

Application for an enforceable undertaking

June 2019

Part 4, Health and Safety at Work Act 2015

The commitments in this application are offered to WorkSafe New Zealand by

Name of entity or, partnership or individual applying for this undertaking

Forest360 Limited

Application for an enforceable undertaking

Part 4, Health and Safety at Work Act 2015

The commitments in this application are offered to WorkSafe New Zealand by

Name of the person or persons who will be signing this undertaking in section 4:

Daniel Timothy Gaddum, Managing Director

On behalf of:

Forest360 Limited

Name of the entity giving this undertaking (if an individual or sole trader, leave blank – complete in all other cases)

Forest360 Limited

This enforceable undertaking is given on the day and date that it is accepted and signed by WorkSafe. The undertaking and its enforceable terms will operate as a legally binding commitment on the part of the person from the date it is given.

Do not refer to the victim by name in this document. Please refer to the victim/worker/employee/volunteer/or other term as appropriate.

WorkSafe respects your privacy and is committed to protecting personal information. The information provided in this document is for the purpose of an undertaking given to WorkSafe under Part 4 of the *Health and Safety at Work Act 2015*. This information will be managed within the requirements of both the *Privacy Act 1993* and the *Official Information Act 1982*.

There is an expectation that WorkSafe will generally publish the undertaking in full on its website.

TERM	DEFINITION
Contravention	An action which offends against the <i>Health and Safety at Work Act 2015</i> and/or any Regulations made under it. It includes both health and safety contraventions. A contravention also includes an alleged contravention.
HSMS	A Health and Safety Management System.
Person	An individual who or a legal entity which has a duty under the <i>Health and Safety at Work Act 2015</i> and can give a written undertaking. The term includes individuals, each partner in a partnership, corporations, trustees of trusts, and crown organisations.
Health and Safety legislation	<i>Health and Safety at Work Act 2015</i> and associated regulations.
Enforceable undertaking	An enforcement pathway that allows a duty holder to voluntarily enter into a binding agreement with WorkSafe. The agreement outlines actions the duty holder will undertake to address the contravention. It is expected to deliver activities which benefit workers, the wider industry or sector and/or the community as well as acceptable amends to any victim(s).

1. General information

1.1 Details of the person/persons/entity giving the undertaking

Name of person(s) making this undertaking: (in all cases complete with the name(s) of those who are signing this undertaking under Section 4)

Daniel Timothy Gaddum, Managing Director

Name of entity: (if applicable, leave blank if an individual)

Forest360 Limited (F360)

Type of legal entity: (complete in all cases, for example individual, sole trader, partnership, trust, company, etc)

Company

Nominated contact person: (the same person listed above/one of those listed above)

Daniel Timothy Gaddum, Managing Director

Physical address:

Head Office
70 Aorangi Street
Fielding, 4702
New Zealand

Postal address: (if different from physical address)

Work phone:

Mobile phone: 027 585 9339

Email: s9(2)(a) OIA 1982

Industry: Forest Management Services

Workers (enter numbers):

Full-time: 50 Part time: 8 Casual:

Description of the products and services provided by the business or undertaking:

F360 provides forest advisory and management services from initial land-use assessment to eventual harvest and re-establishment.

Comments:

1.2 Detail of the contravention

Forest360 Limited (F360) has been charged with one offence under sections 36(1)(a), 48(1) and 48(2)(c) of the Health and Safety at Work Act 2015 (HSWA) in relation to a fatal driving incident which occurred at a forest on 27 May 2023.

The alleged contravention is that F360, being a person conducting a business or undertaking (PCBU), and having a duty to ensure, so far as is reasonably practicable, the health and safety of workers who work for the PCBU, while the workers were at work in the business or undertaking, namely driving a loaded 9-axle truck and trailer unit, did fail to comply with that duty, and that failure exposed workers to a risk of death or serious injury.

The particulars of the charge alleged that it was reasonably practicable for F360 to have:

(a) ensured an adequate risk assessment was carried out on Wairotoroto Road with reference to the 'Approved Code of Practice for Safety and Health in Forest Operations December 2012' and the 'NZ Forest Road Engineering Manual Operators Guide 2020' and identified the risk of Wairotoroto Road and the arrowhead corner for a loaded 9-axle truck and trailer unit;

(b) ensured Wairotoroto Road and the arrowhead corner was either:

- (i) designed, constructed and maintained to the 'Approved Code of Practice for Safety and Health in Forest Operations December 2012' and the 'NZ Forest Road Engineering Manual Operators Guide 2020' for the use of loaded 9-axle truck and trailer units; or
- (ii) restricted use of the arrowhead corner on Wairotoroto Road to a truck only cartage;

(c) consulted with the owner of the forest and the haulage company retained during harvesting as to whether Wairotoroto Road and the arrowhead corner met the standards for the use of loaded 9-axle truck and trailer units.

