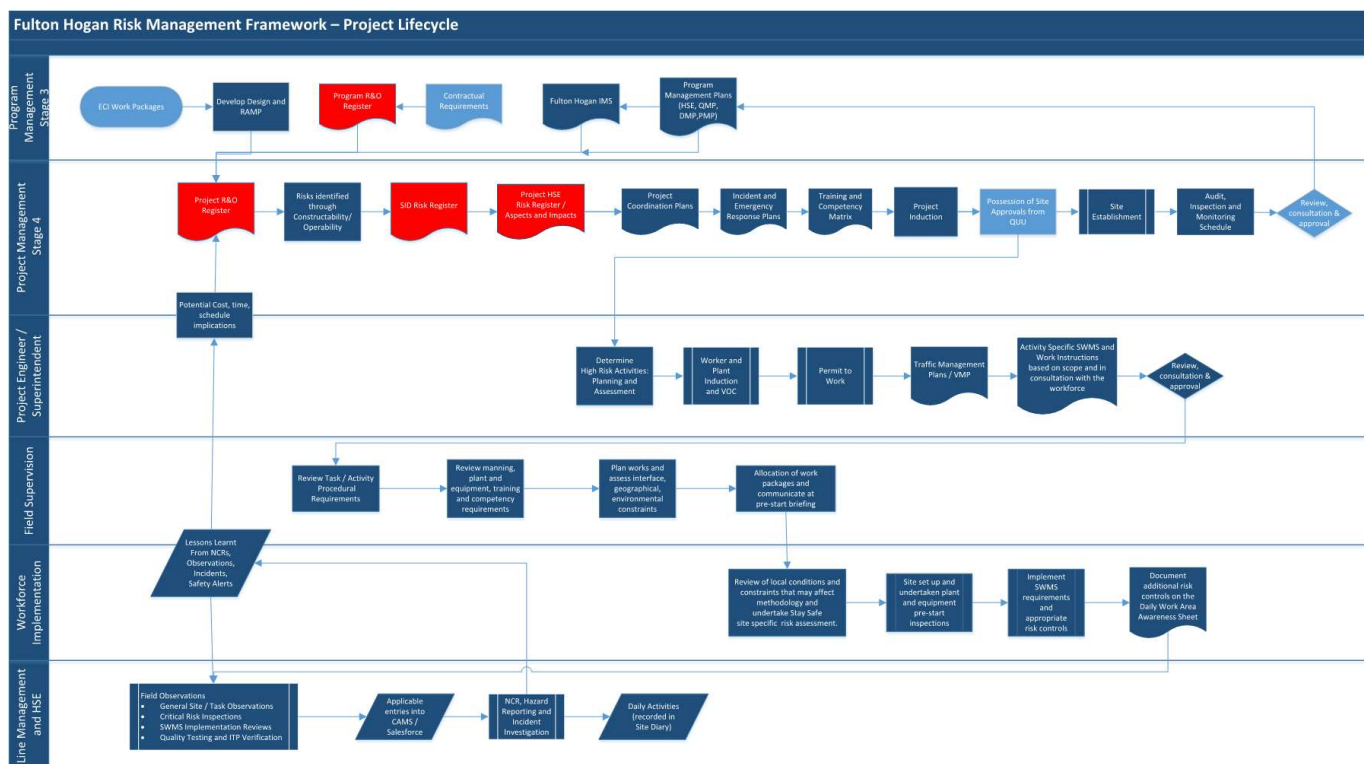


Figure 11 - Risk Management Process Flow

19.2 WWMP Risk Project Lifecycle

The Risk Project Lifecycle illustrates the relationship of not only the risk registers but all of the processes, sub process and documents required to effectively manage risk across the entire program and allocated work packages. It also defines the higher level responsibilities and continuous feedback and approvals loop to keep the risk process live and constantly improving.

19.3 Analysis and Evaluation

Rating the consequence and likelihood of occurrence of each risk will be based on the relevant ranking table to determine a priority for the risk in order to be able to later evaluate the risk.

The consequence and likelihood of the risk need to be considered as follows:

For each risk a review is undertaken of the likelihood of the potential outcome of the risk

The consequence of an incident may vary from:

- » Financial impact
- » Legal or Regulatory impact
- » Health and Safety impact
- » Environmental Impact
- » Reputation / Political / Stakeholder impact
- » Project Delivery and Start-up (including resources and technical) impact
- » Community impact
- » Design Performance impact
- » Workforce and Industry Participation impact.

Likelihood is the product of frequency and probability. To select how likely an event is of occurring both frequency and probability should be taken into account.

In assessment of risks, the following needs to be considered for each risk:

- » What can happen?

- » When and how frequently can it happen?
- » Where can it happen?
- » Who could be involved in creating the risk?
- » Who could be impacted by the risk?
- » How and why could the risk arise?
- » What measures are in place to prevent or manage the risk?
- » How reliable is the data or information used?

19.4 Risk Classification

Risks captured in the Program and Project specific registers as well as the Safety in Design Workshops shall be classified and evaluated in accordance with Urban Utilities's Risk and Opportunity Management Procedure ([PRO84](#)) and Risk Score Matrix shown in Figure 12.

Consequence	Likelihood					
		1. Rare	2. Unlikely	3. Possible	4. Likely	5. Almost Certain
	E. Catastrophic	High 10	High 15	Extreme 20	Extreme 25	Extreme 30
	D. Major	Medium 4	Medium 5	High 10	High 15	Extreme 20
	C. Moderate	Low 3	Medium 4	Medium 5	High 10	High 15
	B. Minor	Low 2	Low 3	Medium 4	Medium 5	High 10
	A. Insignificant	Low 1	Low 2	Low 3	Medium 4	Medium 5

Figure 12 - Urban Utilities Risk Score Matrix

19.5 HSE Risk Classification

HSE Risks captured in the Program and Project specific registers shall be classified and evaluated in accordance with Fulton Hogan Group Risk Management Procedure. The associated Risk Matrix and Risk Ratings are shown in Figure 13 and Figure 14.

		Potential Consequence Level				
		Insignificant	Minor	Significant	Major	Catastrophic
Potential Likelihood Level	Almost Certain <i>The potential consequence is expected to occur in most circumstances</i>	Med 11	High 16	High 20	Ext 23	Ext 25
	Likely <i>The potential consequence will probably occur in most circumstances</i>	Med 7	Med 12	High 17	High 21	Ext 24
	Possible <i>The potential consequence is expected to occur at some time</i>	Low 4	Med 8	Med 13	High 18	High 22
	Unlikely <i>The potential consequence could occur at some time</i>	Low 2	Low 5	Med 9	Med 14	High 19
	Rare <i>The potential consequence may occur in exceptional circumstances</i>	Low 1	Low 3	Low 6	Med 10	Med 15

Figure 13 - FH HSE Risk Score Matrix

Risk Level	Risk Rating	Acceptance
Extreme	23-25	Always Intolerable
High	16-22	Generally Intolerable
Medium	7-15	Tolerable
Low	1-6	Broadly Acceptable

Figure 14 - FH HSE Risk Ratings

19.5.1 Allocation/Acceptance of Risks

All risks shall be allocated an owner, by name or by organisation. Risk owners are responsible for ensuring a risk treatment plan is developed and implemented for each High and Extreme risk they own. A treatment may not be required for low and negligible risks, but is recommended where the outcome is a net benefit.

19.5.2 Risk Treatment Plans

All risk treatment plans shall be recorded in the risk register, either directly or by reference to the risk treatment plan document (Risk Action Plan).

At the discretion of the risk owner, specific action items may be allocated to other parties for implementation of certain aspects of the treatment plan. The risk owner remains responsible for monitoring progress of those actions.

19.5.3 Risk Action Plans

For each individual risk area, formal detailed Risk Action Plans will be developed for all Extreme risks where these cannot be avoided.

Where appropriate, these plans will be developed and implemented by suppliers and contractors.

In the rare event a Risk Action Plan is needed, it will be implemented with specific proposed actions and objectives, assigned responsibilities, allocated and controlled resources, a schedule and milestones, and a progress monitoring and reporting plan.

19.5.4 Review and Maintenance

Risk registration, monitoring and review functions are designed to provide information and assurance that risks are being appropriately managed. It is essential that review processes are conducted in a periodic manner, of a frequency suitable to the pace of the project. Table 5 lists the minimum frequencies at which risk review activities are to be conducted. Activities not listed may be performed as required, or in accordance with other project requirements.

<i>Risk Review</i>	<i>Accountable</i>	<i>Minimum</i>	<i>Risk Agenda</i>
Program R&O	Program Manager	Monthly	Management of current risks to be discussed and noted in minutes to meeting.
Project R&O	Project Manager	Monthly	Review of the management of all current risks that are evaluated to be Medium or higher Discuss and agree any additional required risk
SID RR	Design Manager	Per Project	Review of the management of all current risks that are evaluated to be Medium or higher Discuss and agree any additional required risk management actions required
HSE RR	Project Manager	Project Specific Monthly	Discuss and agree any additional required risk management actions required

Table 5 - Review and Maintenance Schedule

19.5.5 Opportunity

Costed risks identified by the RAMP Report should be considered as opportunities and captured accordingly, in the Risk Register. Opportunities should be managed following the same process as Risks.

19.5.6 Risk Bank

A Risk Bank shall be established at a Program level and shall comprise contingent funds identified by the approved RAMPs. Drawdowns from the Risk Bank shall be recommended by the PMT for Approval by the ELG. These drawdown recommendations will typically be as a result of an accompanying Change Proposal recommendation.

20 DOCUMENT CONTROL AND RECORDS MANAGEMENT

The objectives of the Document Control and Records Management system to be used on the WWMP works are:

- » Manage the flow of documentation, both internally and externally
- » Indicate project deliverable documentation and their anticipated issue dates
- » Identify and expedite where documentation is behind schedule
- » Ensure that the current revision is available to the stakeholders
- » Capture, preserve and control documentation in electronic and paper format as necessary
- » Keep confidential information secure
- » Manage the documentation and associated metadata in Team Binder that is required to support handover to Urban Utilities

The WWMP Document Control Procedure ([Doc Number TBA](#)) has been developed to eliminate the need for a dual document numbering system and allow easy integration with Urban Utilities's RedEye System. All new document number requests will be submitted to the Delivery Document Control Team for review, who will then obtain the relevant Urban Utilities document number(s) prior to upload into TeamBinder.

20.1 TeamBinder

TeamBinder is the mandatory Electronic Document and Records Management System (nominated by the client) for communication and collaboration on the WWMP Program for all parties. TeamBinder is used for:

- Program Correspondence and Document Control Requests (MAIL)
- Controlled and uncontrolled Documentation (DOCUMENTS)
- Contract Execution / Tender Packages / Deliverable Transmittals to Sub-Contractors (PACKAGES)
- Formal Distribution of Controlled Documentation (TRANSMITTALS)
- Requests for Information (RFI), Non-Conformance Reports (NCR), Notices of Design Change, Witness Points, Hold Points - (FORMS)

Lot management will be managed in accordance with the Quality Management Plan under QAntrol.

20.2 Controlled and Uncontrolled Documentation

Any document that is subject to formal management procedures to regulate its preparation, review, approval, release, distribution, revision, withdrawal and disposition, is considered controlled, e.g. policy, standard, procedure, guideline, template, report, Engineering drawing.

Controlled documents shall adhere to the following:

- Numbered with a unique identifier or coded according to the project defined numbering scheme defined in the Document Control Procedure ([Doc Number TBA](#))
- Reviewed and approved in accordance with the Design Management Plan before it is issued, and therefore should be identified with a revision number
- Identifiable review and approval responsibility of documents and authority for issue
- All new and revised documents (including review comments) submitted to FHU Document Control via Document Control Request Mail Item via Team Binder

Uncontrolled documents are those that are produced once, and are not subject to formal approval or change control. These documents are not to be used as reliable information that has an impact on Program or Project Delivery.

20.3 Document Distribution Matrix (DDM)

A DDM established and approved by the project team within TeamBinder during the implementation phase, shall identify the electronic distribution for the various disciplines and document types required for each party.

The Document Control Function shall facilitate distribution via TeamBinder. All controlled documents will be issued as per the DDM and/or as per instruction received via the appropriate instruction.

20.4 Document Numbering Scheme

Document numbering and revision control for this program of works has been documented in the Document Control Procedure ([Document Number TBA](#)) and is in accordance with Urban Utilities Technical Specification TMS1654 Naming Requirements for Engineering Documentation. Details of the naming convention can be found within the Quality Management Plan ([NTP-QM-PLN-00001](#)).

20.5 Project Correspondence

All project formal correspondence, i.e. Contractual Notices, Letters and Memos between all project stakeholders shall be issued via Mail Module in Team Binder using dedicated mail types for various type of correspondence.

No other distribution method shall be accepted unless prior authorisation is granted by the WWMP Program Manager. This will ensure that all relevant correspondence is captured and stored in one central location.

Detailed instructions on how to issue correspondence via TeamBinder shall be provided in TeamBinder quick guides ([NTP-QM-GDL-00002](#)) and issued as part of the TeamBinder training.

