



Health
Strategies

Survey Findings: Tree Work Post Project Research

SafeWork NSW
Final Report

October 2018

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Executive Summary

Background

The Focus on Industry (FOI): Tree Work project was conducted between March 2017 and June 2018. It was a Commerce Regulation Program initiative led by SafeWork NSW, in partnership with NSW Fair Trading and the State Insurance Regulatory Authority (SIRA). The project included communication and educational activities, such as a visit program conducted by SafeWork NSW inspectors, to raise awareness and promote industry understanding of safety in conducting tree work services.

The purpose of the research was to seek to understand the reach and effectiveness of the Tree Work project ('project'), as well as understand changes to the industry's knowledge, attitude and capabilities before and after the project's completion. ZEST Health Strategies was engaged to conduct the post-project research, which sought to build on the findings of the pre-intervention research commissioned by SafeWork NSW. The pre-intervention research provided baseline results on the knowledge, attitudes and behaviours of those in the industry in reducing and managing risk. The findings in this report will be included as part of a broader review of the project which is being conducted by SafeWork NSW.

This report presents the key findings from the research and includes a series of recommendations for consideration in supporting the development of similar projects by SafeWork NSW in the future.

Approach and methodology

This research involved two post-project surveys – one with general industry (Survey A), and one targeted at a smaller cohort of those who had been involved in the visit program component of the project (Survey B). The surveys were both administered using a mixed mode approach - through the telephone and online.

Survey A was conducted over a four-week period, from the 6th August to 1st September 2018, and resulted in a total of 151 completed surveys. Survey B was conducted over a three-week period, from the 20th August to 12th September 2018, and resulted in a total of 24 responses.

Quantitative data was cleaned and entered into the statistical analysis software package, SPSS for analysis. No formal qualitative analysis was conducted, however general themes were identified following a review of the survey data. General comparisons between the pre and post-project survey findings have been included where relevant, to provide a general understanding of the changes before and after the project.

Key findings

Awareness of tree work communication activities and changes to behaviour

The following findings are from those who may have seen the project's media campaign as well as those who participated in the visit program (Survey A and B):

- 70% of respondents said that they had seen, read, or heard information about tree work safety in the previous 12 months.
- 40% indicated that they had accessed this information via social media (e.g. Facebook, Twitter), over 35% through print materials and over 30% from websites.
- 55% of respondents indicated that they were aware of the organisations that worked in partnership to implement the project, with 42% indicating that this partnership provided 'substantial added value'.
- 12% of respondents indicated that the information had caused them to change the way in which they managed the safety of tree work in their business.
- The majority of respondents indicated that they agreed that the information provided in the project was accessible, relevant and provided an opportunity for self-reflection on areas of strength and opportunities for improvement in addressing safety in their business.

The following are specific findings for those who participated in the visit program:

- The elements of the visit program were indicated as being generally well received by survey respondents, with over 80% either 'agreeing' or 'strongly agreeing' with the value of components of the pre-visit activities, and over 90% indicating that they felt that the purpose of the inspector's visit was clearly explained.
- 32% of respondents involved in the tree work visit program indicated that they were required to take further actions following the visit. These requirements were generally well received, with 71% stating that these actions were 'absolutely appropriate'. However 29% of respondents said that the requirements were only 'slightly appropriate'.

Knowledge and attitudes to tree work safety practices

- 84% of respondents indicated that 'working at heights' was a 'major hazard' for their businesses. This increased from 79% of respondents who indicated this response in the pre-intervention findings.
- Respondents indicated confidence in 'quoting or speccing out a job' (77%), 'tree climbing' (76%) and 'working at heights' (78%). These results were only slightly higher than those indicated in the pre-intervention findings.
- There was an increase in the percentage of respondents from pre-intervention findings in their approaches to managing the risks associated with working at heights, working near power lines, working with machinery, excessive noise and plant equipment, and lone or isolated work. However the results indicated that there were some areas of risk management for working at heights that could be strengthened.
- The vast majority of respondents indicated that they inspected their equipment used in the performance of tree work 'after every job'. This ranged between 78% for wood chippers to 89% for climbing equipment.

- Ensuring safety on worksites was indicated as a 'shared responsibility' by the majority (62%) of respondents. However this represents an area for further improvement. The percentage of respondents indicating that they had daily talks on safety increased from 39% at pre-intervention to 57%; with continual talks also increasing from 16% to 51%.

Comparison of results between the two surveys showed minimal difference, however, there were certain approaches in managing tree work associated risks that were reported higher by those participating in the visit program, compared with general industry. The low number of responses to Survey B has limited the understanding of the added value of the visit program in improving the knowledge, attitudes and capability of PCBUs in managing safety. However, it is evident that the method in which the visit program was delivered was well received by those who participated. There is an opportunity for future surveys to assess improvements in behaviour as a result of the visit program as these are likely to occur over time.

Conclusion and Recommendations

The research findings highlight an awareness and engagement with communication and educational activities delivered by SafeWork NSW for the tree work industry. Additionally, there is a general indication that the project may have contributed to an increase in the knowledge, attitudes and management of safety by tree workers. The positive nature in which the visit program was received was evident, despite the non-voluntary nature of participating in this activity. This may reflect the industry's strong understanding of the role of SafeWork NSW in encouraging reflection and practice improvement through its review processes. However, given the low number of responses from those who participated in the visit program, the research could not conclude if the visits made a significant difference to participants' knowledge, attitudes and management of safety.

The mechanisms which SafeWork NSW have used to promote these messages - including the social media channels, key messages and educational activities through the visit program - appear appropriate and are acceptable to those in the tree work industry. There are opportunities to further explore the strengths and weaknesses of the project as highlighted in the findings in order to confirm and prioritise areas for continuation and strengthening where required.

Moving forward, the findings have also indicated that there is an opportunity for SafeWork NSW to:

- Continue to **use and enhance existing communication mechanisms**, such as social media, websites and print materials as they appear appropriate for use in distributing information to the tree work industry.
- Consider the **use of complementary mechanisms** to disseminate information on tree work safety, such as through partnering with industry associations to use existing platforms (such as an industry newsletter) and educational providers such as TAFE, to increase the reach of this information. **Peer-based learning** could also be explored.
- Given tree workers obtain information on tree work safety from many sources other than Safe Work, **review** and **quality** and **accuracy** of information provided by these

other sources to ensure tree workers are accessing **consistent, accurate** and **best practice information**.

- Leverage existing **partnerships** and develop new ones with industry organisations to promote SafeWork NSW's **resources** for the tree work industry and collaborate with them to ensure **promotion** of **consistent information** on tree work safety within the industry.
- **Strengthen resources and communication materials** to more closely reflect the **day-to-day experience** of tree workers. The increased use of case studies and scenarios drawn from real life examples could be considered.

1 Background

The Focus on Industry (FOI): Tree Work project was conducted between March 2017 and June 2018, as a Commerce Regulation Program initiative led by SafeWork NSW, in partnership with NSW Fair Trading and the State Insurance Regulatory Authority (SIRA)¹. The project included communication and educational activities, such as a visit program, to raise awareness and promote an understanding of safety in conducting tree work services within the industry.

The communication activities included a digital media campaign, a dedicated web page hosting information on tree work safety, and a consumer flyer outlining what to look out for when hiring a company to carry out tree work services. The educational activities included a webinar which was made available through the SafeWork NSW website, and the visit program. The visit program was delivered by a taskforce of 18 Inspectors across metropolitan and regional offices in NSW, conducting 148 on-site verifications of tree service providers across the state. Participants did not opt-in to participate in these visits which were arranged by SafeWork NSW.

A timeline of the launch of these activities is presented in Figure 1.

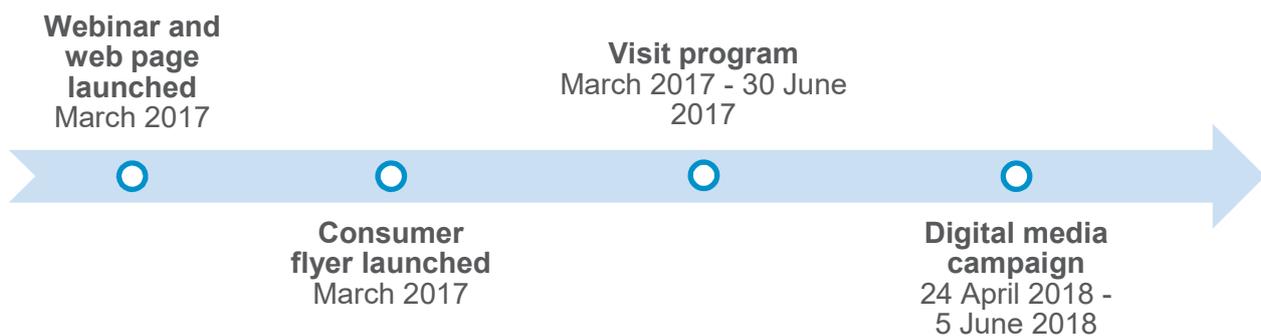


Figure 1 Timeline of the launch of project activities in the SafeWork NSW Tree Work project

1.1 Purpose of the post-project research

ZEST Health Strategies was engaged by SafeWork NSW to conduct post-project surveys on the FOI: Tree Work project.

The purpose of these surveys was to seek to understand the reach and effectiveness of the Tree Work project, as well as understand changes to knowledge, attitude and capability before and after the completion of the project activities. The surveys also explored to a lesser extent, the collaboration between stakeholders on the project.

These surveys aimed to build on the findings of previous research commissioned by SafeWork NSW in November 2016, prior to the implementation of the project. The pre-intervention research conducted with Tree Work providers, provided baseline results for the levels of knowledge and attitudes towards risk, and behaviours used to reduce and manage risk among those working in the industry. These findings were subsequently used to inform the focus and development of project activities.

¹ SafeWork NSW (2017) *SafeWork to Focus on Tree Work Industry Safety*, Media Release, accessed June 2018 from: <http://www.safework.nsw.gov.au/news/media-release/safework-to-focus-on-tree-work-industry-safety>

1.2 Research questions

The post-project surveys aimed to answer a series of questions on aspects of the Tree Work project in addition to understanding changes in knowledge, attitude and capability of the industry in managing risk and improving safety.

The key research questions addressed in this report are:

1. How effective were the Tree Work Project's communication and awareness activities?
2. Have there been improvements in knowledge of, and attitude towards, managing safety for tree workers amongst the industry (person conducting a business or undertaking ('PCBUs')) since the project?
3. Have there been any improvements in the industry's (PCBUs) management of risks associated with tree work since the project?
4. Did the visit program make a difference to the knowledge and attitude of tree work PCBUs in managing safety?

An additional research question which will be addressed to a lesser extent includes:

5. How did the collaboration between SafeWork NSW, NSW Fair Trading and SIRA contribute to the effective implementation and outcomes for the project?

This snapshot report provides key findings from the post-project surveys, and includes high-level recommendations to inform the development of similar programs by SafeWork NSW in the future.

2 Approach and Methodology

An overview of the project methodology is presented in Figure 2. This research was conducted over a three month period, from July to early October 2018.

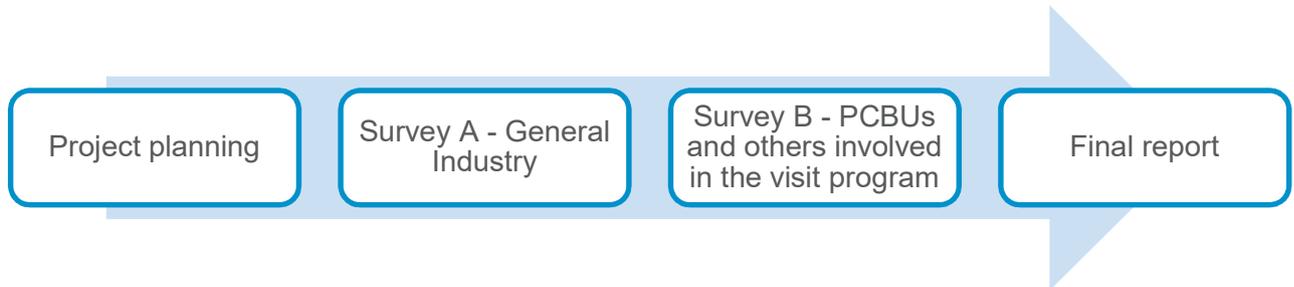


Figure 2 Overview of post-project research methodology of the FOI: Tree Work project.

2.1 Survey A – General Industry

This survey was conducted with the target audience of PCBUs in the Tree Work industry. The survey questionnaire was developed by ZEST Health Strategies in collaboration with SafeWork NSW. To allow for a comparison of results between baseline and post-project findings, several questions which were included in Survey A were directly taken from the pre-intervention survey questionnaire. Specific questions on the tree work project were also included. The questionnaire for Survey A can be found in Appendix I.

An introduction to the survey was sent via email or hard-copy letter to the target audience by SafeWork NSW on the 24th July 2018.

The survey was conducted using a mixed-mode approach (Computer Assisted Telephone Interviewing (CATI) and online), and facilitated by ZEST Health Strategies working with the organisation, McNair yellowSquares. This approach was appropriate given the cohort, and provided an opportunity to those who may have had little or no internet access to participate.

SafeWork NSW provided ZEST Health Strategies with the sample database for use, which contained 672 contact details. This list was subsequently augmented with an additional 80 contacts sourced from the internet, bringing the total number of unique sample records to 752. All participants were owners or managers of tree work business in NSW. Participation in the survey was optional.

The survey was live over a four-week period, from the 6th August to 1st September 2018. All potential respondents were contacted at least once, and in some cases multiple times by phone and/or email. In addition, an open link was provided to SafeWork NSW who distributed the survey invitation through social media.

A total of 151 surveys were completed by the end of the survey period, representing a response rate of 20%. The average length of time to complete a telephone interview was 20 minutes.

Table 1 Number of surveys completed by method for Survey A

Method of completion	Number
Phone	69
Online – via personalised email link	68
Online – via open link distributed through SafeWork NSW and tree work industry association communication channels	14
TOTAL	151

2.2 Survey B – PCBU's and other involved in the visit program

Survey B was conducted with the target audience of PCBU's and others involved in the visit program. The survey questionnaire was developed in collaboration with SafeWork NSW, and included specific questions relating to the visit program (Appendix II). Similarly to Survey A, SafeWork NSW provided ZEST Health Strategies with the sample database for use, which included a total of 109 contact details.

An introduction to the survey was sent by SafeWork NSW via email and by hard-copy letter.

