R24_IES_S_IT_ITSSC_Works Mgmt Tool Upgrades - IES v1.0 (IES)

❖*For work being proposed for inclusion into the capital works program.*

Project name:	Works Management Tools Replacement
Department:	Technology & Performance
Investment Type:	Non-Network
Investment Category:	Non-Network - Information Technology
Functional Area(s):	ITSSC
Project ZoNe location:	assetzone.tnad.tasnetworks.com.au/R24_distribution/ICTIT
Document Number:	R0002079169
Needs Item Reference:	R0002119503
Regulatory Investment Test Required?	No
Version Number:	1.0
Date:	15/12/2022

❖

Preferred Option:		Option 1		
Level 1 Estimate +/- 30 per cent (preferred option – base dollars):		$8,362,022		
Expenditure profile	FY25	FY26	FY27	FY28	FY29
Capex	$3,978,026	$4,383,996	0	0	0
Opex	0	0	0	0	0

❖

Sign-offs (in support of the recommended option)			
Works Initiator:		Date	18/11/2021
Leader: (Endorsement)		Date	
Leader or General manager noting delegation levels. (Approval)[1]		Date	Click here and type the date.

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[1] Approval based on delegation level.

❖ denotes mandatory field

1.   RELATED DOCUMENTS

Description	URL
Needs Form	[R24_NEE_S_IT_ITSSC_Works Mgmt Tool Upgrades - Needs Assessment](#)
Estimate	[R24_EST_S_IT_ITSSC_Works_Mgmt_Tool_Upgrades -_Project_Cost_Model - Option_1 - V1.xlsm](#) [R24_EST_S_IT_ITSSC_Works_Mgmt_Tool_Upgrades -_Project_Cost_Model - Option_2 - Phase_1 - V1.xlsm](#) [R24_EST_S_IT_ITSSC_Works_Mgmt_Tool_Upgrades -_Project_Cost_Model - Option_2 -_Phase_2_and_Total - V1.xlsm](#)
NPV	[R24_NPV_S_IT_ITSSC_Works_Mgmt_Tool_Upgrades -_NPV - V3.xlsx](#)
Asset Management Plan	[IT Software Asset Management Plan](#)
[TasNetworks Towards 2030](#)	
[TasNetworks Digital Strategy](#)	
[Future Distribution System Vision](#)	
[TasNetworks Corporate Plan](#)	
[TasNetworks Business Plan](#)	
[TasNetworks Risk Management Framework](#)	
[National Electricity Rules (NER)](#)	

2.   OVERVIEW

2.1   APPROVAL GATE STATUS

Approval Gate	Approver Title	Approver Name	Date
Gate 1 – Needs	Leader, Information Technology	Nigel Bailey	18/11/2021
Gate 2 – Option	This project seeks **OPTIONS APPROVAL** to proceed		

In line with the Gated Investment Framework this Project seeks Gate 2 Option approval to proceed to budget and financial approvals. This IES presents economic and risk assessments for each option considered, together with recommendation of a preferred option to address the business need.

2.2   BACKGROUND

This Investment Evaluation Summary covers the proposal to replace three of our technology systems involved in Works Management. From a technology point of view, these systems are beyond end-of-life and pose increasing cyber and platform risks. From a business perspective the systems provide an inadequate user experience for our workers and do not leverage business efficiencies now possible through contemporary solutions. Additionally, a failure of these systems poses a significant customer service delivery risk impacting on brand and compliance.

What does Works Management include?

For the purposes of this IES, Works Management covers the process of taking work from initiation through scheduling, allocation to personnel, completion of the work in the field and any required data capture.

TasNetworks currently operates multiple solutions for scheduling, allocating and completing field works:

| Work Type	Application Health	Roadmap Plan	Candidate for Consolidation
Customer Service based works (Servicing, Road lighting, Reconnect/Disconnect, Special meter reads)	Status Red Past End of life. Utilises a variety of old (2003) unsupported technologies with inherent technology and cyber risks.	Replacement budgeted and in plans.	These work types could be consolidated into one system. It should be examined through RFP requirements
Asset based works (Construction, Maintenance)	Maintenance for our version ended in Sept 2020	An available upgrade only extends support to Nov 2022. A plan is required for replacement.	

Forms JRA, EWC, LV Svs, LV Audit, Env due Diligence etc.	Not effectively tracked or managed	Currently tactical solutions are being applied	
Outage Management / Faults	Currently fully supported.	Plan and budget is to move this function into the ADMS in 2023/24	Due to links to real-time operational data, it is not a candidate for consolidation
Vegetation Works	Currently fully supported.	No plan to replace	Not likely for consolidation due to the spatial nature of vegetation works
Route based meter reading	End of support Dec 2021	Current plan is to monitor and hopefully keep the system running until Advanced Meter Rollout removes the need.	Not likely for consolidation due to the requirements for high volume activity

In particular, this IES is addressing the needs of:

- Customer Service based works (Currently met by ████████████████),
- Asset based works (Currently met by ████████████████████), and
- Forms involved in job related activities such as Job Risk Assessments (JRA) as well as asset data capture.