1.3 Detail the events surrounding the contravention

The event occurred within the forest at 934, Thames Coast Road, Te Mata, 3575 at a corner on a private existing forestry road within the forest, named Wairotoroto Road.

In 2006, the forest owner had engaged a road designer and construction company to design and construct Wairotoroto Road. A forest harvest operation was conducted at the time and approximately 800 full logging trucks were carried out during that harvest. F360 was not involved with and did not manage the construction of Wairotoroto Road or this prior harvest operation.

On 29 November 2022, F360 was contracted by the forest owner to provide specified forest management services for the harvest operation and managed sale of existing commercial radiata pine. In accordance with the Harvesting Agreement between F360 and forest owner, this included:

- undertaking all necessary pre-harvest activities, including inventory fieldwork, consent and permit applications, environmental hearings, planning and land use submissions and appeals;
- felling, delimbing, cross cutting and hauling logs to landings or otherwise preparing the logs for cartage from the cutting area; and
- carrying out any reinstatement activities following the harvest.

F360 and the owner agreed that owner was responsible for road construction and maintenance to a suitable standard to allow logging trucks to safely access and cart logs. The owner contracted directly with a roading contractor. The owner and roading contractor were responsible for the construction, reconstruction and/or maintenance of all roading within the forest, including Wairotoroto Road. F360 have contracted with the haulage contractor which employed the victim who drove the truck on this occasion, for around 19 years to provide cartage for the harvest operations under the management of F360.

On 9 January 2023, prior to commencing operations, the haulage company's regional operations manager inspected the road to check the appropriateness of the road, for all trucks and road users. The road was assessed as appropriate for log transport activities. The regional operations manager assessed the site with the benefit of a level 3 health and safety qualification, and with reference to the ACOP. The risk assessment was not formally recorded.

Cartage out of the forest commenced on 20 January 2023. Many loads were carted out of the forest using 9-axle trucks and trailers prior to the event.

On 24 May 2023, one of haulage contractor's most senior driver trainers, undertook an In-Cab assessment on the road, and did not identify any issues with the road. The assessment was of the general condition of the road, road width, and traction – not from a construction point of view, but for driver training purposes. The regional operations manager carried out further visits of the forest to check whether there had been any changes and to ensure his assessment of the roading remained correct and up to date. This included a visit of the forest on 26 May 2023, the day before the incident. No issues were identified by these inspections.

The Event

On 27 May 2023, the victim started work at around 3am. The victim was tasked by his employer to transport logs from the forest to the haulage yard for storage before cartage to Port Tauranga. He had transported logs from the forest on three previous occasions during the forest harvest operation, on 18 May 2023, and twice on 19 May 2023.

The victim drove a 9-axle truck and trailer and arrived at the forest at around 5am. He drove up Wairotoroto Road, being the main forestry access road, then onto the new section of road and the top loading site which had been constructed by a roading contractor for the current harvest operation.

Before the logs were loaded onto the truck, the rear tyres of the trailer got stuck in mud at the top loading site. The loader driver at the loading site (an employee of the harvesting company contracted by F360,) used his loader to push a log against the truck's trailer bolsters, moving the truck out of the mud and back onto the road. The loader driver loaded the logs onto the truck. The truck was laden with 60+ 3.9/0.3m logs and was a combined weight of approximately 47800 kilograms. The victim chained the load down.

The victim then drove to deliver the logs, returning on the same route he had used to access the top loading site.

Another truck driver also left the loading site several minutes after the victim and drove down the same route. As he reached the arrowhead corner, he noticed that a truck had gone off the road and over into the bank.

Unfortunately, the victim had died at the scene of the event.

1.4 Detail any enforcement notices issued that relate to the contravention as detailed in term 1.2

DATE	NOTICE TYPE	NOTICE NUMBER	CONTRAVENTION OR PROHIBITED ACTIVITY	ACTION TAKEN IN RESPONSE TO NOTICE
DD / MM / YEAR	N/A			
DD / MM / YEAR				
DD / MM / YEAR				

1.5 Detail the rectifications to the workplace or work practices made as a result of the contravention (1.2), events (1.3) and the enforcement notices issued (1.4)

As a result of this event F360 have updated risk assessments of roads in conjunction with transport operators. This assessment includes assessing road geometry in relation to best practice and industry codes and manuals. The transport operator is issued a job prescription that includes a risk assessment and map of the route where areas of high risk (either close or outside optimal design criteria) are noted along with risk controls to be implemented.

As part of the risk assessment and control process, which includes determining the most appropriate size and configuration of the log haulage unit, Forest360 also deploys forest road signage, marker pegs where necessary clearly marking high risk areas.

