Tree Care Operations Standard
Small Business Advocacy Review Panel—Small Entity Representative
Issues Document
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1. BACKGROUND

Congress created the Occupational Safety and Health Administration (OSHA) to assure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance. Based on the preliminary research described below, OSHA believes that there are currently unsafe or hazardous conditions for working men and women in the tree care industry that could be improved through federal regulation.

Specifically, OSHA's preliminary research has found that the tree care industry has a high rate of fatalities (estimated at 1 in 1,000 tree trimmers). This fatality rate is nearly 30 times higher than the national average for all workers (reported at 3.5 per 100,000). Accordingly, OSHA is considering a potential tree care operations rulemaking to address the hazards that can be associated with work in this industry. This Small Business Advocacy Review Panel is a preliminary step in exploring the potential for such a standard.

The agency currently applies a patchwork of standards and the OSH Act's general duty clause, 29 U.S.C. 654(a)(1), to attempt to address the serious hazards in this industry. However, the relatively high frequency of fatalities and injuries for tree care workers indicates that further regulation may be needed to improve the safety of this work environment. We are interested in your views on whether regulation is needed to address hazards that may arise during tree care operations.

OSHA's potential tree care standard is based in part on, and is largely consistent with, the Virginia Occupational Safety and Health Program Tree Trimming Operations regulation.[1] The potential standard is also largely consistent with tree care regulations promulgated by Oregon, California, Maryland, and Michigan, as well as the American National Standards Institute (ANSI) Standard for Arboricultural Operations – Safety Requirements (ANSI Z133-2017). The ANSI standard is a voluntary consensus standard for the tree care industry.

The scope of OSHA's potential standard would include tree trimmers and pruners who engage in tree care operations work daily, as well as companies, municipalities, and organizations that occasionally perform tree care operations. The work performed to prune, repair, maintain or remove trees, as well as training and equipment use, would be regulated by this potential standard. The on-site support of tree care (for example, performing on-site groundwork, vehicle control, or operating equipment in connection with tree care) would also be covered under this potential standard.

OSHA has preliminarily determined the following:

- This rulemaking is preliminarily estimated to affect approximately 350,000 employees employed at about 53,000 establishments. Most of the affected workers are believed to be employed in Landscaping Services (NAICS 561730)[2], but workers occasionally perform tree care operations across many industries, municipalities, and organizations.
- The tree care industry's fatality rate for tree care operations makes tree trimming and pruning among the most hazardous occupations in the country. The potential standard is intended to address the underlying causes of between 35 and 41 fatalities and about 1,110 non-fatal occupational injuries a year and to improve safety among an affected population of about 41,000 professional tree trimmers and pruners.[3]
- The total costs of this potential standard are estimated to be about $106 million annually. Most of these costs would be borne by small entities ($94 million), including very small entities that have fewer than 10 employees ($72 million).
- The Preliminary Initial Regulatory Flexibility Analysis (PIRFA) estimates average costs for the industry sectors that would be affected by the potential standard. For small

[1] Virginia Occupational Safety and Health Program (VOSH) Tree Trimming Operations regulation, 16 Va. Admin. Code ch. 73 available at http://law.lis.virginia.gov/admincode/title16/agency25/chapter73/.

[2] The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. See https://www.census.gov/eos/www/naics/ for more information.

[3] OSHA has not made any determination of how many fatalities a tree care standard would likely prevent. The numbers presented here show all fatalities among the affected entities engaged in the relevant activities. A potential standard is unlikely to prevent every fatality or injury, and the potential standard will ultimately be informed by additional factors such as feasibility.

entities, average costs do not exceed 1 percent of revenues, but do exceed 10 percent of profits for one industry sector (Professional, Scientific, and Technical Services). For very small entities (those employing fewer than 10 employees), average costs do not exceed 1 percent of revenue, but do exceed 15 percent of profits for some sectors.

- The PIRFA also estimates costs for some model entities in the Landscaping Services industry. For some model entities, the costs of implementing the potential standard may exceed 50 or even 100 percent of profits (See PIRFA Tables VII-32 – VII-35).
- For the small entities in the Administrative and Support Services sector, where the majority of tree trimmers and landscapers are employed, OSHA estimates an average annualized cost per entity of $1,799 (see PIRFA Table VII-27). OSHA estimates that very small entities in this sector, those with fewer than 10 employees, would incur $1,729 in average annualized costs per entity (see PIRFA Table VII-28). The costs of implementing the standard for any given entity can vary widely depending on a number of factors including the number of employees and number of tree care jobs, as well as existing qualifications and practices.
- Almost no landscapers—fewer than five percent—are expected to continue to perform tree care operations under the potential tree care standard (see PIRFA Table V-1).

OSHA has convened a Small Business Advocacy Review (SBAR) Panel under the Small Business Regulatory Enforcement Fairness Act (SBREFA). The SBAR Panel has several purposes. First, the Panel provides an opportunity for affected small businesses and small local government entities (Small Entity Representatives or SERs) to provide comments to OSHA in advance of a formal rulemaking process. Second, by reviewing the potential provisions that might be included in a Tree Care Operations standard and the estimates of the potential impacts of that rule, SERs and the Panel can offer recommendations to OSHA on ways to tailor the rule to make it more cost effective and less burdensome for affected small entities. Third, early comments permit identification of different regulatory alternatives the agency might consider. Finally, the SBAR Panel report can provide specific recommendations for OSHA to consider on issues such as reporting requirements, timetables of compliance, and whether some groups, including small entities, should be exempt from all or part of any proposed rule.