These two work types (Asset and Customer Service) could be considered for consolidation onto one platform and is prudent to explore and prove through the RFP recommended by this IES.

Where is TasNetworks on the Spectrum of Field Technology?
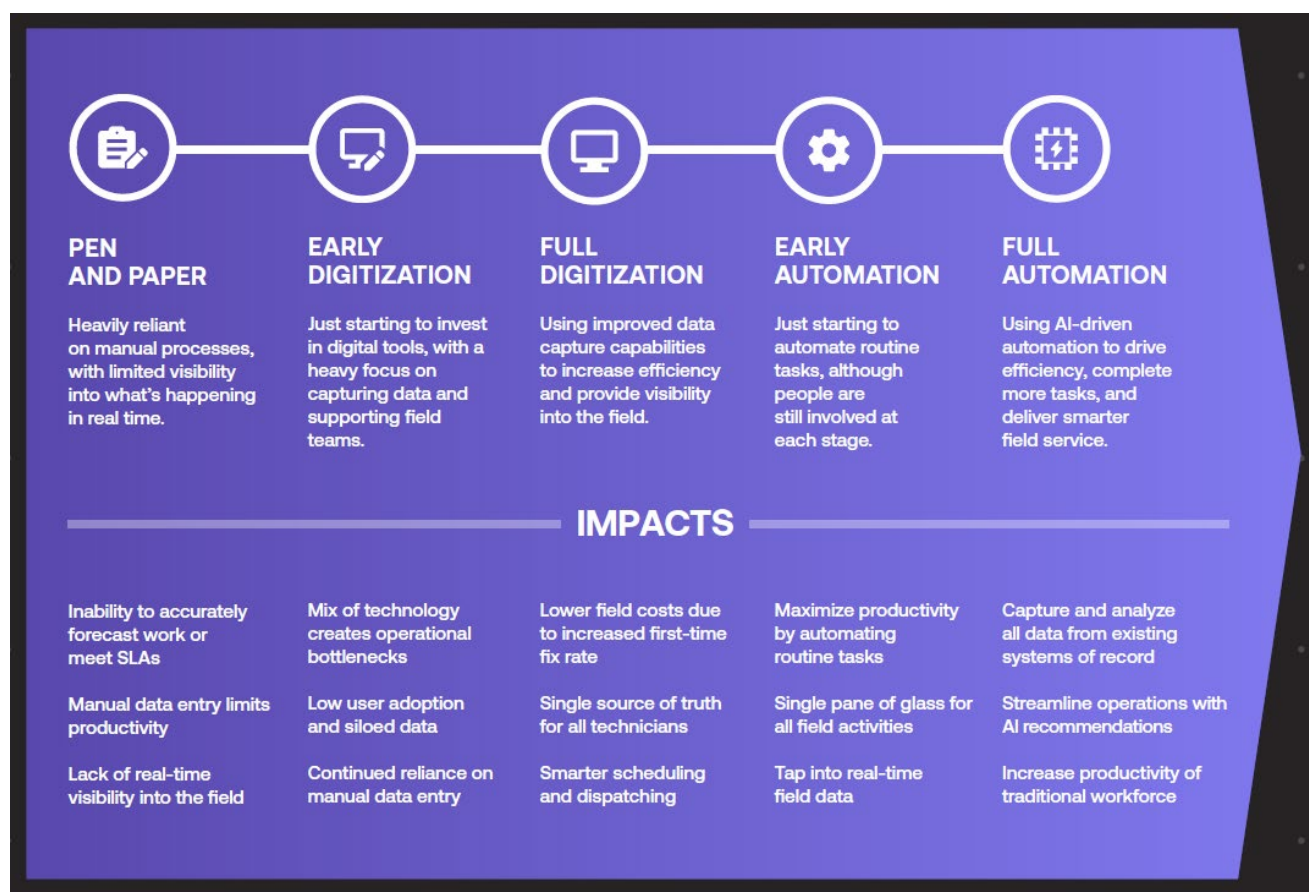
Source: Zinier

TasNetworks has various examples in the first three columns however as a company we could be best described as "**Early Digitisation**" due to:

- our mix of technologies,
- siloed data, and
- continued reliance on manual data entry for many asset and job data capture exercises.

We could achieve many benefits by moving further along the spectrum especially with a goal of:

- trialling/deploying Artificial Intelligence-driven automation,
- smarter scheduling and dispatch functionality, and
- improved user centric data collection.

2.3   PROBLEM DEFINITION

Current systems are either at end-of-life or have constrained roadmaps, pose cyber and infrastructure risk to the business. They are not flexible enough to cope with the changing nature of our business such as increasing use of external workforces or our strategic efforts around Digital Transformation. The current systems are not able to provide work visibility to enable cross utilisation or capabilities to enable tee-ups / coordination with external parties, preventing delivery of work in the most efficient manner.

