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

Network owners provide the following information
- Provided line names and lengths
- Classified the lines according to customer importance
- Classified the lines according to vegetation density

Specialists then process this information and verify the information through physical inspections.

Information is then adjusted to improve accuracy

A Priority Matrix is then compiled per network

The Vegetation Management Plan (VMP) is then developed

Note: - This plan is adaptable to all situations, i.e. if line importance changes or climatic conditions change, the plan can be adapted.

The VMP will then be managed and updated over its lifespan
e.g. of Priority Lines (network managers perception)

Results of Vegetation Status
## Priority Lines Matrix

<table>
<thead>
<tr>
<th>Line Priority</th>
<th>Vegetation Status</th>
<th>Classification</th>
<th>Priority Rank</th>
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## Example of Combined Result

### Priority Lines Combined Information - Albany TSC

- **Red Red**: 6%
- **Red Yellow**: 24%
- **Yellow Red**: 27%
- **Green Red**: 12%
- **Green Yellow**: 31%

### Priority Lines Combined - Uitenhage TSC

- **Red Red**: 95%
- **Red Yellow**: 5%

### Priority Lines Combined - Kirkwood TSC

- **Red Red**: 49%
- **Yellow Yellow**: 23%
- **Yellow Green**: 13%
- **Yellow Red**: 19%
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

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Example - Matching Project costs to Budget constraints

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- **Year 1 Cycle**
- **Year 2 Cycle**
- **Year 3 Cycle**
- **Total Cost per year**

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Stats Per Area (vegetation densities)

- **Biomass per Area**
  - Albany
  - Uitenhage
  - Kirkwood
  - Adelaide
  - Humansdorp

- **Relative Bush Densities**
  - Albany
  - Uitenhage
  - Kirkwood
  - Adelaide
  - Humansdorp

- **Line Length per Area**
  - Albany
  - Uitenhage
  - Kirkwood
  - Adelaide
  - Humansdorp

Planning & Programming

- **Trendline**
  - Albany
  - Uitenhage
  - Kirkwood
  - Adelaide
  - Humansdorp
  - GRAND TOTAL

- **Years**
  - 1 to 10
Design a Strategy to Suit Your Needs

Vegetation Management Matrix

Vegetation Problems

Priority Areas controlled

Teams

All CLN’s

Maintenance

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.