This document contains a brief discussion of each topic OSHA is considering including in a proposed standard and initial estimates of the unit costs of complying with those provisions. This document also presents potential regulatory alternatives (both those that reduce burdens on small entities and are considered significant alternatives under the Regulatory Flexibility Act (RFA) and those that may increase burdens) and questions for SERs. This issues document is meant to serve as both a summary of the longer PIRFA and as a discussion guide for SERs participating in the teleconferences.

OSHA welcomes comment on all aspects of the PIRFA, but this document focuses on specific areas of interest to the SBAR Panel. This document does not include discussions of wage rates or detailed calculations of total cost. If costs are incurred to purchase a good or service, OSHA presents the estimated dollar cost of that purchase, but where costs are accounted for in additional time requirements from employees, this presentation has largely focused on the estimated time demands. The full calculations of costs, tables, and references are found in the PIRFA. Throughout this document, the Panel has listed issues, along with questions, for which the Panel would appreciate SER input. However, SERs should feel free to bring up any relevant issues they would like the Panel to consider.

This document includes alternatives that may have the potential to meet the agency's statutory objectives, be feasible, and reduce the burden on small entities. The agency is presenting these alternatives consistent with the requirements of section 603(c) of the RFA, and to solicit feedback to assist the agency in the decision-making process. We welcome your views on the technological and economic feasibility of alternatives and the draft regulatory framework. In the case of a potential provision that would impose a requirement and an alternative that would not impose a requirement, SERs should feel free to suggest more nuanced alternatives that lie somewhere in the middle of these options; or to suggest entirely different means of addressing the hazards potential regulatory provisions are designed to address.

The OSH Act imposes a number of requirements OSHA must satisfy before adopting a standard. Among other things, a safety standard must be highly protective, materially reduce a significant risk to workers, be technologically feasible, and be economically feasible. It is important to note that the PIRFA is only one of several analyses OSHA would conduct in developing a proposed standard. OSHA has not yet prepared a health effects analysis, a preliminary risk assessment, or a technological feasibility assessment, and OSHA's economic feasibility analysis would be further refined to incorporate additional research and feedback from this Panel. We seek feedback that would help to inform any future analyses related to a potential tree care standard. We appreciate the contribution that your expertise and experience bring to the discussion of potential regulatory provisions to protect workers who engage in tree care activities, as well as to OSHA's understanding of the feasibility of requiring such provisions.

2. Scope and Affected Entities

Scope

OSHA has preliminarily determined that this potential standard would cover workers who prune, repair, maintain, or remove trees, and provide on-site support for tree care operations.

The potential standard would not apply to the use of earth-moving equipment to mechanically remove trees. Workers who would be covered by this potential standard (i.e., tree trimmers and

pruners) generally are not exposed to the hazards associated with using earth-moving equipment to mechanically remove trees. That type of work is generally done during activities such as site clearance or logging. OSHA notes that the manual felling of trees and other tree care operations would continue to be covered by a potential tree care operations standard even though earth-moving machinery may also be used at a site to remove trees. For example, if, after using an excavator to fell a tree, workers engage in limbing or bucking that tree, the limbing or bucking would be considered a tree care operation. As another example, a potential standard would apply to the manual felling of a tree to clear a site for the building of a home.

The potential standard would also not apply to the pruning, repairing, maintaining, or removing of shrubs, hedges, and similar bushes, or the mowing of lawns. This work is typically done on residential or commercial properties by landscaping firms, not by tree care firms.

This potential standard would cover tree care operations even if such work is not a routine part of the worker's job or the main activity performed by employers in a given NAICS industry. If the type of work performed meets the definition of tree care operations, the employer's performance of such work would fall under the scope of this draft regulatory framework. OSHA has preliminarily determined that the main occupations affected by a potential tree care operations standard would include landscaping and groundskeeping workers (landscapers); pesticide handlers, sprayers, and applicators, vegetation (spray technicians); tree trimmers and pruners (tree trimmers); and crane operators. We are interested in understanding if any other occupations would be significantly impacted by a potential tree care standard.

OSHA has preliminarily determined that 99 percent of the entities that engage in tree care operations and that would be impacted by a potential tree care standard are small entities, and that 83 percent are very small entities, with fewer than 10 employees. Because this potential standard would primarily impact small or very small entities, we are very interested in your views on whether the potential standard and individual provisions of the potential standard would be necessary and feasible, as well as on whether they would appropriately target potential hazards that you experience as you perform tree care operations.

OSHA has preliminarily estimated that all workers with the job title tree trimmers and pruners (BLS Standard Occupation Code (SOC) 30-3013)[4] are affected by the potential draft standard. Furthermore, workers with the job title landscaping and groundskeeping workers (SOC 30-3011) are affected where they perform tree care operations.

[4] The 2018 Standard Occupational Classification (SOC) system is a federal statistical standard used by federal agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. All workers are classified into one of 867 detailed occupations according to their occupational definition. See https://www.bls.gov/soc/ for more information.

Further, while several NAICS industries employ SOC 53-3012 Pesticide Handlers, Sprayers, and Applicators, Vegetation, OSHA has preliminarily estimated that only those employed in NAICS 561730 Landscaping Services are likely to fall within the scope of a potential tree care operations standard. Spray technicians are generally subject to state level licensing requirements, do not climb trees, and do not work with the types of dangerous equipment used during tree care operations. Thus, OSHA did not include spray technicians that are employed in other NAICS industries for the purposes of estimating the costs of complying with the potential standard.

Similarly, while several NAICS industries employ SOC 53-7021 Crane and Tower Operators, OSHA has preliminarily estimated that only those employed in NAICS 561730 Landscaping Services are likely to fall within the scope of a potential tree care operations standard. Thus, OSHA did not include crane operators that are employed in other NAICS industries for the purposes of estimating the costs of complying with the potential standard.