The survey was live over a three week period, from the 20th August 2018 to 12th September 2018 and administered via online and telephone methods. Similarly to Survey A, all respondents were contacted at least once, and in some cases multiple times, to participate in the survey.

A total of 24 survey responses were provided by the end of the survey period, representing a response rate of 22%. 22 responses were retained for final analysis, with two responses excluded from the final sample due to one respondent providing invalid and incomplete answers, and the other respondent not meeting the inclusion criteria. The average length of time for completion was 13 minutes for online and 43 minutes for phone interviews.

Table 2 Number of survey responses by method for Survey B

Method of completion	Number
Online	18
Phone	6
TOTAL	24

2.3 Data analysis

Data was cleaned in Microsoft Excel and entered into the statistical software package, SPSS to perform all analyses. Where appropriate, the relevant statistical tests (cross tabulation, Chi-square test of independence or McNemar's test) were performed to test the statistical significance of the differences in the results. For all calculations, $p < 0.05$ was considered

significant. A summary of the statistical terms used in this analysis is presented in Appendix III.

No formal qualitative analysis was conducted, however general themes were identified following a review of the survey data. De-identified quotes have also been used in this report, where appropriate, to illustrate key findings.

2.4 Interpreting the survey results

The survey results have been provided in a manner which highlights information from both the pre and post-intervention surveys to seek to understanding the impact of the project on the industry.

Data sources used in these comparisons and the robustness of these findings have been indicated in the results using coloured flags. These flags have been included where applicable to help support interpretation of the findings, as well as how these findings may be used to draw conclusions.

	<p>Direct data comparisons have been conducted using cleaned data sets from the pre-intervention and post-intervention surveys, with statistical calculations conducted where appropriate.</p>
	<p>Comparison of results have been conducted using pre-intervention data from the final published report. General conclusions may be drawn from this data, however as no statistical calculations to support these findings have been conducted, inferences may be limited.</p>
	<p>No comparisons between pre- and post-intervention results have been made due to differences in survey questionnaire composition (i.e. post-interventions questions do not correlate with pre-intervention surveys due to addition of survey questions, or rewording of survey questions).</p>

2.5 Limitations

- The generalisability of the survey results will be limited, as statistical power calculations have not been conducted. However, the results are assumed to be able to provide an indication of the potential impact of the tree work project on the industry.
- Survey respondents in the post-intervention research may not have been the same as those who participated in the pre-intervention research. As the composition of these groups may have been different, the improvements reported in the results may reflect differences in those who responded to the survey rather than the influence of the project.
- The ability to be able to make direct comparisons between the pre-and post-intervention survey findings was limited. This was due to the poor quality of the raw data from the pre-intervention survey and that in the pre-intervention report it was not clear which data was used to inform some of the results. Thus in many cases we could not be sure that we were comparing 'apples with apples'. However, references to the pre-intervention research results from the final report have been included in this report to provide a general indication of the potential changes that the project may have contributed to.

- There is a risk of bias in the survey results on attitudes and work practices regarding tree work safety due to the self-reported nature of the survey responses. This survey method, however, was appropriate for this particular research activity. There is an opportunity to independently validate these results in the future.
- The target response rates for both Survey A and Survey B were not met. This was potentially due to a number of factors including: lack of interest from the target audience in participating, a significant proportion of incorrect contact details due to changes in, or cessation of, business ownership; and difficulty in contacting some operators.

3 Key Findings

Characteristics of survey respondents

3.1 Survey A

The majority (98%) of Survey A respondents were ‘owners/managers’, with the remainder identifying as ‘subcontractors’. Over half of the businesses (56%) had between 2-5 employees. This was similar to the pre-intervention research, where approximately two-thirds of the businesses surveyed had less than five employees (Figure 3).

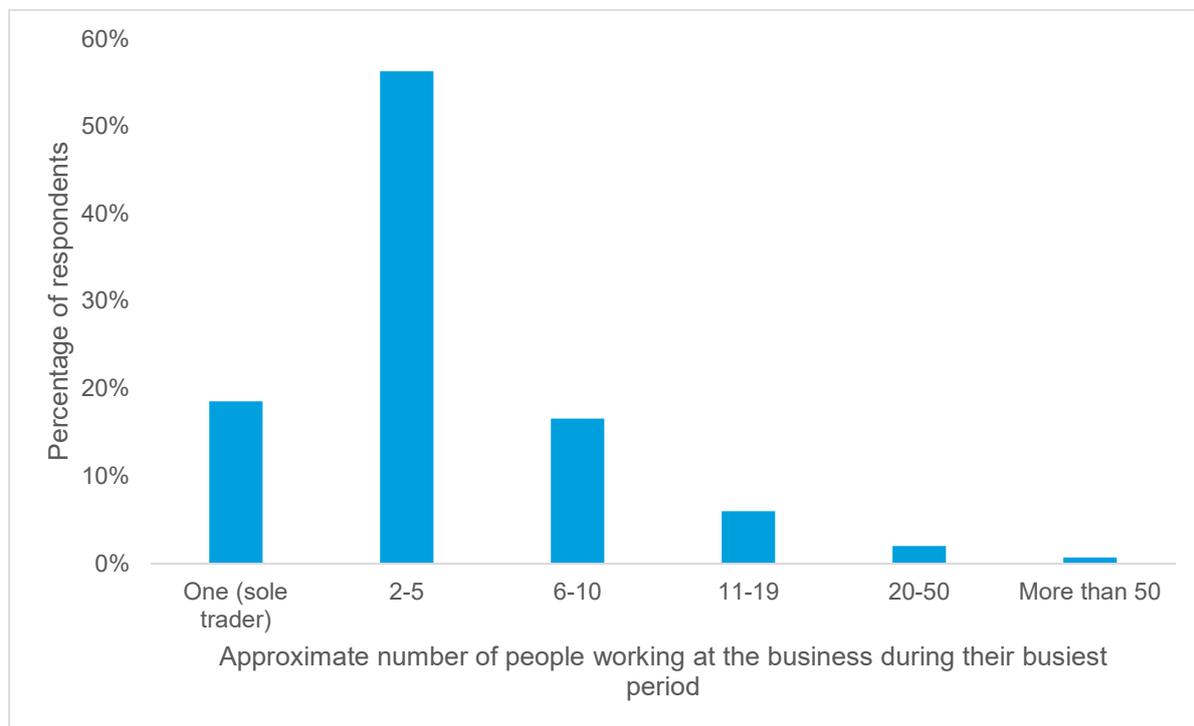


Figure 3 Approximate number of people working at the business during their busiest period (n=151)

The majority of survey respondents also reported less than five permanent employees in their businesses, with 38% and 33% for 2-5 permanent employees, and single employees, respectively. These findings may reflect the nature of the tree work industry, where seasonality and changes in workload impact staffing arrangements.

Over half of the businesses surveyed had been in operation for more than 10 years (64%, n=96), which was the same proportion as participated in the pre-intervention research. This was followed by 19% operating between 6-10 years, 13% between 2-5 years, and 5% for less than 2 years.

Over a quarter (27%) of survey respondents' operations were predominantly in metropolitan Sydney, compared to 70% who operated regionally. These regional locations included north of Sydney (33%), south of Sydney (21%) or west of Sydney (17%). Three percent of

respondents also stated that they operated across multiple areas, both within NSW and nationally.

3.2 Survey B

Survey B respondents were limited to those who had participated in the tree work visit program, with 79% and 21% identifying as tree work businesses and local government councils, respectively.

The characteristics of tree work businesses who participated in Survey B were similar to those of Survey A. The majority of Survey B respondents who identified as tree work businesses, had 2-5 employees (38%) and had less than five permanent employees in their businesses with 42% and 13% for 2-5 and single employees, respectively.

Close to half of Survey B respondents had been in operation for more than 10 years (42%), which was similar to those who had responded in Survey A. Thirteen percent reported operating predominantly in metropolitan Sydney, compared with 25% operating regionally.

Part 1: Awareness and of tree work communication activities and changes to behaviour

Question 1: How effective were the Tree Work Project's communication and awareness activities?

Question 5: How did the collaboration between SafeWork NSW, NSW Fair Trading and SIRA contribute to the effective implementation and outcomes for the project?

Key findings:

- Approximately **70%** of combined survey responses indicated that they had seen, read, or heard information about tree work safety in the previous 12-month period.
- **Over half** of the respondents recognised SafeWork NSW's involvement in the project, including the partnership involvement with NSW Fair Trading and SIRA.
- Only **12%** of respondents from the general industry indicated that the information on tree work safety that they had interacted with caused them to change the way they manage safety in their business.
- The visit program appears to have been well received, with **90% of respondents indicated that they felt that the purpose of the inspector's visit was clearly explained**, and over **95% of respondents agreed that they felt that their work practices had been reviewed in an appropriate manner**.

- **32%** of respondents who participated in the visit program indicated that they were required to take further actions to improve safety in their businesses. These actions however, were generally viewed positively.

3.3 Communication activities

The majority (70%) of combined survey respondents indicated that they had seen, read, or heard information about tree work safety in the previous 12-month period (Figure 4). There were no statistically significant differences between the two survey response groups.

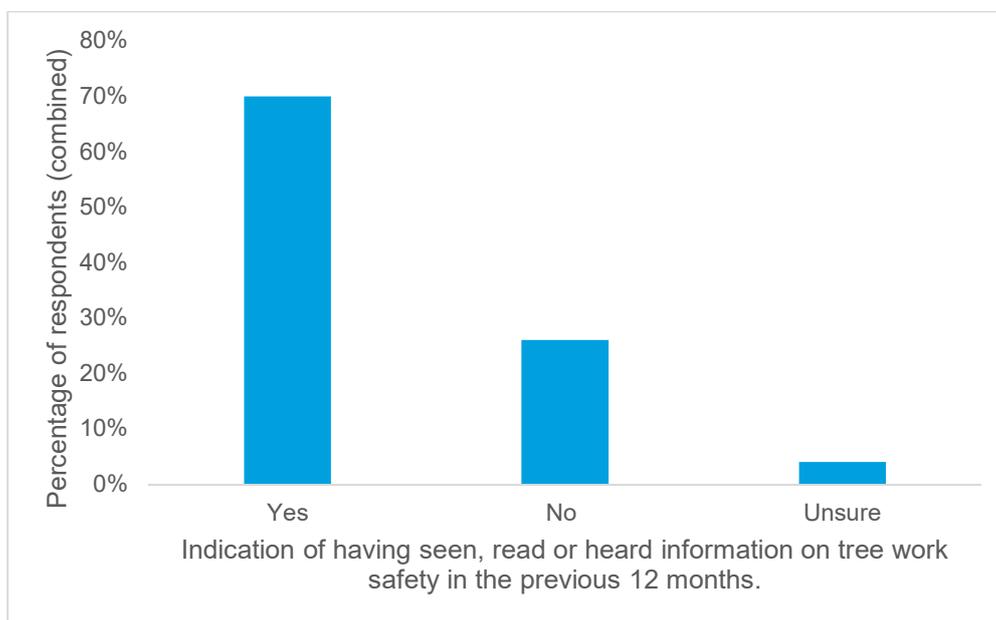
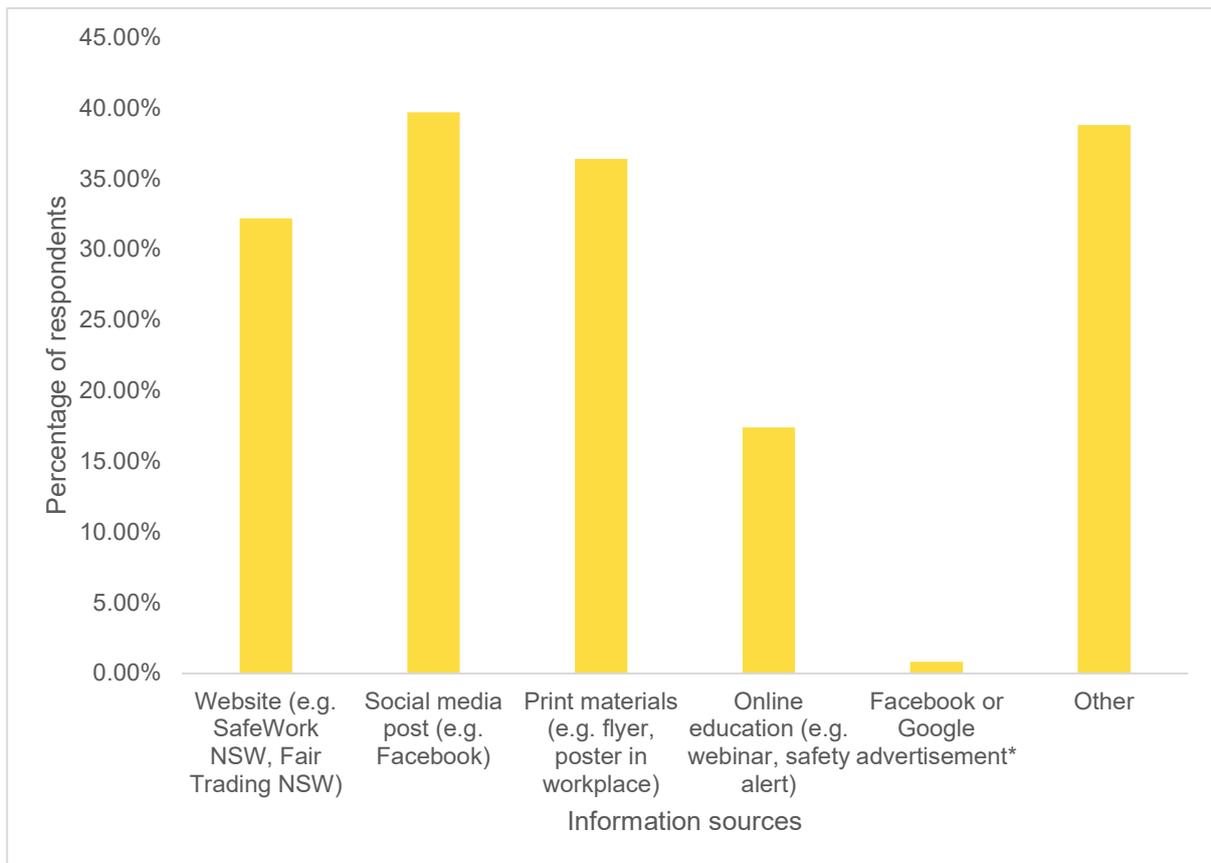


Figure 4 Indication of having seen, read or heard information on tree work safety in the previous 12 months (n=173)

The Tree Work project was delivered in a collaborative partnership between SafeWork NSW, NSW Fair Trading and the State Insurance Regulatory Authority (SIRA). Over half of Survey B respondents (55%) indicated recognition of this partnership involvement, with 52% of Survey A respondents indicating SafeWork NSW as the main organisation who released this information on tree work safety. Survey B respondents were also asked about the perceived value of this partnership to the provision of content and resources, with 42% indicating that the partnership provided 'substantial added value'.