DRAFT

Weekly Works Delivery Construction Meeting

Purpose of Meeting:	Weekly Construction Meeting	
Outcomes to be Achieved:	Works Delivery in progress	
Location:	DTMR Compound / Teams Meeting	
Date: 26/08/20	Time: 11.00	
Chair and Minutes By:	Chair: Luke Pyke Minutes: Sarah Conley	
<u>Attendees:</u> Gavin Bowen FH Taurai Masvingise FH James Watts FH Thomas Hatton FH Ciara Otter SMEC		<u>Apologies:</u> George Malan SMEC Fadik Farvid FH Rochelle McDonald FH

Item	Discussion/Key Points	Action	Due Date
Items			
1.0 Safety:			
	Safety Share: TM – driver in front of him in traffic driving with large headphones, wasn't paying attention to what was going on around him. NP-01 - Save and archive site familiarisations NP-02 - Inspections ongoing – month to date stats to be sent out, Ciara form to be sourced - KPI matrix distributed - WRA updated, PSCP to be updated NP-03.1 - Site establishment checklist to be completed when commencing on site - WRA to be complete and submitted - SWMS required: Veolia (Dewater & Recharge and Scaffolding), Xylem, Treescape, TKR, Advanced - PSCP to be submitted in Teambinder - Onboarding (Plant and People): Veolia, Xylem, Treescape, TKR, Advanced - Site familiarisation to be reviewed to ensure covers NP3.1 - New permits to be checked: Confined Space, Work @ Heights, Isolations - Trial Shuts: 15/9 – 17/9 & 22/9 – 24/9 - Actual Shuts: 2/10 – 18/10 31/8 Commence on site	SC SC JW JW JW JW JW SC SC NOTE NOTE	28/8/20 21/8/20 28/8/20 21/8/20 28/8/20 21/8/20 21/8/20
2.0 Environment:			

Item	Discussion/Key Points	Action	Due Date
	NP-01	JW	
	- Noise assessment – background noise on Monday 24/8 – 1 week long assessment - Odour assessment commenced 25/8 – awaiting report, due next week		
	NP-02		
	- Ecology report submitted to BCC for review and approval, awaiting response - Inspections – weekly, 4 conducted for August - Training on water quality testing being conducted next week - CEMP to be updated to reflect changes - Permit system being finalised		
	NP-03.1		
	- EWMS to be completed and submitted to UU, being reviewed - Odour suppressant being investigated - Ecologist will be on-site during clearing and grass trimming (will require a post clearing report and qualifications) - FSC required on site during clearing and de-watering (snakes)	TM JW JW	21/8/20 21/8/20 21/8/20
3.0 Quality:			
	- QAntrol in full use by all parties. Ensure QA is notified of all new subcontractors so they can be trained and set up in the system - Pipe delivery complete for time being - Ensure we keep Urban Utilities up to date with all relevant QA inspections including off site inspections. - QA Site inspections/ Audits to be created and uploaded into Salesforce – RH will advise when to commence - QA General Induction currently being created. This will be rolled out to all relevant FHU employees and subcontractors. Rob and Taurai to review C&G ITP ensure all items covered off. - Monthly QA meeting to commence with PMs to address construction, commissioning and completions including responsibilities.	RH RH RH RH Complete RH GB	Ongoing Ongoing Ongoing 25/08/20 TBA 19/08/2020 Ongoing Ongoing

Item	Discussion/Key Points	Action	Due Date																																																		
	- QA Audit NP-02 last week Approved ITPs: <table><tr><th>ITP Title</th><th>Status</th></tr><tr><td>SUPPLY – Concrete Mix Designs</td><td>Approved</td></tr><tr><td>SUPPLY - Reinforcement</td><td>Approved</td></tr><tr><td>Concrete Placement</td><td>Approved</td></tr><tr><td>Supply of HDPE Pipes & Fittings</td><td>Approved</td></tr><tr><td>Clear, Grub & Topsoil Stripping</td><td>Approved</td></tr><tr><td>Sewer Rising Main (HDD)</td><td>Approved</td></tr></table> Upcoming ITPs: <table><tr><th>ITP Title</th><th>Status</th><th>Responsible</th><th>Target IFC Date</th></tr><tr><td>DTMR - Sewer Rising Main (Open Trench)</td><td>Under Internal Review</td><td>RH/ TH</td><td>01st Oct</td></tr><tr><td>UU - Sewer Rising Main (Open Trench)</td><td>Under Internal Review</td><td>RH/ TH</td><td>01st Oct</td></tr><tr><td>Flow Meter – Supply and Install</td><td>To be created</td><td>TH/ SS</td><td>01st Oct</td></tr><tr><td>Sewer manhole construction</td><td>To be created</td><td>TH/ SS</td><td>01st Oct</td></tr><tr><td>Sewer commissioning</td><td>To be created</td><td>TH/ JH</td><td>01st Oct</td></tr><tr><td>Precast supply & Install</td><td>To be created</td><td>RH</td><td>01st Oct</td></tr><tr><td>Concrete Repair - Expoy</td><td>Under Internal Review</td><td>RH</td><td>01st Oct</td></tr><tr><td>Concrete Repair - Mortar</td><td>Under Internal Review</td><td>RH</td><td>01st Oct</td></tr></table> Lot Status: - Refer attached report for full details - Ensure QAntrol statuses are updated as required – only QA team to “Close” Lots RFI Status: - Refer attached weekly report - Ensure RFIs are tracked/ addressed promptly and Closed out	ITP Title	Status	SUPPLY – Concrete Mix Designs	Approved	SUPPLY - Reinforcement	Approved	Concrete Placement	Approved	Supply of HDPE Pipes & Fittings	Approved	Clear, Grub & Topsoil Stripping	Approved	Sewer Rising Main (HDD)	Approved	ITP Title	Status	Responsible	Target IFC Date	DTMR - Sewer Rising Main (Open Trench)	Under Internal Review	RH/ TH	01 st Oct	UU - Sewer Rising Main (Open Trench)	Under Internal Review	RH/ TH	01 st Oct	Flow Meter – Supply and Install	To be created	TH/ SS	01 st Oct	Sewer manhole construction	To be created	TH/ SS	01 st Oct	Sewer commissioning	To be created	TH/ JH	01 st Oct	Precast supply & Install	To be created	RH	01 st Oct	Concrete Repair - Expoy	Under Internal Review	RH	01 st Oct	Concrete Repair - Mortar	Under Internal Review	RH	01 st Oct	Complete RH RH RH RH NOTE JW	Ongoing 21/8/20 21/8/20
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Concrete Repair - Expoy	Under Internal Review	RH	01 st Oct																																																		
Concrete Repair - Mortar	Under Internal Review	RH	01 st Oct																																																		

Item	Discussion/Key Points	Action	Due Date
	Punchlist/ Defects: • Teambinder to be utilised moving forward. QA team to develop and manage with input from construction team. Commissioning and Completions: • Jasper Hennekens (SMEC) on board as Commissioning Lead • Project Managers are responsible for Completions and Handover in conjunction with Commissioning Lead and QA Lead. NP03: • Raise 1 lot and use as filing cabinet for all Xylems deliverables • JW to send RH all information received to date NP02 • Golden weld to be x-rayed. In PDG scope • Bamser daily reports to be uploaded to QAntrol Lot/s • Temp works Lots to be opened for Drive 2 temp access	Ongoing Ongoing Complete Complete Complete Complete	
4.0 Community / Stakeholder:			
	UU Comms Audit to be conducted 27/8 WP.01 – JOT, YER, ASH • Stakeholder liaison: - JOT: w/c community consultation documentation, strategy and fact sheet, currently being finalised. Aim to submit to UU asap by Monday 31/08 for endorsement. - Nil customer enquiries or complaints received. - Continuing to liaise with Jo, UU, regarding upcoming stakeholder consultation required to be completed with key stakeholders (i.e. local residents and businesses such as the pony club). WP.02 – Centenary Highway Sewer Upgrade, Jindalee • Capitol Drive Park reserve – new pipes temporary laydown area and welding works:		

Item	Discussion/Key Points	Action	Due Date
	▪ Tuesday 25/08: notification letterbox drop and door knock completed (residents and businesses) for upcoming night works, installation of temporary survey markers on Centenary highway (northbound and southbound); and Centenary Highway on ramp (near Seventeen Mile Rocks Road). Notification also emailed to key stakeholders, for their reference i.e. Wesley Mission Queensland (Jonathon, Peter, Comms and Marketing team); Seasons' Living, Bicycle Queensland, Jindalee Bushcare Group (Rod), Jindalee Golf Club, Jindalee Bowls Club. ▪ Project information board (to be temporarily installed near Capitol Drive Park reserve, Jindalee): currently being approved by UU Marketing. 26/08. Advised, should receive approval. • Stakeholder meetings: ▪ reoccurring fortnightly (Friday) on site project progress meeting with Jindalee Golf Club (Rob and Ken). ○ Proposed onsite meeting to occur at DTMR Centenary Highway road reserve (temporary construction site compound) Friday 28/08 to explain drilling works. • Upcoming events (currently on hold until advised by UU): UU/DTMR media opportunity Thursday 23/07; and Cr Sarah Hutton social media filming Friday 24/07. Run sheets prepared and finalised with UU media and Shareholder Relations. • Existing/new supporting comms collateral currently being updated/developed: ▪ Draft communications (i.e. notification, contact centre scripting, webpage content) currently being prepared for upcoming project work activities: temporary site access via Oldfield Road through BCC property; set up of temporary construction site compound within the Sinnamon Village Aged Care property for construction (drilling) works; and survey monitoring works on Centenary Highway for upcoming pipe drilling works (from Jindalee Golf Club location, under Centenary Highway, to Sinnamon Village Aged Care property). ▪ Completed: Weekly Project report submitted to UU; Updated: contact centre scripting; project webpage • Other: ○ Community initiative: currently discussing holding a RUOK Day BBQ breakfast at the Jindalee Golf Club 09/10 September with Jindalee Golf Club. Currently liaising with Gavin and Jindalee Golf Club.		

Item	Discussion/Key Points	Action	Due Date
	- Temporary demobilisation of drill rig from the Jindalee Golf Club property while property access arrangements for the Sinnamon Village Aged Care property are being finalised. Jindalee Golf Club informed, no issues. Jindalee Golf Club has been informed. No enquiries/issues received. - Ongoing liaison with UU Shareholder Relations regarding project progress, to keep the local Councillor and MP updated as required. WP.03.1 – Condition Assessment works, Eagle Farm Sewer Pipeline (Serpentine Road to Luggage Point, Pinkenba) CE Plan and CE Service Plan: w/c 24/08: finalising both documents, only minor comments (additional information to include) received from UU comms. 25/08: Notification (no.1 of 2) – letterbox drop and door knock completed. No issues. Notification emailed to BAC. BAC appreciated receiving notification and advised it will distribute the notification to their stakeholders. - Two compliments received.		
5.0 Design:			
	NP-02 - IFC DWG on TeamBinder - Temp Bypass for Northern Connection being worked through – comments received - Aged care area options being discussed – ongoing - Next focus on commissioning and handover – expectations from UU, meeting held with PAC team, Jasper to start in the office next week. - Cadastral survey to be sent - Pilot hole for HDD Drive 1 to be sent over from FH - Flow control plans, meeting with stakeholders to be organised. - Close out of the SID NP-03.1 - Survey of line completed. - SID being reviewed - Xylem to send through design information, due COB Fri 4/9	JW	21/08/20

Item	Discussion/Key Points	Action	Due Date
6.0 Construction:			
	NP-01 - ASH target date 16/11 NP-02 - Drive 1 – Commenced reaming back with 24inch tool, still in hard rock. Aeration of mud and contamination of rock. Core samples sent for analysis, trailing a solution. - Looking at dates for pulling through pipe - String area – welding Drive 1 complete - Alternative access into 3rd site progressing well, awaiting BCC approval - Temp works design from FSA/FSG for access track - Program to be updated based on current productivities - Open cut dates being worked through NP-03 - Target Dates: - Track Rectification and Clearing Commence: 31/8 – 11/9 - Install Cribs and Wash Rooms: 7/9 – 11/9 - Trial Shut 1: 15/9 – 17/9 - Trial Shut 2: 22/9 – 24/9 - Works: 2/10 – 18/10 - Waiting on BAC and ABC permits	NOTE	
7.0 Risk/Scope change proposal:			
	NP-03.1 Valves broken		

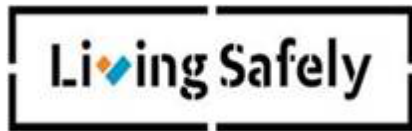
Item	Discussion/Key Points	Action	Due Date
	NP-02 - Rock, mud designs - Wet weather for commissioning time frames		
8.0 Innovation:			
	Initiative – aeration of rock, potential for a case study to be competed and presented		
9.0 Any Other General Business:			
	Format of meeting going forward with multiple work packages under construction		

Date and Time of Next Meeting: Wednesday 02/09/2020

From: [CONLEY, Sarah](#)
To: [BOWEN, Gavin](#); [PYKE, Luke](#)
Subject: WD Weekly Construction Meeting Minutes 26.08.20
Date: Friday, 28 August 2020 8:34:00 AM
Attachments: [20200826 WD weekly construction meeting.docx](#)

Minutes from Wednesday's meeting.

Sarah Conley | **Health and Safety Advisor** | Water Power Gas | **Utilities** | **Fulton Hogan** | Level 10, 515 St Pauls Tce, Fortitude Valley QLD 4006 | Mobile +61 499 310 655 | Web: www.fultonhogan.com



People at the heart of everything

Project Specific Coordination Plan

Wastewater Metropolitan Program

Centenary Highway SRM019 Rising Main – Works Delivery Phase

Document Control

Revision:	Reason for Revision:	Revision Date:	
Rev No.5	Inclusion in of Scope Change – Oldfield Road Access	01 September 2020	
Prepared By:	Sarah Conley Fulton Hogan Health & Safety Advisor		
Approved By:	Aaron Lutton Fulton Hogan Program Manager		

Document Control

This Plan interfaces with the other associated plans, which together describe the proposed overall project management system for the Urban Utilities program or works.

If any unsigned hard copies of this document are printed, they are valid only on the day of printing.

The revision number is included at the bottom of each page. When revisions occur, the entire document will be issued to all owners with the revision number updated accordingly for each owner of a controlled copy.

Attachments/Appendices to this plan are revised independently of this plan.

Disclaimer

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The holder is responsible for complying with the instructions that accompany revisions. No person other than the Fulton Hogan Project Manager, Line Manager or his/her nominee may issue revisions.

Amendments must be identified by the revision number.

Project Specific Coordination Plan

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1. Project Scope

1.1. Overview

Centenary Motorway Sewer Rising main (RM019) is a DN410 MSCL Pipe which was installed in 1976. It originates from SP019 Centenary Motorway Pump Station and terminates at the discharge maintenance hole MH177147 located adjacent to the Sinnamon Village Aged Care. It is approximately 1515m long with approximately 800m located in the middle of the Centenary Motorway.

The rising main runs predominantly along/under Centenary Hwy, from north to south, towards the on-ramp from Sinnamon Park then continues through a wetland and the natural ground adjacent to the Sinnamon Village Aged Care. Recent expansions to the retirement village have resulted in buildings closer to the main and discharge manhole than when constructed. Large rock boulders in the vicinity may have been placed over sections of the rising main (as part of the onsite stormwater management). As a result of these developments, direct vehicular access to the discharge manhole has been cut-off.

A recent burst in the rising main occurred near SP19 on the night of 6 February 2020 which severely affected the traffic flow through the Centenary Motorway. During the repair it was observed that the MSCL pipe near the high point of the rising main line is severely corroded. Condition of most of the pipe on the motorway is unknown as no CCTV inspection or thickness testing of the pipe could be undertaken on the motorway. This has raised a concern on the risk of failure of the rising main in the middle of the motorway in near future. A condition assessment of the rising main was carried out in 2019 by SMEC under Urban Utilities Enhanced Condition Assessment Program. Condition Assessment report is attached in Appendix 4.

Urban Utilities is urgently seeking to relocate the main away from the motorway through the Department of Main Roads (DTMR) Corridor to eliminate the risk of another failure on the motorway.

A summary of the scope of works that will be delivered by the WWMP team are detailed below;

- Design development to IFC
- Site Mobilisation and Early Works
- Installation of Drive 1 HDD DTMR Compound to Jindalee Golf Club (JGC) Maintenance Shed
- Installation of Drive 2 HDD JGC to Sinnamon Aged Care Easement
- Pipework Installation and Connections, including Flow Control and Isolations
- Reinstatement and Handover
- Oldfield Road Access to Sinnamon Aged Care Easement

1.2. Location



Figure 1: Sewer Rising Main 19 Site location.

The light blue line indicates the existing alignment of the rising main and shows the proximity of the project to the Brisbane River.