Finally, for the purposes of estimating the costs of a potential tree care standard, OSHA preliminarily estimated that about 35 percent of firms and establishments that employ landscapers currently perform tree care operations based on reported receipts in the U.S. Economic Census. OSHA estimated that, unless a landscaper is working with a tree trimmer, under the potential standard they will opt not to continue to perform tree care operations.

The potential standard would require a knowledgeable and experienced employee to perform certain tasks, such as the conduct of a Job Hazard Analysis (JHA, discussed below), and OSHA preliminarily believes that landscaping workers do not have this knowledge and experience. Based on this preliminary belief, OSHA estimates that approximately 193,000 landscapers in NAICS 561730 Landscaping Services and 104,000 landscapers in other NAICS industries would choose to cease performing tree care operations under a potential standard.

QUESTIONS FOR THE SERs

1. Is it appropriate to include in the scope of a potential standard all industries and workers that the agency's draft regulatory framework currently identifies as within the scope? If so, please explain why.
2. Should any industries or workers currently included in the scope of the potential standard be excluded? If so, please explain why.
3. Has OSHA failed to identify any industries or workers that would or should be included, but are not? Please identify them and give your reasons as to why they would or should be included.
4. Should spray technicians be covered by a tree care operations standard? Why or why not?
5. Should crane operators outside the landscaping services industry be included in the scope of a tree care operations standard? Why or why not?

6. The potential standard would not apply to the pruning, repairing, maintaining, or removing of shrubs, hedges, and similar bushes, or the mowing of lawns. Are these terms readily understood in your industry? Should OSHA add definitions of "tree," "shrub," "bush," and "hedge" to a potential standard? If so, how should OSHA define such terms?
7. The potential standard would not apply to the use of earth-moving equipment to mechanically remove trees. Do you agree with this potential exclusion? Why or why not?
8. How should OSHA define "earth-moving equipment," and what types of equipment should be included in the definition?
9. The agency welcomes suggestions on how to clarify anything you find confusing or potentially confusing.

Affected Entities

The vast majority of firms in the industries affected by this potential standard are small entities. Over 90 percent of affected firms are small by the Small Business Administration's (SBA) and RFA definitions and these firms employ over 90 percent of workers in the relevant occupations. Over 80 percent of firms employ fewer than 10 employees. Firms with fewer than 10 employees account for between 70 and 90 percent of workers in the relevant occupations. Table 1 summarizes the number of establishments, firms, and employees in the scope of this potential tree care operations standard, the profile for entities that are small by SBA/RFA definition, and the profile for entities the employ fewer than 10 employees. Full calculations, estimates, information on how small entities are defined, and other additional details are discussed in depth in Section V- Potentially Affected Entities in the PIRFA.

Table 1. Firms, Establishments, and Employees in Scope of a Potential Tree Care Operations Standard, Sector Level

		All Potentially Affected						Potentially Affected SBA/RFA Defined Small						Potentially Affected <10 Employees					
		Firms	Estab	Employees				Firms	Estab	Employees				Firms	Estab	Employees			
NAICS	Industry			Tree Trimmers	Land-scapers	Spray Tech	Crane Op			Tree Trimmers	Land-scapers	Spray Tech	Crane Op			Tree Trimmers	Land-scapers	Spray Techs	Crane Op
11	Agriculture, Forestry, Fishing and Hunting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Mining, Quarrying, and Oil and Gas Extraction	8	9	0	25	0	0	8	8	0	22	0	0	5	5	0	14	0	0
22	Utilities	53	272	890	162	0	0	50	86	263	98	0	0	16	16	28	71	0	0
23	Construction	1,062	1,072	1,010	5,908	0	0	1,051	1,053	982	5,806	0	0	884	884	807	4,745	0	0
31-33	Manufacturing	296	298	0	834	0	0	296	297	0	829	0	0	114	114	0	391	0	0
42	Wholesale Trade	202	232	0	950	0	0	201	210	0	860	0	0	151	151	0	598	0	0
44-45	Retail Trade	317	390	0	3,473	0	0	314	335	0	2,996	0	0	240	241	0	2,162	0	0
48-49	Transportation and Warehousing	104	114	0	374	0	0	104	108	0	340	0	0	82	82	0	244	0	0
51	Information	25	28	0	79	0	0	25	26	0	72	0	0	21	21	0	55	0	0
52	Finance and Insurance	44	64	0	149	0	0	44	49	0	115	0	0	37	37	0	84	0	0
53	Real Estate and Rental and Leasing	1,249	1,497	0	9,666	0	0	1,230	1,301	0	8,276	0	0	1,131	1,137	0	7,033	0	0
54	Professional, Scientific, and Technical Services	195	211	0	3,639	0	0	193	197	0	3,482	0	0	154	154	0	2,901	0	0
55	Management of Companies and Enterprises	189	394	49	457	0	0	4	4	1	12	0	0	6	6	1	12	0	0
56	Administrative and Support Services	40,136	41,401	36,760	202,368	9,720	280	39,906	40,083	35,893	195,164	9,522	274	35,270	35,276	31,749	171,284	8,445	243
61	Educational Services	323	479	40	2,804	0	0	255	267	15	1,450	0	0	105	105	5	531	0	0
62	Health Care and Social Assistance	289	426	0	3,481	0	0	258	305	0	2,396	0	0	130	130	0	757	0	0
71	Arts, Entertainment, and Recreation	2,851	3,105	60	33,523	0	0	2,833	2,949	55	31,244	0	0	1,912	1,916	31	17,013	0	0
72	Accommodation and Food Services	730	906	0	6,363	0	0	719	775	0	5,173	0	0	465	467	0	3,010	0	0
81	Other Services (except Public Administration)	1,076	1,261	80	8,714	0	0	1,064	1,143	72	7,826	0	0	861	872	56	5,872	0	0
99	State and Local Government	977	977	1,385	18,988	0	0	914	914	1,188	15,355	0	0	103	103	134	1,730	0	0
Total		**50,126**	**53,136**	**40,274**	**301,957**	**9,720**	**280**	**49,469**	**50,110**	**38,469**	**281,516**	**9,522**	**274**	**41,687**	**41,717**	**32,811**	**218,507**	**8,445**	**243**
Percent Small or Very Small								**99%**	**94%**	**96%**	**93%**	**98%**	**98%**	**83%**	**79%**	**81%**	**72%**	**87%**	**87%**

