

# Investment Evaluation Summary (IES)



## Project Details:

<b>Project Name:</b>	Replace condemned wide based steel poles
<b>Project ID:</b>	00593
<b>Thread:</b>	Public Lighting
<b>CAPEX/OPEX:</b>	CAPEX
<b>Service Classification:</b>	Alternative Control
<b>Scope Type:</b>	D
<b>Work Category Code:</b>	RLWBP
<b>Work Category Description:</b>	Replace condemned wide based poles
<b>Preferred Option Description:</b>	Replaces Wide Base Pole (by pole being condemm (structurely) or insulation breakdown of internal electrical components
<b>Preferred Option Estimate (Nominal Dollars):</b>	\$4,466,000

	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
<b>Unit (\$)</b>	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000
<b>Volume</b>	50	50	55	55	60	60	65	65	70	70
<b>Estimate (\$)</b>	\$350,000	\$350,000	\$385,000	\$385,000	\$420,000	\$420,000	\$455,000	\$455,000	\$490,000	\$490,000
<b>Total (\$)</b>	\$350,000	\$350,000	\$385,000	\$385,000	\$420,000	\$420,000	\$455,000	\$455,000	\$490,000	\$490,000

## Governance:

<b>Project Initiator:</b>	Gerard Martindill	<b>Date:</b>	24/03/2015
<b>Thread Approved:</b>	Darryl Munro	<b>Date:</b>	16/10/2015
<b>Project Approver:</b>	Darryl Munro	<b>Date:</b>	16/10/2015

## Document Details:

<b>Version Number:</b>	1
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## Related Documents:

Description	URL
Wide Based Pole Audit Report - copy from DM	<a href="http://projectzone.tnad.tasnetworks.com.au/business-projects/nis-program/DD17SAM/Deliverables/Public%20Lighting/Wide%20Based%20Pole%20Audit%20Report%20-%20copy%20from%20DM.docx">http://projectzone.tnad.tasnetworks.com.au/business-projects/nis-program/DD17SAM/Deliverables/Public%20Lighting/Wide%20Based%20Pole%20Audit%20Report%20-%20copy%20from%20DM.docx</a>

# Section 1 (Gated Investment Step 1)

## 1. Background

Wide-based poles were first installed in underground subdivisions in 1974. As well as providing support for minor public lighting, they also provide servicing points for the adjacent house allotments. Pole inspections have indicated that these poles are reaching the end of their life, particularly in areas with corrosive soil or in seaside conditions. A number of incidents have also occurred where the insulation of wiring inside the pole has degraded allowing live parts to make contact with the cover plate of the pole. This has resulted in damage to the cover and allowed public exposure to extraneous live parts. An audit of cable poles with three installed LV cables was carried in the first half of 2013 to determine extent of issues with the insulation. A report (see Document section) was produced outlining findings and recommendations. This has resulted in an increased forecast replacement volume for these assets over the next seven years.

Wide based poles (in terms of pole inspections) are being replaced as required based on asset condition assessments by the TasNetworks pole inspection program (inspection funded by Structures Thread, replacement funded by Public Lighting Thread).

### 1.1 Investment Need

To address the issues outlined under the 'Background' section, TasNetworks has a program to replace wide based poles that are condemned (pole) through condition based assessment. Investment is to be maintained in order to replace wide based pole with new slim line pole and install a new turret over the existing wide base pole location.

### 1.2 Customer Needs or Impact

TasNetworks continues to undertake a consumer engagement as part of business as usual and through the voice of the customer program. This engagement seeks in depth feedback on specific issues relating to: • how it prices impact on its services • current and future consumer energy use • outage experiences (frequency and duration) and expectations • communication expectations • STPIS expectations (reliability standards and incentive payments) • Increase understanding of the electricity industry and TasNetworks Consumers have identified safety, restoration of faults/emergencies and supply reliability as the highest performing services offered by TasNetworks. Consumers also identified that into the future they believe that affordability, green, communicative, innovative, efficient and reliable services must be provided by TasNetworks. This project specifically addresses the requirements of consumers in the areas of; • safety, restoration of faults/emergencies and supply reliability • affordability, green, communicative, innovative, efficient and reliable services Customers will continue to be consulted through routine TasNetworks processes, including the Voice of the customer program, the Annual Planning Review and ongoing regular customer liaison meetings.