Social media posts were a source of information for up to 40% of the respondents, through platforms such as Facebook and Twitter. Thirty-nine percent indicated other information sources, such as through conferences hosted by professional associations, trade publications (e.g. Arbor Age), and through peer learning from colleagues attending courses to obtain trade qualifications (Figure 5).



*Option provided in Survey B only.

Figure 5 Information sources for tree work safety interacted with in the last 12 months (n=121, multiple responses allowed)

The majority of Survey A respondents also agreed that the information provided in the tree work project through the communication activities were accessible, relevant, and provided an opportunity for self-reflection on areas of strength and opportunities for improvement with regards to tree work safety in their businesses (Figure 6).

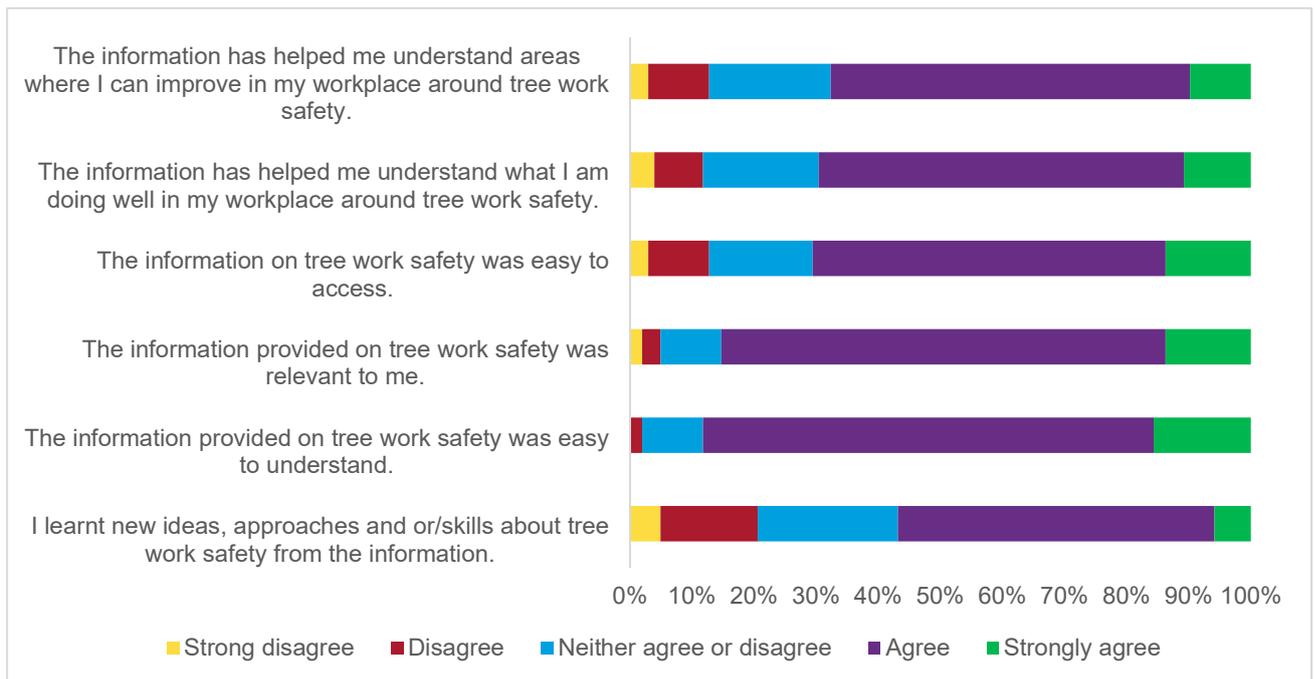


Figure 6 Level of agreement with statements on the information on tree work safety interacted with in the past 12 months (n=102)

Survey respondents were also asked to describe up to three key messages or pieces of information about tree work safety that was seen, read or heard about in the previous 12 months. Generally, the comments provided were either related to industry knowledge or were practice specific; legislation and industry standards; or related to SafeWork NSW led activities.

Practice or industry specific comments:

‘to maintain paperwork and have toolbox meetings and document them’

‘to maintain twice the height of the tree when setting up exclusion zones’

Description of shared responsibility for ensuring safety:

‘be aware of changing conditions and watch your mate’

‘work as a team, watch out for each other and clients safety’

There was a sense that whilst performing tree work was a potentially risky activity, there were ways in which risks, and subsequently accidents, could be minimised.

Work safe, go home safe.

– Survey A respondent

Only 12% of Survey A respondents indicated that the information on tree work safety which they had interacted with in the last 12 months had caused them to change the way in which they managed the safety of tree work in their business. Of the 12%, more than half of the respondents who indicated that they had changed their practice were businesses who had been in operation for more than 10 years. This may indicate that the tree work industry is highly

informed on safety practices, with the majority already implementing best practice approaches to safety. However, it is also recognised that behaviour change does require sustained implementation of interventions over time, and so further follow-up may be warranted to determine if changes in behaviour have been realised.²

Areas where improvements were described to have been made were related to equipment, and business processes in sharing and reinforcing information about safety.

Improvements described relating to equipment:

‘washing ropes in proper detergent’

‘making sure that PPE and harnesses are worn’

Improvements described in business processes:

‘discussion at toolbox meetings’

‘improving the way we manage our training, with more regular toolbox talks using real and specific industry examples’

There was also a sense of the perceived value of the sharing of experiences amongst the industry to improve safety, and the opportunities which presented when reflecting on industry specific incidents to improve their own businesses’ safety. One respondent described this as ‘learning from unforeseen actions in the industry, not only through SafeWork NSW but expanding networks worldwide’.

3.3.1 Educational activities – focus on tree work visit program



The tree work project had a number of educational activities as project components, including the visit program. Survey B respondents who participated in the visit program were asked on their level of agreement with a series of statements about the stages of the tree work visit program, with these stages being: preparing for the visit, participating in the visit, and reviewing resources and information on tree work safety practices after the visit.

Preparing for the inspector’s visit

Overall, over 80% of respondents either ‘agreed’ or ‘strongly agreed’ with the statements relating to the activities which were conducted when preparing for the inspector’s visit. These activities included information on the visit program provided by SafeWork NSW, the completion of a self-assessment checklist, and resources, such as the Safe Work Australia Guide.

Whilst the purpose of the visit appears to have been clearly explained to participants, there appears to be an opportunity to provide additional clarity around the purpose of the visit, as one respondent indicated ‘strong disagreement’ and another ‘disagreement’ with this statement.

Only one respondent indicated ‘strong disagreement’ with, the information in the pre-visit letter being clear and easy to understand, and the self-assessment checklist being easy to complete.

² Health Promotion Unit, 2007. Stages of behaviour change: Queensland Stay On Your Feet® Community Good Practice Toolkit. Division of Chief Health Officer, Queensland Health.

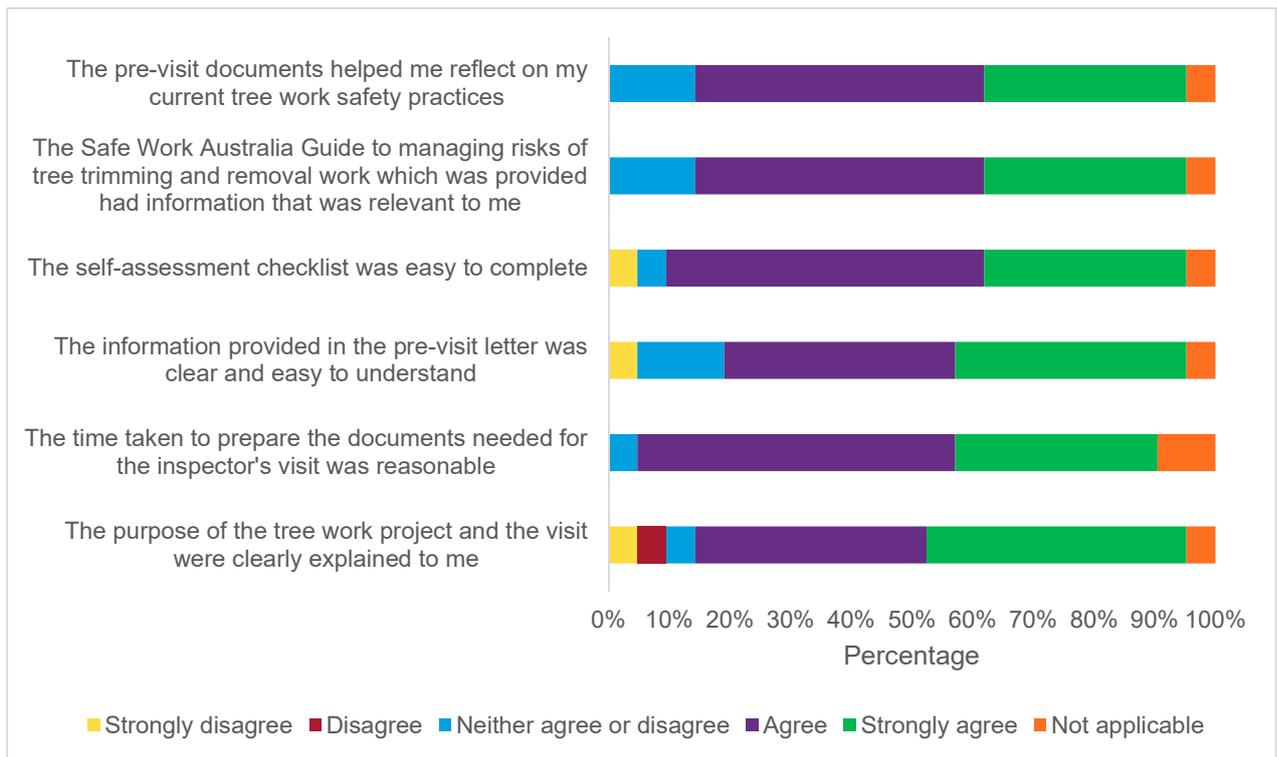


Figure 7 Level of agreement with statements in preparing for the inspector's visit.

During the inspector's visit

There was strong agreement across all the positive statements relating to the topics covered during the inspector's visit. 90% of respondents indicated that they felt that the purpose of the inspector's visit was clearly explained, and over 95% of respondents agreed that they felt that their work practices had been reviewed in an appropriate manner. The inspector's visit also appeared to assist individuals in understanding what they were doing well in their workplace around tree work safety, as well as understanding areas where they could improve safety in their workplace (80% and 85% in agreeance, respectively).

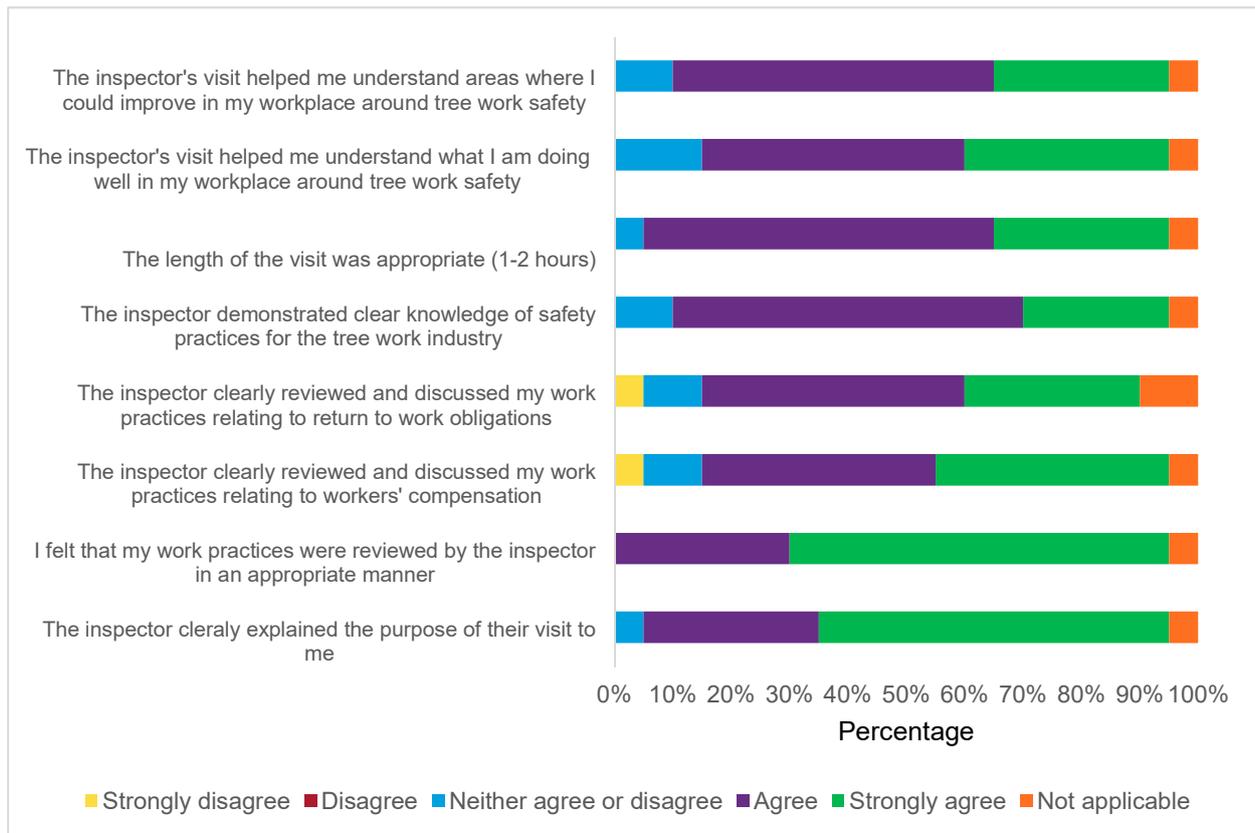


Figure 8 Level of agreement with statements on during the inspector's visit.