Sources: See the PIRFA for the references
Note: Totals may not sum due to rounding

APPLICABLE ALTERNATIVES AND OPTIONS THAT WOULD CHANGE THE INDUSTRY PROFILE

- *Exclude Spray Technicians from tree care operations standard (PIRFA Alternative 1)*

  This alternative would completely remove spray technicians from the scope of a potential standard. OSHA has preliminarily determined that, when spray technicians perform work on trees, they work from the ground (e.g. spraying trees from the ground, inserting nutrients into the tree via the trunk, etc.) and that they do not face the same tree care-related hazards as workers engaged in tree trimming and pruning.

  OSHA estimates that this alternative would remove 9,720 workers from the scope of the potential standard and reduce costs by approximately $1.5 million annually.

- *Exclude Line-Clearance Tree Trimming Covered by the Electric Power Generation, Transmission and Distribution Standard, 29 CFR 1910.269, from tree care operations standard (PIRFA Alternative 2)*

  Under this alternative, employers performing line-clearance tree trimming covered by the Electric Power Generation, Transmission and Distribution Standard would not need to follow the non-electrical provisions of a potential standard. (The potential standard (either in its current form or with the alternative) would not impact employers' existing duties with respect to protections against electrical hazards, see discussion below). The Electric Power Generation, Transmission and Distribution Standard already contains some protections against certain non-electrical hazards associated with line-clearance tree trimming. OSHA notes, however, that it preliminarily believes that a potential tree care operations standard would provide more comprehensive protection for, and better protect, employees engaged in line-clearance tree trimming against non-electrical tree care related hazards, and would result in decreased injuries and deaths for those employees.

  The cost of this alternative was not quantified but the agency expects it would reduce costs because fewer employees and jobs would be affected by the requirements of this potential standard.

- *Include Fruit and Tree Nut Farming (Regulatory Option 1)*

  This alternative would bring NAICS 1113 Fruit and Tree Nut Farming under the scope of a potential tree care operations standard. While these establishments may undertake similar activities to tree care operations, OSHA identified few, if any,

fatalities and injuries related to tree care operations in the Fruit and Tree Nut Farming industry.

OSHA preliminarily estimated that this alternative would bring approximately 19,000 additional establishments with 635,000 workers under the scope of this potential standard and add an additional $70 million to the total cost of this potential standard.

- *Include work tasks using chippers, stump grinders, chainsaws, and backpack power units, regardless of whether the employer is performing tree care or on-site activities done in support of tree care (Regulatory Option 2)*

  This option would apply all provisions of a tree care operations standard to all uses of chippers, stump grinders, chainsaws, and backpack power units, regardless of whether the equipment or tools are being used for tree care or on-site activities in support of tree care.

  OSHA has not estimated the cost impact of this option, but the agency believes this option would bring additional landscapers, construction site preparation, brush clearance, and, in all probability, other industries and types of work under the scope of a tree care standard.

- *Include brush clearance in the scope of the potential standard (Regulatory Option 3)*

  This option would expand the scope of the potential standard to include brush clearance.

  OSHA has not estimated the cost impact of this option, but this option would increase the number and type of entities potentially covered including bringing construction site preparation and additional landscapers under the scope of a tree care operations standard. If OSHA were to include brush clearance in the scope, the agency would also likely consider including additional provisions for rotary mowers (i.e., brush hogs) and similar equipment commonly used in brush clearance.

QUESTIONS FOR THE SERs

1. Should OSHA include spray technicians in the scope of this potential standard for some or all provisions? Why or why not?
2. Do you agree with OSHA's preliminary determination that spray technicians do not face the same tree care-related hazards during their work as workers engaged in tree trimming and pruning?

3. If you think spray technicians should be included in a tree care operations standard, are there particular provisions to which they should or should not be subject, in your opinion?
4. Should OSHA include employees covered by the Electric Power Generation, Transmission and Distribution Standard in the scope of a tree care operation standard? Why or why not?
5. OSHA invites comments from SERs concerning the hazards facing employees engaged in line-clearance tree trimming during tree care operations.
6. Should employers who are using equipment and tools generally used in tree care operations (chippers, stump grinders, chainsaws, and backpack power units) be subject to any or all provisions of this standard even if they are using such equipment outside of a tree care operation? If so, should a potential OSHA requirement include any equipment other than the equipment listed above? Should there be any limitations to the types of work that would be covered when using this equipment?

OTHER APPLICABLE SCOPE ALTERNATIVES

OSHA has explored a few additional alternatives that could reduce the scope of a tree care operations standard and seeks input from the SERs.

- *Limit the scope of tree care operations by defining "tree" (PIRFA Alternative 3)*

  This alternative would add a definition of "tree" to the potential standard and would exclude some work from the scope of the potential rule based on tree height and/or diameter. Some pruning and trimming of small trees can be performed from the ground, which may limit some hazards. However, work on small trees may expose workers to hazards that a potential tree care standard could address, such as hazards from using tools and equipment (chainsaws and chippers, for example).

