

# Vegetation Management Planning

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## Introduction

Due to ageing hardware and increasing demands for service delivery, vegetation related problems has been identified as one of the root causes of power dips, poor access also prevents inspections of hardware.

To reduce costs of vegetation maintenance over the long term and improve network performance, long term vegetation management plans should be considered.



## Current Situation

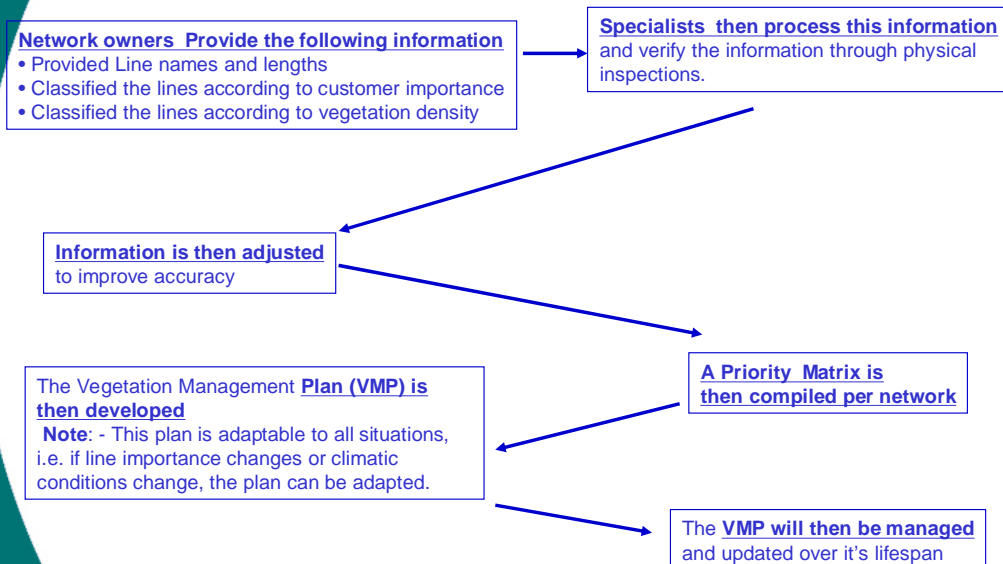
- Vegetation is usually managed on an adhoc basis & no overall plan to manage vegetation holistically or strategically is developed
- Vegetation maintenance on lines is delayed until it becomes critical due to outages / trips / dips
- This brings to the fore the need for a system / methodology to be implemented which can be used as a management tool, not only for network performance but also to aid access to inspect ageing hardware.
- The aim of this plan is to maintain control of all stages of vegetative re-growth and follow-up cycles



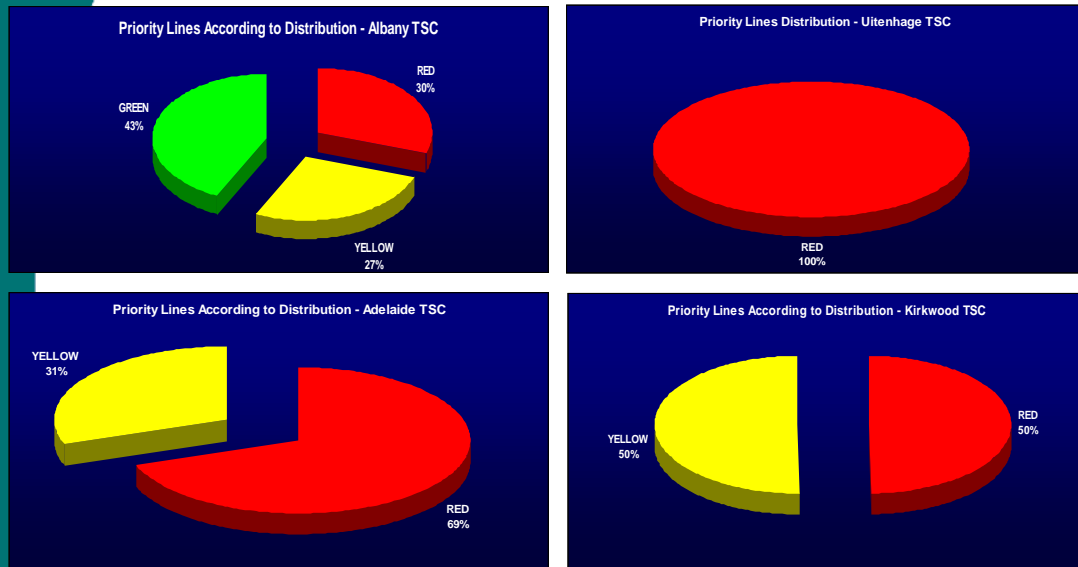
## Modus operandi

- Evaluate the vegetation status by extracting a sample of the vegetation from each network by:-
  - physical inspections
  - and consultation with network Managers
- Make use of an integrated system to analyze as accurately as possible, the magnitude of the vegetation present, and future status
- Prioritize the lines or locations according to their vulnerability
- Classify vegetation into density categories
- Apply actual production rates of vegetation clearing for each vegetation category within the specific biome.