2. Possession of Site Specific Requirements

Throughout the durations of Works Delivery there will be four (4) sections of land that will be required for Fulton Hogan Utilities to possess in order to deliver the project. The works will be predominately limited to the four area, shown in Figure 2 and listed below;

- Site 1: DTMR compound adjacent and SP19 Sewer Pumping Station.
- Site 2: Jindalee Golf Course
- Site 3: Sinnamon Aged Care Facility via Oldfield Road Access Track
- Site 4: BCC Park Reserve – Pipe stringing area

In order to gain access to the land required, the following permits and approvals are required prior to commencing works;

- DTMR Compound – Sub-lease Agreement with Lybec Infrastructure (who is currently leasing the land) and DTMR approved permit.
- Jindalee Golf Course – BCC approval to access land and agreement with Jindalee Golf Club.
- Sinnamon Aged Care Facility – agreement and approval to access land with the Wesly Mission Queensland.
- BCC Park Reserve – agreement and approval from BCC Park department.
- Sinnamon Park - BCC Park Reserve and Wetland - agreement and approval from BCC Park department

As part of site possession the Fulton Hogan Utilities will be submitting Notice of Entry to relevant lands as required.

JINDALEE SRM-19 SITE LAYOUT



Figure 2 – Site Compound Areas and Access points

Fulton Hogan controlled access points to the four project areas will be as follows;

1. DTMR. The access and central meeting point will be the existing compound area as detailed and accessed as per Fig 3a.



Figure 3a

2. Golf Course. The access and central meeting area will be adjacent to the GC Maintenance shed which is accessed via the existing access road off Yallanbee Road as per Fig 3b.

COMPOUND AREA 2
LAYDOWN & SITE LAYOUT



Figure 3b

3. Sinnamon Aged Care Facility. The central meeting point will be in the existing car park indexed in Fig 2 and accessed as per Fig 3c.

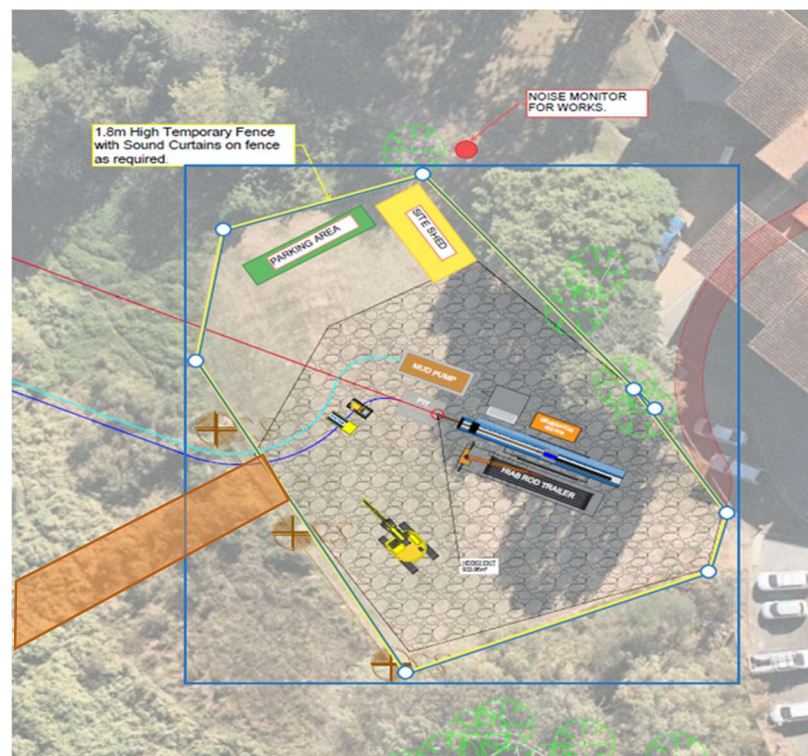


Figure 3c

4. BCC Park Reserve – Pipe stringing area. Access for pipe delivers as per Fig 2, via Capitol Drive.

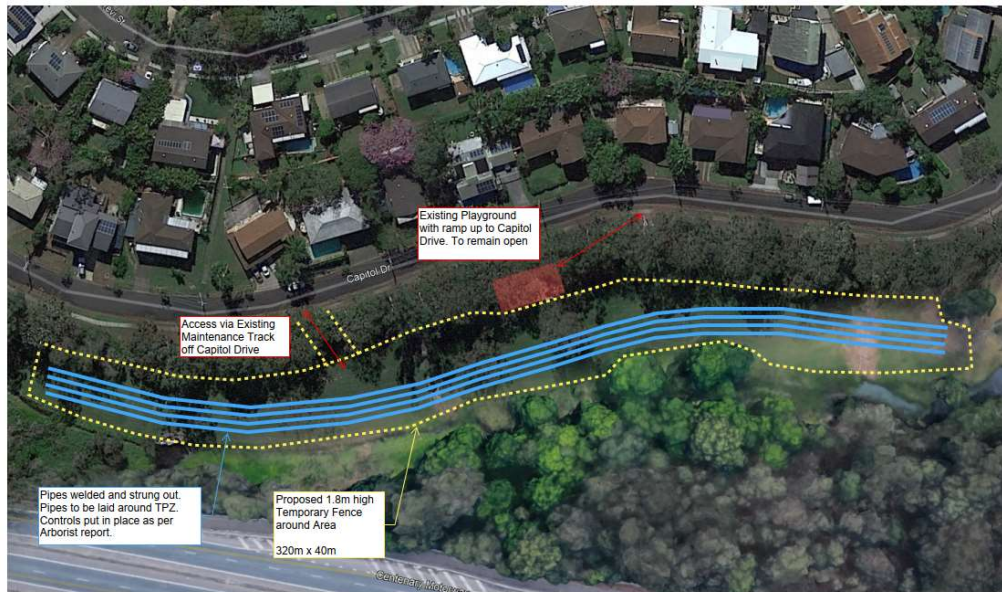


Figure 3d

3. Project Works Delivery Team

The Works Delivery team will work collaboratively together to ensure all aspects of the Works Delivery phase are completed safely, efficiently and to the highest quality standards. The integrated WWMP team is for Work Pack 02 is shown in Figure 6 below

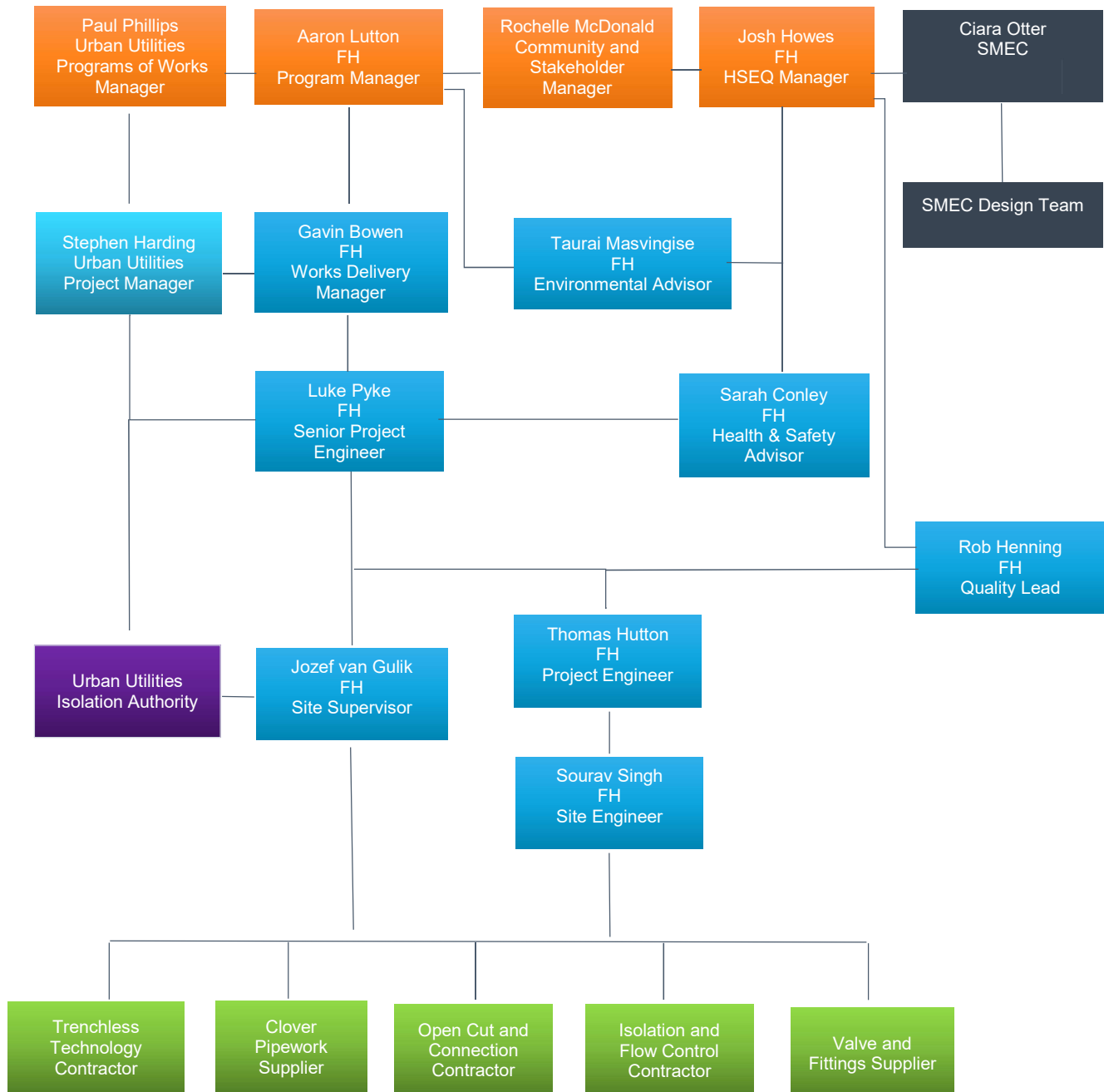


Figure 6 – Works Delivery Team Organisational Chart

4. Key Project Risk Documents & Approvals Process

In order to manage HSEQ key risk through the ECI to works delivery phase the flow chart shown in Figure 7 below highlights the key steps that need to be undertaken prior to commencing works on-site.

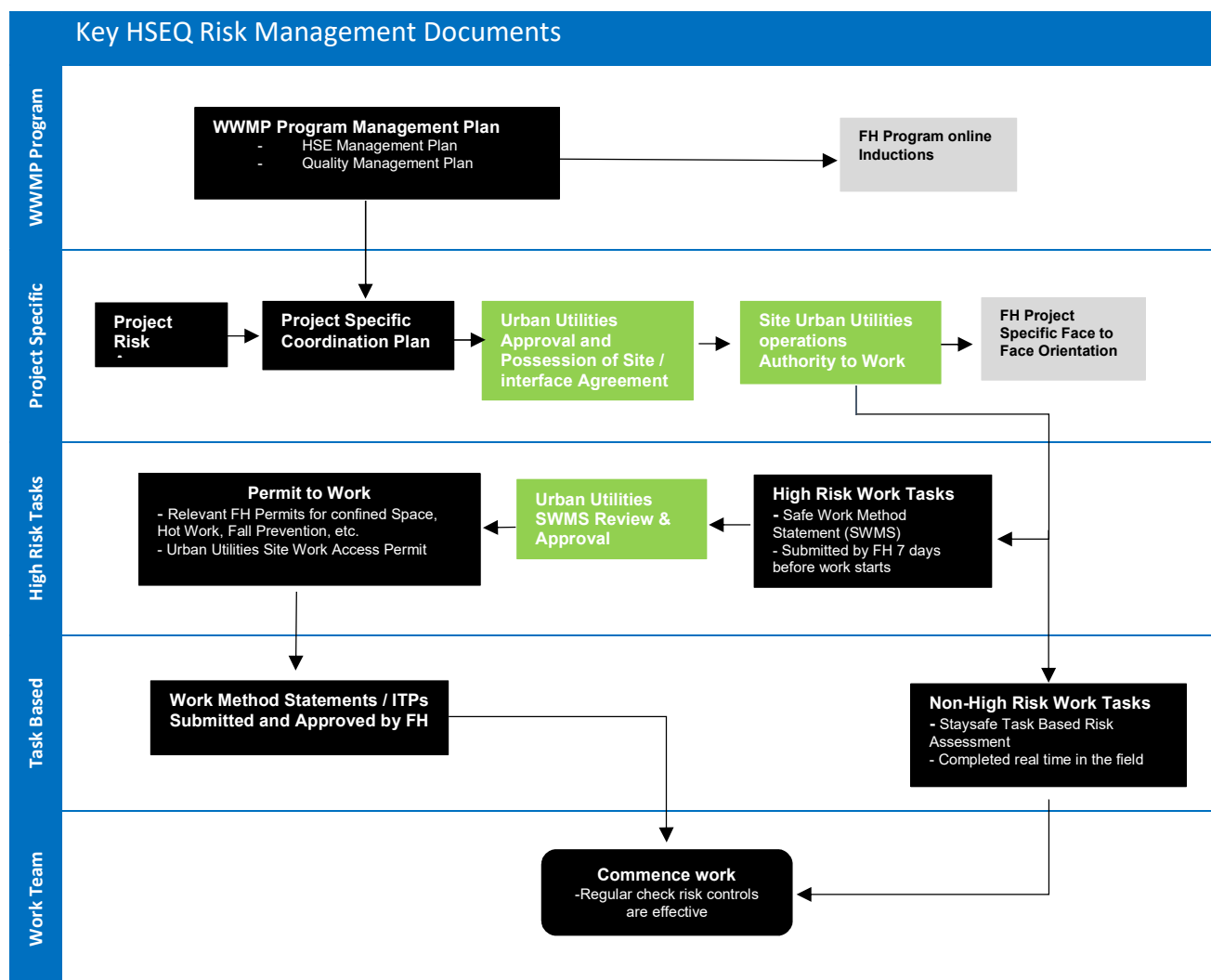


Figure 7 – HSEQ Risk Management Flow Chart

5. Project Key Contacts Listing

Workplace Personnel			
Fulton Hogan Personnel			
Title	Name	Contact Details	Comment
Program Manager	Aaron Lutton	0410 645 983	
Works Delivery Manager	Gavin Bowen	0499 302 803	
Community and Stakeholder Manager	Rochelle McDonald	0499 303 035	
Senior Project Engineer	Luke Pyke	0455 542 023	
Project Engineer	Thomas Hatton	0427 281 795	
Site Engineer	Sourav Singh	0448 895 136	
Site Supervisor	Jozef Van Gulik	0499 300 388	
Health & Safety Advisor	Sarah Conley	0499 310 655	
Environmental Advisor	Taurai Masvingise	0499 320 275	
Urban Utilities			
Program Manager	Paul Phillips	0400 779 338	
Senior Project Manager	Stephen Harding	0427 620 368	
WHS Lead	TJ Phillips	0448 289 124	
Urban Utilities Networks	Nadine Story	0408 295 539	
Urban Utilities Control	Damian McMurray	07 3856 7179	
Urban Utilities 24hr number	Urban Utilities	13 23 64	
SMEC			
Design Manager	Ciara Otter	0438 158 093	Overall Project Designer