- *Exempt the pruning, repairing, or maintaining of a tree when that work is performed*
  a. *entirely from the ground (except for manual felling of a whole tree) (PIRFA Alternative 4); or*
  b. *entirely below a certain trigger height (except for manual felling of a whole tree) (PIRFA Alternative 5)*

  These alternatives would exempt tree care operations (but not on-site support activities) when that work is performed entirely from the ground or below a certain height (e.g. four feet), but would not exempt the manual felling of a whole tree.

These alternatives would remove many employees and activities from the scope of the standard—for instance, landscapers who only perform pruning and trimming from the ground, spray technicians who work from the ground to spray trees, etc. While these workers do not face hazards associated with tree climbing, working from aerial lifts, and working with dangerous tools while aloft, OSHA is concerned that these alternatives could leave many employees exposed to hazards from falling limbs, electrical hazards, and other hazards that a potential tree care operations standard would likely address.

QUESTIONS FOR THE SERs

1. In what ways do the hazards from tree care operations performed on small trees differ from the hazards associated with larger trees?
2. What minimum tree height and/or diameter might provide an appropriate scope limit?
3. Do you agree with the idea of restricting the scope of a tree care operations standard based on the size of a tree? If so, OSHA welcomes any suggestions on how to define a tree that would allow for clear delineation of which operations would be covered by a potential standard and which would not.
4. Do you think OSHA should exempt tree care operations that are performed wholly from the ground or entirely below a certain trigger height? Why or why not?
5. Should OSHA add definitions of "tree," "shrub," "bush," and "hedge" to a potential standard? If so, how should OSHA define such terms?

3. REGULATORY SUMMARY, ALTERNATIVES, AND UNIT COSTS

The following paragraphs discuss some of the potential requirements of the draft regulatory framework for this potential standard. For each provision, we also provide information on the unit costs of, as well as alternatives to, the provisions that OSHA is considering.

OSHA notes that, in general, generally applicable standards (such as the Noise Standard or the Personal Protective Equipment (PPE) standard) would continue to apply to tree care operations if OSHA moves forward with a potential standard. The potential tree care standard would note specifically when generally applicable provisions do not apply. For example, OSHA might determine that a particular requirement in the PPE standard is not appropriate for tree care work. If OSHA makes such a determination, this would be incorporated in the potential tree care standard.

Throughout this section, OSHA presents unit costs of compliance for each provision of the potential standard on a per-establishment, per-employee, or per-job basis. The unit costs for the

potential standard largely reflect new work safety practices and the additional time that would be required to comply with the potential standard. There are some unit costs to account for the purchase of additional equipment (e.g., high-visibility vests and hands-free, wireless communications equipment), but, unless otherwise specified, OSHA assumes that employers would be able to comply with the potential standard using existing equipment. OSHA welcomes comment on all cost estimates and whether they are in line with how long you would expect compliance with these provisions to take.

Rule Familiarization

OSHA does not include a requirement that employers familiarize themselves with the rule; however, the agency does account for this time when estimating the costs of a potential rule because employers would be bound by a final rule and therefore would be expected to review it.

Unit Costs

- 2 hours of a manager's time

GENERAL REQUIREMENTS

Employee Qualifications

OSHA's potential standard would require that a number of tasks be completed by a knowledgeable and experienced employee (e.g., the job hazard analysis (JHA), conducting a job briefing, meeting with the crane operator to review procedures, etc.). This employee would need to be trained and competent in many areas, such as OSHA's requirements, recognition of hazards associated with tree care operations (e.g., electrical hazards, fall hazards, etc.), tool and equipment safety, tree pruning, trimming, and removal procedures, aerial device operation and climbing procedures, to name a few.

As described in more detail in the full PIRFA, OSHA estimates that the potential employee qualifications requirement would impose the second highest ongoing/annual cost of all the provisions in the rule ($21 million). This represents about a fifth of total annualized costs.

The agency has preliminarily estimated that the compliance burden to train a worker to the level where they have the expertise to complete these tasks may not be worth the costs for some employers who only perform a limited amount of tree care operations. OSHA estimates that a business with in-house landscapers only, where no tree trimmer is also employed, would contract out any tree trimming jobs to a tree care contractor that would be covered by the potential standard. OSHA believes that landscapers perform tree care only occasionally.

Unit Costs

- OSHA estimated that, in cases where employers opt to discontinue performing tree care operations under this potential standard, the cost will be the difference between the cost of using in-house staff to perform any tree care operations and the cost of hiring a tree care contractor to do that work. For example, if work that previously took two hours of a landscaper's time at a fully loaded wage of $23 per hour now had to be contracted out to a tree care contractor at a cost of $100, the unit cost of requiring employee qualifications would be $54.

APPLICABLE ALTERNATIVE

- *Do not require employee qualifications (PIRFA Alternative 6)*

  This alternative would remove the potential requirement that certain tasks be completed by a worker with a higher degree of expertise. OSHA believes preliminarily that many of the benefits of a potential standard are contingent on these tasks being performed by a suitably qualified person.