1.6 Total amount of money spent on rectifications

The cost of these rectifications have been mainly system and process costs and additional management time in the job set up phase. The increased costs of signage and hazard marking is an on going cost to the forest owners. The cost of risk assessment and control for each job depends on the complexity of the risk assessment

1.7 Detail the injury sustained or illness suffered by victim(s) or other(s) as a consequence of the contravention or, (as applicable) the *potential* for fatal injury or future fatal illness

The victim suffered fatal injuries as a result of the truck and trailer going off the forestry and over into the bank.

1.8 Detail any offer of amends or payments made to the victim(s) who sustained injury or suffered illness (the total monetary amount here is also to be included in the table at 3.12.3)

Describe the victim(s) relationship to you/the entity in question: (eg employee(s)/shareholder/director/family member/contractor, etc. If the relationship has more than one dimension, for example a family member who is also an employee and a director and/or shareholder of the business, or an employee who is a shareholder (etc) – then please describe this)

F360 had no relationship with the victim at the time of this event as he was employed by others. In May 2025 Dan Gaddum, director of F360, met with the victim's partner by way of informal restorative justice process.

Detail offer of amends or payments:

F360 will within 14 days of acceptance of this undertaking, pay to the victim's partner the sum of s2(2)(a) OIA 1982.

1.9 Detail any consultation with the victim(s) as to their views on whether an enforceable undertaking would be an acceptable alternative to prosecution

At the meeting in May 2025 referred to above at 1.8, it was understood that the victim’s partner was supportive of F360’s intent and purpose in seeking this Enforceable Undertaking aimed at improving safety on forest roads.

1.10 Detail any consultation with unions/sector/industry as to their views on whether an enforceable undertaking would be an acceptable alternative to prosecution

F360 have consulted with Forest Industry Safety Council who are supportive of the principal element of this undertaking which is aimed at improving safety on forest roads.

1.11 Detail the support provided or proposed by the person to the victim(s), other(s)

DATE	DESCRIPTION OF SUPPORT	COMMENTS
DD / MM / YEAR	See offer of amends above	
DD / MM / YEAR		
DD / MM / YEAR		
DD / MM / YEAR		
DD / MM / YEAR		
DD / MM / YEAR		
DD / MM / YEAR		
DD / MM / YEAR		
DD / MM / YEAR		
DD / MM / YEAR		
DD / MM / YEAR		
DD / MM / YEAR		
DD / MM / YEAR		

1.12 Detail any current HSMS Implemented and maintained by the person

Describe how health and safety risks are managed, including types of procedures or policies or standards:

The health and safety of staff and contract workforce has been a key focus for F360 since its establishment. F360 employs a full-time Health and Safety Manager and two Health and Safety co-ordinators. These staff work alongside the operations managers who manage each forest and are tasked with ensuring employees and contractors are operating to current rules under the 'Approved Code of Practice for Forestry Operations' (ACoP). This involves regular audits of company and contractor systems and training records and ensuring employees are fully trained and compliant. F360 encourages a culture for all people involved to openly raise concerns or identify risks and hazards so that these can be properly addressed.

F360 operate a company Health and Safety management system that is cloud-based and managed via a smart phone or tablet App. All Health and Safety Management for contractors is run through this system, including contractor inductions, work prescriptions, risk identification, management and control documentation, corrective actions. A 'Site Specific Operational Risk Register' can be generated through the system. This is a report with a scoring system to identify potential risks applicable to a particular forest site and to recommend mitigating steps for clients to consider and address these risks.

In F360's engagement with contractors, F360 also implements the following requirements to ensure that contractors appreciate and are responsible for maintaining the standards of Health and Safety management that F360 expects:

- Contractors are contractually required to perform monthly safety self-inspections and identify risks or hazards on or about any site or place where work is being carried out.
- Contractors are contractually required to ensure its operations comply with regulations including the Approved Code of Practice for Safety and Health in Forest Operations, the Best Practise Guidelines issued by relevant industry bodies, and the Health and Safety at Work (Hazardous Substances) Regulations 2017.

F360 also implements a documented Health and Safety Policy for each forest site.

F360 operates a drug and alcohol-free workplace. All employees and contractors are regularly tested on site.