- **Platforms at End-of-life**

- o TasNetworks is currently running ██████████████████████, maintenance for this version ended in September 2020. There is a final minor upgrade available ███ which would extend maintenance until November 2022 however this provides no functional improvements. There is no future roadmap for ██████████, the vendor is treating it as obsolete technology and is developing new products that are not direct or complete replacements for ██████████. As ██████████ is approaching end-of-life it is not a candidate to replace The Service Based Work Management systems and it also requires a replacement plan.

  - o The ████ product is also not being enhanced into the future, SAP is developing new products for the ██████ version of the ERP which are not direct replacements for our ███ application.

  - o The Service Based Work Management systems platform is beyond end-of-life. The system was originally commissioned in March 2005, since that time it has only had some back office technology upgrades and releases to address performance issues but it has not had any major design or functionality uplift since the initial release. The platform now lacks substantial vendor support, there is no vendor roadmap or path to modernise the platform so that it can run on contemporary hardware platforms.

- **Cyber and Infrastructure Risks.** Continuing to run outdated environments for TVD-CSC pose various cyber risks for TasNetworks. Additionally our virtualised hardware environment will soon run into issues supporting the outdated environment required for Service Based Work Management. Our preferred mobile ██████████████████████ is increasingly seeing issues running older software such as the Service Based Work Management systems, it is highly likely that a future release of ██████████████, deployed to address cyber related vulnerabilities, will not run our legacy software.

- **Sub-contracted / External Workforces** not only need to use our field tools but are increasingly requesting access to scheduling and allocation systems. We cannot provide secure access with our current tools.

- **Coordinated Works.** Various job types require coordination to ensure multiple parties arrive onsite at the same time, for example contestable metering providers and electricians. Our current systems provide no capabilities to assist with this new business problem, manual and inefficient systems and communications are used to ensure the visits align.

- **Visibility of work and cross utilisation.** As there is no single system that shows all work and worker utilisation, it is difficult to cross utilise staff efficiently and transparently. Current tools are silo systems with no integration capabilities. Limitations in scheduling capabilities in the Service Based Work Management systems has resulted in some work types being scheduled externally using spreadsheets and paper, with inefficiencies and lack of transparency as a result.

- **Usability of current tools and Staff engagement.** The usability of the current tools does not meet the business expectations and is directly affecting the amount and quality of data collected in the field. Limitations in ██████████████ has meant that acceptance and adoption by field staff has not been universally successful resulting in poor data collection. A temporary tactical application has been required to provide asset inspection capability to ensure that the program of work stays on track.

- **Appointment Management and Customer communications.** Customer engagement through forums has received feedback that customers and electricians expect to be able to book appointments and have visibility of how we are observing that appointment. Our current systems have no capability to either enable appointments or to automate or enable direct

communication such as text messages or emails about their jobs. Today there are higher customer expectations that these capabilities are available.

- **Contemporary scheduling and allocations systems.**

    o Utilisation and efficiency would be increased with the use of AI systems that utilise special awareness of workers, jobs and traffic conditions and understand worker/job skillsets to ensure the most efficient decisions are made about which worker is assigned which job. Even at the low end, say 2 technicians each with 5 jobs has 720 combinations, human schedulers cannot match a computer in determining the best schedule.

    o Contemporary systems use AI to determine job length far more accurately than static unit job times.

    o Contemporary systems have intelligence to automatically cope with unplanned emergency work and will re-optimise schedules. Current systems have no such capability and unplanned work requires manual inefficient adjustment of schedules.

    o Contemporary systems have dynamic analysis of Planned Work vs. Capacity.

- **Device Options** - Field tools in use do not provide TasNetworks with additional device options, i.e. they are restricted to Windows tablets or laptops. Contemporary tools provide additional device options such as iOS and Android tablets which may provide workflow advantages and better total cost of ownership benefits.

- **Connectivity used in Scheduling** – Ideally a system would have awareness of how customers and jobs relate via electrical connectivity to schedule together all waiting jobs downstream of an isolation point to minimise impacts on customers.

- **Map integration** – Currently the Service Based Work Management systems have no map integration at all. A definite requirement in a contemporary field system.

- **Document Management** – Currently the Service Based Work Management systems have no capability to attach Work Instructions, Job Risk Assessments (JRA), Photos or Video to jobs. A definite requirement in a contemporary field system.

3. CUSTOMER NEEDS AND IMPACT

Scheduling and field works systems are vital for the efficient delivery of customer services.

- On time connections and other customer initiated works
- Planned outages of minimum duration to facilitate planned asset works
- Reduced costs by use of cross utilisation of resources & other scheduling improvements

The business needs contemporary solutions that:

- Consolidates Asset based works and Customer service based works onto one platform
- Provide field user interfaces that have been developed with a human centred design approach
- Provide an extendable platform for improving asset and works data quality
- Aligns with our existing SAP landscape
- Provide appropriate efficiencies in scheduling both complex project works as well as high volume small time duration activities, i.e. 5 minute duration tasks
- Allows TasNetworks to work hand-in-hand with external sub-contracted workforces, allowing external access not only to field tools but into scheduling and allocation in a security access controlled manner

- Provides capabilities to align external parties where joint attendance is required through appointment capabilities and portals
- Provides options to enhance customer communications and experience
- Provides AI assistance to the scheduling and allocation of jobs that has spatial and traffic awareness.