EXTERNAL EMERGENCY CONTACTS			
Title	Name	Contact Details	Comment
Police	National Emergency Call Centre Local Police Station	000 Mobile phones 112	Indooroopilly Police Station 343 Moggill Rd, Indooroopilly QLD 4068 (07) 3377 9444
Ambulance	National Emergency Call Centre	000 Mobile phones 112	
Fire	National Emergency Call Centre	000	
Poison Information Centre	National Coverage	13 11 26	
Doctor or Medical Centre	Jindalee Medical Centre 62 Looranah St, Jindalee QLD 4074	(07) 3376 7343	
Hospital	Kessels Rd &, Troughton Rd, Coopers Plains QLD 4108	(07) 3182 6111	
Local / Regional Council	Brisbane City Council	07 3403 8888	

6. WHS High Risk Hazards Applicable to Works

HSE Plan Reference	Critical Hazards Categories	Applicable ✓	Risk L/M/H/E	Scope of Work
Section 8.1	Onsite - Traffic Management	✓	H	Site Deliveries
Section 8.1.1	Site Access & Parking	✓	H	Throughout the project
Section 8.1.2	Vehicles and Mobile Plant on Site	✓	H	Throughout the project
Section 8.2	Traffic Management – Roadwork	✓	H	Throughout the project
Section 8.3	Mobile Plant	✓	H	Throughout the project
Section 8.3.1	Servicing and Maintaining Mobile Plant	✓	H	Throughout the project
Section 8.4	Crane Lifts	✓	H	Throughout the project
Section 8.5	Working Near to Underground or Overhead Services	✓	H	Civil Works, excavation and drilling close to existing services.
Section 8.6	Permit to Work	✓	H	Throughout the project
Section 8.7	Electrical Safety	✓	H	Cut over and Commissioning works
Section 8.8	Isolation	✓	H	Cut over and Commissioning works
Section 8.9	Trenching & Excavations	✓	H	Throughout the project
Section 8.10	Drilling	✓	H	HDD works
Section 8.11	Asbestos	✓	H	Civil Works, excavation and HDD works
Section 8.12	Fall Prevention	✓	H	Unloading and accessing existing pumps stations for flow control and Tankering
Section 8.12.1	Ladders	✓	H	Civil works
Section 8.13	Temporary Structures	✓	H	Mechanical pipe installation
Section 8.13.1	Temporary Works	✓	H	Mechanical pipe isolation and pipe installation
Section 8.13.2	Scaffold	✓	H	Temporary works
Section 8.14	Hot Work	✓	H	Butt Welding and general maintenance
Section 8.15	Hazardous Chemicals and Dangerous Goods	✓	H	General Maintenance Works
Section 8.16	Demolition	✓	H	Demolition and grouting of redundant rising main

Section 9.16	Working Over or Near Water	✓	H	RCBC bridge improvements and bracing
Section 8.17	Confined Space and Restricted Access	✓	H	Mechanical works – internal welding of pipework.

7. WHS Hazards Applicable to Works

HSE Plan Reference	General Hazard Categories	Applicable ✓	Risk L/M/H/E	Scope of Work
Section 9.1	Barricading	✓	M	Throughout Principal Contractor Area
Section 9.2	Signage	✓	M	Throughout Principal Contractor Area
Section 9.3	Chain of Responsibility (CoR)	✓	M	Flow Control and Tankering
Section 9.4	Power Plant & Equipment	✓	M	Butt Welding
Section 9.5	Manual Handling	✓	L	Throughout project
Section 9.6	Change Management	✓	M	Throughout project
Section 9.7	Personal Protective Equipment	✓	M	Throughout project
Section 9.8	Site Establishment	✓	L	Throughout project
Section 9.9	Dust Management	✓	L	Demolition works
Section 9.10	General Site Rules	✓	M	Throughout project
Section 9.11	Amenities & Housekeeping	✓	M	Throughout project
Section 9.12	Use of Lasers	✓	L	Throughout project
Section 9.13	Working Alone	✓	L	Throughout project
Section 9.14	Noise	✓	L	Demolition works
Section 9.15	Inclement Weather	✓	M	Throughout Project
Section 9.17	Offsite driving and commuting	✓	M	Throughout project

8. Health & Wellbeing Hazards Applicable to Works

HSE Plan Reference	Hazard	Applicable ✓	Risk L/M/H/E	Scope of Work
Section 11.1	Fatigue Management	✓	M	Throughout project
Section 11.2	Fitness for Work including Alcohol and Drugs	✓	M	Throughout project
Section 11.3	UV, Sun Protection and Heat	✓	M	Throughout project
Section 11.4	Hygiene Management & Decontamination	✓	M	Demolition works

8.1. Permits Application to Project

Permit	Applicable ✓	Responsibility
Urban Utilities Network Access Permit	✓	Project Manager
Excavation Permit	✓	Supervisor / Project Engineer
Hot Work Permit	✓	Supervisor / Project Engineer
Confined Space Permit	✓	Supervisor / Project Engineer
Isolation Permit	✓	Supervisor / Project Engineer
Working Live Permit	✓	Supervisor / Project Engineer
Fall Prevention Permit	✓	Supervisor / Project Engineer
Crane Lift Study	✓	Supervisor / Project Engineer

9. Environmental Aspects Application to Works

HSE Plan Reference	Aspect	Applicable ✓	Scope of Work
Section 10.1	Air Quality Management	✓	Throughout the project
Section 10.2	Vibration	✓	HDD and driving of Enveloper
Section 10.3	Flora & Fauna	✓	Survey and recommendations
Section 10.4	Soil Erosion and Sediment Control	✓	Throughout Project
Section 10.5	Contaminated Soil	✓	Open trenching and HDD
Section 10.6	Acid Sulphate Soil	✓	Open trenching and HDD
Section 10.7	Water Quality	✓	Throughout Project
Section 10.8	Waste	✓	Throughout Project
Section 10.9	Heritage	☐	
Section 10.10	Heritage Discovery	☐	

9.1. Additional Environmental Submissions

Dependant on risk rating as identified above or required by Urban Utilities

Aspect	Detail	Responsibility
Trees and Vegetation	NALL Survey	SMEC Design Manager
Environmental Management	Construction Environmental Management Plan and Species Management Plan	SMEC Design Manager
Land use agreements	DTMR, BCC, Jindalee GC and Sinnamon Aged Care	Urban Utilities Project Manager

9.2. Environmental Permits

EPA Permit for Disposal of Acid Sulphate Soils

All relevant permits and requirements are covered within Project Construction Environmental Management Plan (CEMP)

10. Quality Documents Required

Scope of Works	ITP #	Construction Method Statement Required	ITP Required	ITC Required
Clear, Grub & Topsoil Stripping	TBA	✓	✓	✓
General Excavation	TBA	☐	✓	✓
Conduit & Pit - Installation (Urban Utilities)	TBA	✓	✓	✓
General Fill - Placement	TBA	☐	✓	✓
Concrete - Placement	TBA	☐	✓	✓
Subgrade Preparation	TBA	☐	✓	✓
Supply - HDPE Pipes and Fittings	TBA	☐	✓	✓
HDPE Pipe Installation (Open Trench)	TBA	✓	✓	✓
HDPE Pipe Installation (HDD)	TBA	✓	✓	✓
HDPE Pipe Installation (HDD) - TMR	TBA	✓	✓	✓
Landscaping	TBA	✓	✓	✓
Manhole Construction	TBA	☐	✓	✓
Decommissioning of Pipes and Pits	TBA	✓	✓	✓
Prime/ Seal & Asphalt Placement (BCC)	TBA	☐	✓	✓
Concrete Repair - Concrete Mortar	TBA	☐	✓	✓
Concrete Repair - Epoxy Mortar	TBA	☐	✓	✓
SUPPLY - Backfill Material (GF, Gravels)	TBA	☐	✓	✓
SUPPLY - Concrete Mix Designs	TBA	☐	✓	✓
SUPPLY - Electrical Materials (Conduit, Pits, Rope etc)	TBA	☐	✓	✓
SUPPLY - Reinforcement & Accessories	TBA	☐	✓	✓
Commissioning Plan Required?	✓	Contents Required: As per SDRL		



Hold Points and Witness Points Register:

To be advised upon completion of IFC Drawings

11. Project Communication and Consultation Schedule

Type	Freq.	Agenda	Attendees
Client Meetings	Weekly	To discuss general and raised issues and agree relevant actions as may be necessary Formal - Minutes issued.	Fulton Hogan Management/Sub-contractor Client Representatives
Urban Utilities Operations daily update (during Flow Control activities)	Daily	To discuss general and raised issues and agree relevant actions as may be necessary during Flow Control activities. Formal minutes issued as deemed necessary	All Field Supervision Urban Utilities Operations
Daily Pre Start Meeting	Daily	Raise and address any safety concerns from the previous shift Inform of any areas with significant risk for the coming shift To be a forum to raise OH&S issues To discuss daily site activities To co-ordinate works and interfaces such minimising hazards Daily Pre Start Meeting minutes shall be kept	All field supervision, Sub-contractor, Wages employees
Tool Box Meeting	Weekly	OH&S Topic to be determined by Project Manager / Safety Manager Toolbox Meeting Minutes to be kept and distributed	All supervision, Sub-contractors, consultants, suppliers and wages employees on site
Safety Committee Meetings (if requested by workforce)	Monthly	To discuss general and raised issues and agree relevant actions as may be necessary by the project workforce Formal - Minutes issued.	HSR's Elected Representative Safety Coordinator FH Project Manager
Other Contractors Visitors	As required	Report to site office If unable to attend daily pre start meeting, site supervisor / HSE coordinator will communicate all hazards / activities to other contractors / visitor	Site Supervisor Safety Coordinator Contractors Visitors to site

12. Incident Notification and Investigation

Refer Appendix A Contractor Classification, Notification & Investigation Process
Refer Appendix B Program Classification, Notification & Investigation Matrix

13. Emergency Management

The Fulton Hogan Project Manager shall appoint:

- An Emergency Planning Committee (EPC), that manages workplace-level emergency planning
- An Emergency Response Team (ERT), that manages the tactical and operational response to incidents and emergencies at a workplace
- An Emergency Coordinator (EC), who leads the ERT
- A designated first aider

The Emergency Planning Committee (EPC) for this project consists of the following personnel:

EPC Members	Discipline / Focus Area
Works Delivery Manager – Gavin Bowen	Overall Works Delivery
Senior Project Engineer – Luke Pyke	Overall workplace accountability
Site Supervisor – Jozef Van Gulik	Site specific Responsibility
Project Engineer – Thomas Hatton	Site specific Responsibility
Safety Operative – Sarah Conley	Health & Safety Advisor
Environmental Operative – Taurai Masvingise	Environmental Representative

The Emergency Response Team (ERT) for this project consists of the following personnel:

ERT Members	Position / Area
Luke Pyke	Senior Project Engineer
Jozef Van Gulik	Supervisor (Emergency Coordinator (EC))
Sarah Conley	Health & Safety Advisor
Thomas Hatton	Project Engineer

Core incident or emergency scenario flowcharts	
<i>Initial response (R.E.A.C.T) flowchart</i>	<i>Emergency evacuation flowchart</i>
<i>Emergency communications flowchart</i>	<i>Crisis management flowchart</i>
<i>Serious injury flowchart</i>	<i>Injury management flowchart</i>

Specific incident or emergency response flowcharts		Applicable ✓
Asbestos	Incident and emergency response flowchart - Asbestos	✓

Bomb threat	Incident and emergency response flowchart - Bomb threat	☐
Bushfire	Incident and emergency response flowchart - Bushfire	☐
Chemical, oil and fuel spills	Incident and emergency response flowchart - Chemical, oil and fuel spills	✓
Encountering contaminated soil	Incident and emergency response flowchart - Encountering contaminated soil	✓
Encountering cultural heritage sites or human remains	Incident and emergency response flowchart - Encountering cultural heritage sites or human remains	☐
Encountering wildlife (including snakes)	Incident and emergency response flowchart - Encountering wildlife (including snakes)	✓
Extreme dust	Incident and emergency response flowchart - Extreme dust	☐
Fall arrest	Incident and emergency response flowchart - Fall arrest	✓
Major fires or explosions	Incident and emergency response flowchart - Major fires or explosions	☐
Minor fires	Incident and emergency response flowchart - Minor fires	✓
Robbery or hostile intruder	Incident and emergency response flowchart - robbery or hostile intruder	✓
Service strikes and leaks – water or sewage pipes	Incident and emergency response flowchart - Service strikes and leaks - water or sewerage pipes	✓
Service strikes and leaks – gas	Incident and emergency response flowchart - Service strikes and leaks - gas	✓
Service strikes and leaks – electricity cables (underground or overhead)	Incident and emergency response flowchart - Service strikes and leaks - electricity cables (underground or overhead)	✓
Storms and flooding	Incident and emergency response flowchart - Storms and flooding	✓
Temperature extremes - heat	Incident and emergency response flowchart - Temperature extremes - heat	✓
Temperature extremes – cold	Incident and emergency response flowchart - Temperature extremes - cold	☐
Trench collapse	Incident and emergency response flowchart - Trench collapse	✓
Vandalism	Incident and emergency response flowchart - Vandalism	✓
Vehicle accidents and plant rollovers	Incident and emergency response flowchart - Vehicle accidents and plant rollovers	✓

Specific Emergency Plans Required	
Plan Type	Responsibility
Flow Control Plan / procedure	FH Site Team and Subcontractors with input from relevant Urban Utilities personnel
Demolition Plan	
Hydro fracture Response Plan	

14. Injury Management

Where an employee requires medical treatment resulting from an incident, they will be taken to the medical facility located nearest to the site (refer to Appendix C). Sonic Health Plus located at Skygate (Brisbane Airport), Oxley and Loganholme will be the preferred medical facilities for initial injury assessment. The closest provider can be located in the map in Appendix C.

14.1. Rehabilitation and Return to Work Coordinator

OccCorp Injury Management service will be utilised as part of the Rehab and Return to Work service. The designated Fulton Hogan Return to Work Coordinator will work closely with OccCorp to manage the injuries specific to Fulton Hogan employees. Subcontractors will be responsible for the injury management of their own employees and there will be an expectation that they have adequate resources and processes in place.

The Fulton Hogan designated RRTW Coordinator is: Josh Howes

14.2. First Aid

First Aiders Name	Position / Area
Thomas Hutton	Project Engineer
Sarah Conley	HSE Co-ordinator

First Aid Kits and snake bite kits are located in FH vehicles and site compounds and access to Defibrillator located in each of the three site compounds.