1.13 Detail the level of auditing undertaken on the HSMS, including compliance audits and audit frequency

F360's Health and Safety management system incorporates the following:

- Health and Safety Audits of all forest sites managed by F360. Health and Safety audits are typically carried out by the Health and Safety Manager in regard to harvesting, aerial spraying, and log transport operations. The audit frequency ranges between two and three months, depending on previous audit performance. The audits cover such topics as checking the contractor has all the health and safety documentation available on site and understood by all staff, emergency procedures in place, first aid equipment on site and trained responders, hazards have been identified and mitigated, PPE is being worn correctly, hazardous substances are being managed correctly, and that plant and machinery meets the health and safety requirements.
- Monthly 'forest harvesting checks' by operations managers for each forest managed. Forest Operations Routine Checks are carried out typically on a fortnightly to monthly basis (depending on previous audit performance) regarding forestry and silviculture (noting that silvicultural audit frequencies vary due to the short term nature of contracts and the reduced risk compared with that of harvesting contractors). The check includes a site inspection, health and safety and PPE check, machinery inspection, environmental inspection and any corrective action required.

1.14 Detail the consultation undertaken or proposed to be undertaken, in relation to this undertaking

F360 has consulted with Discover Forestry, Forest Industry Safety Council and the University of Canterbury in relation to this undertaking.

2. General terms

The person acknowledges and commits to the general terms set forth in the sub-terms below.

2.1 Acknowledgement that WorkSafe alleges a contravention occurred as detailed in term 1.2

F360 acknowledges that WorkSafe alleges a contravention occurred.

2.2 Statement of regret that the contravention occurred

F360 sincerely regrets the incident on 27 May 2023. F360 acknowledges the impact of this incident on the victim and his family.

F360 takes very seriously its responsibility under the Act of ensuring the health and safety of both F360 employees and other persons operating within the forests managed by F360. F360 has no prior convictions for breach of the Health and Safety at Work Act 2015. F360 has cooperated fully with WorkSafe throughout the investigation.

F360 offer this undertaking as an opportunity to support the victim's family and improve the standards of work health and safety throughout the forestry industry.

2.3 Statement of the reasons why, on balance, the person considers this undertaking is the most appropriate response to the contravention

F360 understands that the key objectives and purpose of an Enforceable Undertaking is to:

- Support progressively higher standards of work health and safety in a given industry or sector for the benefit of the workers and/or work and/or workplace, the wider industry or sector, and the community;
- Provide acceptable amends to any victim(s); and
- Support WorkSafe to meet its strategic priorities.

F360 is committed to addressing the risks which led to the alleged contravention with a view to ensuring they do not arise again in future, for F360 and across all forests throughout New Zealand.

F360 believes that the intent, scope, expenditure, industry engagement and community benefits of the proposed activities will support higher standards of health and safety for the New Zealand forestry industry and believes this undertaking to be the appropriate response to the contravention because:

- Through this undertaking, F360 will dedicate the resources towards researching and developing a tailored technological solution directly addressing the health and safety hazard that arose. This is research and software that has the potential to tangibly and directly address a risk that is otherwise widespread throughout the forestry industry. The result of the research and software will be user-friendly and streamline the process for forest owners and forestry operators to ensure forest roads are compliant and are used safely. F360 is committed to ensuring the material is publicly accessible (free of charge), and will expend the necessary finances or other resources required to achieve this.
- F360 is a well-known and leading forest management provider, with more than 30 years of forest management experience and knowledge. F360 is committed to sharing its learnings from this incident so that it benefits the wider forestry industry. It is proposed that this is achieved through presentations, articles and workshops through well-known and widely attended industry forums.
- The technological solution will also have the potential for wider applications across:
 - o Other industries, such as for farm owners assessing the safety of farm roads.
 - o Internationally in other countries, such as in Australia and the United States, given the widespread use of LiDAR data and universality of the technology.

- F360's planned community engagement through Discover Forestry by providing funding to enable additional resources to be deployed expanding the program into urban (as well as rural) schools in New Zealand. Details of that proposal are attached

In addition to the above:

- F360 cooperated fully with WorkSafe in its investigation of this incident.
- F360 has no previous convictions for offences under the Health and Safety at Work Act 2015 nor the Health and Safety in Employment Act 1992.
- F360 has expressed remorse and expressed a willingness to meet and engage with the victim's family.

2.4 Statement of commitment that the behaviour, activities and other factors which caused or led to the contravention has ceased and will not reoccur

F360 is committed to addressing the risk which caused or led to the incident with a view to ensuring they will not be repeated by F360. The factors in play in this incident inform future risk assessments. The activities proposed to be undertaken by F360 will directly mitigate the risk of use of non-compliant forestry roads by developing and disseminating a tailored technological solution that is user-friendly and streamlines the process for forest owners and forestry operators to assess forest roads as compliant and ensure these roads are used safely.

This should significantly reduce the risks associated with cartage on forestry roads within the forests managed by F360, and all other forests who choose to adopt the technology developed by F360.

F360 is committed to continuous improvement and innovation in ensuring the health and safety of F360 employees, other persons operating within the forests managed by F360, and for workers in forests throughout New Zealand.