### 1.3 Regulatory Considerations

6.5.7 (a) Forecast capital expenditure (1) meet or manage the expected demand for standard control services over that period; (2) comply with all applicable regulatory obligations or requirements associated with the provision of standard control services; (3) to the extent that there is no applicable regulatory obligation or requirement in relation to: (i) the quality, reliability or security of supply of standard control services; or (ii) the reliability or security of the distribution system through the supply of standard control services, to the relevant extent: (iii) maintain the quality, reliability and security of supply of standard control services; and (iv) maintain the reliability and security of the distribution system through the supply of standard control services; and

## 2. Project Objectives

To replace condemned/aged wide based steel streetlight poles and poles that have internal electrical insulation breakdown issues as identified by pole inspection/audits, with a new turret and an TasNetworks owned slim-line road light.

## 3. Strategic Alignment

### 3.1 Business Objectives

Strategic and operational performance objectives relevant to this project are derived from TasNetworks 2014 Corporate Plan, approved by the board in 2014. This project is relevant to the following areas of the corporate plan: • We understand our customers by making them central to all we do. • We enable our people to deliver value. • We care for our assets, delivering safe and reliable networks services while transforming our business.

### 3.2 Business Initiatives

The business initiatives that relate to this project are as follows: • Safety of our people and the community, while reliably providing network services, is fundamental to the TasNetworks business and remains our immediate priority • We care for our assets to ensure they deliver safe and reliable network services • We will transform our business with a focus on: - the customer, and a strong commitment to delivering services they value - an engaged workplace with strong cultural qualities and people who will be great ambassadors for TasNetworks - a high performing culture with clear accountabilities for deliverables - an appropriate approach to the management and allocation of risk - a well run, efficient business, that delivers sustainable returns to the Tasmanian community and is resilient to future challenges. The strategic key performance indicators that will be impacted through undertaking this project are as follows: • Customer engagement and service – customer net promoter score • Price for customers – lowest sustainable prices • Zero harm – significant and reportable incidents • Sustainable cost reduction – efficient operating and capital expenditure

## 4. Current Risk Evaluation

Do nothing is not an acceptable option to TN's risk appetite. If nothing is done, the risk of customer shock or electrocution is increased or the risk of customer injury or death from pole falling down.

### 4.1 5x5 Risk Matrix

TasNetworks business risks are analysed utilising the 5x5 corporate risk matrix, as outlined in TasNetworks Risk Management Framework.

Relevant strategic business risk factors that apply are follows:

Risk Category	Risk	Likelihood	Consequence	Risk Rating
Customer	Low impact to customer	Possible	Negligible	Low
Environment and Community	Low impact	Unlikely	Negligible	Low
Financial	Low impact	Rare	Negligible	Low
Network Performance	Small performance issue to < 100 customers	Possible	Negligible	Low
Regulatory Compliance	Nil reg. compliance issues	Possible	Negligible	Low
Reputation	TasNetwork reputation as a safe work place decreased	Possible	Major	High
Safety and People	Pole failing over pole livening up due to insulation inside breaking down	Possible	Severe	High

## Section 1 Approvals (Gated Investment Step 1)

<b>Project Initiator:</b>	Gerard Martindill	<b>Date:</b>	24/03/2015
<b>Line Manager:</b>		<b>Date:</b>	
<b>Manager (Network Projects) or Group/Business Manager (Non-network projects):</b>		<b>Date:</b>	
[Send this signed and endorsed summary to the Capital Works Program Coordinator.]			

<b>Actions</b>			
<b>CWP Project Manager commenced initiation:</b>		<b>Assigned CW Project Manager:</b>	
<b>PI notified project initiation commenced:</b>		<b>Actioned by:</b>	

## Section 2 (Gated Investment Step 2)

### 5. Preferred Option:

To replace condemned/aged wide based steel streetlight poles and poles that have internal electrical insulation breakdown issues as identified by pole inspection/audits, with a new turret and an TasNetworks owned slim-line road light.