QUESTIONS FOR THE SERs

1. Do you think it is necessary that the person completing certain tasks including the job hazard analysis and the job briefing be especially knowledgeable or experienced? Are there jobs where you think it would not be necessary to have these tasks done by a highly knowledgeable or experienced employee? Are there circumstances or situations where a less experienced or knowledgeable employee could handle these tasks? Please explain.
2. Does your company have someone who has the potential qualifications, summarized above, to be considered a knowledgeable employee? If you do not currently have anyone who has the qualifications, summarized above, to be considered a knowledgeable person, do you expect your company would opt to, and be able to, train someone to the level necessary, or hire such a person? How much additional training would someone at your company need to meet the qualifications, summarized above, to be considered a knowledgeable person? How much would that additional training cost and how much time would it take? How would this affect your business? What would happen if you couldn't offer tree trimming services?
3. Do you expect that meeting the above potential requirements concerning employee qualifications would add additional time and delay work? Would there be additional consequences of this delay? Are there other options that should be considered?
4. OSHA anticipates that some companies who do a small number of minor tree care jobs in a given year will opt to no longer provide those services or no longer use in-house employees to do those jobs. Do you think this is a reasonable assumption? What problems do you think this might cause? Would remaining companies be able to fill existing demand for those smaller tree care jobs?

5. While the draft regulatory framework would require a suitably qualified individual, it does not currently include a potential requirement that tree care firms employ a certified arborist. Do you think OSHA should require a certified arborist on tree care crews? Why or why not?

Safety and Health Program

OSHA is considering requiring that employers develop, implement, and maintain a written tree care safety and health program that adequately addresses the tree care operations hazards to which employees might be exposed. This written program would need to include the employer's safety and health policies and procedures for addressing hazards encountered in tree care operations.

OSHA would require that this written safety and health program be reviewed and updated at least annually, and whenever necessary to reflect changes in occupational hazards or work procedures, changes in technology, or updates to applicable regulations. Employers would be required to provide and train employees on this program upon initial employment and make the program available to employees at any time.

Unit Costs

- 8 hours of a manager's time in the first year to develop the plan;
- 1 hour of a manager's time each year thereafter to review and update the plan; and
- 1 hour of an employee's time each year to participate in the review and update of the plan.

APPLICABLE ALTERNATIVES

- *Do not require a written safety and health program (PIRFA Alternative 7)*

  This alternative would completely remove the potential requirement to develop, review, and update a written worker safety and health program.

- *Require employers to update the written tree care safety and health program every three years instead of annually (PIRFA Alternative 8)*

  This alternative would reduce the frequency with which the safety and health program is updated, from annually to every three years.

QUESTIONS FOR THE SERs

1. Do you have a safety and health program for your organization? If not, is this something that you would be able to develop?
2. Do you think these types of programs improve worker safety and health?

3. If you have a safety and health program, do you update it regularly and, if so, how often?
4. Is a requirement to review and update the program annually appropriate? Or do you prefer an alternative timeframe for review and update? How frequently do you think the safety and health program should be reviewed and updated and why?
5. Do you agree with OSHA's estimates of the time necessary to develop and update these plans? If not, what is a more accurate estimate in your opinion?

Job Hazard Analysis (JHA)

OSHA is considering requiring employers to prepare a written JHA, prior to each tree care operation, and for each worksite. The JHA would be used to identify hazards that are or might be present at the worksite related to the specific nature of the job tasks, the nature of the worksite, and the specific conditions present at the worksite, as well as the specific means of abatement or avoidance of each of the hazards. Should a change in conditions occur, a new or revised JHA would be required. A JHA can be completed on a form or checklist specific to the company. OSHA would also require that employees have input into the JHA as it is developed, to ensure that their viewpoints on hazards can be considered.

Each JHA would need to include, but would not be limited to, the following:

- General jobsite information that would impact the method of work, as well as the hazards that are or might be present on the worksite. This would include, for example, the type, weight, and health of all trees that would be pruned, repaired, maintained, or removed;
- Location of overhead and underground utility or service lines;
- Weather and environmental conditions/hazards;
- Identification of all drop and work zones, and when workers can or cannot enter those zones;
- Methods of communication that are needed for the scope of work;
- Specific job tasks to be completed, along with the hazards associated with each task;
- The type of tools and the number of employees needed to perform the job;
- The rescue plan;
- Identification of all other hazards present at the jobsite, such as the potential presence of vehicular or pedestrian traffic, or of employees from other companies on-site; and
- The specific means of eliminating, or providing effective protection against, each of the hazards identified in the JHA, including but not limited to, administrative, engineering, or work practice controls that would be used.

The JHA would also contain procedures for the inspection of the tree prior to climbing, entering, or performing any work on the tree. This inspection would cover, for example, any trees being removed, any trees workers would be climbing in order to install cabling or rigging, and any trees to which cables would be attached for the purpose of hauling logs (i.e., spar trees). Inspection would be required to address trunk, root, lower stem, limbs and storm damage hazards.

As part of a JHA, the employer would be required to determine the weight of the limbs and other tree parts that will be lowered to the ground during tree care operations. OSHA is considering incorporating into a potential standard, as a non-mandatory appendix, a table delineating the weight of green logs (see Potential Non-Mandatory Appendix 1 in the PIRFA).

OSHA emphasizes that the JHA would need to be completed by a knowledgeable and experienced employee. Therefore, OSHA would require someone performing a JHA in a potential standard to be trained and competent in the many areas, such as OSHA provisions, hazard recognition, tool and equipment safety, tree removal procedures, aerial device operation and climbing procedures to name a few.

OSHA has provided some example JHAs to help you understand what a JHA might look like, if you are not already familiar with this concept.

As described in more detail in the full PIRFA, OSHA estimates that the potential JHA requirement would impose the highest annual/ongoing cost ($55 million) of all the provisions in the rule, accounting for more than half of total annual/ongoing costs ($106 million).

Unit Costs

- 15 minutes (0.25 hours) on average for an employee in charge to perform this analysis at each job. Some JHAs may be simple and require less than 15 minutes while more complex jobs may require more than 15 minutes.