2.5 Acknowledgment of the policy published by WorkSafe for the acceptance of an undertaking

(write the name of the person(s) or entity giving the undertaking)

F360

has read and understood the Enforcement Undertaking Operational Policy.

2.6 Acknowledgement that this undertaking will be published and publicised in full

(write the name of the person(s) or entity giving the undertaking)

F360

acknowledges that the undertaking will, if accepted, be published on WorkSafe's website in full and referenced in WorkSafe material.

2.7 Statement of the person's ability to comply with the terms of this undertaking and meet the projected costs of the activities

(write the name of the person(s) or entity giving the undertaking)

F360

has the financial ability to comply with the terms of this undertaking and have provided evidence by way of

(type of evidence provided)

Financial Statement Summary Provided in attachment and subject to commercial privilege.

with this undertaking to support this declaration.

In the event of impending receivership, liquidation or sale of the entity, (write the name of the person(s) or entity giving the undertaking)

F360

will advise WorkSafe of the relevant circumstances and its capacity to comply with the outstanding terms of this undertaking.

2.8 Statement outlining any relationship between the person and any corporations, officers, employees, contractors, proposed beneficiaries of donations or scholarship or other recipient of financial benefit contained in this undertaking

F360 employs s9(2)(a) OIA 1982 who will be undertaking the University of Canterbury Masters of Forestry Science research which in turn may form the basis of software to be developed to conduct geometry assessments of forestry roads against the relevant engineering standards for road construction. F360 will pay for the fees and research costs of his Masters studies as part of this undertaking, and enable him to apply 50% of his work time to this study for 2 years.

F360 is not affiliated with any other organisation or company that is proposed to receive a financial benefit in relation to these proposed undertakings.

2.9 Statement regarding Intellectual Property

(write the name of the person(s) or entity giving the undertaking)

F360 has obtained consent from University of Canterbury in relation to the research element of this project, and in addition F360 grants WorkSafe a perpetual, non-exclusive, worldwide and royalty-free licence to use, for any purpose, all Intellectual Property Rights in relation to any material developed as a result of this undertaking. This licence includes the right to use, copy, modify and distribute the materials.

2.10 Acknowledgement that the person may be required to provide a statutory declaration

(write the name of the person(s) or entity giving the undertaking)

1. It is acknowledged that responsibility for demonstrating compliance with this undertaking rests with the person.
acknowledges that it may be necessary for WorkSafe to obtain a statutory declaration outlining details of any prior convictions (safety related) outside of New Zealand and that it will provide such declaration if required by WorkSafe

2.11 Statement of commitment from the person to participate constructively in all compliance monitoring activities for this undertaking

1. It is acknowledged that responsibility for demonstrating compliance with this undertaking rests with the person.
2. Evidence to demonstrate compliance with the terms will be provided to WorkSafe by the due date for each term.
3. The evidence provided to demonstrate compliance with this undertaking will be retained by the person until advised by WorkSafe, that this undertaking has been completely discharged.
4. It is acknowledged that any failure to meet the due date for an enforceable term will result in the matter being escalated and may lead to enforcement action.
5. It is acknowledged that WorkSafe may undertake other compliance monitoring activities to verify the evidence and compliance with an enforceable term, and cooperation will be provided to WorkSafe.
6. It is acknowledged that WorkSafe may initiate additional compliance monitoring activities, such as inspections, as considered necessary at WorkSafe's expense.
7. It is acknowledged that details of all seminars, workshops and training conducted by a non-registered training provider must be notified to WorkSafe, by email, at least one week prior. Notification should include time, date, location and the trainer/facilitator.

(write the name of the person(s) or entity giving the undertaking)

F360

3. Enforceable terms

The person acknowledges all activities set forth in the enforceable terms below must be auditable and include a date for completion and an estimated cost for each activity.

The person commits to performing the activities below diligently, competently and by the respective completion date.

3.1 A commitment by the person to perform activities that will ensure the ongoing effective management of risks to health and safety in the future conduct of its business or undertaking

Detail the management strategies to be employed that will satisfy and demonstrate to officer/s of the person that this commitment is being met:

F360 confirms its commitment to performing the activities set out in sections 3.3, 3.4 and 3.5 of this undertaking which will address the risks which led to the alleged contravention, with a view to ensuring they do not arise again in future, for F360 and for use across other forests throughout New Zealand.

In addition to these activities for the undertaking, F360 takes very seriously its responsibility under the Act and is committed to ensuring the ongoing effective management of risks to health and safety in the future conduct of its own business.