A replacement of the current tools will allow for an uplift in organisational capabilities in order to meet customer needs and enable a more efficient workforce.

4. CORPORATE ALIGNMENT❖

4.1 BUSINESS PERFORMANCE OBJECTIVES

This project will help achieve the customer and business performance objectives in TasNetworks' Corporate Plan, and as shown in Table 1.

Table 1 - Performance objectives relevant to this project.

Performance category	Performance measure	Investment impact on performance
Safety and wellbeing	Reportable incidents	This project will ensure field staff have up to date access to safety information such as dogs and aggressive customers
Our customers	Customer net promoter score	This initiative aims to improve the efficiency of customer generated works, as well as add new capabilities such as appointments and communication options to make a customer's experience easier.
Our people	Employee engagement	The project will support our staff and engagement by delivering tools that are user centric and contemporary.
Our business - Sustained cost management	Capital and Operating expenditure	Enabling cross utilization of staff through visibility of works will assist in lowering costs.
Our business - Network service	Service incentive bonuses earned - transmission and distribution	Improve efficiency of customer generated works

4.2 RISK OBJECTIVES

The corporate plan identifies a number of business risks outlined in the TasNetworks Risk Framework. The TasNetworks Risk Appetite Statement details the level of risk the business finds acceptable in each category (Safety, Environmental, Financial, Regulatory, Legal and Compliance, Customers, Assets, Reputation and People).

This initiative addresses Regulatory Compliance, Business Continuity and Customer risks, of which TasNetworks has No to Limited appetite. Unreliable and/or inaccessible data negatively impacts on decision making and therefore poses increased risk in these areas.

A detailed assessment of the risks mitigated by the project is presented in Section 5.3.

Table 2 - Business risks mitigated by this project

ID	Risk Category	Risk	Impact
ITR-167	Death or Injury (Employee)	Continued use of systems past their end of supported life increases the risk of failure.	If the current Service Based Work Management system fails the manual processes will struggle to ensure that known safety information such as savage dogs or other hazards is provided to our field crews, elevating risk of injury to them.
ITR-168	Sustainable and Predictable Pricing	Continued use of systems past their end of supported life increases the risk of failure.	If the current systems fail: • Without generating automated responses to Retailers, there will be a flood of telephone inquiries regarding job progress, complaints etc. Additional labour will be required to process. • Manual processing will require additional staff to ensure works are scheduled, allocated and completed. • Manual processing will cause delays resulting in higher level of GSD Guaranteed Service Delivery payments Manual processes will result in de-energisations made non-compliantly resulting in NECF fines.
ITR-169	Customer Focus	Continued use of systems past their end of supported life increases the risk of failure.	If the current system fails, manual processes will be required resulting in: • Without service works management tools, field activities will need to be registered manually, significantly decreasing efficiency, resulting in slower work or increased workforce. • Without service works management tools, field activities will need to be registered manually, significantly decreasing efficiency, resulting in customers without power or services. TasNetworks be more likely to not meet SLAs, resulting in not meeting its regulatory obligations and possibly being fined.

ID	Risk Category	Risk	Impact
ITR-170	Business Continuity Management	Continued use of systems past their end of supported life increases the risk of failure.	If the current system fails, manual processes will be required resulting in: • Without service works management tools, field activities will need to be registered manually, significantly decreasing efficiency, resulting in slower work or increased workforce. • Without service works management tools, field activities will need to be registered manually, significantly decreasing efficiency, resulting in customers without power or services. • Business continuity will be severely compromised beyond one day due to the volume of activity that manual processes will not be able to cope with.
ITR-171	Cyber Security	The technology behind the Service Based Work Management system is circa early 2000's. The server platform is currently Microsoft Server 2003 which is long out of support. The Oracle database the system utilizes is also out of support. There are higher cyber risks associated with older technology. It is increasingly difficult to keep the field client application running on the latest operating systems and may soon require use of unsupported field platforms in order for it to run.	There is a risk that this system could be compromised leading to the system being unavailable to the business for several days. Customer services such as energisations would be greatly affected.
ITR-172	Staff Engagement	Persisting with systems that are not designed with user experience in mind creates disengagement with data collection processes, and needs for data quality creating gaps in asset data that flow further into our asset management systems with long term effects. We experience this today and there is high likelihood it could worsen.	Staff disengagement resulting in increased errors, poor data quality and reduced effectiveness of works management.
ITR-176	Cyber Security	If systems are not maintained in a healthy supported state, they become more vulnerable to Cyber Attacks. A compromised works management tool could also act as an entry point to the whole of TasNetworks IT Ecosystem.	A cyber attack that affects multiple operational systems could cause widespread disruption to the business, breaches of market obligations and release of sensitive data.

4.3 STRATEGIC OBJECTIVES

Table 3 summarises strategic objectives that will be addressed by this project.