Job Briefing

A potential tree care operations standard would require that employers hold a job briefing with all worksite employees before the start of any tree care operations. If the work or operations to be performed during the work day or shift are repetitive and similar, the employer would be required to perform at least one job briefing before the start of the first job of each day or shift. Additional job briefings would need to be held if significant changes occur during the course of a tree care job that might affect the safety of the employees. In addition, the job briefing would need to:

- Be relevant to the operations occurring specifically at that worksite, as identified in the JHA.

- Be conducted by the experienced and knowledgeable employee who completed the JHA or another employee with the minimum level of experience and competence to have completed the JHA had they been tasked to do so, so that the hazards associated with the job, and the contents of the JHA, could be fully and adequately explained to the employees performing the work.
- Address hazards associated with the job, work procedures involved, special precautions, energy-source controls, and PPE requirements.
- Highlight any unique hazards presented by the scheduled work activities at that particular worksite, and methods for avoiding those hazards. OSHA recognizes that this briefing will vary in length and topics covered based on the complexity of the job and the hazards that are present.

Unit Costs

- 15 minutes (0.25 hours) for each member of the job crew per job. Some jobs may be simple and require less than 15 minutes while more complex jobs may require more than 15 minutes.

Worksite Setup

OSHA estimates that additional time will be needed for the employee in charge to set up the worksite including developing a communication protocol, developing a safety plan, designating a drop zone, inspecting the worksite for electrical hazards, and visually inspecting the tree.

As part of worksite setup, employers with employees who perform tree care operations would need to ensure that workers at the site who are not engaged in tree care operations are protected from the hazards associated with the tree care operations. OSHA believes preliminarily that employers performing tree care operations are often in the best position to protect all on-site workers from the hazards associated with tree care operations.

Unit Costs

- 5 minutes each for developing a communication protocol, developing a safety plan, designating a drop zone, and inspecting for electrical hazards
- 15 minutes to visually inspect the tree

APPLICABLE ALTERNATIVE

- *Do not require a JHA (PIRFA Alternative 9)*

  Under this alternative, OSHA would completely remove the potential requirement for conducting a JHA.

QUESTIONS FOR THE SERs

1. Do you complete JHAs? If so, how often?
2. OSHA has preliminarily estimated that it will take, on average, 15 minutes to complete a JHA. How does this compare with your experience? Do you frequently spend less time on a JHA or more time on a JHA, and how long does it take in those instances?
3. Do you think it is necessary that the person completing the JHA be especially knowledgeable or experienced? Does your company have someone who would meet the potential requirements above to be considered a knowledgeable employee who could prepare a JHA?
4. Should a JHA be conducted for all jobs? Are there some jobs or jobsites where a job hazard analysis is more or less appropriate? What factors would be helpful to consider in determining whether a JHA should be required for a particular jobsite?
5. Are there shorter or less complex JHAs that might be appropriate in some situations? In what situations do you think those might be appropriate? Would a shorter version of a JHA offer the same protection as a detailed JHA? If there are situations where a shorter or less complex JHA is appropriate, what should that JHA include in order to adequately address the hazards present at the jobsite?
6. What portion of a JHA, if any, can be completed prior to a crew arriving at the jobsite?
7. Should tree inspections be included in JHAs? Why or why not?
8. Should the employer determine the weight of the limbs and other tree portions that will be lowered to the ground during tree care operations as part of a JHA? Why or why not? What are the challenges in determining the weight of limbs and how do you compensate for these challenges?
9. When are electrical hazards or underground service lines identified?
10. Are there any tools or equipment workers need to assist in conducting JHAs?
11. Are individuals outside of the tree care company included in the JHA process? If so, who is included and do they have input into the JHA?
12. How are JHA results shared or communicated on multi-employer worksites?
13. Are pre-climb assessments included in the JHA process?
14. Do you agree that a higher level of training and competency is needed in order to complete all JHAs? If not, what factors could influence the level of training and competency needed to complete a JHA? For example, would the need for a high level of training and competency depend on the complexity of job site or whether a job could be completed by one employee working alone?
15. What other areas of training would be required or helpful for someone performing a JHA?
16. Employees may not be exposed to a number of hazards typical to tree care operations in the limited situation when the only tree care operations taking place at a worksite

are sprayer operations and no employee engaged in sprayer operations climbs, changes work location, or works on trees during the course of these sprayer operations.

a. Should the JHA and job briefing in such a limited sprayer operations situation be performed by an employee who is knowledgeable and experienced in all aspects of tree care operations or would such a requirement be overly burdensome given the limited nature of the sprayer operations?
b. OSHA seeks input on whether it should include, in a potential standard, modified requirements for the JHA and job briefing that are specific to this limited sprayer operations situation. Should OSHA modify the JHA and job briefing potential requirements in this limited situation? How should OSHA do so?

17. Do you currently provide job briefings? At each job? Do you think job briefings are an important part of protecting tree care workers?
18. Similar to the JHA, OSHA preliminarily believes that the person completing the job briefing should be an experienced and knowledgeable employee. Do you agree that this is necessary? Why or why not?
19. Should a job briefing be provided at all jobs? Are there situations where a job briefing is unnecessary?
20. Are there any alternatives OSHA should consider that might reduce the burden of providing job briefings while still ensuring workers get the appropriate information to stay safe?

Working Alone

A tree care operations standard would require a JHA and job briefing for employees who work alone, and would require the employer to account for each employee working alone throughout a work shift at regular intervals appropriate to the job, and at the end of the job assignment or end of the work shift, whichever comes first.

APPLICABLE ALTERNATIVES

- *Do not require JHAs on job sites where there is only one employee (PIRFA Alternative 10)*

  Under this alternative, a JHA would not be required for job sites with only one employee.