F360 will employ the following management strategies to ensure that this commitment is being met and the activities set out in sections 3.3, 3.4 and 3.5 of this undertaking are performed:

1. Appointing an Enforceable Undertaking delivery team at F360, consisting of Dan Gaddum, s9(2)(a) OIA 1982 and s9(2)(a) OIA 1982 and other suitably qualified people from time to time as are necessary to support the delivery of the project.
2. Conducting a quarterly Enforceable Undertaking project progress meeting to monitor ongoing progress of the community contribution, research project, development works, and dissemination of the tool.
3. Reporting progress update to Board of Directors monthly.
4. Ongoing reporting to WorkSafe's Enforceable Undertaking team as requested, and fully cooperating with WorkSafe's monitoring process.

3.2 A commitment by the person to disseminate information about this undertaking to workers, and other relevant parties

(this may include to work health and safety representatives and in the organisation's annual report, if applicable)

Dissemination will be achieved by doing the following:

F360 will disseminate information about this undertaking to F360 employees, other persons operating within the forests managed by F360, and other relevant parties as set out below whereby (in section 3.4.1) we will make the results of the research publicly accessible and promote it at conferences and in publications (in section 3.4.3) facilitate online industry workshops to educate and train industry in the software capability and use and (in section 3.4.4) we will engage with Forest Industry Safety Council/Safetree™ to promote the uptake and use of the research and the system by the industry.

Once software is developed, facilitating online industry workshops within 6 months of development to educate and train industry in its capability and use.

Dissemination will occur by: DD / MM / YEAR

3.3 Activities to be undertaken to promote the objectives of the health and safety legislation that will deliver benefits for workers and/or work and/or the workplace

[illegible]

3.4 Activities to be undertaken to promote the objectives of the health and safety legislation that will deliver benefits for the wider industry or sector

ACTIVITIES	COST (\$)	TIMEFRAME
Outline the activity and the expected outcomes		
3.4.1 Make the results of the research publicly accessible and promote it at conferences and in publications. (Please refer to Appendix A for full description.)	25,000.00	January 2028
(Subject to research findings from Activity 3.3.1 determining if private LiDAR (Light Detection and Ranging) data is required, and Activity 3.3.3 developing road assessment software on this basis)	0	January 2028
3.4.2 Purchase one or more LiDAR capable drones and make available for use by the wider industry. (Please refer to Appendix A for full description.)		
3.4.3 Within 6 months of development of the software, facilitate online industry workshops to educate and train industry in its capability and use. These workshops will be developed inhouse at F360 at its cost.	0	January 2028
3.4.4 Engage with Forest Industry Safety Council/Safetree™ to promote the uptake and use of the system by the industry. Sponsorship to ensure this occurs.	20,000.00	January 2028
Total estimated cost of benefits for industry	\$ 45,000.00	

3.5 Activities to be undertaken to promote the objectives of the health and safety legislation that will deliver benefits for community

ACTIVITIES	COST (\$)	TIMEFRAME
3.5.1 Donate to Discovery Forestry to support:	50,000.00	January 2028
- education programmes which engage school students about forestry as a profession and safety in forests, including hands on learning, field trips, school presentations, careers materials and student inspiration; and		
- Wāhine in Forestry, which provides professional development and networking opportunities with professional foresters and other members of the forest sector; and		
- Urban Forestry sustainable schools program; and		
- Including In kind contribution of F360 people attending the events with schools and promoting the industry.		
(Please refer to Appendix A for full description.)		
Total estimated cost of benefits for the community	\$ 50,000.00	

3.6 Where WorkSafe considers appropriate in the circumstances, undertaking a SafePlus Onsite Assessment

Further information about SafePlus can be found here: worksafe.govt.nz/about-us/who-we-are/our-priorities/safeplus/about-safeplus

- 3.6.1 The suitability of a SafePlus assessment will be determined by the Enforceable Undertakings Panel when your application is considered.
- 3.6.2 In addition to the total cost below (3.7) all costs of a SafePlus Onsite Assessment will be met by the person making this undertaking.
The fee charged for an Onsite Assessment is a commercial matter between your business and the SafePlus Accredited Assessors that you commission.

3.7 Minimum spend

(write the name of the person(s) or entity giving the undertaking)

- 3.7.1 F360
- commits to a minimum spend of

s9(2)(a) OIA 1982

 for this undertaking.

(write the name of the person(s) or entity giving the undertaking)

- 3.7.2 F360
- agrees to spend any residual amount arising from an original term not being completed or being less costly than estimated in this undertaking.
Agreement on how to spend this residual amount will be sought from WorkSafe

(write the name of the person(s) or entity giving the undertaking)

- 3.7.3 F360
- Acknowledges the minimum spend comprises of the:

TOTAL COST	MINIMUM SPEND
Financial amends paid to victims (if applicable)	s9(2)(a) OIA 1982
Benefits to workers/others	180,000.00
Benefits to industry	45,000.00
Benefits to community	50,000.00
Estimated cost of the undertaking Plus GST (if any)	s9(2)(a) OIA 1982

4. Execution

Authorised representative of an organisation

Undertaking given by (name of authorised representative)
Daniel Timothy Gaddum
In my own right and in my capacity as (eg President, Chairperson, etc)
Managing Director
of (eg organisation name) Forest360 Limited
On the (day) 16 day of (month) 09, 20 25 (year).