15. Site Facilities, Toilets and Amenities

The following facilities are available at site for use by visitors and operatives;

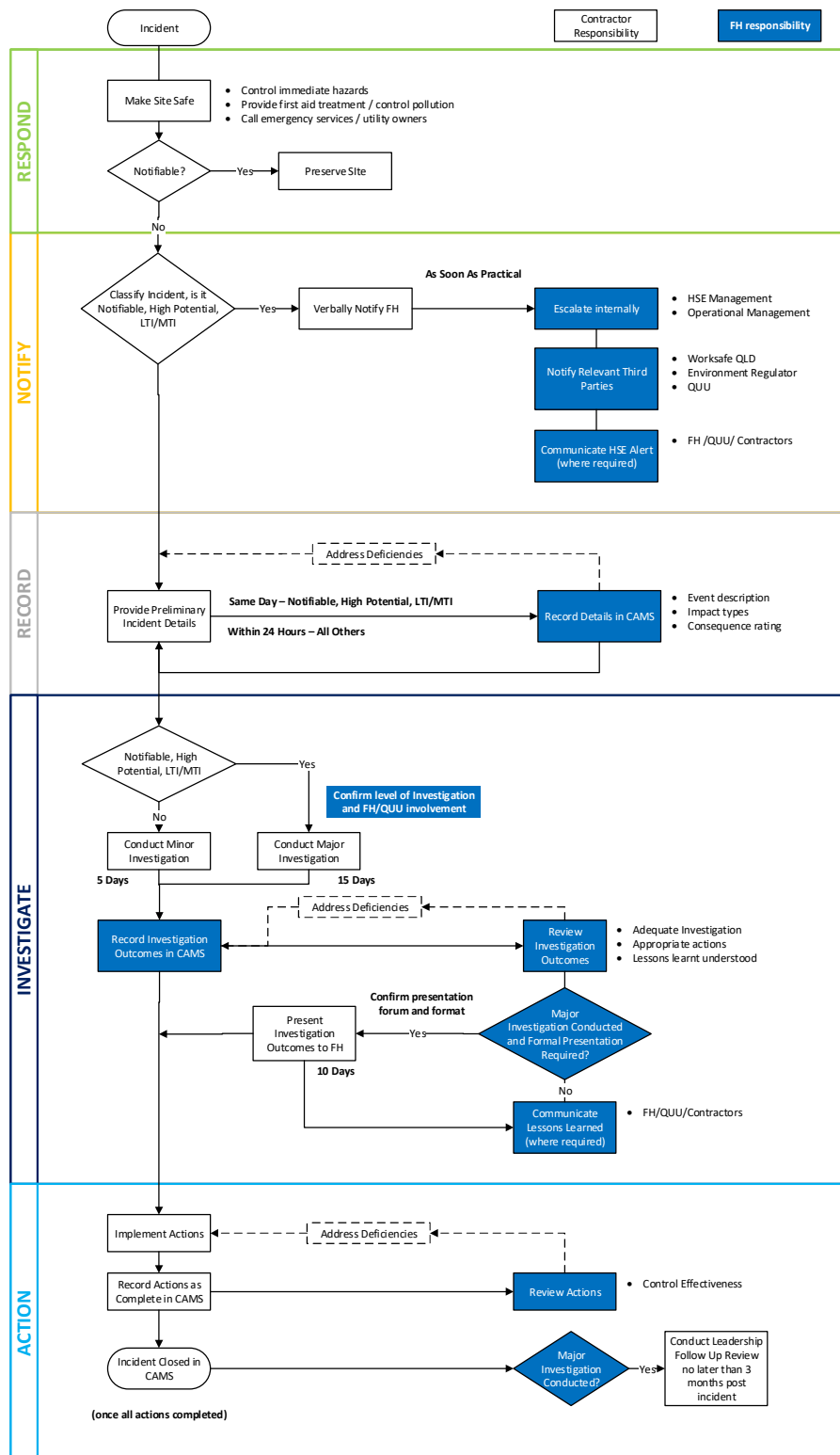
- DTMR Laydown - Site Compound
 - Site office x 2 and Crib Sheds x 2
 - Male and Female toilets
 - Hot and cold potable water
 - First aid
 - Defibrillator

- Jindalee Golf Club – FH Office Adjacent to maintenance Shed
 - Crib Shed
 - Male and Female toilets
 - Hot and cold potable water
 - First aid
 - Defibrillator
- Sinnamon Aged Care Centre – Crib Shed
 - Crib Shed
 - Male and Female toilets
 - Hot and cold potable water
 - First aid
 - Defibrillator

16. Revision History

Date	Revision	Author	Brief Description of Change
5 June 2020	Rev 0	S Conley	Draft
10 June 2020	Rev 1	L Pyke	Draft Amended
12 June 2020	Rev 2	S Conley	Draft Amended
18 June 2020	Rev 3	S Conley	Draft Amended
24 June 2020	Rev 4	S Conley	Approved for Distribution
18 June 2020	Rev 5	S Conley	Amended to include Oldfield Road Access Scope Change

Appendix A Contractor Incident Classification, Notification and Investigation Process

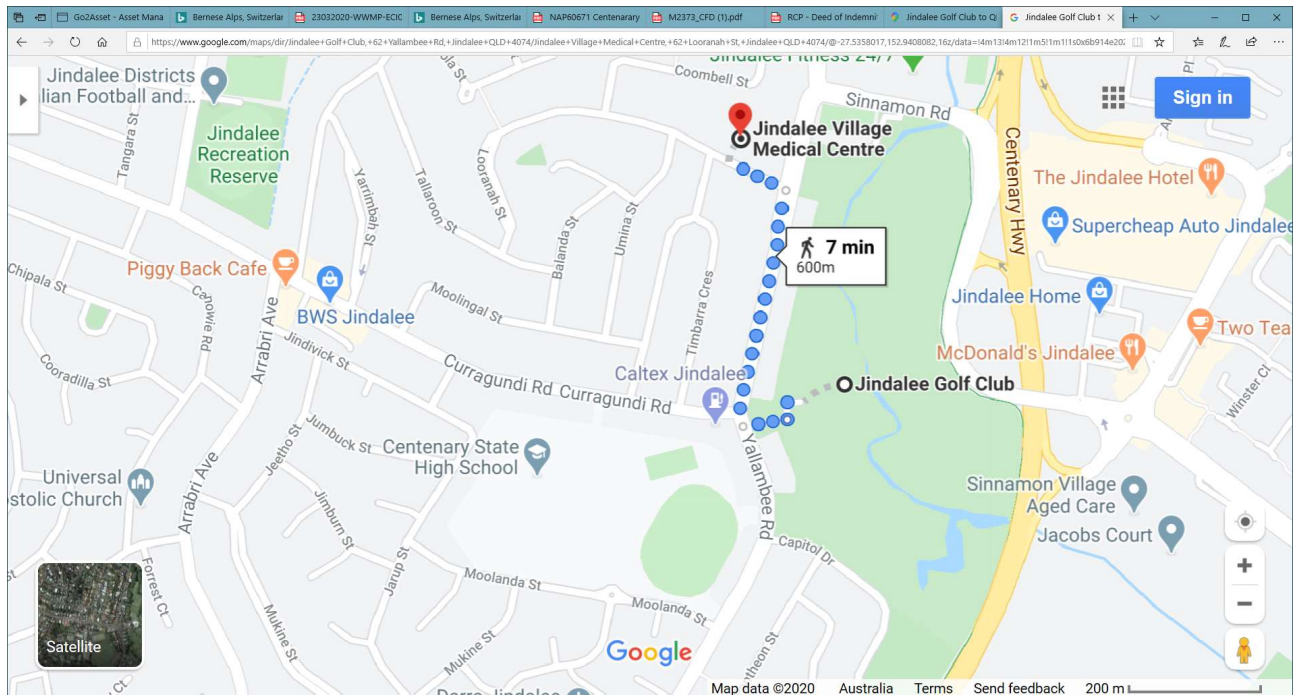


Appendix B Program Classification Notification & Investigation Process

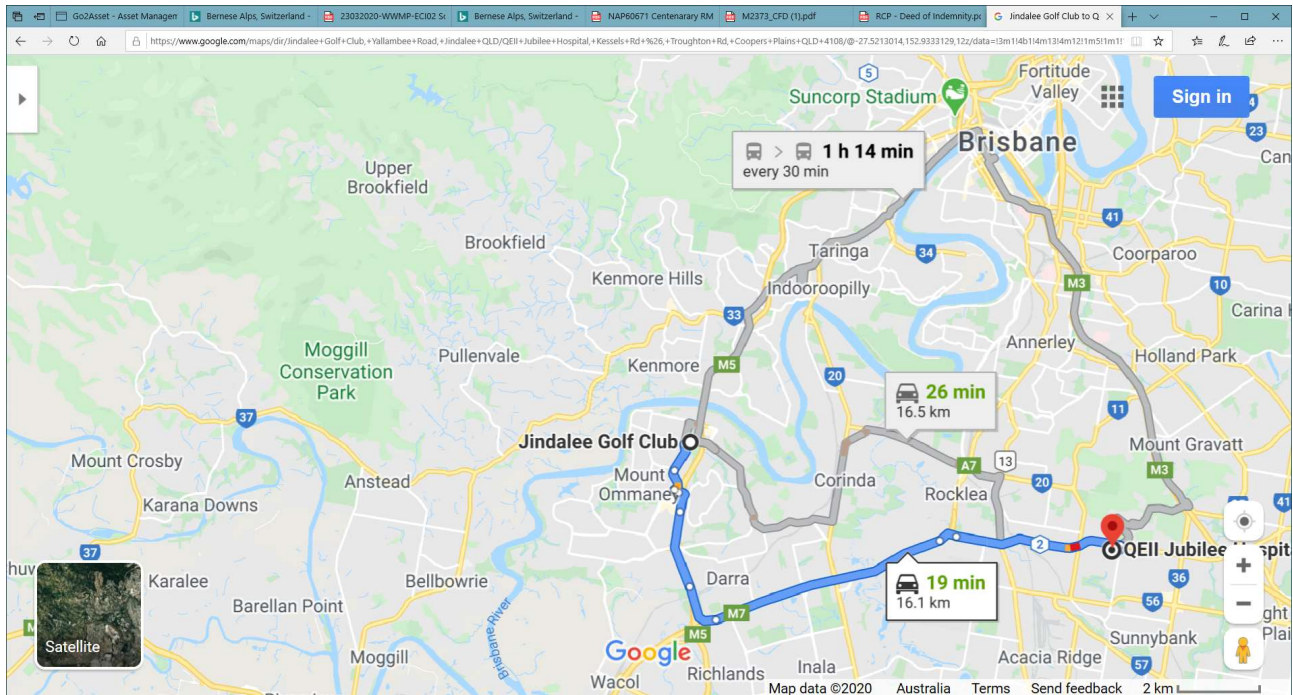
Consequence Descriptor		Insignificant	Minor	Moderate	Major	Catastrophic
Incident Impact Category	WHS	Injury or illness requiring first aid treatment. Near miss events.	Medical Treatment/ Suitable Duties Injury or illness. Short term illness	Lost Time Injury or Illness < 4 days. Short term disability	Serious / Hospitalisation injury Long term > 4 days Lost Time Injury or illness Long term disability.	Fatality and / or amputation of a limb. Long term/ terminal illness. Permanent disability.
	Natural Environment	Temporary, reversible environmental impact quickly contained & immediately restored (<24 hours). E.g. No lasting impact on species, habitat or community amenity or Cosmetic remediation.	Short term reversible impact to the natural environment or heritage area which requires minor effort (time and resources) to remediate (<1 week). E.g. Sewage overflow which cannot be remediated in 24 hours. Noise or odour complaints.	Medium term reversible impact to the natural environment or heritage area which requires moderate effort (time and resources) to remediate (>1 week to <1 year). E.g. Sewage overflow which does not cause major life kill but requires moderate time to remediate.	Long term reversible impact to the natural environment or heritage area that requires significant effort (time and resource) to remediate (>1 year). E.g. Sewage or chemical spill to an aquatic or terrestrial environment which causes major life kill.	Permanent or irreversible damage to the natural environment or heritage area. E.g. A wilful or negligent act that causes serious harm to the environment, such as destruction of heritage asset, conservation areas, threatened species or protected bushlands.
	Customers	Customers/ Community disruption event < 5 hours.	Customer/Community disruption > 5 hours. No Key Account customer disruption.	Customer/Community disruption > 10 <= 15 hours. Individual Key Account customer service disruption.	Customer/Community disruption > 15 <= 25 hours. Individual Key Account customer shutdown. Localised displacement of people.	Customer/Community disruption > 25 hours. Multiple Key Account customer shutdowns. Widespread displacement of people.
	Compliance	No regulatory involvement expected. Individual breach of internal policy or procedure. No civil action expected.	Regulator/external auditor 'non-conformance' or request for further explanation. Notification to Regulator required. Local area breach of internal obligation, procedure or policy. Civil action expected.	Regulator/ external auditor issues improvement notice, multiple non-conformances or PIN. Systemic breach of internal obligation, procedure or policy.	Regulator issues notices, corrective action order and/or penalties, common law liability confirmed. Order to stop work. Multiple PINs, Prohibition notice. Breach of Code of Conduct resulting in dismissal.	Successful criminal prosecution, imprisonment of QUU officer. Government inquiry. Loss of licence to operate.
	Reputation	Standard Complaints Notification of potential adverse media/ social media coverage. Media Team intervention	Minimal stakeholder interest/concern. Adverse localised community concern Isolated local adverse media/social story. ELT intervention.	Short term (1 week) loss of confidence among some key stakeholders. Adverse widespread community concern. Short-term local adverse media/ social media coverage. CEO intervention.	Medium term (1 month) loss of confidence among key stakeholders. Community campaign or action. Short term state and/or national adverse media/ social coverage. Board intervention.	Long term (3 month) loss of confidence among key stakeholders. Widespread community action or protest. Sustained state and national adverse media/ social media coverage. Shareholder intervention.
Notification FH (Escalation) by:		Worker to Supervisor	Project PM to PRM Project HSE to BU HSE	GM to COO to CEO BU HSE to National HSE	CEO to MD	National HSE to GM Corp Services
Notification to QUU		FH SUP to Site QUU OPS	FH PM to QUU PM to QUU PRM FH HSE to QUU HSE	Internal QUU Escalation		Internal QUU Escalation
Notification Communication Method:		Same Day CAMS Only	Within 6 Hours by phone/email/text	ASAP by phone/email/text		ASAP by phone/email/text
CAMS Entry timeframe:		Near Miss – Within 24 hours	CAMS: 12 Hours Incident Report	CAMS: 12 Hours Incident Report / ICAM Investigation or 5 Why's based on severity		CAMS: 2 Hours Incident Report / ICAM Investigation
Preliminary Investigation Details Available		CAMS and Q-Pulse only	Within 48 hours	Within 24 Hours		Within 24 Hours (legal privilege may apply)
Final Investigation Details Available		CAMS and Q-Pulse only	CAMS and Q-Pulse only	5 Days Basic Root Cause Investigation	Within 10 Working Days ICAM Investigation	Within 10 Working Days ICAM Investigation
OFSC Ph: 1800 652 500 (Utilities QSE Manager)		N/A	MTI: Report Form (within 3 weeks)	LTI / Dangerous / Notifiable Incident: Report Form - 48 Hours		Fatality: Phone - Immediate Report Form - 48 Hours
Worksafe QLD Ph: 1300 362 128 (Project Safety Mgr)		N/A	Medical Treatment within 48 hours of exposure to a substance	Under certain conditions as per Work Health and Safety Act 2011	Immediate treatment as an in-patient in a hospital and as per Regulations	As per Work Health and Safety Act 2011

Key: PM = Project Manager, HSE = Health Safety Environment, OM = Operations Manager, GM General Manager, COO Chief Operating Officer, CEO Chief Executive Officer, MD = Managing Director, PRM = Program Manager

Appendix C – Medical Centre Map



Appendix D – Hospital Map



Appendix E – Project Site Facilities

As per Figure 3a - d

Appendix F – Vehicle Movement Plan (Light Vehicles)

As per Figure 3a - d

Appendix G – Vehicle Movement Plan (Heavy Vehicles)

As per Figure 3a - d

Appendix H – STEP/RACI Matrix

Attached

Appendix I – Construction Environmental Management Plan (CEMP)

Attached



	  
Table Of Contents	
1.	Executive Summary
2.	Health, Safety & Environment
3.	Risk Management
4.	Program Performance
5.	Work Package Performance
6.	Community & Stakeholder Engagement
7.	Making A Difference
8.	Appendices
9.	Additional Attachments
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1. EXECUTIVE SUMMARY

In the 8th Month of the Wastewater Metro Program the team have are now in the closing process of one project and in full discussions on the handover planning for Jindalee SRM.