Table 3 - Strategic objectives relevant to this project

Strategic Document	Strategic Objective	How the proposed investment will address the strategic goal
Digital Technology Strategy	To deliver value and reliability to our customers and our people through innovative, secure, high quality and timely solutions. Driving operational excellence. Being customer centric in everything we do	In line with the strategy this initiative will do this by: • Introducing integrated digital solutions that improve workforce productivity efficiency, collaboration and decision-making. • 'Digitising' processes to be operationally efficient. • Treat Data as an asset - developing data driven solutions and insights. Selecting an appropriate "off the shelf" solution rather than highly customised and/or in-house bespoke development.
TasNetworks Business Plan	Our Business — "Deliver our Works Programs"	This initiative will build up our business intelligence and operational capabilities, further optimising our Field Works Program.
TasNetworks Business Plan	Our Customers — "We engage with our customers, and continue to develop customer-centric approaches"	This initiative aims to improve the efficiency of customer generated works, as well as add new capabilities such as appointments and communication options to make a customer's experience easier.
TasNetworks Business Plan	We will fail to "Enable our workforce for a changing future" by retaining outdated (2005) tools that do not meet the needs of the business today or into the future.	Digitalisation of our business requires new tools. By upgrading our works management tools we will "Enable our workforce for a changing future".
Digital Technology Strategy	"Get the most out of SAP" "Treat Data as an Asset" "Digitise processes to be operationally efficient" "Accelerate and Increase the impact of digital"	• We cannot achieve this when a large volume of field activity is not visible within SAP. • A replacement system should provide a contemporary unified data collection capability. • Contemporary works management tools will facilitate operational efficiency. • Contemporary works management tools will avoid the use of paper based processes.

5.   PROJECT OBJECTIVES❖

This project aims to:

- Initially under a Seed funded exercise it is proposed to:
    - Build a small team drawing on Subject Matter experts from the business, led by a Project Manager and Enterprise Architecture
    - Gather requirements for both areas:
        - Customer Service based works management
        - Asset based works management
    - Build and conduct an RFP for solutions that cover both areas
    - Select a system and implementer that meets the need of both areas
    - Build a Business Case for implementation
- Initiate a project to replace Asset Based and Service Based Work Management systems.

6.   OPTIONS ANALYSIS❖

6.1   OPTIONS CONSIDERED AND ECONOMIC ANALYSIS

Table 4 lists the options considered, the outcome of the economic analysis for each option, and the option being proposed for endorsement in this Investment Evaluation Summary. Details of the NPV analysis are included in Appendix A1.

Table 4 - Options considered

Option No.	Option summary	Direct 5yr cost ($m)	10yr NPV ($m)	Preferred (yes/no)	Reason for selection/rejection
0	RETAIN - Do Nothing and persist with existing tools	$16.82	$(29.81)	No	This option does nothing to address the risks and issues associated with the current systems as described in sections 2.2 and 4.2
1	BUY - Go to market to source a new solution for Scheduling, Allocation and Field Works Execution. Deliver in one phase.	■■■■	■■■■	Yes	This option offers the most cost effective means of addressing the current systems risks and issues.
2	BUY - Go to market to source a new solution for Scheduling, Allocation and Field Works Execution. Deliver in two phases.	■■■■	■■■■	No	While option 2 may provide a lower project risk than option 1, it would be significantly more costly.
3	BUILD – Build either full or partial solution.	n/a	n/a	No	This option was rejected as it is not considered feasible to build in-house when there are a range of mature systems in the marketplace.
4	REUSE – Reuse technologies already within the Business	n/a	n/a	No	This option was rejected as there are no existing systems in the business that could provide the full range of needed functionality.

6.1.1 OPTION 0: "RETAIN" – DO NOTHING

This option includes:

- Retain existing solutions until they fail catastrophically or expose the business to elevated technology or cyber security risks
- Breach TasNetworks policy to ensure mission critical systems remain maintained and supported by vendors
- Continue with current inefficiencies involved in:
  - Multiple scheduling systems including spreadsheet and paper that provide no unified visibility of work or chance for cross utilization
  - Inability for external workforces to schedule and allocate with our systems
  - Inability to efficiently coordinate jobs where multiple external parties must arrive onsite at the same time
- Constrain device options and limit the success of digital transformation in the Digital Technology Strategy.

6.1.2 OPTION 1: "BUY" – DELIVER IN 1 PHASE

(PREFERRED OPTION)

Go to market to source a new solution for Scheduling, Allocation and Field Works Execution.

This option includes:

- Deliver a solution in 1 phase:
  - Deploy the selected solution replacing Service Based Work Management systems
  - Deploy the solution for Asset based works replacing the existing system
  - Both in 1 Business Case and a continuous project.
- Initially under an 8 month seed funded exercise it is proposed to:
  - Build a small team drawing on Subject Matter experts from the business, led by a Project Manager and Enterprise Architecture
  - Gather requirements for both areas:
    - Customer Service based works management
    - Asset based works management
  - Build and conduct an RFP for solutions that cover both areas
  - Select a system and implementer that meets the need of both areas
  - Determine target architecture
  - Build a Business Case for whole project
  - Initiate project to implement solution in a single phase.