Signature of the person giving the undertaking:
s9(2)(a) OIA 1982

Undertaking given before me:
Witness name: James Chapman
Witness address:
s9(2)(a) OIA 1982
Witness signature:
s9(2)(a) OIA 1982

5. Acceptance

This undertaking is accepted by WorkSafe.

On the (day) 17 day of (month) September, 20 (year) 25
Signature of person accepting the undertaking:
s9(2)(a) OIA 1982
Name of WorkSafe representative: (General Manager, WorkSafe (or delegate))

Tracey Conlon
Undertaking given before me:
Witness name: Allison Houston
Witness address:
s9(2)(a) OIA 1982

Witness signature:
s9(2)(a) OIA 1982

Appendix A – Activities to be undertaken to promote the objectives of the health and safety legislation that will deliver benefits

3.3 Activities to be undertaken to promote the objectives of the health and safety legislation that will deliver benefits for workers and/or work and/or the workplace

3.3.1 Sponsor the undertaking of a University of Canterbury Master of Forestry Science Research Project to identify a method for conducting geometry assessments of existing forestry roads against relevant engineering standards for road construction.

- (a) Due to the extended timeline of the forestry cycle, many forests throughout New Zealand contain forest roading infrastructure that was constructed several years (often decades) before the forest roads are subsequently used for harvesting. These existing roads present a safety risk if these were not originally designed for the purpose of harvesting, were constructed in accordance with outdated engineering standards, or otherwise do not comply with current engineering standards for safe road construction. Forest roads are owned by a variety of entities from small private owners to large corporates across many regions of New Zealand. Importantly, the roads are frequently used by workers and PCBUs who were not involved in the design and construction of those roads.
- (b) Currently in the New Zealand forestry industry, there is no existing methodology for users of existing forestry roads to easily and effectively conduct geometry assessments of these roads against current and relevant engineering standards for road construction. The activities proposed by F360 as part of this enforceable undertaking seek to develop such a methodology and create a tailored technological solution for this risk that can be used throughout the forestry industry, and beyond.
- (c) Firstly, F360 will fund the undertaking of a University of Canterbury Master of Forestry Science Research Project. The student for this Research Project will be s9(2)(a) OIA 1982, who is currently employed by F360 as a GIS (Geographic Information System) and Technology Specialist. He has been identified as a deserving and capable candidate for this research because of his expertise, industry experience and enthusiasm for innovative digital technologies in forestry. He will be supervised by s9(2)(a) OIA 1982, Lecturer and Director of Studies at the University of Canterbury School of Forestry.
- (d) The research will consider the utility of existing LiDAR-based data publicly available through the LINZ National Elevation Programme in investigating methods to conduct geometry assessments of existing forestry roads. LiDAR (Light Detection and Ranging) is a technology using laser sensors mounted on aircraft that fly over a landscape to capture a 3D view of the land. In summary, the research hypothesis is that LiDAR data can be used to map existing forestry roads and identify the geometry of these roads. The research is necessary to test this hypothesis, and assess the accuracy, reliability and accessibility of a method that uses existing, publicly available LiDAR data. Depending on preliminary findings, the research may also consider (in the alternative) the utility of LiDAR-data obtained by private survey.
- (e) In addition to sponsoring the fees of the Masters project, F360 will allocate 50% FTE of s9(2)(a) OIA 1982 time for two years for this purpose (that overhead not included in this cost). F360 has committed such resource and is dedicated to delivering this initiative. In addition to employee time, there will be additional travel costs for delivery of the activities.

3.3.2 Purchase one LiDAR capable drone for use in the research project (Activity 3.3.1)

- (a) Depending on preliminary findings, the research may also consider in the alternative the utility of LiDAR-data obtained by private survey. This will be pursued if it becomes apparent during the research project that the existing LiDAR-based data publicly available through the LINZ National Elevation Programme is not suitably accurate to be used for road geometry assessments. LiDAR-data obtained by private survey could be more accurate. F360 will purchase a LiDAR capable drone for this purpose.
- (b) LiDAR capable drones can cost up to NZ\$50,000 and will need to be transported across the country and operated by an experienced drone pilot.

3.3.3 Develop road assessment software which allows users to perform geometry assessments of forestry roads against the relevant engineering standards for road construction.

