Date of Submission

May 2021

Network Innovation Allowance Closedown Report

Notes on Completion: Please refer to the appropriate NIA Governance Document to assist in the completion of this form.

Network Licensees must publish the required Project Progress information on the Smarter Networks Portal by 31st July 2014 and each year thereafter. The Network Licensee(s) must publish Project Progress information for each NIA Project that has developed new learning in the preceding relevant year.

Project Progress

Project Title

Applied Integrated Vegetation Management

Project Reference

NIA_SSEPD_0025

Funding Licensee(s)

Scottish Hydro Electric Power Distribution, Southern Electric Power Distribution

Project Start Date

January 2016

Project Duration

3 years and 6 months

Nominated Project Contact(s)

SSEN NIA Programme Delivery Manager – Joe McNeil

Scope

Integrated Vegetation Management (IVM) is the practice of promoting desirable, stable, low-growing plant species which naturally inhibit the regrowth of taller tree species, coupled with annual control using selective application of herbicide (instead of mechanical cutting). The purpose of this project is to investigate if using IVM can reduce the operational expenditure, number of re-visits, exposure to hazardous activities, and impact on the environment compared to traditional techniques.

The project scope includes the following steps:

- Determine current knowledge about IVM strategies in the USA and elsewhere by reviewing existing literature and other information sources
- Literature review to assess current equipment and methods
- Decide management objectives and the range of herbicides and equipment to be used
- Carry out a baseline site and vegetation survey to understand the site-specific plant succession applicable at the Tongham Railway path site
- Carry out a baseline ecology survey and willingness to pay survey
- Set up the trial, with different treatment options and control areas at Tongham Railway
- Monitor the effectiveness of the various methods used at Tongham Railway
- Monitor the changes in habitats for wildlife
- Results from the trial will be used to make a comparison between the current method and the innovative method and to assess the viability of the innovative method from a consideration of financial and environmental factors.

Objectives(s)

We will:
- Determine current knowledge about IVM strategies in the USA and elsewhere by reviewing existing literature and other information sources
- Design IVM strategies based on current knowledge and test them in the field
- Implement IVM strategies on trial sites
- Quantify any financial savings of IVM compared to conventional techniques
- Assess the relative value of biodiversity of the habitat arising from the IVM compared to conventional techniques

Success Criteria

The project will be deemed successful if:

- Identification of the extent to which IVM can control trees returning and how effective it is as a tool to maintain regulatory standards around power lines
- Determine if IVM is a cost-effective method in the UK
- Production and dissemination of learning around IVM

Performance Compared to the Original Project Aims, Objectives and Success Criteria

Determine current knowledge about IVM strategies in the USA and elsewhere by reviewing existing literature and other information sources

- This was successfully undertaken during the first year of the project, it was concluded that IVM could result in improving the biodiversity of both plants and animal species.

Design IVM strategies based on current knowledge and test them in the field

- Based upon the literature review an IVM strategy was produced.

Implement IVM strategies on trial sites

- Two trial sites where selected in the Southern Electric Power Distribution area - last year vegetation heights and coverage of bare ground, water logging and brash seemed to be mostly similar between IVM plots and control plots and while there are changes year on year there were no obvious trends.

Quantify any financial savings of IVM compared to conventional techniques

- As the trial has progressed there have been changes in the way the Tree Cutting Team operate. Following an internal review of the project with the Tree Cutting team, the deliverables and learning expected were not deemed to provide financial savings against conventional methods. This was due to not every site having the suitable characteristics to use IVM and the fact that IVM requires annual inspections and cutting until the taller species are inhibited. For example, utilising the IVM methods unwanted vegetation is pruned or felled at the start of the cycle. Annual visits are then required to 'cherry pick' the faster growing species by removing and treating until a site is manageable. Yearly visits for 5 years are then required to implement IVM. These visits still entail the same level of maintenance and costs as BAU 3 yearly inspections, as it stands today. Therefore, the end result being, the IVM sites cost greater than traditional techniques.

Assess the relative value of biodiversity of the habitat arising from the IVM compared to conventional techniques

- Annual surveys were carried out and there are no significant changes in the biodiversity and habitat between the trial sites, when compared year on year since the trial began three years ago.