After the inspector's visit

As part of the visit program, individuals were provided with a series of resources which contained information about tree work safety. These resources included a USB with pre-loaded SafeWork NSW resources, a trade vehicle sticker with a scannable code to the SafeWork NSW website and the Fair Trading kit. The usefulness of these resources in supporting individuals with information on tree work safety was determined through asking participants how helpful they found these resources.

Generally, the three resources appeared to be rated by respondents as being 'moderately helpful' in finding out more information on tree work safety. The trade vehicle sticker appeared to be the least helpful when compared with the other two resources; with the pre-loaded pen USB appearing to be the most helpful. In consultations during the design of the project, the tree workers noted that because they are a mobile workforce, quick access to relevant information was important to them. This might have been the reason why the USB was most popular, as it provided ready access to information rather than merely pointing to where information was available.

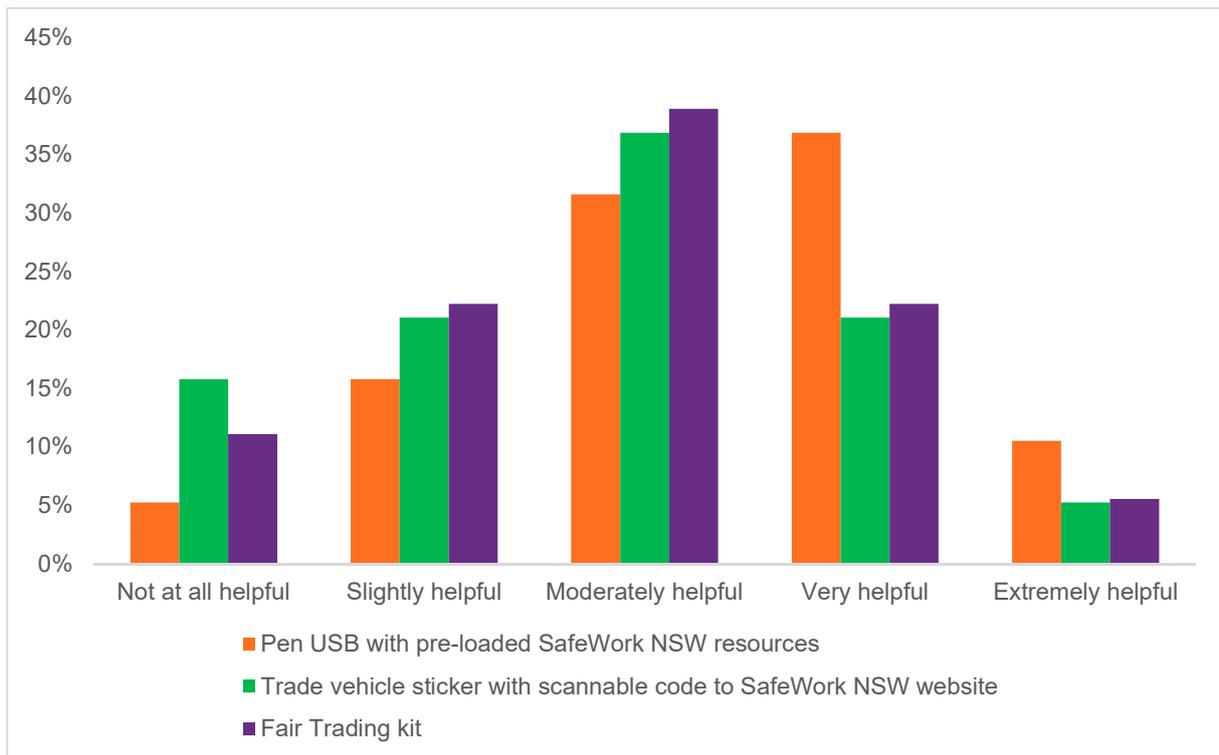


Figure 9 Level of agreement on how helpful resources provided in the visit were in finding out more information on safety.

Whilst 32% (n=7) of respondents indicated that they were required to take further actions following the visit to improve safety, these actions were viewed as being either ‘absolutely appropriate’ (71%) or ‘slightly appropriate’ (29%). No local government councils indicated that they were required to take further actions following the visits.

The information sources which informed their changes to safety practices in their business were also described.

Forty-four percent (n=8) of respondents indicated that they had changed their safety practices as a result of the information they had seen, read or heard in the past 12 months on tree work safety, compared to 33% (n=6) who attributed these changes to the information received specifically within the visit program. However half of the respondents indicated that the information which they received during the visit program did not cause them to change the way in which they managed tree work safety in their business. This finding may have been as a result of the lack of need for additional amendments to be made to the business as they might have already been implementing best practice approaches, or that changes were not made despite recommendations by SafeWork NSW inspectors.

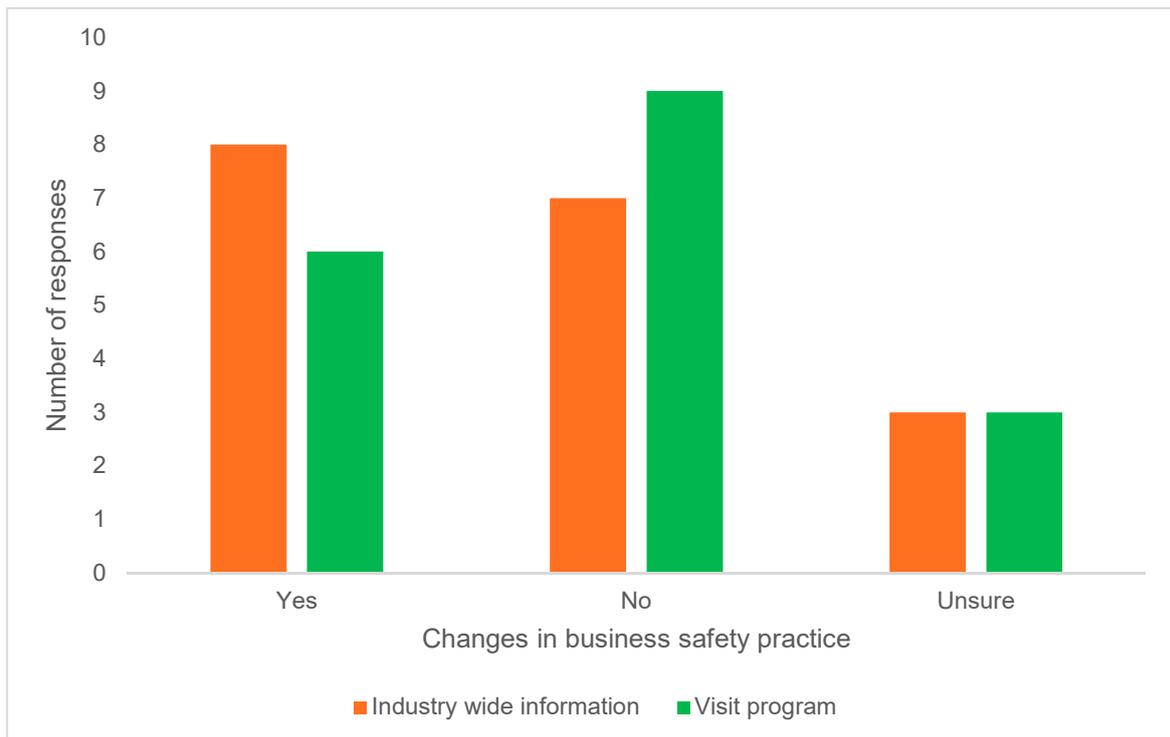


Figure 10 Changes in behaviour to tree work safety practices as a result of industry wide information or information received during the visit program

Respondents were also asked to describe up to three key messages or pieces of information that they recalled seeing, hearing or reading about with reference to tree work safety in the previous 12 months. These responses could generally be described as either being knowledge or skills related or associated with recall with legislation and/or industry standards. Two respondents also highlighted that they ‘did not recall’ any key messages or pieces of information, with one respondent stating, “I did not receive any information or kit”.

Key messages or pieces of information described by Survey B respondents:

‘communication to identify hazards and eliminate safety issues’

‘everyone being part of the control system’

‘legislative requirements and standards’

‘talking through the inspector’s experience and knowledge’

Part 2: Knowledge and attitudes to tree work safety practices

Question 2: Have there been improvements in knowledge of, and attitude towards, managing safety for tree workers amongst the industry (PCBUs) since the project?

Question 3: Have there been any improvements in the industry's (PCBUs) management of risks associated with tree work since the project?

Question 4: Did the visit program make a difference to the knowledge and attitude of tree work PCBUs in managing safety?

Key findings:

- Overall, there have been increases in the reported approaches in managing the risks associated with activities in the tree work industry.
- Approaches in managing the various risks associated with tree work varied between those engaged with communication materials only and those who participated in the visit program. The higher percentages observed in the visit program respondents may be as a result of tailored messaging through the site visit.
- The percentage of respondents who indicated that 'working at heights' was a major hazard for their business increased from 79% to 84% prior to and post the project's implementation.
- 62% of respondents indicated that ensuring safety in the workplace was a shared responsibility, with this remaining relatively unchanged from pre-intervention (61%).
- The percentage of general industry (Survey A) respondents who indicated that they had a workers compensation policy decreased from pre-intervention, from 87% to 81%.

The following sections explored the knowledge and attitudes of tree workers to safety and risk management. The results have been reported in two ways – both as an aggregate, which combines both Survey A and Survey B responses; and the results for each survey.

The aggregated results allow for a general comparison of pre-intervention and post-intervention results across the whole industry. The results for each survey provide insights into the differences between those who engaged with the SafeWork NSW communications and education material only (Survey A), and those who engaged with these resources and were also involved in the visit program (Survey B).

3.3.2 Safety hazard identification and confidence in management

A series of questions were provided to survey respondents to seek to understand the types of safety hazards identified and encountered at their workplace, and their level of confidence tree work providers had when managing the risks associated with this type of work.

Similarly to the pre-intervention results, 'working at heights' and 'working with equipment and machinery' were the two situations which were identified by survey respondents as 'major hazards' for their businesses. 84% considered working at heights as a major hazard which

was higher than that the 79% reported in the pre-intervention findings. 'unqualified' and/or 'untrained' people performing tree work, substance abuse, pedestrians, terrain/slopes, time and financial constraints, environmental pollution, chainsaws, and fatigue.

Survey respondents were also provided with several hazards and asked to rate their confidence in managing these risks. As a group, 77% indicated being 'very confident in 'quoting or speccing out the job'. 'Tree climbing' was reported similarly, with 76% (n=118) also indicating being 'very confident' in managing this risk, and 78% (n=125) being 'very confident' in 'working at heights'. Comparing these results with the pre-intervention research findings, the percentage of respondents indicating that they were 'very confident' with managing these risks increased slightly. These hazards could be considered as 'common' to the tree work industry, and so it may be assumed that confidence levels in managing these risks would be high.

Respondents indicated being 'not very confident' in managing the following risks: tree climbing (0.6%), emergency rescue (0.6%), and drug and alcohol use (1.3%). Of these, only emergency rescue was an area which respondents also noted they were 'not very confident' in in the pre-intervention findings (6%). This indicates that emergency rescue could be a topic area in which tree workers require further education.

3.3.3 Management of risk

Survey respondents were asked a series of questions relating to how they managed the risks associated with working at heights, power lines, machinery and equipment, noise and working alone. Multiple responses were allowed for these questions. Results from the pre-intervention research have been referenced where available, to allow for a general comparison of the findings before and after the tree work project's implementation.

Whilst there were differences in responses between Survey A and Survey B respondents, these results were not statistically significant. Survey findings presented by question and grouped by survey are presented in the appendices.

Working at heights

In managing the risks associated with working at heights, the top three approaches in managing this risk from the post-intervention findings as a whole were '*using appropriate systems of work for the job*' (96%, n=161), '*ensuring the integrity of climbing equipment*' (92%, n=154), and '*ensuring that you are well positioned prior to making a cut*' (91%, n=153). findings are similar to those of the pre-intervention research, which had the same top two approaches, with the third being '*ensuring VTA is conducted prior to selecting anchor points*'. These percentages however were higher than those from the pre-intervention findings, both as an aggregate and on a per survey basis.

The least likely approaches to managing risks associated with heights were '*crane and using the crane as an anchorage for access*' (47%, n=79), '*installing a false crotch*' (57%, n=96), and '*EWP were accessible and where the tree removal allows for this*' (69%, n=116). According to SafeWork NSW, these results would be expected given the relative difficulty in applying some of these approaches, but also indicate that there are certain areas of risk management in working at heights that the industry lacks confidence in.

Those who participated in the visit program (Survey B) indicated a higher percentage response rate compared to the general industry in approaches relating to the use of EWPs. This may be as a result of the tailored messaging which could have occurred during site visits, as a result of inspector's observations and provision of information on a site-specific basis.

Table 3 Percentage differences between pre-intervention, Survey A and Survey B for the top three approaches in managing risks associated with heights

Approach	Pre-Intervention	Survey A	Survey B
Use appropriate systems of work for the job	78%	97%	88%
Ensuring the integrity of climbing equipment such as climbing spikes, ropes and harnesses	40%	92%	88%
Ensuring that you are well positioned prior to making a cut	18%	92%	83%

Other approaches which were described by survey respondents included use of qualified staff, recognised as those with qualifications or with length of experience, and the use of raised platforms.

Working near power lines



In managing the risks associated with working near power lines, the top three approaches of managing this risk included '*never encroaching into the 'no go' zone*' (79%, n=132), '*ensuring safe approach distances are maintained for accredited and non-accredited persons*' (76%, n=127) and '*being wary of working in inclement weather*' (76%, n=127). These differed to the responses provided in the pre-intervention research, which listed *ensuring a safe distance is maintained* (57%), *arranging a power outage* (32%) and *contacting the electrical distributor to clear vegetation* (26%) as the three most frequently mentioned approaches. These percentages were markedly higher than those from the pre-intervention findings, both as an aggregate and on a per survey basis. SafeWork NSW notes that both the project and electrical supply authorities put a significant amount of work into educating tree workers about 'no go zones'. The improvement in post project results could reflect an improvement in knowledge based upon these educational activities.

There were respondents who noted that they did not work near power lines or avoided these jobs where possible.