#### 5.1 Scope

1 Work to be undertaken:

Installation of new TasNetworks owned slim-line pole - Standard installation methods to be utilised for the installation of the slim-line pole- Street lighting must be maintained at this location where possible so that there is not a period where the street lighting is extinguished. This may not be possible, in some situations, where the existing pole must be made safe by the immediate removal of the top section of the pole due to the lack of structural integrity.

Location to be selected as close as possible to existing wide based pole position taking into account traffic flows and obstructions to access to properties.

If position is greater than 5 metres from current pole position then design advice to be sought on the effect on the lighting scheme for the roadway.

Ensure that the slim-line poles are effectively earthed with either a separate earth pin or a separate earth wire from the new turret.

Pole to be classified as 'TasNetworks Surcharge' on G-Tech and appropriate installation details to be sent back to GIS Records for recording. Removal of condemned Wide Based Streetlight - Where poles are condemned and are deemed to be unsafe must have the top 89 mm NB section cut off including the streetlight. The remaining section must be capped to stop ingress of water and made safe. In these situations the installation of the slim line pole and the re-establishment of streetlighting should be fast tracked as much as possible.

New streetlighting head will be installed where the existing fitting is greater than 10 years old.

The entire pole shall be removed including the 1200 mm (approx) in-ground section. The in-ground section shall be retained to allow for inspection by Assets. The in-ground section shall be marked with the pole ID so the pole location is known.

If customer's mains are disconnected or disturbed in any way, the required polarity check procedures will be undertaken.

New Turret - Installation of new turret is the same location as the wide based streetlight.

Standard installation procedures to be observed and followed.- Existing cable installations to be critically inspected and should be re-terminated as required. Special attention should be given to CONSAC cable installations. CONSAC installations shall be reported to the Underground Thread Leader for inclusion on the CONSAC cable replacement program.

All equipment and hardware used in the turret installation shall be new.

Each new turret shall have a separate earth pin installed.

#### 5.2 Expected outcomes and benefits

- Maintain a safe and reliable network. - Assets replaced according to condition and risk based assessment criteria.

#### 5.3 Regulatory Test

## 6. Options Analysis

## 6.1 Option Summary

Option description	
Option 0	Do nothing
Option 1 (preferred)	Replaces Wide Base Pole (by pole being condenn (structurely) or insulation breakdown of internal electrical components

## 6.2 Summary of Drivers

Option	
Option 0	Does not effectively manage risk of shock or electrocution or pole falling over by contnuing to run all assets to failure. Likely customer shock or electrocution or severe injury from failed wide base pole.
Option 1 (preferred)	Reduces risk of customer shock or electrocution by replacing assets before they fail in service. Reduces risk of customer injury or death from pole falling down. Reduces unplanned outages on the network when the pole fails - causing a prolonged outage to potentially hundreds of customers

## 6.3 Summary of Costs

Option	Total Cost (\$)
Option 0	\$0
Option 1 (preferred)	\$4,466,000

## 6.4 Summary of Risk

This section outlines an overall residual asset risk level, for each of the options.

Option	Risk Assessment
Option 0	Medium
Option 1	Low

## 6.5 Economic analysis

Option	Description	NPV
Option 0	Do nothing	\$0
Option 1 (preferred)	Replaces Wide Base Pole (by pole being condenn (structurely) or insulation breakdown of internal electrical components	\$0

### 6.5.1 Quantitative Risk Analysis

A risk assessment based on the results on an inspection program has indicated that the replacement of wide based poles needs to be increased to effectively manage the safety risk associated with public exposure to live assets.

### 6.5.2 Benchmarking

Benchmarking has not been completed for this item.

### **6.5.3 Expert findings**

There are no expert findings to report on this project.

### **6.5.4 Assumptions**

## Section 2 Approvals (Gated Investment Step 2)

<b>Project Initiator:</b>	Gerard Martindill	<b>Date:</b>	24/03/2015
<b>Project Manager:</b>		<b>Date:</b>	

<b>Actions</b>			
<b>Submitted for CIRT review:</b>		<b>Actioned by:</b>	
<b>CIRT outcome:</b>			