- (a) Once the UC research is complete, F360 will fund the development of software designed to analyse LiDAR data uploaded by the user and produce an assessment output identifying any areas where the

forest road is non-compliant with the relevant engineering standards for road construction. The relevant engineering standards to be considered include the current Approved Code of Practice for Safety and Health in Forest Operations (December 2012), and the New Zealand Forest Owners Association Incorporated New Zealand Forest Engineering Manual (February 2020) and New Zealand Forest Road Engineering Manual: Operators Guide (February 2020).

- (b) F360 does not have in-house capability to develop this road assessment software. F360 will engage an external software developer to complete this work. The estimated cost for this is as yet uncertain pending the results of the research. For that reason, costing of this element of the undertaking is provisional.
- (c) The brief for the software developer will be that the road assessment software must be user-friendly and streamline the process for forest owners and forestry operators. F360 commits to ensuring the tool can be publicly accessible (free of charge).
- (d) There will also be internal costs to oversee the software development, including s9(2)(a) OIA 1982 involvement and input of the findings of his research project to inform the design of the software. F360 will ensure it is tested by F360 staff and any other interested parties who are in the forest and operations management roles likely to use this tool.

3.4 Activities to be undertaken to promote the objectives of the health and safety legislation that will deliver benefits for the wider industry or sector

3.4.1 Make the road assessment tool publicly accessible and promote the road assessment software.

- (a) The results of the UC research will be publicly available, with a timeframe for delivery by May 2027.
- (b) After the completion of this research with the University of Canterbury, F360 intend for the research findings will to form the basis of development work funded by F360 for a tool, such as software or app development, which may be widely adopted and used across different forest roads and throughout the industry. It is not possible to determine that cost at this point pending the results of the research but F360 commits up to \$100,000 for that purpose. The timeframe for developing the road assessment software is dependent on research results, but for the purpose of this application F360 proposes a timeframe of 9-12 months.
- (c) F360 is a well-known and leading forest management provider, with more than 30 years of forest management experience and knowledge and a respected reputation within the New Zealand forestry industry. We regularly attend and participate in forestry industry events, conferences and forums. F360 are committed to sharing its learnings from this incident and disseminating the methodology derived from the research (in advance of any software development) so that methodology is widely adopted throughout and benefits the wider forestry industry. It is proposed that this is achieved through:
 - (i) A presentation at one or more of the following:
 - the New Zealand Farm Forestry Association Annual Conference. NZFFA are a network of tree growers each practicing sustainable land management in rural New Zealand. NZFFA estimate members own or manage up to 100,000 hectares of forest.
 - the New Zealand Institute of Forestry Annual Conference. Membership is open to those who work in all aspects of forestry, including forest management and utilisation, processing, research, education and consulting.
 - the annual ForestTECH Event. Run annually since 2007, this event is a technology event for forest resource managers, remote sensing, GIS and mapping specialists, inventory foresters, and tree crop and forest establishment managers from across Australasia.

F360 will produce the relevant presentation and offer to present at all of these conferences, although acceptance of those offers to speak rests with the conference organisers. F360 is confident that the subject-matter will be of relevance and attractive to conference organisers
 - (ii) Providing an articles for publication about the research results on any relevant forums and newsletters provided by the above named organisations, and the Scion (New Zealand's leading

Crown Research Institute in forestry, industrial biotechnology and advanced manufacturing)
Tools For Foresters online forum.

- (d) As noted at paragraph 1 above, we have not included the internal costs to prepare for, travel to, attend and present at these events in the application, however we estimate these costs to be around \$25,000.

3.4.2 Purchase one or more LiDAR capable drones and make available for use by the wider industry.

If the research determines the appropriate method should utilise LiDAR-data obtained by private drone survey, F360 commits to the purchase of one or more LiDAR capable drones that can be used by the wider forestry industry in conjunction with using the road assessment software. The estimated cost of a LiDAR capable drone is \$50,000. F360 are committed to ensuring the software is publicly accessible. For third party forestry personnel who will have access to the software as part of this undertaking, but no access to a suitable drone, for at least the duration of this enforceable undertaking the F360 drone will be made available to third parties free of charge, with the cost of the F360 operator oncharged.

3.4.4 Engage with Forest Industry Safety Council/Safetree™ to promote uptake and use of the system by industry

F360 will engage with Safetree™ to promote the uptake and use of the research and the system by the industry.

It will sponsor Safetree™ in the sum of \$20,000 to ensure this occurs.

3.5 Activities to be undertaken to promote the objectives of the health and safety legislation that will deliver benefits for community

3.5.1 Donate to Discover Forestry to support:

- (a) Education programmes which engage school students about forestry as a profession and safety in forests, including hands on learning, field trips, school presentations, careers materials and student inspiration; and
- (b) Wāhine in Forestry, which provides professional development and networking opportunities with professional foresters and other members of the forest sector.

The Discover Forestry proposal is **attached** with this undertaking.