Table 4 Percentage differences between pre-intervention, Survey A and Survey B for the top three approaches in managing risks associated with working near power lines

Approach	Pre-Intervention	Survey A	Survey B
Never encroach into the 'no go' zone or work on any vegetation wholly or partly within the no go zone	17%	78%	88%
Ensure safe approach distances are maintained for accredited and non-accredited persons	57%	76%	81%
Being wary of working in inclement weather	4%	76%	75%

Working with machinery

The approaches in managing the risks associated with working with machinery were almost all frequently mentioned by survey respondents. The approaches which were mentioned the least by respondents were *'ensuring first aiders are on site'* (81%, n=136), *'always conducting a pre-start safety check to ensure the safety and integrity of any equipment before use'* (86%, n=144), and *'ensuring emergency stop devices are functioning prior to using any machinery or equipment'* (86%, n=145).

From the pre-intervention research findings, it was noted that having appropriate first aid or qualified first-aiders on site was not frequently mentioned, accounting for only 3% of responses. The increase in the post-intervention results potentially highlights a revised approach in managing the risks associated with machinery and equipment. It was however, noted in the pre-intervention findings that lack of indication of first-aid as a risk management approach may have been due to oversight or an 'assumed given', and so the increase in results may be as a result of increased awareness or knowledge of survey respondents of this approach.

Excessive noise and plant equipment

Similarly to the pre-intervention research findings, use of hearing protection was the most frequently noted approach to managing the risks associated with excessive noise and plant equipment (98%, n=166). 68% (n=114) of respondents also indicated that they also tried to minimise the length of time people were exposed to excessive noise, which was only noted by 14% of respondents in the pre-intervention research findings.

Lone or isolated work

82% (n=138) of survey respondents indicated ensuring that there is always more than one person on the site as the most frequently mentioned approach to minimising the risks with lone or isolated work. This was a similar result to that of the pre-intervention research, with 68% of respondents indicating this as their most frequently mentioned approach. Ensuring that workers have effective methods of communication at all times was the second most frequently indicated response (68%, n=114), with this similar to that of the pre-intervention research findings.

Equipment inspection and maintenance schedules

Respondents were asked to indicate the frequency of their equipment and/or maintenance schedule for climbing equipment, ropes, chainsaws, wood chippers and personal protective equipment (PPE). Multiple responses were permitted for these questions.

Across all the equipment used in the performance of tree work, the vast majority of respondents indicated that these were inspected after every job with percentages ranging from 78% (n=130) for wood chippers, to 89% (n=147) for climbing equipment.

These results are similar to those from the pre-intervention research findings; potentially supporting the view that these operators undertake a preventative and proactive approach to maintaining their equipment.

3.3.4 Consideration of risk when quoting for a job



Understanding whether and how survey respondents factored risk into the pricing of jobs was determined.

The majority of respondents from both Survey A and Survey B reported that they factored in risk assessments when quoting for jobs, with 58.3% (n=88) and 76.5% (n=13) from Survey A and Survey B respectively noting this ‘always’ happened. However, as noted in section 3.3.3, certain approaches to managing risks associated with working at heights are not being incorporated.

Tree work businesses who have been in operation for more than 10 years were also likely to state that they considered risk when quoting for a job, at 63% (n=104) compared with 37% (n=61) of those in operation for 5 years or less.

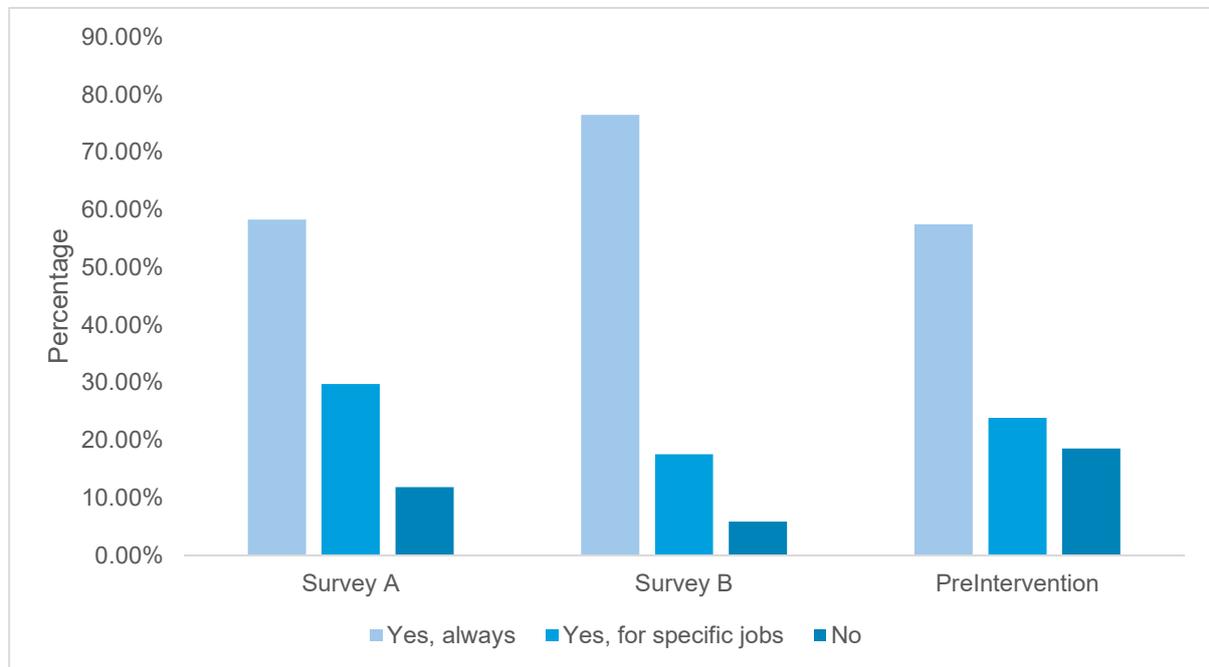


Figure 11 Percentage of respondents who factor in risk assessments when quoting for a job (n=168)

Grouping Survey A and Survey B responses, access to the site (89.9%), equipment required (88.8%), and the condition of the tree (85.2%) were the most frequently mentioned risk factors which were reported to be considered when quoting for a job.

3.3.5 Safety training and induction



The views on who is mainly responsible for ensuring the safety of workers at different worksites was determined from the survey respondents. The majority of respondents considered safety as a shared responsibility, and that the individual themselves were also responsible for workplace health and safety. These results are similar to those from the pre-intervention research findings, with differences in the results not statistically significant.

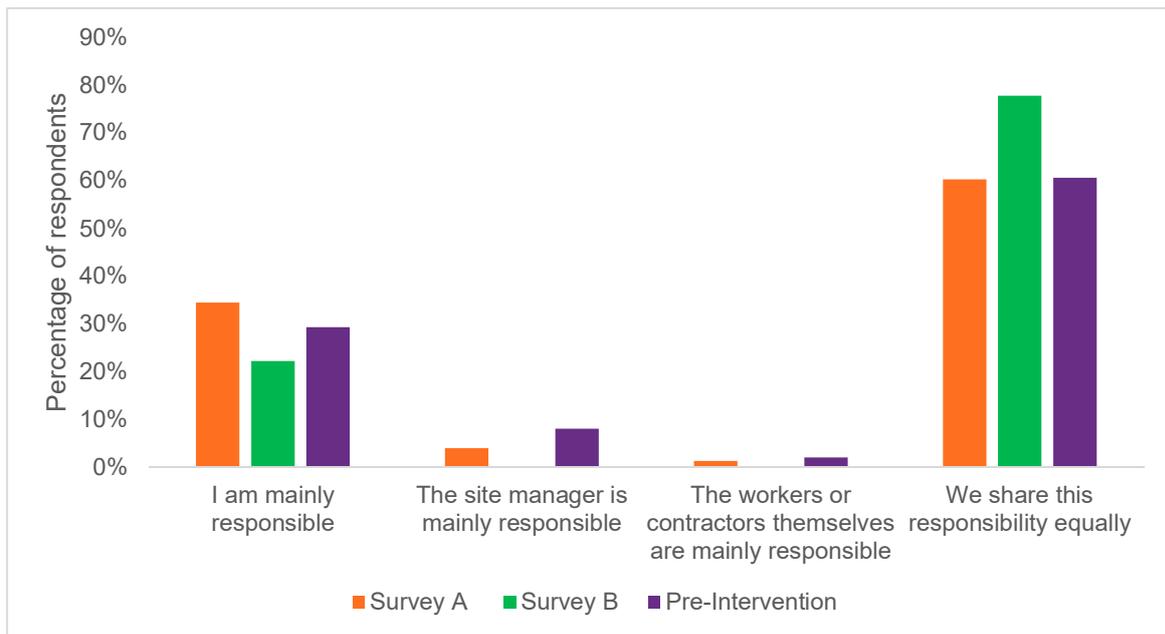


Figure 12 Views on responsibility for ensuring the safety of workers at different worksites (n=169)

Over half (57%) of the respondents had discussion with workers on tree work safety both daily and at every job. 51% also indicated that they had these talks continually or on regular intervals. Compared with the pre-intervention research findings, these percentages did increase, from 39% daily and 16% continually.

There was an increase observed when comparing the pre-intervention results in the percentage of activities used in the workplace to discuss safety. 81% indicated that they had an informal induction process (e.g. on the job training), with 80% offering toolbox talks. Of interest, the percentage of those who had a formal induction process increased from 39% in the pre-intervention research, to 43% in the post-intervention findings. The other ways which were described for discussing safety included inclusion in workplace safety manuals and engaging external providers to facilitate training.

3.3.6 Workers' Compensation and injury management ▶

Survey A respondents were asked about their approach to Workers' Compensation and injury management, with these responses compared against those from the pre-intervention research findings.

81% (n=122) of Survey A respondents indicated that they had a workers compensation policy, compared with 87% (n=167) of pre-intervention respondents. The percentage of respondents indicating that this policy was not applicable to them increased in Survey A, from 3% (n=6) in the pre-intervention results to 16% (n=24) post-intervention. Interestingly however, the percentage of respondents who indicated they didn't have a workers compensation policy decreased from the pre-intervention findings, from 10% (n=20) to 3% (n=5). Comparison between the pre-intervention and Survey A results with reference to this statement on workers' compensation policy were the only results which were statistically significant. This decrease

may have been as a result of increased understanding of when a policy would need to be required, information that was delivered as part of the project.

67% (n=101) of Survey A respondents indicated that they did not have a 'if you get injured at work' poster on display in the workplace, with these findings similar to those from the pre-intervention findings (65%, n=126). Only 16% (n=24) of Survey A respondents had a workers compensation claim in the previous 12 month period, which was lower than the 24% (n=47) in the pre-intervention results.

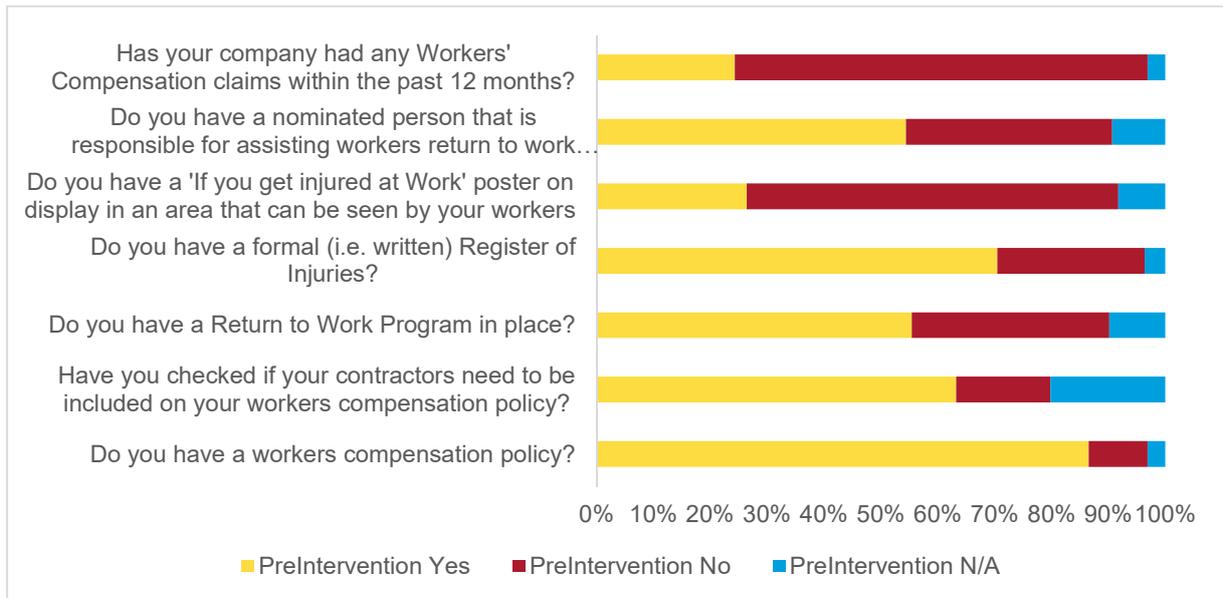


Figure 13 Pre-intervention results relating to workers compensation and injury management (n=193)

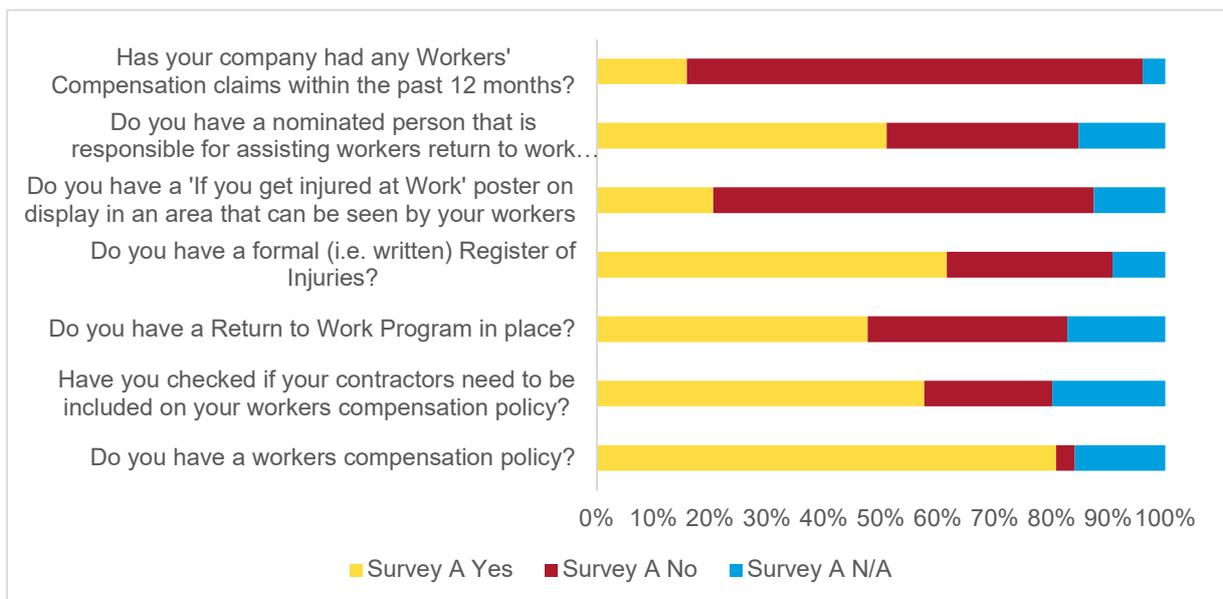


Figure 14 Post-intervention (Survey A) results relating to workers compensation and injury management (n=151)

4 Conclusion

The findings of this research highlight that the tree work industry were aware of the communication and educational activities delivered as part of the Tree Work Project by SafeWork NSW and that this information is likely to have contributed to an increase in the knowledge, attitudes and management of safety by tree workers. The visit program was also well received by those who participated. There were significant improvements during the project period in the way that the industry currently approaches the management of risks in certain areas of tree work. The project is likely to have contributed to these improvements.