6.1.3 OPTION 2: "BUY" – DELIVER IN 2 PHASES

Go to market to source a new solution for Scheduling, Allocation and Field Works Execution.

This option includes:

- Deliver a solution in 2 phases:
  - Phase 1. Deploy the selected solution for Customer Service based Works Management systems
  - Phase 2. Deploy the solution for Asset based works replacing the existing system

- o   Both Phases will have their own business case.
- Initially under a 8 month seed funded exercise it is proposed to:
  - o   Build a small team drawing on Subject Matter experts from the business, led by a Project Manager and Enterprise Architecture
  - o   Gather requirements for both areas:
    - Customer Service based works management
    - Asset based works management
  - o   Build and conduct an RFP for solutions that cover both areas
  - o   Select a system and implementer that meets the need of both areas
  - o   Determine target architecture
  - o   Build a Business Case for Phase 1
  - o   Initiate Phase 1 project.

6.1.4   OPTION 3: "BUILD"

(DISCOUNTED OPTION)

This option includes an attempt to build either:

- A full end-to-end solution either with internal or external developers, or
- Go to market for the scheduling and allocation component, build and integrate a field tool solution with either internal or external developers.

This option is not viable as it not feasible that we could build a system with the level of maturity, sophistication and functionality the business requires. Commercial products in this space have been refined over years to become mature offerings.

TasNetworks Architecture Principles state we should only consider a Build option when buying a commercial off-the-shelf products is not available.

The **TasNetworks Digital Technology Strategy** recommends that where possible we select appropriate "off the shelf" solutions rather than highly customised and/or in-house bespoke development.

In this case, there are numerous commercial products available and these have been successfully deployed by other Distribution businesses in the NEM.

6.1.5   OPTION 4: "RESUSE"

(DISCOUNTED OPTION)

This option includes a few variations

Variation1 - Consolidate Service based works into the Asset Based Works System, ███████████.

This is not viable as:

- ███████████████ will not fulfil the requirements in Customer Servicing Works. These products are designed around larger project based works that require plans often involving multiple resources types, or crews, and the jobs generally take many hours or days. These systems are not optimised for a high volume of smaller jobs that might take 5-10 minutes in the example of a disconnection. The business would be severely impacted by the degradation in process and inefficiencies for this high volume work stream.
- ██████████ itself is at end of life and needs to be replaced as well, it makes no sense to continue to invest and expand the use of ██████████, given its roadmap and looming end of support.

Variation2 - Attempt to replace the Service and Asset Based Work Management systems with extensions to existing GIS technologies or the Meter Reading System MVRS.

This is not viable as:

- Solutions will not meet the complex needs of the business especially in the areas of scheduling and allocation, and complex data capture with the level of maturity, sophistication and functionality the business requires.

- The handheld device used by MVRS is not an appropriate form factor for the data entry required by these field work types.

6.1.6   SENSITIVITY ANALYSIS

N/A

6.2   OPTION EXPENDITURE PROFILES

The following tables show the expenditure profile for each investment option.

Option 0 – Do nothing Estimate (in nominal dollars) $16.82m					
Expenditure profile	FY25	FY26	FY27	FY28	FY29
Capex					
Opex	$3,363,419	$3,363,419	$3,363,419	$3,363,419	$3,363,419

Option 1 – BUY" – Deliver in 1 Phase Estimate (in nominal dollars) ▮					
Expenditure profile	FY25	FY26	FY27	FY28	FY29
Capex	▮	▮	▮	▮	▮
Opex					

Option 2 – BUY" – Deliver in 2 Phases Estimate (in nominal dollars) ▮					
Expenditure profile	FY25	FY26	FY27	FY28	FY29
Capex	▮	▮	▮	▮	▮
Opex					

6.3   RISK MITIGATION

The matrix presented in Table 5 compares the options, showing how each assists TasNetworks in mitigating its key business risks (previously identified in section 4.3 "Risk objectives").

Appendix B provides supporting details of the risk assessment outcomes presented in Table 5.

Table 5 - Risk matrix summary

ID	Risk Category	Risk Drivers	Impact	Option 0 Gross risk	Option 1 Net risk
ITR-167	Death or Injury (Employee)	Continued use of systems past their end of supported life increases the risk of failure.	If the current Service Based Work Management system fails the manual processes will struggle to ensure that known safety information such as savage dogs or other hazards is provided to our field crews, elevating risk of injury to them.	High	Medium
ITR-168	Sustainable and Predictable Pricing	Continued use of systems past their end of supported life increases the risk of failure.	If the current systems fail: • Without generating automated responses to Retailers, there will be a flood of telephone inquiries regarding job progress, complaints etc. Additional labour will be required to process. • Manual processing will require additional staff to ensure works are scheduled, allocated and completed. • Manual processing will cause delays resulting in higher level of GSD Guaranteed Service Delivery payments. • Manual processes will result in de-energisations made non-compliantly resulting in NECF fines.	Medium	Medium
ITR-169	Customer Focus	Continued use of systems past their end of supported life increases the risk of failure.	If the current system fails, manual processes will be required resulting in: • Without service works management tools, field activities will need to be registered manually, significantly decreasing efficiency, resulting in slower work or increased workforce. • Without service works management tools, field activities will need to be registered manually, significantly decreasing efficiency, resulting in customers without power or services. • TasNetworks will be more likely to not meet SLAs, resulting in not meeting its regulatory obligations and possibly being fined.	Medium	Low
ITR-170	Business Continuity Manage-ment	Continued use of systems past their end of supported life increases the risk of failure.	If the current system fails, manual processes will be required resulting in: • Without service works management tools, field activities will need to be registered manually, significantly decreasing efficiency, resulting in slower work or increased workforce.	Medium	Low