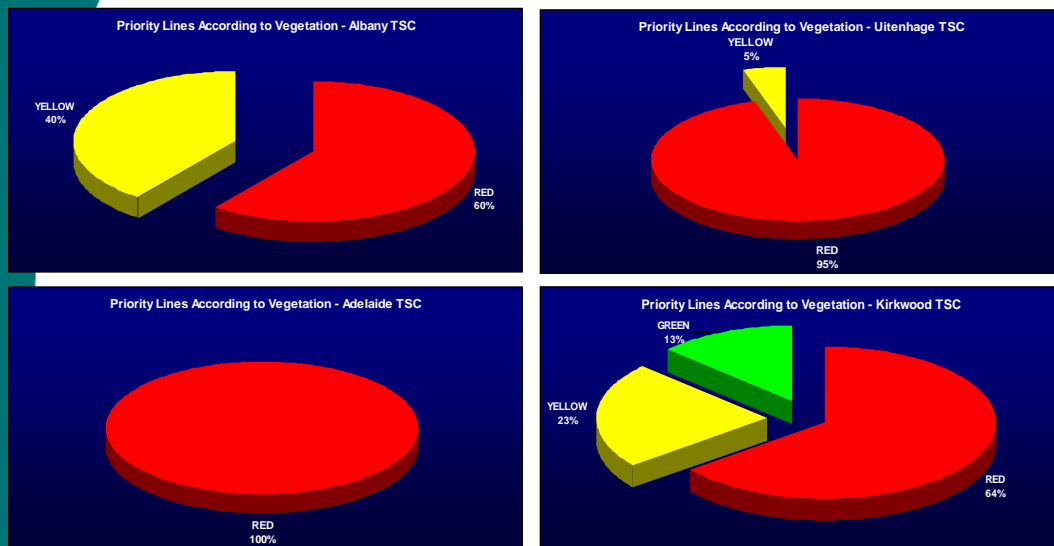
## Process Flow Diagram



## e.g. of Priority Lines (network managers perception)



## Results of Vegetation Status

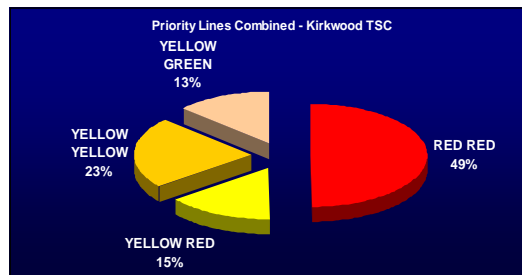
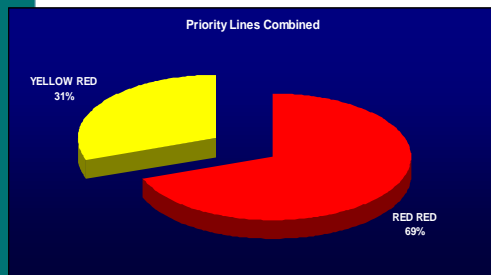
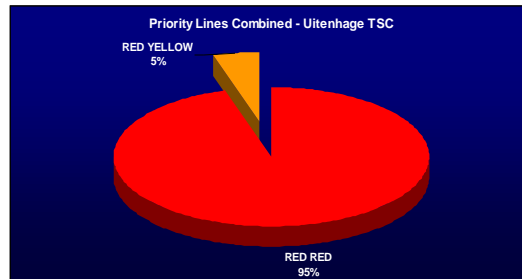
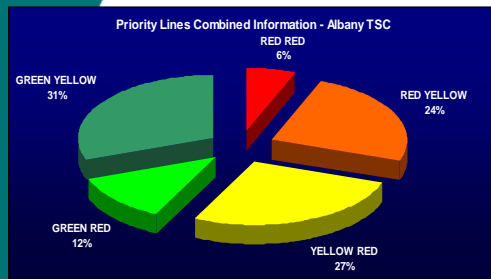


# Priority Lines Matrix

Line Priority	Vegetation Status	Classification	Priority Rank
Red	Red	RR	1
Red	Orange	RO	2
Red	Yellow	RY	3
Red	Green	RG	Follow - up
Yellow	Red	YR	4
Yellow	Orange	YO	5
Yellow	Yellow	YY	6
Yellow	Green	YG	Follow - up
Green	Red	GR	7
Green	Orange	GO	8
Green	Yellow	GY	9
Green	Green	GG	Follow - up

Importance ↑

## Example of Combined Result



# Implementing the Plan

Based on the following financial assumptions, the plan is as follows:

- **1st Year** Initial clearance includes chemical treatment & starts on the most critical lines or areas
- **2nd Year** The follow up (cycle 2) on the previous year's work
- **3rd Year** The follow up (cycle 3) on the previous years work (both cycle 1 & 2)
- **From the 4th Year onwards** The lines fall into a maintenance cycle