To date WWMP have had 6 Packages released into ECI. Two packages have completed RAMP approval and commenced works on site. Two are currently awaiting RAMP approval.

Package 6 was released as a constructability report and as a result of the positive feedback there has been some discussions about FHU assisting the Gate 2 to 3 process to minimise any doubling of site investigations.

Work Package - In progress

Pack	Sub	UU Code - OLD/New	Description
NP-01	01	BWWTCAA14A17	ASH - Amy Street Hawthorne PS (RAMP Submitted)
	02	BWWTCAA14A53	JOT - Jermiah O'Toole PS (Approvals Process)
	03	BWWTCAA14A52	YER - Yeerongpilly PS (Approvals Process)
NP-02	01	BWWCAA03A54	RM019 Burst Sewer Main Replacement (WD)
NP-03	01	BCASAA01A22	SRMs Condition Assessment (WD)
	02	BCRSAA01A14	RTU's (11No.) Replacement (RAMP Submitted)
NP-04	01	SRMR030	1840mm Eagle Farm SPS SRM - Serpentine Rd to LP STP Rehab (ECI Expenditure Limit)
NP-05	01	STRG127	Breakfast Creek Tunnel S1 (PRE-ECI Approved)
NP-06	01	BWWCAB41	SRMs Line51 Replacement (Pre-ECI COMPLETE)

Work Package - Upcoming Work Packages

Pack	Sub	UU Code	Description
TBA	TBA	TBA	

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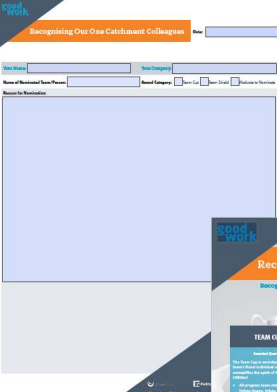




EXECUTIVE SUMMARY

Cont'd

- The Reward & Recognition Posters and Nomination forms for the Urban utilities – “One Catchment” WWMP and MTP programs of works were rolled out to the team.
- This is an initiative designed to recognise and reward the excellence of individuals and teams that go above and beyond, includes for Urban Utilities/FH/SMC/Subcontr actors and is intended to be held quarterly. More info to come!!




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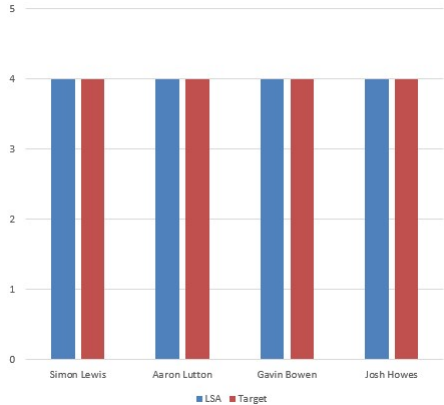





2. HEALTH, SAFETY & ENVIRONMENT

- No incidents occurred within the month of October.
- All LSA and Inspection targets were exceeded. (refer graph opposite)
- Learnings and areas of focus from LSA's included:
 - Trenching and Access – Discussion with workforce surrounding requirements of battering and benching and ladder requirements for access to open excavations
 - People Plant Separation – Discussion with operators and spotters on positive communications and the importance of clear and continuous communication when working in the vicinity of other plant and equipment
 - Environmental Risk – Discussion with team on the need to use spotter catchers and fauna spotters
- FH has released its Critical Risk Controls, an alignment of key risk procedures with Life Saving Rules to simplify the requirements regarding these key business risks and more clearly articulate FH expectations

Leadership Safety Actions - October



Individual	LSA	Target
Simon Lewis	4	4
Aaron Lutton	4	4
Gavin Bowen	4	4
Josh Howes	4	4

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3. RISK MANAGEMENT

The main threat remains as identified previously to the successful delivery of the program as handover and engagement throughout the approvals process. The Town Planning component of NP-1 (JOT/YER) has now been engaged and with a weekly JOT/YER Approvals meeting is clarifying the requirements for DA/Owners Consent etc.

The Stakeholder and Community interactions to date for DP's has been written around the approvals being in place. Now that FH are being involved in the approvals process this has added some additional process which is being worked through to maintain the customer at the forefront of the decision process but to reflect the minimal information available at the time of DA application etc.

JOT/YER will act as a "proving ground" to confirm this is the best practice to undertake on future projects.

Risks

- One risk has been requested to be drawn upon to date on the projects in Works Delivery. This remains in discussion for the ground conditions experienced during Drive 1. This is currently in the process of being clarified prior to being agreed as a RISK item.

Opportunity

- NP02 - DTMR has expressed interest in utilising the shut period for early next year to complete some preparation works for the new Jindalee bridge. No new information has been provided on this opportunity and may be too late to capitalise upon.
- Utilising the current resources to undertake works to minimise overheads percentage remains a priority.

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4. PROGRAM PERFORMANCE

Program performance:

- Positive affect– Brisbane West BUG and Cr Hutton organically praised the Centenary Highway, Jindalee project on their Facebook pages for our early engagement about the bikeway diversion.
- Positive affect – **ALL** – Rainfall has not affected the one project under construction during October
- Negative affect - **ALL** – RAMP submissions are taking longer than planned to be endorsed
- Positive affect – **NP02** – Commissioning team SMEC/FH/Urban Utilities conducted first meeting on handover

Key Achievements:

- **NP02 – Jindalee SRM** - Completed Drive 2 access track and pilot hole.
- **NP03.1 – SRM inspection** – Completed works – Urgent and High Damage Report completed

Lessons Learnt:

- The importance of consistent/early engagement has been reinforced with the team this month as a result of positive feedback received from the BUG at Jindalee SRM. Positive feedback was received and referenced publically/organically from the BUG which drives the teams customer centric approach.

WWMP NP-02 UPDATE

Open trench and pipe installation at DTMR Compound is now complete.








Construction of access track completed

Access track to Sinnamon Aged care is open for Drive 2.....




10 Oct 2020 at 1:36:53 pm
Centenary Highway Bikeway
Jindalee QLD 4977
Australia

9 © Urban Utilities






Drive 2: Pilot Hole Completed!



10 © Urban Utilities






6. COMMUNITY & STAKEHOLDERS ENGAGEMENT (NETWORKS)

Areas of focus	Gone well	Community benefits
• Progress collaboration between UU and FH for FH overarching Community Engagement Strategy and project specific Community Engagement Plan documents • Assisting UU with Development Application engagement for Morningside and Yeerongpilly • Start early information engagement for Hawthorne in early December • Training on UU CMS platform.	• Nil complaints* for Centenary Highway Sewer Upgrade, Jindalee • Gail Harris on boarded • Web page and contact centre updates sent to UU for uploading • Toolbox training well received on site by Jindalee crews and One Team fortnightly meeting • Cr Sarah Hutton and UU Shareholder Relations team had a successful follow up Centenary Highway site visit on 29 October.	• Local communities informed about upcoming works with information available about how to contact the project team • Brisbane West BUG and Cr Hutton organically praised the Centenary Highway, Jindalee project on their Facebook pages for our early engagement about the bikeway diversion.

* Note: Complaints report has not been included in the appendices as zero complaints have been received between this month.

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7. MAKING A DIFFERENCE

PULP Vision – Virtual Site Portal

Cost Savings:

- Efficient collaboration between Urban Utilities, SMEC and FH
- Minimising stakeholder site investigation visits
- Minimising stakeholder inductions for high risk areas
- Early design clash detection and mitigation
- Constructability assurance

Risk Minimisation:

- Eliminating the need to be in hazardous areas
- Ability to navigate site assisting Safety in Design
- Group safety training conducted in Virtual Site environment

Time Savings:

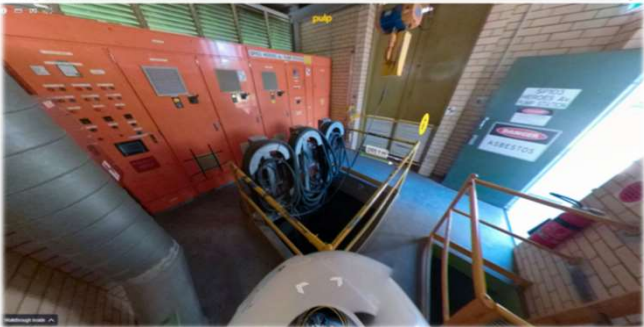
- Pulp Vision's rapid mobilisation and Virtual Site creation
- Elimination of lengthy site visits
- Elimination of cumbersome mass photo archives
- Elimination of repeat visits due to further detail requirement.

pulp

SPS Pump Station Virtual Sites





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7. MAKING A DIFFERENCE

- YouTube link
 - https://youtu.be/mnY_doswH6M

PULP VISION'S IMPACT: 35 UNIQUE VIRTUAL SITES

WASTEWATER
METRO PROGRAM



JINDALEE




PUMP STATIONS




LUGGAGE POINT





OXLEY CREEK




















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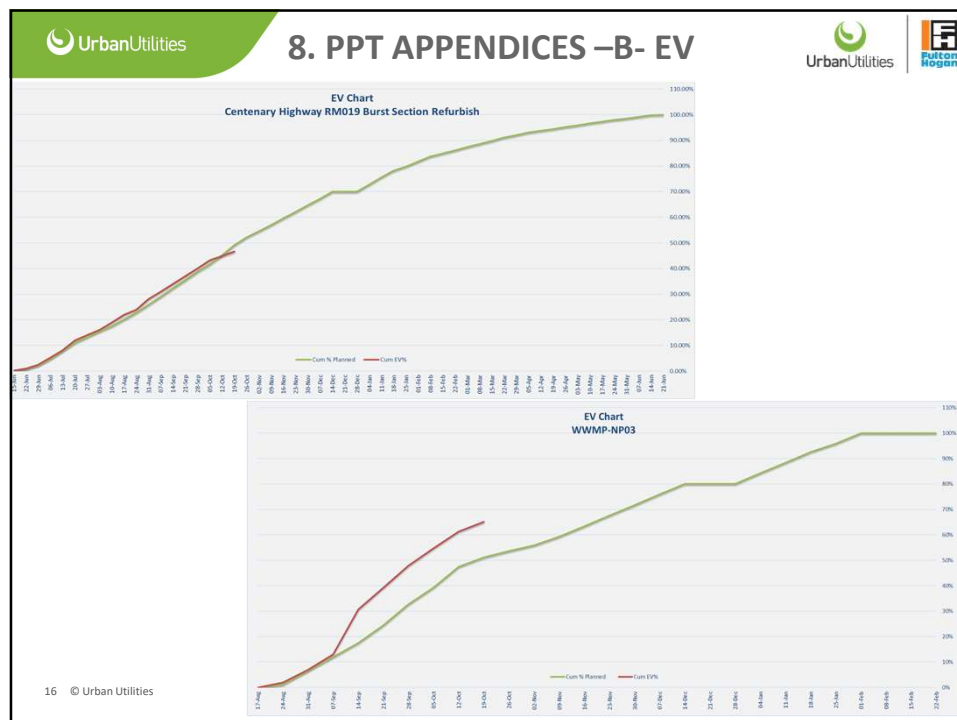
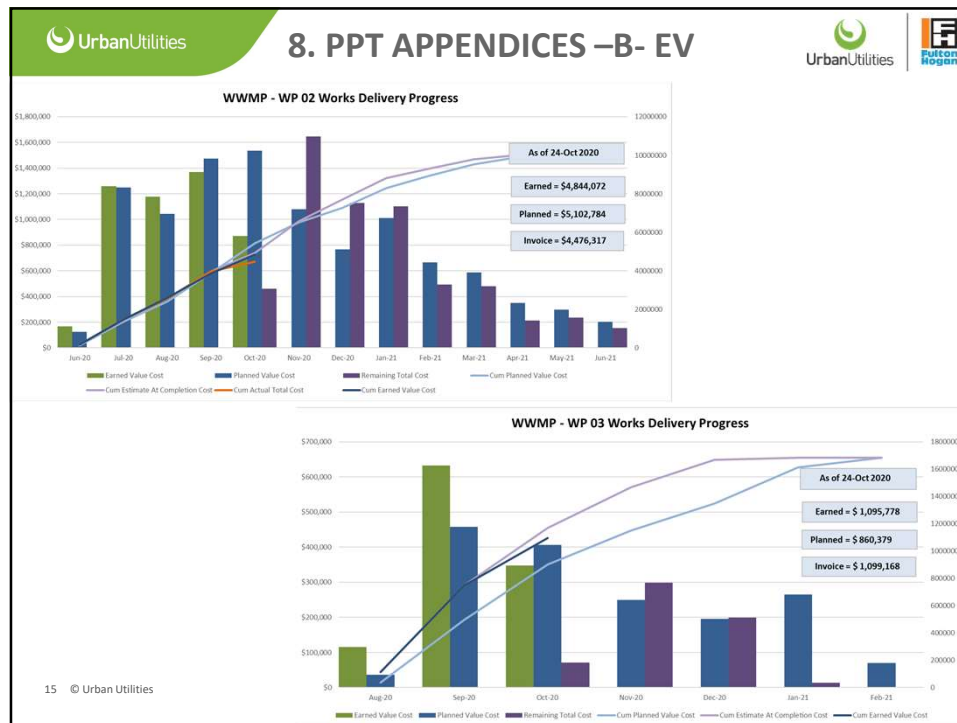





8. PPT APPENDICES

- Appendix B – Earned Value
- Appendix C – Project Progress
- Appendix D – SPI and CPI
- Appendix E – KPI Summary
- Appendix F – Community Engagement Dashboard

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8. PPT APPENDICES –C- Progress

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Waste Water Metro Program
High Level Schedule