As behaviour change occurs over time, there is an opportunity for future research to continue to monitor these improvements in behaviour; the role of the SafeWork NSW activities in contributing to these improvements; and how closely changes in behaviour align with best practice and industry legislation.

4.1 Communication and awareness activities, including the tree work visit program

4.1.1 Tree Work Project's communication and awareness activities

It was clear that there was a level of engagement with information provided on tree work safety from SafeWork NSW and other sources, with approximately 70% of the industry (Surveys A and B) indicating that they had seen, read, or heard tree work safety information in the previous 12-month period. The information on tree work safety which had been provided to the industry appears to have reached its target audience, with less than 10% of respondents from both Survey A and Survey B noting that they were 'unsure' of whether they had seen, read or heard this information. Additionally, over half of the respondents were aware that this project was delivered as a collaborative partnership between SafeWork NSW, NSW Fair Trading and SIRA; and recognised that SafeWork NSW was the main organisation involved in distributing the safety information. This demonstrates that there is an awareness and recognition of SafeWork NSW's involvement in providing information to the tree work industry on safety, as well as the partnership, and that this involvement was clearly articulated in the activities and materials produced as part of the project.

The information on tree work safety provided through communication activities on social media and the website appears to have been well received, with agreement that the information had been relevant, easily accessible, and provided opportunities for individuals to reflect on and improve their approaches and/or skills in managing safety. There appears to have been comparable reach through social media, via the website and through print materials. Interestingly, approximately 40% of respondents indicated that they had located information through 'other' sources such as conferences hosted by professional associations, trade publications and peer learning.

4.1.2 Tree Work Project's visit program

The components of the visit program associated with preparing and engaging with the inspector's visit appear to have been well received. This was despite the non-voluntary nature of participating in the visits. Over 90% of respondents indicated that the purpose of the visit was clear, and 95% indicated that they felt that their work practices had been reviewed in an appropriate manner. Thirty-two percent of respondents indicated that they did take further actions following the visit to improve safety, and these actions were generally viewed positively. Not all participants were required to take action after a visit. These findings appear to highlight a strong understanding of the role of SafeWork NSW in delivering the visit program, as well as recognition that the review process seeks to support reflection and practice improvement.

Of the resources provided to those in the visit program, the pen USB appears to have been the most helpful in providing additional information to individuals on tree work safety, potentially because it enabled the information to be readily available. Whilst these visit program resources were generally reported as being 'helpful', the impact of these resources on further improving awareness and understanding of tree work safety practices is unknown, particularly as the industry is highly engaged through other sources of information, including through social media and the website.

4.2 Knowledge, attitudes, and management of risks

Overall, when comparing pre-and post-project results, there appears to have been an increase in the knowledge, attitudes and recognition of the approaches to managing risks amongst the industry.

4.2.1 Confidence in management of industry specific risks

A small number of respondents did indicate after the intervention that they were not very confident in managing the risks associated with tree climbing, emergency rescue, and drug and alcohol use. These areas which have been identified as areas of 'low confidence' may present opportunities to tailor future educational and communication campaigns in the future. However, as the response rates were quite small, further consultation with the industry may be warranted to understand the generalisability of these results prior to making changes to future program messaging.

4.2.2 Approaches in managing risks in the tree work industry

Generally, there were increases between pre and post-project findings in the percentage of respondents indicating the use of multiple approaches to managing the risks associated with working at heights, working near power lines, working with machinery, excessive noise and equipment and lone and isolated work. Whilst a correlation cannot be conclusively drawn between the project and its impact on the knowledge, attitudes and capability of providers to manage tree work safety, there appears to have been an increase in the approaches and management of these risks in the period between pre and post project. This may be because of information provided in the tree work project, or a result of engagement with other information sources available during the project period which reinforced messaging on safety

practices. The results, however, did identify certain risk management approaches - such as those associated with working at heights - that could be strengthened. There is also an opportunity for future surveys to assess how closely these improvements align with legislative requirements.

Consideration of risk in pricing for a job appears to have remained consistent, with only small increases in the percentage difference between pre and post-project respondent indicating that risk was 'always' considered when pricing for a job. This seems to indicate that good practice was already being followed prior to the project.

The notion of safety being a shared responsibility remained unchanged between the pre-intervention and post-intervention findings, at 61% and 62% respectively. This represents an area for further improvement. However, there was an increase in the percentage of activities involving safety discussions in the workplace; as well as the frequency of daily and on the job discussions about safety.

With reference to workers' compensation and return to work obligations, there appeared to be a decrease in the percentage of respondents who indicated that they had a workers' compensation policy, from 87% to 81%. This reduction may be as result of different respondents participating in the pre-and post-project surveys and may not reflect a true reduction within the industry. It could also reflect greater awareness of when a policy is not required. Results on the percentage of respondents indicating that they had an 'if you get injured at work' poster on display in the workplace appeared to remain similar at approximately 67%. This could be an opportunity for increased communication and awareness of businesses' obligations in certain areas of work, health and safety, and may be a topic which is explored in future campaigns.

Overall, the Tree Work project is likely to have contributed to improvements in the knowledge, attitude and capability of PCBUs in the tree work industry to manage safety.

The mechanisms through which this information was delivered by SafeWork NSW mostly appear to have been appropriate and to have reached the target audience. The added value of the visit program to improving the knowledge, attitudes and capability of PCBUs in managing safety cannot be conclusively drawn. However, the way in which the visit program was delivered is a strength of the project, with the majority of the elements in the visit program well received by those who participated. Certain approaches in the management of industry specific risks were reported higher by those who participated in the visit program, compared with the general industry. This may be as a result of the opportunity the visit program offers to provide tailored information on site, where discussions with the inspector may have focussed on areas of interest or concern specific to the individual business.

SafeWork NSW clearly recognises the importance of safe workplaces, and continued investment in projects such as this which support safety have wide ranging benefits, both for the tree work industry and the public.

5 Recommendations

A high-level summary of the key recommendations from the research findings are provided below. These recommendations may assist in informing the development of similar projects for the tree work industry in the future. The results have been informed by the survey results, and should be explored further with the industry prior to introducing future enhancements to the project.

- The **communication mechanisms** used by SafeWork NSW in the Tree Work project, such as social media, websites and print materials appear appropriate for use in distributing information to the industry. **Continued and enhanced use of these communication mechanisms** could be considered in future campaigns targeting the tree work industry.
- Consider the **use of complementary mechanisms** to disseminate information on tree work safety, such as through partnering with industry associations to use existing platforms (such as an industry newsletter) and educational providers such as TAFE, to increase the reach of this information. **Peer-based learning** could also be explored.
- Where feasible, explore the **increased use of ‘real life’ scenarios or case studies** (such as from court judgements) in future content on safety to provide realistic and practice advice for action.
- Opportunities exist for SafeWork NSW to review the survey responses from the research to understand **areas of weakness from a technical perspective**, and to **address these** in future **communication** or **education** based activities. This review could also determine how closely the messages recalled by survey respondents and those which were promoted in the campaign aligned, to ensure that messaging remains clear and meets the project’s objectives.
- Given tree workers obtain information on tree work safety from many sources other than Safe Work, **review** and **quality** and **accuracy** of information provided by these other sources to ensure tree workers are accessing **consistent, accurate** and **best practice information**.
- **Strengthen resources and communication materials** to more closely reflect the **day-to-day experience** of tree workers. The increased use of case studies and scenarios drawn from real life examples could be considered.
- Leverage **existing partnerships** and **develop new ones** with industry organisations to promote SafeWork NSW’s **resources** for the tree work industry and collaborate with them to ensure **promotion** of **consistent information** on tree work safety within the industry.
- Recognising that behaviour change occurs over time, conduct **follow-up research** to review **changes in the behaviour** of the tree work industry in their approach and management of risks. This may be of particular value in determining the impact of the visit program, where follow-up studies with participants in 6-12 months may provide greater insights into behaviour change which may have occurred.

- Consideration could be given to the **development and use of standardised research tools** to allow for consistency and ease of monitoring a project over time so that SafeWork NSW can report on project outcomes and use results to inform continuous quality improvement of its work.

6 Appendices

Appendix I: Survey A

Survey Content
<p>SafeWork NSW recently conducted a media campaign and educational activities to raise awareness and promote understanding of safety in conducting tree work services. These activities finished in June 2018, and we are now seeking views from those working in tree services, such as yourself, on safety practices when providing tree services.</p> <p>The feedback you provide will be used to evaluate SafeWork NSW's activities and to plan future activities for improving safety practices for tree work services.</p> <p>The survey should take you about 10 minutes to complete. Your responses are confidential and anonymous.</p> <p>We appreciate your time and effort in completing the survey.</p> <p>For more information or if you have any questions about the survey please contact surveys@mchnair.com.au.</p>
<p>1. Please select which would best describe your position in your company:</p> <ul style="list-style-type: none"> • Owner/Manager • Subcontractor • Employee – end of survey [SURVEY DESIGN: exit survey text] • Other – end of survey [SURVEY DESIGN: exit survey text]
<p>2. Thinking about your company, how many people would approximately work for you when you are at your busiest?</p> <ul style="list-style-type: none"> • One (sole trader) – skip to Question 4 • 2-5 • 6-10 • 11-19 • 20-50 • More than 50



<p>3. Of the people working in your company, how many of these would be permanent employees?</p> <ul style="list-style-type: none">• One• 2-5• 6-10• 11-19• 20-50• More than 50
<p>4. How long has your company been in operation?</p> <ul style="list-style-type: none">• Less than 2 years• 2-5 years• 6-10 years• More than 10 years
<p>5. In which of the following regions would you mainly operate and provide tree work services?</p> <ul style="list-style-type: none">• Metro Sydney• Regional – North of Sydney• Regional – South of Sydney• Regional – West of Sydney• Other
<p>6. In the last 12 months, have you seen, read, or heard any information about tree work safety?</p> <ul style="list-style-type: none">• Yes• No – skip to Question 11• Unsure – skip to Question 11
<p>7. Which organisation(s) released this information on tree work safety? Please select all that apply. (multiple response)</p> <ul style="list-style-type: none">• SafeWork NSW• Other organisation (please specify) _____• Unsure



8. Where did you see, read, or hear this information on tree work safety in the last 12 months? Please select all that apply. (multiple response)

- Website
- Social media (e.g. Facebook, Twitter)
- Print materials (e.g. flyer, poster in workplace)
- Online education (e.g. webinar, safety alert)
- Other, please specify

9. Thinking about the information on tree work safety that you have seen, read or heard in the last 12 months, please rate your level of agreement with the following statements on a scale of 1 to 5, with 1 being 'strongly disagree', and 5 being 'strongly agree'.

[SURVEY DESIGN: (scale (1-5) – strong disagree, disagree, neither agree or disagree, agree, strongly agree)]

- I learnt new ideas, approaches and or/skills about tree work safety from the information.
- The information provided on tree work safety was easy to understand.
- The information provided on tree work safety was relevant to me.
- The information on tree work safety was easy to access.
- The information has helped me understand what I am doing well in my workplace around tree work safety.
- The information has helped me understand areas where I can improve in my workplace around tree work safety.

10. Please describe up to **three key messages or pieces of information** that you remember seeing, reading or hearing about tree work safety in the last 12 months?