ID	Risk Category	Risk Drivers	Impact	Option 0 Gross risk	Option 1 Net risk
			• Without service works management tools, field activities will need to be registered manually, significantly decreasing efficiency, resulting in customers without power or services. • Business continuity will be severely compromised beyond one day due to the volume of activity that manual processes will not be able to cope with.		
ITR-171	Cyber Security	The technology behind the Service Based Work Management system is circa early 2000's. ██████ ██████ There are higher cyber risk associated with older technology. It is increasingly difficult to keep the field client application running on the latest operating systems and may soon require use of unsupported field platforms in order for it to run.	There is a risk that this system could be compromised leading to the system being unavailable to the business for several days. Customer services such as energisations would be greatly affected.		
ITR-172	Staff Engage-ment	Persisting with systems that are not designed with user experience in mind creates disengagement with data collection processes, and needs for data quality creating gaps in asset data that flow further into our asset management systems with long term effects. We experience this today and there is high likelihood it could worsen.	Staff disengagement resulting in increased errors, poor data quality and reduced effectiveness of works management.	High	Medium
ITR-176	Cyber Security	If systems are not maintained in a healthy supported state, they become more vulnerable to Cyber Attacks. A compromised works management tool could also act as an entry point to the whole of TasNetworks IT Ecosystem.	A cyber-attack that affects multiple operational systems could cause widespread disruption to the business, breaches of market obligations and release of sensitive data.		

6.4   QUANTITATIVE RISK ANALYSIS

N/A

6.5   BENCHMARKING

N/A

6.6   EXPERT FINDINGS

N/A

6.7   PREFERRED OPTION

The preferred option is Option 1 – BUY – Deliver in 1 Phase. That is go to market to source a new solution to replace the Work Management systems in a single phase project.

This option has the best timeline to deliver the required functions to the business, best NPV, with less deployment impact on the operation of field activities.

7.   INVESTMENT TIMING❖

Recommendation is to start March 2024 which places estimated completion in Dec 2025

8.   EXPECTED OUTCOMES AND BENEFITS

The benefits to TasNetworks from implementation of the preferred option will be avoidance of risk of system failure and associated business disruption.

9.   ASSUMPTIONS ❖

ID	Assumption Description
ITA-169	One of the unsupported systems will cease to function following a ▮▮▮▮▮▮▮▮▮▮ due to deprecated functions
ITA-170	Additional time will be required to process everything manually, rather than the automated systems
ITA-171	Jobs will need to be extracted by Market Services and sent to depots every day - additional 5 mins per day
ITA-172	At depots Job lists will need to be compiled manually, all scheduling and allocation done on spreadsheets - Additional 10 mins per job
ITA-173	Run Sheets will need to be compiled & printed for each worker every day - 10 min x 40 crews
ITA-174	Crews will need to record job results onto paper job sheets - additional 10 min per job
ITA-175	Job result sheets will need to be scanned & emailed to head office for system entry - additional 10 min per job
ITA-176	Job result sheets will need to be manually entered into Market Service Order Mgt system - additional 10mins per job

ITA-177	One of the systems processes over 80,000 jobs per year

10.   REGULATORY INVESTMENT TEST

N/A

11.   RECOMMENDATION ❖

It is recommended that the preferred option is approved and progressed as it best satisfies the customer and business needs.

APPENDIX A – ECONOMIC ANALYSIS

The assumptions used in the economic analysis are as follows:

- NPV analysis is carried out for a 10 year period from the start of the initiative.
- Weighted Average cost of Capital (WACC) of 2.79 per cent is used.

The results of the Economic Analysis are provided below:

ANALYSIS OF OPTIONS		Option 0	Option 1	Option 2
		Status Quo - Do Nothing	Implement Upgrades in a Single Phase	Implement Upgrades in Two Phases
Capital Expenditure	Cash outflow	-		
Operational Expenditure	Cash outflow	(33,634,188)		
Operational Cost savings	Cash Inflow	-		
Total Expenditure	Cash outflow	(33,634,188)		
Revenue	Cash Inflow	-		
Net Cashflow	Net cash	(33,634,188)		
CASHFLOW NPV		(29,812,084)		
Non Cash Benefits	Non cash in	-		
Non Cash Costs	Non cash out	-		
Net Value	Net Value	(33,634,188)		
COST BENEFIT NPV		(29,812,084)		
	RANKING	3		

APPENDIX B – KEY BUSINESS RISK COMPARISON

The project options each have a different impact on key business risks. The table below provides a qualitative summary of the impacts of each option on key business risks, with consideration for the risk approach and risk management process outlined in TasNetworks' Risk Management Framework.