# The Plan Cont....

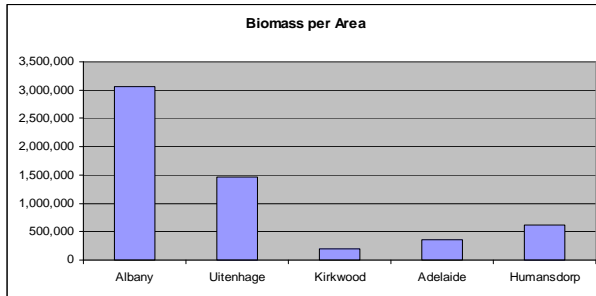
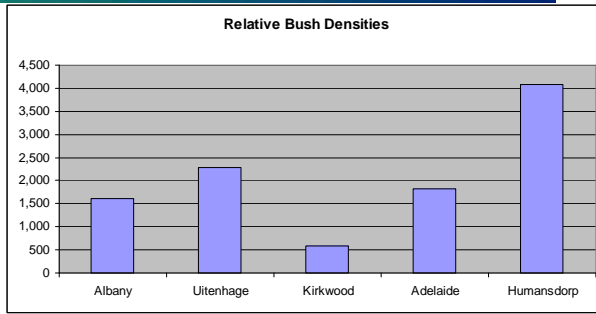
Example - Matching Project costs to Budget constraints

LINE NAME	YEAR				
	1	2	3	4	5
A	1000	400	320	-	-
B	1000	400	320	-	-
	<u>2000</u>				
C		1000	400	320	
		<u>1800</u>			
D			920	368	294
			<u>1960</u>		
E				1400	560
				<u>2088</u>	

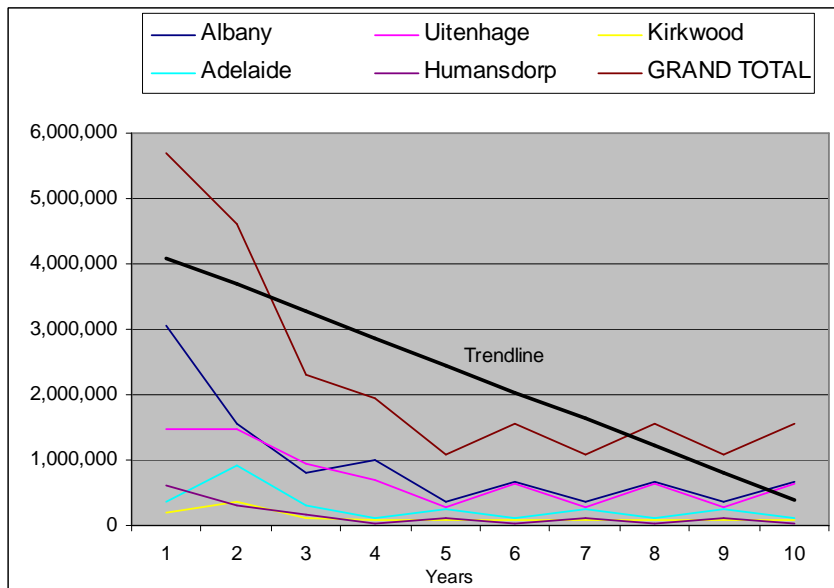
■ Year 1 Cycle   
 ■ Year 2 Cycle   
 ■ Year 3 Cycle   
  Total Cost per year



# Stats Per Area (vegetation densities)

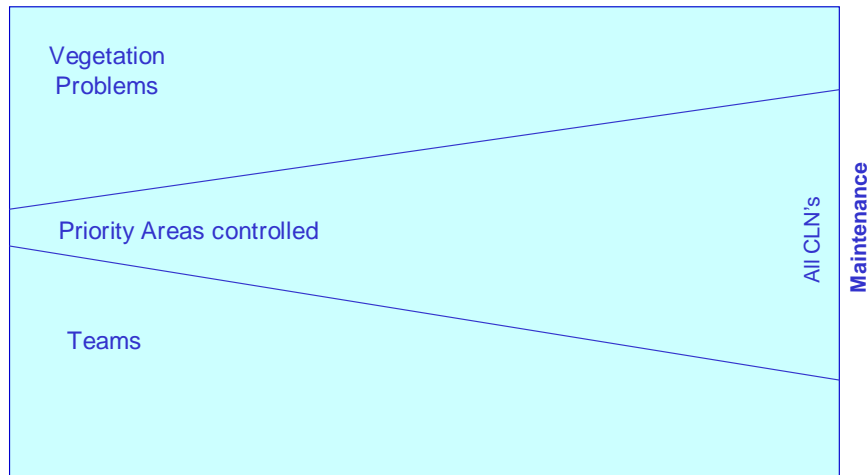


# Planning & Programming



# Design a Strategy to Suit Your Needs

## Vegetation Management Matrix



2005 Time →

## Conclusion

- Long - term strategic management of vegetation is critical to line performance and cost of maintenance.
- Networks should **not** be maintained in a haphazard fashion, they must rather be maintained within a system of cycles to ensure sustained control
- It is also important to note that nature functions as a dynamic system and the vegetation as part of that system is always growing, changing and adapting