- A public values survey was undertaken to ask how much a customer would be willing to pay for this new type of vegetation management, as well as their priorities for biodiversity improvements. On analysing the survey, the results suggested that the public do value the improvements in biodiversity that arise from the implementation of IVM techniques. However, this is dependent on any IVM programme increasing the variety and population of flowering plants, song birds and/or invertebrate. When comparing these biodiversity indicator classes which attracted positive responses from the customer base surveyed, against the three-year IVM trial, there was no supporting evidence that showed improvements in biodiversity or habit.

- The survey also explored the level of costs the customers would be willing to pay towards this vegetation management. For instance, respondents are willing to pay a one-off payment for the following;

Variety / population of Invertebrates
10 % Increase: £7.12
25% Increase: £12.62
Variety / population of birds
10 % Increase:£5.65
25% Increase: £9.50
Variety / population of flowers
10 % Increase: £5.88
25% Increase: £6.89

- However, respondents were not willing to pay for any changes in the current levels of the trees and shrubs biodiversity indicators, which was the major biodiversity indicator class with the potential of greatest improvement via the IVM trial.

Required Modifications to the Planned Approach During the Course of the Project

Post project registration, the structure of the tree cutting department at Scottish and Southern Electricity Networks changed dramatically and more modern and cost-effective approaches to vegetation management were adopted. Also, on reviewing customers' opinions on vegetation management, it was concluded the IVM trial was not sufficiently demonstrating improvements in the areas of biodiversity most valued. Following on from the findings and internal review, SSEN decided to close this project earlier than planned.

Lessons Learnt for Future Projects

There is merit in projects that span longer than three years if the variable being measured requires time to multiply or grow. When considering a project with an extend duration it is important to explore the potential associated business risks in detail and identify mitigation measures. Below are the main risks perceived with long term projects.

· Changes in Team Structure and working processes; keeping in contact with the Field Team Leaders to ensure that the project aims, and success criteria remain within alignment, if there is a drift in direction discuss changes to the project to address and support the Field Teams' direction or early conclusion of the project.

· Stakeholders changes; record formal engagement plans to be used and updated frequently to ensure appropriate stakeholders are still available and involved.

· Project Management changes within SSEN and ADAS (the supplier); Ensure good quality administration and documentation so if changes occur inadvertently limited gaps in subject matter and project progress knowledge are limited.

Note: The following sections are only required for those projects which have been completed since 1st April 2013, or since the previous Project Progress information was reported.

The Outcomes of the Project

Initial knowledge was acquired on how the USA manages IVM strategies, from which an IVM plan was developed for SSEN network with the aim being to control returning trees to maintain regulatory standards around power lines.

The developed IVM plan was then implemented in two control areas of the SSEN network and annual inspection and biodiversity investigations undertaken. At an appropriate point in the field trial an initial evaluation of the IVM strategy was undertaken. This highlighted;

- the IVM strategy was not applicable in all areas of the SSEN network; this introduces a layer of management with applying an IVM plan and the risk of future error in a section missing an IVM maintenance visit;

- that the anticipated increase in biodiversity and habit of the IVM trial sites had not be achieved;

- public market research that people were less willing pay extra for the lower levels of enhanced environmental benefits associated with IVM; and

- internally to SSEN the tree cutting policy had significantly changed with more frequent site inspections to manage tree growth.

On evaluating the outcomes from the IVM trial a detailed cost benefit analysis was undertaken. The result of which showed the present IVM strategy was more expensive than the new SSEN tree cutting policy, with little to no enhanced biodiversity or habit. Therefore, the trialled IVM strategy is not a cost-effective method for the UK.

Material and learning from the IVM trial has been shared via the LCNI Conference Booklets and SSEN Innovation web-site, we welcome any further inquiries to futurenetworks@sse.com

Data Access

No network or consumption data has been directly gathered during the course of this Project.

See Network Innovation Competition (NIC) and Network Innovation Allowance (NIA) Data Sharing Procedure at https://www.ssen.co.uk/InnovationLibrary/Distribution/

Foreground IPR

N/A

Planned Implementation

After three years of the project and monitoring of the trial site, limited benefits were identified if changes to the existing processes were to be made, therefore the IVM strategy will not be implemented.

Other Comments

N/A

Standards Documents

The learning from this project has no implication on standards.