Risk ID	Risk Category	Risk	Option 0 – Do Nothing (untreated risk)			Option 1 Buy Works Management Solution Deliver in one phase.				Option 2 Buy Works Management Solution Deliver in two phases.			
			Likeli hood	Conse quence	Risk	Likeli hood	Conse quence	Risk	How does this option mitigate current situation risk?	Likeli hood	Conse quence	Risk	How does this option mitigate current situation risk?
ITR-167	Death or Injury (Employee)	If the current Service Based Work Management system fails the manual processes will struggle to ensure that known safety information such as savage dogs or other hazards is provided to our field crews, elevating the risk of injury.	Possible	Severe	High	Unlikely	Major	Medium	Contemporary systems are far less likely to fail catastrophically compared to old unsupported systems	Unlikely	Major	Medium	Contemporary systems are far less likely to fail catastrophically compared to old unsupported systems
ITR-168	Sustainable and Predictable Pricing	If the current system fails: Without generating automated responses to Retailers, there will be a flood of telephone inquiries regarding job progress, complaints etc. Additional labour will be required to process. Manual processing will require additional staff to ensure works are scheduled, allocated and completed. Manual processing will cause delays resulting in higher level of GSD Guaranteed Service Delivery payments Manual processes will result in de-energisations made non-compliantly resulting in NECF fines.	Likely	Minor	Medium	Unlikely	Moderate	Medium	Contemporary systems are far less likely to fail catastrophically compared to old unsupported systems	Unlikely	Moderate	Medium	Contemporary systems are far less likely to fail catastrophically compared to old unsupported systems
ITR-169	Customer Focus	If the current system fails, manual processes will be required resulting in: Without service works management tools, field activities will need to be registered manually, significantly decreasing efficiency, resulting in slower work or increased workforce. Without service works management tools, field activities will need to be registered manually, significantly decreasing efficiency, resulting in customers without power or services. TasNetworks be more likely to not meet SLAs, resulting in not meeting its regulatory obligations and possibly being fined.	Possible	Moderate	Medium	Rare	Moderate	Low	Contemporary systems are far less likely to fail catastrophically compared to old unsupported systems	Rare	Moderate	Low	Contemporary systems are far less likely to fail catastrophically compared to old unsupported systems
ITR-170	Business Continuity Management	If the current system fails, manual processes will be required resulting in: Without service works management tools, field activities will need to be registered manually, significantly decreasing efficiency, resulting in slower work or increased workforce. Without service works management tools, field activities will need to be registered manually, significantly decreasing efficiency, resulting in customers without power or services. Business continuity will be severely compromised beyond one day due to the volume of activity that manual processes will not be able to cope with.	Possible	Moderate	Medium	Rare	Moderate	Low	Contemporary systems are far less likely to fail catastrophically compared to old unsupported systems	Rare	Moderate	Low	Contemporary systems are far less likely to fail catastrophically compared to old unsupported systems
ITR-171	Cyber Security	The technology behind the Service Based Work Management system is circa early 2000's. ██████████████	███	███	███	███	███	███	Contemporary systems that we can install with contemporary cyber controls are far less	███	███	███	Contemporary systems that we can install with contemporary cyber controls are far less likely to be compromised

Risk ID	Risk Category	Risk	Option 0 – Do Nothing (untreated risk)			Option 1 Buy Works Management Solution Deliver in one phase.				Option 2 Buy Works Management Solution Deliver in two phases.			
			Likeli hood	Conse quence	Risk	Likeli hood	Conse quence	Risk	How does this option mitigate current situation risk?	Likeli hood	Conse quence	Risk	How does this option mitigate current situation risk?
		There are higher cyber risk associated with older technology. We are finding it increasingly difficult to keep the field client application running on the latest operating systems and may soon require use of unsupported field platforms in order for it to run. There is a risk that this system could be compromised leading to the system being unavailable to the business for 1 to several days. Customer services such as energisations would be greatly affected.			High			Medium	likely to be compromised			Medium	
ITR-172	Staff Engagement	Persisting with systems that are not designed with user experience in mind creates disengagement with data collection processes, and needs for data quality creating gaps in asset data that flow further into our asset management systems with long term effects. We experience this today and there is high likelihood it could worsen.	Likely	Major	High	Unlikely	Major	Medium	Contemporary systems are far less likely to fail catastrophically compared to old unsupported systems	Unlikely	Major	Medium	Contemporary systems are far less likely to fail catastrophically compared to old unsupported systems
ITR-176	Cyber Security	If systems are not maintained in a healthy supported state, they become more vulnerable to Cyber Attacks. A compromised works management tool could also act as an entry point to the whole of TasNetworks IT Ecosystem. A cyber attack that affects multiple operational systems could cause widespread disruption to the business, breaches of market obligations and release of sensitive data.							Contemporary systems that we can install with contemporary cyber controls are far less likely to be compromised				Contemporary systems that we can install with contemporary cyber controls are far less likely to be compromised