[SURVEY DESIGN: Open ended response]

1. _____
2. _____
3. _____

11. Thinking about your business, how much of a safety hazard would you consider the following? Please select all that apply. (multiple response)

[SURVEY DESIGN: (scale (1-4)– major hazard, moderate hazard, minor hazard, not a hazard at all)]

	1 Major Hazard	2 Moderate Hazard	3 Minor Hazard	4 Not a Hazard at all
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Working at heights				
Working around power lines				
Working around equipment and machinery				
Managing roads and traffic				
Machinery noise				
Lone and isolated work				
Other, (please specify) _____				

12. Thinking about your business, please rate your level of confidence in managing the following risks to you and your staff. If the risk does not apply to you, please select 'not applicable'

[SURVEY DESIGN: (scale (1-4) – very confident, quite confident, not very confident, not at all confident + 'not applicable')]

	1 Very confident	2 Quite confident	3 Not very confident	4 Not at all confident	Not applicable
Quoting or speccing out the job					
Tree climbing					
Working at heights					
Falling objects/tree branches, etc					
Working with and maintaining machinery such as chippers or stump grinders					



Traffic management					
Emergency rescue					
Exposure to the sun/sun safety					
Working near power lines					
Managing heat fatigue					
Drug and alcohol use					
Machinery noise					
Other, please specify (open ended response) _____					

13. How do you currently manage the risks associated with working at heights? Please select all that apply. **[SURVEY DESIGN: multiple response]**

- Use appropriate systems of work for the job to be undertaken
- Ensure a comprehensive Visual Tree Assessment (VTA) is conducted prior to selecting any anchor points for climbing and rigging lines
- Install false crotch
- Maintain 2 points of attachment (where possible, particularly when making a cut)
- Mechanical and controlled felling to eliminate the need to work at height
- Use controlled lowering techniques where possible to reduce shock loading on the tree i.e. a friction drum.
- EWP ideally where accessible and the tree removal method allows for this i.e. sufficient lowering room
- Always wear a harness if using an EWP.
- Crane and climber to reduce shock load of trees structure
- Crane and using the crane as an anchorage for access
- Ensure the integrity of climbing equipment such as climbing spikes, ropes & harnesses.
- Ensure you are well positioned prior to making a cut
- Ensure attachment points are secure
- Ensure emergency rescue equipment is available on site and that someone is adequately trained to undertake an aerial rescue if necessary
- Other, (please specify) _____

14. How do you currently manage the risks associated with machinery or equipment, such as chippers or stump grinders? Please select all that apply. **[SURVEY DESIGN: multiple response]**

- Ensure all guarding is in place
- Always conduct a pre-start safety check to ensure the safety and integrity of any equipment or machinery before use
- Ensure emergency stop devices are functioning prior to using any machinery or equipment
- Ensure operators are competent and appropriately trained in use of any equipment or machinery
- Ensure that maintenance is completed by a competent person in accordance with the manufacturer's instructions or the recommendations of the competent person
- Establish signage, exclusion zones, traffic control and barricades where required
- Ensure operators wear appropriate clothing and relevant Personal protective equipment (PPE)
- When using a wood chipper ensure branches and vegetation are fed from the sides with the operator moving away once feed rollers grab material
- Ensure the correct number of persons are used for the safe operation of equipment or machinery
- Ensure first aid appropriate for the size of the workplace and nature of the activity being conducted is available at all times.
- Ensure trained first aiders are onsite
- Other, (please specify) _____

15. How do you currently manage the risks associated with working near power lines? Please select all that apply. **[SURVEY DESIGN: multiple response]**

- Ideally a power outage is the best method
- Contact electrical distributor to use authorised contractors to clear vegetation from the network.
- Ensure safe approach distances are maintained for accredited and non-accredited persons.
- Never encroach into the 'no go' zone or work on any vegetation wholly or partly within the no go zone
- Obtain approval from network operator before starting work on any parts of trees or vegetation that are within a 'no go' zone
- Use line covers as a visual indicator



- Use a safety observer to ensure plant or equipment doesn't breach minimum safe distances.
- Ensure that machinery or equipment is insulated if required
- Be wary of working in inclement weather and conditions (e.g. rain)
- Arrange crane and work position to avoid lifting loads over power lines
- Other, (please specify) _____

16. How do you currently manage the risks associated with excessive noise from plant and equipment? Please select all that apply. **[SURVEY DESIGN: multiple response]**

- Monitor the noise level of plant and equipment to ensure the exposure standard is not being exceeded
- Use hearing protection
- Provide workers with audiometric testing
- Try to minimise the length of time people are exposed to excessive noise
- Other, (please specify) _____

17. How do you currently manage the risks associated with lone or isolated work? Please select all that apply. **[SURVEY DESIGN: multiple response]**

- Ensure workers have effective methods of communication at all time
- Ensure assistance is readily available at all times, including medical assistance or the attendance of emergency service workers
- Ensure that there is more than one person on site at all times
- Other, please specify

18. Which statement most accurately reflects your equipment inspection/maintenance schedule for the following (You may give more than one response per listed equipment)

[SURVEY DESIGN: (scale – when a problem occurs, yearly, 6 monthly, 3 monthly, monthly, after every job)]

	When a problem occurs	Yearly	6 Monthly	3 Monthly	Monthly	After every job
Climbing equipment						
Ropes						
Chainsaws						
Wood chippers						
Personal Protective Equipment						



Other equipment not listed (please specify) _____						
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19. When quoting for a job, do you factor in risk assessments in your pricing? **[SURVEY DESIGN: (single response only)]**

- Yes, always
- Yes, for specific jobs
- No

20. Which of the following factors do you consider in your pricing when quoting for a job?
[SURVEY DESIGN: (scale (1-4) – only if the job required it (e.g. unusual, degree of difficulty), sometimes, mostly, always)]

	1 Only if the job required it (e.g. unusual, degree of difficulty)	2 Sometimes	3 Mostly	4 Always
Condition of the tree				
Competency and experience of workers				
Weather				
Equipment required (climbing and plant)				
Access to site				
Proximity to power lines				
Traffic management				
Management of drop zones and exclusion zones				
Other, (please specify)_____				

21. When do you typically talk to your workers about safety? Please select all that apply.
[SURVEY DESIGN: multiple response]

- Daily



- Every job
- Toolbox talks
- As required
- Continually/regular intervals

22. Do you have any of the following? Please select all that apply.

[SURVEY DESIGN: multiple response]

- An informal induction process (e.g. on the job training)
- Toolbox talks
- A formal induction process (i.e. offsite and written)
- Other, please specify

23. Which of the following statements best reflects your views on who is mainly responsible for ensuring the safety of workers at different worksites?

[SURVEY DESIGN: single response only]

- I am mainly responsible
- The site manager is mainly responsible
- The workers or contractors themselves are mainly responsible
- We share this responsibility equally

24. Thinking about workers compensation for your business, please select yes or no or not applicable, to the following questions.

[SURVEY DESIGN: (Single response only – yes, no, NA)]

	Yes	No	N/A
Do you have workers compensation insurance for your workers?			
Have you checked if your contractors need to be included on your workers compensation policy?			
Do you have a Return to Work Program in place?			
Do you have a formal (i.e. written) Register of Injuries?			
Do you have a "If you get injured at Work" poster on display in an area that can be seen by your workers?			
Do you have a nominated person that is responsible for assisting workers return to work after they have an injury?			
Has your company had any Workers' Compensation claims within the past 12 months?			



25. Who do you think is responsible and has a role to play in the recovery of an injured worker? Please select all that apply **[SURVEY DESIGN: multiple response]**

- Scheme agent/ insurer
- Employer
- Injured worker
- Doctor/ other medical practitioners
- Rehab Provider
- All of the above **[SURVEY DESIGN – deselect above if chosen]**

[SURVEY DESIGN: Skip if Q6 answered: “No” or “Unsure”]

26. Has any of the information on tree work safety that you have seen, read or heard in the last 12 months caused you to change the way you manage the safety of tree work in your business?

- Yes
- No - **skip to the end of the survey [SURVEY DESIGN: End Survey text]**
- Unsure - **skip to the end of the survey [SURVEY DESIGN: End Survey text]**

[SURVEY DESIGN: Skip if Q6 answered: “No” or “Unsure”]

27. Please describe the main way in which you have changed the management of tree work safety in your business as a result of information on tree work safety that you have seen, read or heard in the last 12 months.

Appendix II: Survey B

Survey Content
<p>SafeWork NSW recently conducted a project aimed at improving safety within the tree services industry. As part of this project, you would have been visited by a SafeWork inspector, and we would like to obtain your feedback on the program, and your views on safety practices when providing tree services.</p> <p>The feedback you provide will be used to evaluate SafeWork NSW's activities and to plan future activities for improving safety practices for tree work services.</p> <p>The survey should take you about 10 minutes to complete. Your responses are confidential and anonymous.</p> <p>We appreciate your time and effort in completing the survey.</p> <p>For more information or if you have any questions about the survey please contact Kathryn Lim at ZEST Health Strategies at (02) 9409-7615 or kathryn.lim@zest.com.au</p>
<p>28. Please select which would best describe your organisation:</p> <ul style="list-style-type: none"> • Tree work business • Local government council – skip to Question 7
<p>29. Please select which would best describe your position in your company:</p> <ul style="list-style-type: none"> • Owner/Manager • Subcontractor • Employee – end of survey [SURVEY DESIGN: exit survey text] • Other – end of survey [SURVEY DESIGN: exit survey text]
<p>30. Thinking about your company, how many people would approximately work for you when you are at your busiest?</p> <ul style="list-style-type: none"> • One (sole trader) – skip to Question 5 • 2-5 • 6-10 • 11-19 • 20-50 • More than 50



31. Of the people working in your company, how many of these would be permanent employees?

- One
- 2-5
- 6-10
- 11-19
- 20-50
- More than 50

32. How long has your company been in operation?

- Less than 2 years
- 2-5 years
- 6-10 years
- More than 10 years

33. In which of the following regions would you mainly operate and provide tree work services?

- Metro Sydney
- Regional – North of Sydney
- Regional – South of Sydney
- Regional – West of Sydney
- Other

34. In the **last 12 months**, have you seen, read, or heard any information about tree work safety?

- Yes
- No – **skip to Question 9**
- Unsure – **skip to Question 9**

35. Where did you see, read, or hear this information on tree work safety in the last 12 months?
Please tick all that apply. (multiple response)

- Website (e.g. SafeWork NSW, Fair Trading NSW)
- Social media post (e.g. Facebook, Twitter)
- Facebook or Google advertisement
- Print materials (e.g. flyer, poster in workplace)



- Online education (e.g. webinar, safety alert)
- Other, please specify

36. The Tree Work Project included communication and educational activities, such as the visit program, and was delivered as a joint initiative of SafeWork NSW, NSW Fair Trading and the State Insurance Regulatory Authority (SIRA). Were you aware that these organisations were involved in this project? (single response only)

- Yes
- No – **skip to Question 11**
- Unsure - **skip to Question 11**

37. To what extent do you think the **partnership** between SafeWork NSW, NSW Fair Trading and the State Insurance Regulatory Authority (SIRA) has added value to the provision of content and resources to help you with tree work safety, rather than these organisations working alone?

- No added value
- Very little added value
- Some added value
- Substantial added value
- I don't know

[SURVEY DESIGN] INTRODUCTION – SECTION TEXT

As part of the Tree Work Project, the visit program was conducted in three stages. These three stages were:

- **Preparing** for the visit
- **Participating** in the visit
- **Reviewing resources and information on tree work safety practices** after the visit

The next three questions will seek your feedback on these three stages.

38. Thinking about how you **prepared** for the inspector's visit, please rate your level of agreement with the following statements on a scale of 1 to 5, with 1 being 'strongly disagree', and 5 being 'strongly agree'. If in preparing for the inspector's visit you did not complete an activity listed, please select 'not applicable' **[SURVEY DESIGN: (scale (1-5) – strong disagree, disagree, neither agree or disagree, agree, strongly agree) + 'not applicable']**

- The purpose of the tree work project and the visit were clearly explained to me.
- The time taken to prepare the documents needed for the inspector's visit was reasonable.
- The information provided in the pre-visit letter was clear and easy to understand.



- The self-assessment checklist was easy to complete.
- The Safe Work Australia Guide to managing risks of tree trimming and removal work which was provided had information that was relevant to me.
- The pre-visit documents helped me reflect on my current tree work safety practices.

39. Thinking about **during** the inspector's visit, please rate your level of agreement with the following statements on a scale of 1 to 5, with 1 being 'strongly disagree', and 5 being 'strongly agree'. If during the inspector's visit you did not cover a topic listed, please select 'not applicable'. **[SURVEY DESIGN: (scale (1-5) – strong disagree, disagree, neither agree or disagree, agree, strongly agree) + 'not applicable']**

- The inspector clearly explained the purpose of their visit to me.
- I felt that my work practices were reviewed by the inspector in an appropriate manner.
- The inspector clearly reviewed and discussed my work practices relating to workers compensation.
- The inspector clearly reviewed and discussed my work practices relating to return to work obligations.
- The inspector demonstrated clear knowledge of safety practices for the tree work industry.
- The length of the visit was appropriate (1-2 hours).
- The inspector's visit helped me understand what I am doing well in my workplace around tree work safety.
- The inspector's visit helped me understand areas where I could improve in my workplace around tree work safety.

40. Thinking about **after** the inspector's visit, please rate the following resources which were provided to you, on a scale of 1 to 5 on how helpful they were on finding out more information on tree work safety. 1 being 'not at all helpful' and 5 being 'extremely helpful'. **[SURVEY DESIGN (scale 1-5) – not at all helpful, slightly helpful, moderately helpful, very helpful, extremely helpful].**

- Pen USB with pre-loaded SafeWork NSW resources
- Trade vehicle sticker with scannable code to SafeWork NSW website
- Fair Trading kit

41. As a result of the inspector's visit, were you required to take any further actions to improve safety in tree work practices in your business or organisation?

- Yes
- No – skip to Q16

42. Do you think that the actions you were required to take to improve tree work safety in your business or organisation were appropriate?



- Absolutely inappropriate
- Slightly inappropriate
- Neutral
- Slightly appropriate
- Absolutely appropriate

43. Thinking about the activities conducted by SafeWork NSW about tree work safety in general, please describe up to **three key messages or pieces of information** that you remember seeing, reading, hearing or receiving about tree work safety in the last 12 months?