Fulton Hogan

Activity Name	Start	Finish	BLT Finish	BL Project Finish	Variance - BL Project Finish Date	Variance - BLT Finish Date
SRM037 (BWWCAA03A54) Centenary Highway RM019 Burst Section Refurbishment (24-10-2020)	16-Jun-20 A	22-Jun-21	22-Jun-21	22-Jun-21	0	0
WWMP- NP03- SCR004 (BCASAA01A22) - SRM Condition Assessment (24-10-2020)	26-Aug-20 A	25-Jan-21	26-Feb-21	26-Feb-21	23	23
Activity Name	Original Duration	Start	Finish	BL Project Finish	Variance - BL Project Finish Date	Variance - BLT Finish Date
QUU-8247-10 SRM037 (BWWCAA03A54) Centenary Highway RM019 Burst Section	246	19-Jun-20 A	22-Jun-21	22-Jun-21	0	0
RAMP Approval	0	19-Jun-20 A			0	0
BCC Land use (Golf Course) Access agreement	0		25-Jun-20 A	25-Jun-20	0	0
DTMR Lease Agreement	0		26-Jun-20 A	26-Jun-20	0	0
NALL GC	0		30-Jun-20 A	30-Jun-20	0	0
Start Construction	0	01-Jul-20 A			0	0
Sinnamoon Aged Care Access Agreement	0		15-Oct-20 A	30-Jun-20	-73	
Asset in Service	0		29-Mar-21	12-Apr-21	8	
Construction Complete	0		19-Apr-21	26-Apr-21	5	
Document Handover	0		18-May-21	18-May-21	0	0
Commissioning Complete	0		22-Jun-21	22-Jun-21	0	0
QUU-8272-02 WWMP- NP03- SCR004 (BCASAA01A22) - SRM Condition Assessment	83	26-Aug-20 A	04-Jan-21	05-Feb-21	23	23
Works Delivery Notice (WDN) issued	0	26-Aug-20 A			2	
RAMP Approval	0	26-Aug-20 A			2	
Asset in Service (AIS)	0		14-Oct-20 A	19-Oct-20	3	
Construction Completion	0		15-Oct-20 A	02-Nov-20	12	
Commissioning Completion	0		04-Jan-21	05-Feb-21	23	
Completion Certificate	0		04-Jan-21	05-Feb-21	23	

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8. PPT APPENDICES –D- SPI and CPI






Waste Water Metro Program



Activity ID	Activity Name	Performance % Complete	Actual Total Cost	Planned Value Cost	Earned Value Cost	Cost Performance Index	Schedule Performance Index
Total		49.18%	5,575,486.52	5,963,162.73	5,939,850.76	1.07	1.00
SRM037 (BWWCAA03A54) Centenary Highway RM019 Burst Section		46.6%	4,476,317.62	5,102,784.13	4,844,072.91	1.08	0.95
WWMP- NP03- SCR004 (BCASAA01A22) - SRM Condition Assessment		65.12%	1,099,168.90	860,378.60	1,095,777.85	1.00	1.27

18
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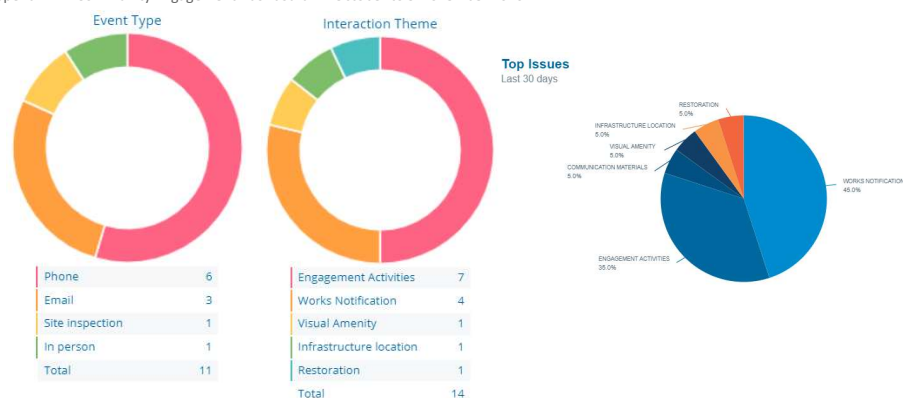
8. PPT APPENDICES –E- KPI OPS

The dashboard attached summarises the assessment of KPI Scores for October 2020. The PMT are currently undertaking an assessment on the KPI's scope/extent going forward and anticipate to be in a position to update the below in more detail in the November report.

Criteria	KPI	KPI Description	Oct-18
Site Safety Lead Indicators	KPI 1.1A	Safety Leadership Insights & Actions	100
Site Safety Lead Indicators	KPI 1.1B	Safety Culture Survey Response Rate	98
Site Safety Lead Indicators	KPI 1.1C	HiPo Incident Debriefing and Lessons Learned Bulletin issued within 60 days	0
Environmental Impact	KPI 1.2	Recordable Environmental Incidents Frequency rate	100
Annual Cost and Time Variance	KPI 1.3	Recordable Environmental Incidents Frequency rate	100
Data Integrity	KPI 1.4	Qualitative assessment of the timeliness and quality of data and deliverables provided by the Contractor	0
Collaboration	KPI 2.1	Qualitative assessment based on feedback from UU and the Delivery Partner team	0
Retention of Key and Important Personnel	KPI 2.2	A measure of the retention the nominated Key and Important Personnel	100
Innovation	KPI 3.1	Innovation and benefits delivered through the Program	100
Complaints Management	KPI 4.1	Measurement of satisfaction, timeliness and appropriateness of enquiries/complaint resolution.	100
Relationship with External Stakeholders	KPI 4.2	The satisfaction within the community of the relationship between the community/stakeholders and the Contra	0
Network Disruption	KPI 4.3	Managing network disruptions/outages to minimise disruptions to customers.	0

8.4 PPT APPENDICES F – Community Dashboard

Appendix D – Community Engagement Dashboard 14 October to 9 November 2020



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9. ADDITIONAL ATTACHMENTS

Scope Change and Risk Drawdown Register (Not included as nil) – excel
Innovation Register – excel
Cashflow – excel
Commercial Tracker – excel

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CONLEY, Sarah

From: BOWEN, Gavin
Sent: Friday, 7 August 2020 7:16 AM
To: LUTTON, Aaron; CONLEY, Sarah
Subject: FW: Emailing: PV01 - Variation Cost Calculation Sheet.xls
Attachments: PV01 - Variation Cost Calculation Sheet.xls

Hi Aaron,

Please find attached Sarah's upper limit estimate for the Aged Care crossing.

Regards,

Gavin Bowen | Works Delivery Manager – Networks | Water Power Gas | Utilities | Fulton Hogan | 480 St Pauls Terrace, Fortitude Valley QLD 4006 | Mobile +61 499 302 803 | Web: www.fultonhogan.com

-----Original Message-----

From: CONLEY, Sarah <Sarah.Conley@fultonhogan.com.au>
Sent: Thursday, 6 August 2020 4:18 PM
To: BOWEN, Gavin <Gavin.Bowen@fultonhogan.com.au>
Subject: Emailing: PV01 - Variation Cost Calculation Sheet.xls

Your message is ready to be sent with the following file or link attachments:

PV01 - Variation Cost Calculation Sheet.xls

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.



VARIATION COSTING SHEET

Project		WWMP-NP-02 CENTENARY HIGHWAY RM019 BURST SECTION REFURBISHMENT
PVO No.		PV01
Sheet No.		1
Date		6/08/2020

DESCRIPTION

Sinnamon Park - Temporary Access and Wetland Crossing

COSTS

Description	Quantity	Unit	Rate	Total
Summary of Costs	1	LS	#####	\$ 1,856,323.98
			Subtotal	\$ 1,856,323.98
Overheads and Profit				\$ 139,224.30
			Total	\$ 1,995,548.28

Contractor's Representative: _____

Area	Activity	Work Type	Contractor	Description	Qty	UOM	Filtered Total	\$ 433,603.98	Comments
							Rate	Subtotal	
All Areas	Survey setout	Subcontractor	ESO	Cadastral Surveyor + Assistant	8	hr	\$ 350.00	\$ 2,800.00	Plugged
All Areas	Survey setout	Subcontractor	ESO	Surveyor + Assistant	8	hr	\$ 220.00	\$ 1,760.00	
All Areas	ESC Consultation	Subcontractor	CNC	CPESC Inspection and Certification	1	LS	\$ 3,000.00	\$ 3,000.00	
All Areas	Arborist Consultation	Subcontractor	Treescape	Arborist Report and Inspections	20	hr	\$ 160.00	\$ 3,200.00	10 hrs for inspection, 10hrs for reporting
All Areas	Clearing Consultation	Subcontractor	Ecosure	Fauna Spotter/Ecologist	25	hr	\$ 180.00	\$ 4,500.00	10 hrs for the access track and 10hrs for the wetland crossing, 5 hrs for
All Areas	Dilapidation	Subcontractor	Burchills	Pre and Post construction report	2	items	\$ 2,000.00	\$ 4,000.00	
All Areas	Dust Monitoring	Subcontractor	Burchills	Dust monitor + Control	6	mth	\$ 500.00	\$ 3,000.00	Duration 6 months
All Areas	Mobilisation and Delivery	Subcontractor	Various	Various	1	LS	\$ 10,000.00	\$ 10,000.00	Plugged figure to include - Subbies, plant and people
All Areas	Community Notifications	Subcontractor	TBC	Construction notice and distribution	1	LS	\$ 2,000.00	\$ 2,000.00	
Access Track	Traffic Control	Subcontractor	Schramm	Long Term TGS Install	1	LS	\$ 7,000.00	\$ 7,000.00	including vac truck to install signs
Access Track	Traffic Control	Subcontractor	Schramm	Short term TGS development	1	LS	\$ 1,000.00	\$ 1,000.00	
Access Track	Traffic Control	Subcontractor	Schramm	Gate Person/Traffic Controller	80	day	\$ 1,000.00	\$ 80,000.00	2 x TC for 40 days
Access Track	ESC	Subcontractor	Advanced Group	Sediment Fence	380	m	\$ 5.00	\$ 1,900.00	
Access Track	Temporary fencing	Subcontractor	Advanced Group	Temporary fencing S&I	760	m	\$ 7.50	\$ 5,700.00	both sides of 380m access track + 100m to the Centernary Highway eas
Access Track	Temporary fencing	Subcontractor	Advanced Group	Temporary fencing - rental	6	mth	\$ 1,000.00	\$ 6,000.00	
Access Track	Banner Mesh	Material		FH/Urban Utilities Banner Mesh	380	lm	\$ 8.00	\$ 3,040.00	
Access Track	Banner Mesh	Labour	Telum	Labourer	20	hr	\$ 60.00	\$ 1,200.00	
									380m(l)*3.5m(w) = 1330m2 @100mm = 133m3
Access Track	Strip topsoil	Plant	TKR	CAT 140M or equivalent	20	hr	\$ 160.00	\$ 3,200.00	wheeled on the lower side of the access track
Access Track	Dust Supression	Plant	TKR	10kl Watercart	20	hr	\$ 110.00	\$ 2,200.00	
Access Track	Subgrade compaction	Plant	TKR	12T Smooth drum roller	20	hr	\$ 100.00	\$ 2,000.00	
Access Track	Seperation layer	Material	Geofabric Aus	A24 Bidim	1330	m2	\$ 2.00	\$ 2,660.00	
Access Track	Seperation layer	Labour	Telum	Labourer x 2	20	hr	\$ 60.00	\$ 1,200.00	
Access Track	Gravel Supply	Material	FHI	2.1 Gravel	383.04	t	\$ 20.60	\$ 7,890.62	133m3*2.4t/m3*Wastage 20% - 13 T&Ds (2 days of deliveries) - Extra fc
Access Track	Gravel Placement	Plant	TKR	CAT 140M or equivalent	20	hr	\$ 160.00	\$ 3,200.00	
Access Track	Gravel Placement	Plant	TKR	10kl Watercart	20	hr	\$ 110.00	\$ 2,200.00	
Access Track	Gravel Placement	Plant	TKR	12T Smooth drum roller	20	hr	\$ 100.00	\$ 2,000.00	
Access Track	Signage and consumables	Material	Various	Miscellaneous items	1	LS	\$ 2,000.00	\$ 2,000.00	
Wetland Crossing	Temporary Works Design	Subcontractor	FSG/FSA	Working Platform Design	1	LS	\$ 15,000.00	\$ 15,000.00	Inclusive of the small 10m crossing
Wetland Crossing	Temporary Works Design	Subcontractor	FSG/FSA	Inspections and RPEQ Certification	20	hr	\$ 200.00	\$ 4,000.00	Inclusive of the small 10m crossing
Wetland Crossing	Seperation layer	Material	Geofabric Aus	A24 Bidim	1440	m2	\$ 2.00	\$ 2,880.00	120m(l)*12m(w)
Wetland Crossing	Seperation layer	Labour	Telum	Labourer x 4	40	hr	\$ 60.00	\$ 2,400.00	
Wetland Crossing	Working Platform Supply	Material	FHI	75-150mm rock (T&D)	0	t	\$ 35.00	\$ -	120m(l)*16m(w)*2m(h) w/ 1:2 batters and 2m no go zone either side of t
Wetland Crossing	Rock double handle	Plant	TKR	30t Excavator	0	hr	\$ 160.00	\$ -	40t/hour
Wetland Crossing	Rock double handle	Plant	TKR	25t Articulated dumb truck	0	hr	\$ 160.00	\$ -	20t capacity per load, 3 loads/hour
Wetland Crossing	Working Platform placement	Plant	TKR	30t Excavator	0	hr	\$ 160.00	\$ -	
Wetland Crossing	Working Platform placement	Plant	TKR	12T Smooth drum roller	50	hr	\$ 100.00	\$ 5,000.00	
Wetland Crossing	Working Platform Pipes	Material	Vinidex	HDPE ribbed pipes (3x600mm)	54	m	\$ 120.00	\$ 6,480.00	18m in length (18*3/3m lengths) 18 x 3 lengths
Wetland Crossing	Working Platform reinforcem	Material	Geofabric Aus	Tensar Triaxl geogrid	1440	m2	\$ 5.00	\$ 7,200.00	possibly required underneath Rock for increased bearing capacity
Wetland Crossing	Working Platform placement	Material	Geofabric Aus	A24 Bidim	960	m2	\$ 2.00	\$ 1,920.00	top of platform 8m*120m
Wetland Crossing	Working Platform placement	Labour	Telum	Labourer x 4	40	hr	\$ 60.00	\$ 2,400.00	
Wetland Crossing	Working Platform placement	Material	FHI	2.1 Gravel capping	230.4	t	\$ 20.90	\$ 4,815.36	960m2 @ 100mm delivered in tippers
Wetland Crossing	Working Platform placement	Plant	TKR	CAT 140M or equivalent	20	hr	\$ 160.00	\$ 3,200.00	
Wetland Crossing	Working Platform placement	Plant	TKR	10kl Watercart	20	hr	\$ 110.00	\$ 2,200.00	
Wetland Crossing	Working Platform placement	Plant	TKR	12T Smooth drum roller	20	hr	\$ 100.00	\$ 2,000.00	
All Areas	Track Maintenance	Plant	TKR	8t Combo	40	hr	\$ 120.00	\$ 4,800.00	
Access Track	Access Track removal	Plant	TKR	30t Excavator - Load to spoil	50	hr	\$ 160.00	\$ 8,000.00	Stripping gravel, loading gravel, replacing topsoil
Access Track	Access Track removal	Plant	TKR	Truck and Dogs - Transport to spoil gravel	80	hr	\$ 100.00	\$ 8,000.00	2 Tipper per day/4 loads per day for 4 days
Access Track	Access Track removal	Plant	TKR	Disposal of Gravel	383.04	t	\$ 200.00	\$ 76,608.00	Disposal in land fill (Worst case)
Wetland Crossing	Crossing removal	Plant	TKR	30t Excavator - Load to spoil	120	hr	\$ 160.00	\$ 19,200.00	
Wetland Crossing	Crossing removal	Plant	TKR	Truck and Dogs - Transport to spoil rock an	480	hr	\$ 140.00	\$ 67,200.00	4 Semi tippers per day/4 loads per day for 12 days
Wetland Crossing	Crossing removal	Plant	TKR	Disposal of rock	0	t	\$ 200.00	\$ -	Disposal in land fill (Worst case)
Access Track	Reinstatement	Subcontractor	Advanced Group	Hydromulch	1330	m2	\$ 5.00	\$ 6,650.00	
Wetland Crossing	Rehabilitation	Subcontractor	Advanced Group	Rehabilitation of the wetlands	1	LS	\$ 15,000.00	\$ 15,000.00	

post clearing report

ement

or Tipper Delivery not included

he hinge

CONLEY, Sarah

From: CONLEY, Sarah
Sent: Thursday, 13 August 2020 10:29 AM
To: 'Nick@pdgroup.com.au'
Subject: Plant hours/km
Attachments: PDG Plant.xlsx

Hi Nick,

This is the spreadsheet I was talking about. If you could please put the current hours against the plant that is onsite that would be great (just leave it blank for anything that either didn't mobilise, or de-mobed). I will then go in and update our Mobile Plant Manager system.

Thanks,

Sarah Conley | Health and Safety Advisor | Water Power Gas | **Utilities** | **Fulton Hogan** | Level 10, 515 St Pauls Tce, Fortitude Valley QLD 4006 | Mobile +61 499 310 655 | Web: www.fultonhogan.com



People at the heart of everything

Project Finalisation - Action List

To close out a project, the Project Manager shall chair a completion planning meeting of all relevant staff to identify and review the issues to be managed to achieve contract finalisation. This Project Finalisation Action List, though not exhaustive, summarises the general requirements for completion of a project.

Insert Project Name - SCAR007 – Twin 1295/1350 Eagle Farm SPS Rising Mains, Serpentine Rd to Luggage Point STP Condition Assessment	
Practical Completion	
1. Contractual requirement to achieve practical completion a. Complete assessment of rising main b. Return asset to service 2. Expected date of Practical Completion 3. Problem Areas? 4. Responsibility for managing Specific Subcontractors? 5. Pre practical completion Inspection by Fulton Hogan 6. Responsibility for managing completion of defects list and achieving client sign off 7. Responsibility for works during maintenance period?	20/12/2020 Nil Sarah Conley Complete N/A N/A
As Built Drawings / Documentation	
1. Contractual Requirements 2. Extent of As built requirements 3. Electronic or Red Line Drawings? 4. To be submitted by (date)? 5. Number of Copies	Xylem report only required to be submitted to client
Operation & Maintenance Manuals	
1. Contractual Requirements 2. Have we agreed the format required? 3. Have we agreed the extent of information required? 4. Responsibility for compiling document 5. Requirements from subcontractors 6. Programme for production of draft and final documents. 7. Provision of required Training	N/A
Design	
1. Is design liability managed? 2. Have design changes been assessed as to whether there has been a change to the risk profile and these changes communicated to relevant persons.	N/A
Subcontractors	
1. Do Subcontractors Understand the requirements for practical completion 2. Finalisation of measured works 3. Finalisation of variations 4. Have we got the required quality documentation? 5. Deed of Release 6. Release of retentions or bank guarantees. 7. Requirement for Subcontractor Performance Report	Yes N/A Nil Yes report received N/A N/A N/A Yes – post contract assessment required

Suppliers	
1. Do we require warranties / guarantees	Nil
2. Are there any problems with the Agreement of Supplier final accounts	Nil
3. Have we got the required quality documentation?	Nil required
Plant	
1. Responsibility to contact all plant suppliers and confirm closure of all accounts	N/A remaining open for full program of works
Human Resources	
1. Can we place all personnel?	Remaining in WWMP teams
2. Do we need to investigate redundancies?	Nil required
3. Are we achieving State specific training requirements?	Yes
4. Have we identified that anyone has Specific Training Requirements for the future?	Yes – first aiders
Safety	
1. Responsibility for Compilation of final safety statistics	Josh Howes
Quality	
1. Who has the Responsibility for close out of Quality Documentation	Rob Henning
2. Who has the Responsibility for compilation and archiving of all Project Documents	Document Control team
Environmental	
1. Who has responsibility to ensure all environmental issues are signed off?	Environmental Co-ordinator
Financial	
1. Agreement of Measure	N/A
2. Agreement of Variations	N/A
3. Agreement of Extension of time.	N/A
4. Agreement of Claims	End of month
5. Transfer or sale of Capex Items	N/A
6. Final Profit Loss Report	End of month
7. Insurances	Remain open for program of works
Feedback to Estimating	
1. Finished Project Information Sheet for Estimating use (capability information)	To be saved to ECI folder
2. Information on +ves and –ves in tender	Nil
Have we given the Client what they want?	
1. Final feedback meeting with Works Delivery Manager & Program Director	Gavin Bowen and Aaron Lutton 27/11/2020
2. Final Feedback meeting with Client	Andrew Nicholson 30/11/2020
a. Who will attend?	
b. When?	
a. Who will attend?	
b. When?	

Disestablishment of Offices		
1. Land / Property Rental Terminated 2. Services Terminated and final account received a. Electricity b. Phones c. Gas d. Water e. Sewage 3. Provision of Security cancelled 4. Buildings off-hired / relocated / transferred? 5. Computer Equipment 6. Office Equipment / Furniture, Sold, Relocated? 7. Access ways / Land Reinstated		Nil – Urban Utilities area provided for use Complete N/A N/A Complete – sediment controls to remain in place
Stakeholders		
1. Responsibility for inspections of adjacent properties. 2. Responsibility for closure of all outstanding stakeholder claims		N/A Nil
Opening Ceremony		N/A
1. Will there be an opening ceremony 2. Have we got client permission? 3. Responsibility for Organisation		

30/11/2020

Project Recommendation of Construction Completion

The Wastewater Metropolitan Program (WWMP) Contract Number C1819

SCAR007 – Twin 1295/1350 Eagle Farm SPS Rising Mains, Serpentine Rd to Luggage Point STP Condition Assessment

Fulton Hogan confirms that as per Clause 25 of the Program ECI Agreement that:

- (a) Construction of the Works for the Project has been completed in accordance with this agreement sufficient for Commissioning
- (b) All pre-commissioning tests of the works for the Project (which are those tests which are required to be carried out before commencement of Commissioning and Acceptance Testing) has been carried out in accordance with the Commissioning Plan
- (c) All O&M Information required for Commissioning, incorporating the agreed maintenance standards referred to in clause 24.3, has been produced for the Project
- (d) All training of the Principals operations and maintenance personnel which is required for commissioning has been properly carried out for the Project
- (e) All Works-as-executed documents required for commissioning has been produced for the Project; and
- (f) Any other precondition for commissioning of the Works for the Project required by the Commissioning Plan have been satisfied.

For the sake of clarity; this particular project was for the condition assessment of an existing asset and as such items: (b), (c), (d) and (e) are not relevant. Item (a) has been achieved by completing the assessment and item (f) has been achieved by returning the asset to service. This occurred on Tuesday 20th October 2020. There are no outstanding actions, defects or any other requirements for Fulton Hogan Utilities to complete and therefore Construction Completion has been achieved.

Commissioning complete will be achieved upon delivering the final assessment reports.

The undersigned agree that the above have been completed and Fulton Hogan may proceed with commissioning of the works.

Fulton Hogan Project Manager

Name: Sarah Conley

Signed: 

QUU Project Manager

Name: Andrew Nicholson

Signed: _____

NP03.1: CONDITION ASSESSMENT OF THE SEWER RISING MAIN – ROUTE 1 STAKEHOLDER – LESSONS LEARNT



CONDITION ASSESSMENT OF THE SEWER RISING MAIN – ROUTE 1 (PROJECT: BCASAA01A22)

The SRM Condition Assessment was successfully complete last month using the unmanned tool known as PipeDiver.

The objective of the project was to conduct an EM inspection of Route 1 in order to determine the condition of the strands in the Precast Concrete Pipe and corroborate deterioration forecast predictions from previous inspections.

The results of the report would also be used to determine emergency and short-term repairs required prior to the planned replacement of the lines.



CONDITION ASSESSMENT OF THE SEWER RISING MAIN – ROUTE 1 (PROJECT: BCASAA01A22)



Trial: Flow Control and
Grate Installation

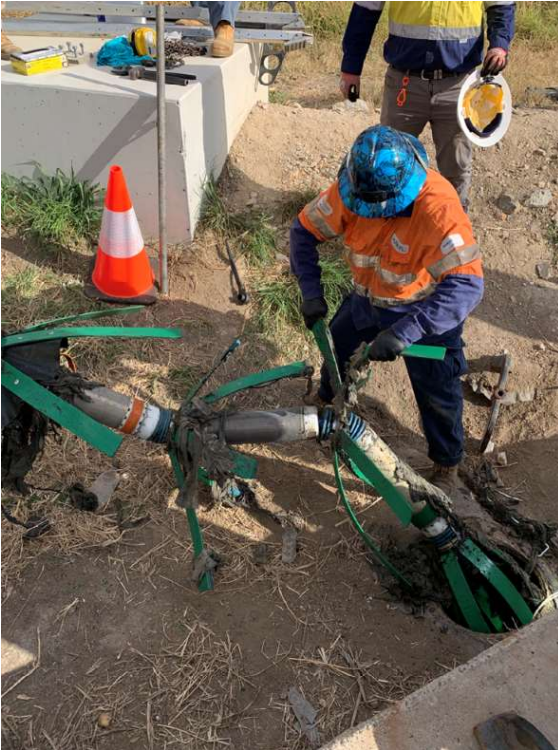


Calibration & Balancing

CONDITION ASSESSMENT OF THE SEWER RISING MAIN – ROUTE 1 (PROJECT: BCASAA01A22)



CONDITION ASSESSMENT OF THE SEWER RISING MAIN – ROUTE 1 (PROJECT: BCASAA01A22)



Retrieval



PROGRAM SUMMARY:

Preliminary Works

RAMP Schedule: 21/9 – 2/10/20

Actual: 7/9 – 11/9/20 (required early for the trial shut – programming error)

Trial Shut

RAMP Schedule: 17/9 – 22/9/20

Actual: 14/9 – 25/9/20 (extended duration to test grate in flow conditions and confirm rag build up)

Condition Assessment

RAMP Schedule: 8/10 – 19/10/20 (18 days incl. 1 full weekend)

Actual: 2/10 – 13/10/20 (10 days incl. 1 full weekend) (single pass provided suitable results)

Comments:

- Availability of network. Booked in windows for trial and assessment on 7/8/20 (6 weeks ahead of trial).
- Simultaneous Operations in network / Emergency Call Outs. No affect to other projects.
- Access to BAC. Long lead item, needed to get preliminary works happening before trial.
- Wet Weather. Storms started in Brisbane week after completion of the assessment.

Key Contractors:

Xylem (Overseas and Local): Prior knowledge of project. Commercial departures were few and relatively straight forward. Opportunity for value adding by increasing scope on these mains or others in the country.

Veolia T&Cs difficult: Prior knowledge of the asset and by far the best submission of all potential Contractors. Opportunity to lock in Lump Sum for specific items (Dewater. Recharge). Several commercial departures so need to engage early.

Secondary Contractors:

Earthworks (wet hire plant). Site Setup and Cribs. Fencing and Enviro Controls. Minor Supply Items.

BAC: No Contract in place and therefore little control over BAC control/access of areas and output.

CONDITION ASSESSMENT OF THE SEWER RISING MAIN – ROUTE 1

Realised Risk and Mitigation Measures:

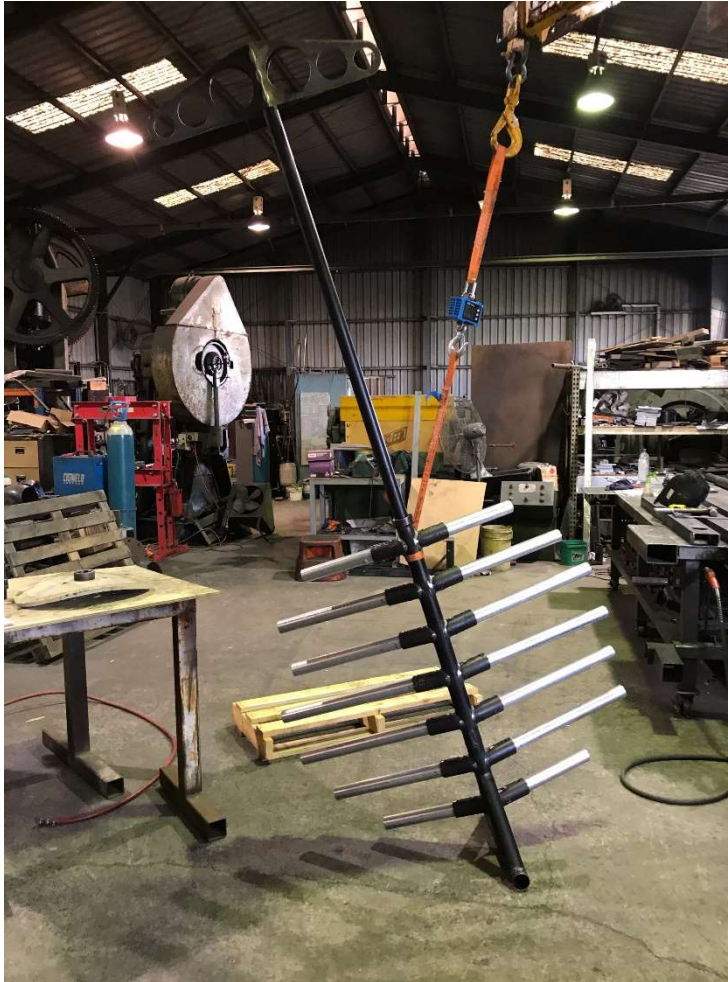
- Members of specialised team were denied access to the country due to Covid restrictions. Subcontractor provided additional resources from Brisbane.

Opportunities Realised:

- Reduced team from Overseas. Reduction in Quarantine costs.

Lessons Learnt / Opportunities / Risks:

1. Allow a minimum of 8 weeks for ASIC cards to be obtained – not worth pursuing for shorter projects such as this;
2. Minimise crew from Overseas (Covid-19) – one or two key people may now suffice since there is some expertise within the country;
3. Reduce overall time of inspection (shut downs to system) by running through the weekend – risk of wet weather or emergency works;
4. Trial shuts are beneficial, several unknowns were discovered and dealt with prior to the assessment shuts minimising potential disruptions to the community;
5. Community engagement went well. Leaflets handed out 2 weeks and also 5 days prior to shut downs occurring. Nil community complaints received;
6. Obtain main point of contact for all BAC land access and community engagement activities.



QUESTIONS?