[SURVEY DESIGN: Open ended response]

1. _____
2. _____
3. _____

44. Thinking about your business or organisation, how much of a safety hazard would you consider the following? Please tick all that apply. (multiple response)

[SURVEY DESIGN: (scale (1-4)– major hazard, moderate hazard, minor hazard, not a hazard at all)]

- Working at heights
- Working around power lines
- Working around equipment and machinery
- Managing roads and traffic
- Machinery noise
- Lone and isolated work
- Other, please specify

45. Thinking about your business or organisation, please rate your level of confidence in managing the following risks to you and your staff. If the risk does not apply to you, please select 'not applicable'

[SURVEY DESIGN: (scale (1-4) – very confident, quite confident, not very confident, not at all confident + 'not applicable')]

- Quoting or speccing out the job
- Tree climbing
- Working at heights
- Falling objects/tree branches, etc
- Working with and maintaining machinery such as chippers or stump grinders

- Traffic management
- Emergency rescue
- Exposure to the sun/sun safety
- Working near power lines
- Managing heat fatigue
- Drug and alcohol use
- Machinery noise
- Other, please specify (open ended response)

46. How do you currently manage the risks associated with working at heights? Please tick all that apply. **[SURVEY DESIGN: multiple response]**

- Use appropriate systems of work for the job to be undertaken
- Ensure a comprehensive Visual Tree Assessment (VTA) is conducted prior to selecting any anchor points for climbing and rigging lines
- Install false crotch
- Maintain 2 points of attachment (where possible, particularly when making a cut)
- Mechanical and controlled felling to eliminate the need to work at height
- Use controlled lowering techniques where possible to reduce shock loading on the tree i.e. a friction drum.
- EWP ideally where accessible and the tree removal method allows for this i.e. sufficient lowering room
- Always wear a harness if using an EWP.
- Crane and climber to reduce shock load of trees structure
- Crane and using the crane as an anchorage for access
- Ensure the integrity of climbing equipment such as climbing spikes, ropes & harnesses.
- Ensure you are well positioned prior to making a cut
- Ensure attachment points are secure
- Ensure emergency rescue equipment is available on site and that someone is adequately trained to undertake an aerial rescue if necessary
- Other, please specify

47. How do you currently manage the risks associated with machinery or equipment, such as chippers or stump grinders? Please tick all that apply. **[SURVEY DESIGN: multiple response]**

- Ensure all guarding is in place

- Always conduct a pre-start safety check to ensure the safety and integrity of any equipment or machinery before use
- Ensure emergency stop devices are functioning prior to using any machinery or equipment
- Ensure operators are competent and appropriately trained in use of any equipment or machinery
- Ensure that maintenance is completed by a competent person in accordance with the manufacturer's instructions or the recommendations of the competent person
- Establish signage, exclusion zones, traffic control and barricades where required
- Ensure operators wear appropriate clothing and relevant Personal protective equipment (PPE)
- When using a wood chipper ensure branches and vegetation are fed from the sides with the operator moving away once feed rollers grab material
- Ensure the correct number of persons are used for the safe operation of equipment or machinery
- Ensure first aid appropriate for the size of the workplace and nature of the activity being conducted is available at all times.
- Ensure trained first aiders are onsite
- Other, please specify

48. How do you currently manage the risks associated with working near power lines? Please tick all that apply. **[SURVEY DESIGN: multiple response]**

- Ideally a power outage is the best method
- Contact electrical distributor to use authorised contractors to clear vegetation from the network.
- Ensure safe approach distances are maintained for accredited and non-accredited persons.
- Never encroach into the 'no go' zone or work on any vegetation wholly or partly within the no go zone
- Obtain approval from network operator before starting work on any parts of trees or vegetation that are within a 'no go' zone
- Use line covers as a visual indicator
- Use a safety observer to ensure plant or equipment doesn't breach minimum safe distances.
- Ensure that machinery or equipment is insulated if required
- Be wary of working in inclement weather and conditions (e.g. rain)



- Arrange crane and work position to avoid lifting loads over power lines
- Other, please specify

49. How do you currently manage the risks associated with excessive noise from plant and equipment? Please tick all that apply. **[SURVEY DESIGN: multiple response]**

- Monitor the noise level of plant and equipment to ensure the exposure standard is not being exceeded
- Use hearing protection
- Provide workers with audiometric testing
- Try to minimise the length of time people are exposed to excessive noise
- Other, please specify

50. How do you currently manage the risks associated with lone or isolated work? Please tick all that apply. **[SURVEY DESIGN: multiple response]**

- Ensure workers have effective methods of communication at all time
- Ensure assistance is readily available at all times, including medical assistance or the attendance of emergency service workers
- Ensure that there is more than one person on site at all times
- Other, please specify

51. Which statement most accurately reflects your equipment inspection/maintenance schedule for the following (You may give more than one response per listed equipment)

[SURVEY DESIGN: (scale – when a problem occurs, yearly, 6 monthly, 3 monthly, monthly, after every job)]

- Climbing equipment
- Ropes
- Chainsaws
- Wood chippers
- Personal Protective Equipment
- Other equipment not listed (please specify)

52. When quoting for a job, do you factor in risk assessments in your pricing? **[SURVEY DESIGN: (single response only)]**

- Yes, always
- Yes, for specific jobs
- No
- Not Applicable

53. Which of the following factors do you consider in your pricing when quoting for a job?

[SURVEY DESIGN: (scale (1-4) – only if the job required it (e.g. unusual, degree of difficulty), sometimes mostly, mostly, always) + ‘not applicable’]

- Condition of the tree
- Competency and experience of workers
- Weather
- Equipment required (climbing and plant)
- Access to site
- Proximity to power lines
- Traffic management
- Management of drop zones and exclusion zones
- Other, please specify
- Not Applicable

54. When do you typically talk to your workers about safety? Please tick all that apply. **[SURVEY DESIGN: multiple response]**

- Daily
- Every job
- Toolbox talks
- As required
- Continually/regular intervals

55. Do you have any of the following? Please tick all that apply.

[SURVEY DESIGN: multiple response]

- An informal induction process (e.g. on the job training)
- Toolbox talks
- A formal induction process (i.e. offsite and written)
- Other, please specify

56. Which of the following statements best reflects your views on who is mainly responsible for ensuring the safety of workers at different worksites?

[SURVEY DESIGN: single response only]

- I am mainly responsible
- The site manager is mainly responsible
- The workers or contractors themselves are mainly responsible



<ul style="list-style-type: none">• We share this responsibility equally
<p>57. Has any of the information on tree work safety that you have seen, read or heard in the last 12 months (other than provided during the visit) caused you to change the way you manage the safety of tree work in your business or organisation?</p> <ul style="list-style-type: none">• Yes• No - skip to Question 32• Unsure – skip to Question 32
<p>58. Please describe the main way in which you have changed the management of tree work safety in your business or organisation as a result of information on tree work safety that you have seen, read, heard or received in the last 12 months (other than the information provided during the visit).</p> <hr/> <hr/> <hr/>
<p>59. Has any of the information on tree work safety that you received during the visit program caused you to change the way you manage the safety of tree work in your business or organisation?</p> <ul style="list-style-type: none">• Yes• No - skip to the end of the survey [SURVEY DESIGN: End Survey text]• Unsure - skip to the end of the survey [SURVEY DESIGN: End Survey text]
<p>60. Please describe the main way in which you have changed the management of tree work safety in your business or organisation as a result of information on tree work safety that you received during the visit program.</p> <hr/> <hr/> <hr/>

Appendix III: Summary of Statistical Terms

- **Chi-square tests** are used to test and measure the differences in responses to questions between proportions of respondents in different groups.
- **Cross tabulation** is a method used to analyse the quantitative relationships between two variables.
- **McNemar's tests** are used to test the differences between proportions based on information that has been collected on the same individuals. This test is often used in before and after studies, where responses are measured at two separate time points (e.g. pre-test, post-test).
- **Statistical significance** is the term used to describe the differences between groups, with findings that are statistically significant being unlikely to have been caused by chance alone. The reporting of statistical significance is mostly associated with a result which shows that the result of chance is less than 5%, or probability (p) of that occurrence is <0.05 .

Appendix IV: Counts and percentages of Survey A and Survey B responses against statements for managing risks associated with working at heights

Question: How do you currently manage the risks associated with working at heights? (n=168, multiple response allowed)

Data is presented as percentage within the Survey Type, and as a percentage of the aggregated responses (Survey A and Survey B)

Statement		Survey A	Survey B	Total (%)
Use appropriate systems of work for the job to be undertaken	n=	146	15	161 (95.80%)
	% within Survey Type	96.70%	88.20%	
Ensure a comprehensive Visual Tree Assessment (VTA) is conducted prior to selecting any anchor points for climbing and rigging lines	N=	132	14	146 (86.90%)
	% within Survey Type	87.40%	82.40%	
Install false crotch	N=	91	5	96 (57.10%)
	% within Survey Type	60.30%	29.40%	
Maintain 2 points of attachment (where possible, particularly when making a cut)	N=	132	16	148 (88.10%)
	% within Survey Type	87.40%	94.10%	
Mechanical and controlled felling to eliminate the need to work at height	N=	124	13	137 (81.50%)
	% within Survey Type	82.10%	76.50%	
Use controlled lowering techniques where possible to reduce shock loading on the tree i.e. a friction drum.	N=	131	13	144 (85.70%)
	% within Survey Type	86.80%	76.50%	
EWP ideally where accessible and the tree removal method allows for this i.e. sufficient lowering room	N=	102	14	116 (69.00%)
	% within Survey Type	67.50%	82.40%	
Always wear a harness if using an EWP.	N=	120	15	135 (80.40%)
	% within Survey Type	79.50%	88.20%	
Crane and climber to reduce shock load of trees structure	N=	111	9	120 (71.40%)
	% within Survey Type	73.50%	52.90%	



Crane and using the crane as an anchorage for access	N=	74	5	79 (47.00%)
	% within Survey Type	49.00%	29.40%	
Ensure the integrity of climbing equipment such as climbing spikes, ropes & harnesses.	N=	139	15	154 (91.70%)
	% within Survey Type	92.10%	88.20%	
Ensure you are well positioned prior to making a cut	N=	139	14	153 (91.10%)
	% within Survey Type	92.10%	82.40%	
Ensure attachment points are secure	N=	138	14	152 (90.50%)
	% within Survey Type	91.40%	82.40%	
Ensure emergency rescue equipment is available on site and that someone is adequately trained to undertake an aerial rescue if necessary	N=	118	13	131 (78.00%)
	% within Survey Type	78.10%	76.50%	
Other	N=	12	1	13 (7.70%)
	% within Survey Type	7.90%	5.90%	
Total	N=	151	17	168

Appendix V: Counts and percentages of Survey A and Survey B responses against statements for managing risks associated with working near power lines

Question: How do you currently manage the risks associated with working near power lines?
(n=167, multiple response allowed)

Data is presented as percentage within the Survey Type, and as a percentage of the aggregated responses (Survey A and Survey B)

Statement		Survey A	Survey B	Total (%)
Ideally a power outage is the best method	N=	84	9	93 (55.70%)
	% within Survey Type	55.60%	56.30%	
Contact electrical distributor to use authorised contractors to clear vegetation from the network.	N=	76	9	85 (50.90%)
	% within Survey Type	50.30%	56.30%	
Ensure safe approach distances are maintained for accredited and non-accredited persons.	N=	114	13	127(76.00%)
	% within Survey Type	75.50%	81.30%	
Never encroach into the 'no go' zone or work on any vegetation wholly or partly within the no go zone	N=	118	14	132 (79.00%)
	% within Survey Type	78.10%	87.50%	
Obtain approval from network operator before starting work on any parts of trees or vegetation that are within a 'no go' zone	N=	71	8	79 (47.30%)
	% within Survey Type	47.00%	50.00%	
Use line covers as a visual indicator	N=	71	7	78 (46.70%)
	% within Survey Type	47.00%	43.80%	
Use a safety observer to ensure plant or equipment doesn't breach minimum safe distances.	N=	97	12	109 (65.30%)
	% within Survey Type	64.20%	75.00%	
Ensure that machinery or equipment is insulated if required	N=	84	8	92 (55.10%)
	% within Survey Type	55.60%	50.00%	
Be wary of working in inclement weather and conditions (e.g. rain)	N=	115	12	127 (76.00%)
	% within Survey Type	76.20%	75.00%	
Arrange crane and work position to avoid lifting loads over power lines	N=	97	9	106 (63.50%)
	% within Survey Type	64.20%	56.30%	
Other	N=	39	4	43 (25.70%)
	% within Survey Type	25.80%	25.00%	
Total	N=	151	16	167

Appendix VI: Counts and percentages of Survey A and Survey B responses against statements for managing risks associated with working with machinery and equipment

Question: How do you currently manage the risks associated with machinery or equipment, such as chippers or stump grinders? (n=168, multiple response allowed)

Statement		Survey A	Survey B	Total (%)
Ensure all guarding is in place	N=	139	16	155 (92.30%)
	% within Survey Type	92.10%	94.10%	
Always conduct a pre-start safety check to ensure the safety and integrity of any equipment or machinery before use	N=	130	14	144 (85.70%)
	% within Survey Type	86.10%	82.40%	
Ensure emergency stop devices are functioning prior to using any machinery or equipment	N=	131	14	145 (86.30%)
	% within Survey Type	86.80%	82.40%	
Ensure operators are competent and appropriately trained in use of any equipment or machinery	N=	144	15	159 (94.60%)
	% within Survey Type	95.40%	88.20%	
Ensure that maintenance is completed by a competent person in accordance with the manufacturer's instructions or the recommendations of the competent person	N=	135	14	149 (88.70%)
	% within Survey Type	89.40%	82.40%	
Establish signage, exclusion zones, traffic control and barricades where required	N=	140	14	154 (91.70%)
	% within Survey Type	92.70%	82.40%	
Ensure operators wear appropriate clothing and relevant Personal protective equipment (PPE)	N=	142	14	156 (92.90%)
	% within Survey Type	94.00%	82.40%	
When using a wood chipper ensure branches and vegetation are fed from the sides with the operator moving away once feed rollers grab material	N=	138	13	151 (89.90%)
	% within Survey Type	91.40%	76.50%	
Ensure the correct number of persons are used for the safe operation of equipment or machinery	N=	135	15	150 (89.30%)
	% within Survey Type	89.40%	88.20%	



Ensure first aid appropriate for the size of the workplace and nature of the activity being conducted is available at all times.	N=	136	15	151 (89.90%)
	% within Survey Type	90.10%	88.20%	
Ensure trained first aiders are onsite	N=	121	15	136 (81.00%)
	% within Survey Type	80.10%	88.20%	
Other	N=	8	2	10 (6.00%)
	% within Survey Type	5.30%	11.80%	
Total	N=	151	17	168

Appendix VII: Counts and percentages of Survey A and Survey B responses against statements for managing risks associated with excessive noise from plant and equipment

Question: How do you currently manage the risks associated with excessive noise from plant and equipment? (n=168, multiple response allowed)

Statement		Survey A	Survey B	Total
Monitor the noise level of plant and equipment to ensure the exposure standard is not being exceeded	N=	38	10	48 (28.60%)
	% within Survey Type	25.20%	58.80%	
Use hearing protection	N=	149	17	166 (98.80%)
	% within Survey Type	98.70%	100.00%	
Provide workers with audiometric testing	N=	22	2	24 (14.30%)
	% within Survey Type	14.60%	11.80%	
Try to minimise the length of time people are exposed to excessive noise	N=	103	11	114 (67.90%)
	% within Survey Type	68.20%	64.70%	
Other	N=	13	2	15 (8.90%)
	% within Survey Type	8.60%	11.80%	
Total	N=	151	17	168

Appendix VIII: Counts and percentages of Survey A and Survey B responses against statements for managing risks associated with lone or isolated work

Question 23. How do you currently manage the risks associated with lone or isolated work?
(n= 168, multiple response allowed)

Statement		Survey A	Survey B	Total (%)
Ensure workers have effective methods of communication at all time	N=	101	13	114 (68%)
	% within Survey Type	67%	59%	
Ensure assistance is readily available at all times, including medical assistance or the attendance of emergency service workers	N=	61	12	73 (43%)
	% within Survey Type	40%	55%	
Ensure that there is more than one person on site at all times	N=	123	15	138 (82%)
	% within Survey Type	81%	68%	
Other	N=	10	2	12 (7%)
	% within Survey Type	7%	9%	
Total	N=	151	17	168

Produced by ZEST Health Strategies on behalf of SafeWork NSW

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