- *Do not require a job briefing for employees working alone (PIRFA Alternative 11)*

  This alternative would completely remove the potential job briefing requirement for employees working alone.

- *Do not require employers to account for employees working alone throughout the work shift (PIRFA Alternative 12)*

  This alternative would remove the requirement for employers to account for employees working alone throughout a work shift at regular intervals appropriate to the job, and at the end of the job assignment or end of the work shift, whichever comes first.

QUESTIONS FOR THE SERs

1. Are there situations where employees work alone when performing work that would be covered by the potential standard?
2. How often does this occur? Please provide examples of job tasks or circumstances.
3. How do you ensure the safety of employees working alone? Are you conducting job briefings in these situations?
4. Have any of your employees been involved in an incident where he/she was injured, incapacitated or deceased while working alone? Are you aware of incidents of this nature occurring to employees of other firms that perform tree care? Please explain in detail the circumstances surrounding any such incidents. What caused the worker's incapacitation, injury, or death?
5. OSHA also seeks feedback about the methods employers use to account for employees working alone, how often employees work alone, and how often during an assignment or shift employers account for employees working alone.

Traffic Control

OSHA understands that tree care work is often performed near streets where there is vehicular and pedestrian traffic. Under a potential standard, employers would need to take those working conditions under consideration as part of the JHA prior to the start of tree care work. Moreover, under a potential tree care operations standard, employers would be required to:

- Protect employees from hazards associated with working on or near roadways;
- Ensure that employees exposed to the hazards associated with working on or near roadways wear high-visibility clothing;
- Provide annual training for workers on traffic control procedures, including proper traffic control device usage and placement; and
- Ensure that employees are not working in a traffic area, or in a work zone that would push them into traffic. For example, where a chipper is placed on the side of roadway, the work zone around that chipper would need to be sufficiently identified and protected so that employees are not pushed into traffic by the work, or do not inadvertently walk into traffic.

Unit Costs

- Five minutes (0.08 hours) per job for one employee to direct traffic at a worksite.
- High visibility clothing, e.g., a vest costs $15.13 per employee.

QUESTIONS FOR THE SERs

1. Should OSHA include traffic control provisions in a potential standard? Or do you believe that existing regulations are adequate to protect workers? Do you view traffic to be a notable hazard of tree care work when work is performed on or next to roads? Are tree care workers at greater risk with regards to traffic hazards than other occupations or than in non-occupational situations?
2. Are there additional traffic control hazards that OSHA should address? Are any of the potential traffic control provisions detailed here unnecessary in your opinion? If so, why do you think that?
3. How do you control traffic at your job sites? Do you outsource this work or perform it yourself?
4. Do you currently train employees to comply with the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)? How often is this training conducted?
5. How many employees do you have working solely on traffic control?
6. Do you provide employees working in or near traffic with high visibility vests? If so, do all employees working in or near traffic wear vests or only some? If some, which ones?
7. Are traffic protections included in your JHA or job briefing?
8. Does your state, town, or company require that you have a police presence when working in or near roadways?

Emergency Procedures and Rescue

OSHA is considering requiring employers to train workers in the correct procedures for emergency response, including 911 calls and other applicable emergency response procedures. OSHA believes that at least one employee trained in aerial rescue should be on the ground at each job site while climbing or working aloft is taking place. In addition, OSHA is considering including in a potential tree care standard an Aerial Rescue Flowchart from the Virginia Tree Trimming Operations regulation as a non-mandatory appendix (see Potential Non-Mandatory Appendix 2 in the PIRFA).

Unit Costs

- One hour of a manager's time to develop instructions on emergency procedures and provide them to their employees.
- 30 minutes (0.5 hours) per employee to receive instruction.
- Aerial rescue training
  - 8 hours of an employee's time for each employee trained (one per job site where climbing or working aloft is taking place)
  - $130 for training materials

APPLICABLE ALTERNATIVES AND OPTIONS

- *Do not require aerial rescue training (PIRFA Alternative 14)*

  Under this alternative, employers would not need to provide aerial rescue training to any workers, but would still need to address all potential aerial rescue situations by training employees in the correct procedures for emergency response, including 911 calls and other applicable emergency procedures.

- *Do not require aerial rescue training, but instead require that climbers use climbing equipment that allows for rescue from the ground (PIRFA Alternative 15)*

  Under this alternative, OSHA would not require aerial rescue training, but would instead require that climbers working aloft use climbing gear that allows the climber to be lowered by someone on the ground. With this option, employers would be required to train employees on how to lower an incapacitated climber.

- *Require aerial rescue training for all workers on crews where someone works aloft or while climbing is taking place (Regulatory Option 4)*

  This option would require employers engaged in tree care operations to train all on-site employees in aerial rescue procedures on jobsites where someone works aloft or while climbing is taking place.

- *Require rescue equipment (Regulatory Option 5)*

  Under this option, employers would be required to purchase rescue equipment and have this equipment readily available at each worksite. OSHA estimates a rescue kit for tree care operations could either be purchased pre-assembled or assembled by the employer for a unit cost of $2,500 per crew, based on available rope rescue kits sold for technical rescue.

QUESTIONS FOR THE SERs

1. Are any of your employees trained in aerial rescue? What is included in this training? If not, what are workers expected to do if someone becomes incapacitated while working aloft?
2. How could a timely rescue be accomplished without having employees trained in aerial rescue on site?
3. What rescue equipment systems and components do you use?
4. How often should rescue training be conducted?
5. How many members of each work crew are trained in aerial rescue? Should OSHA require training in aerial rescue for all workers at worksites where workers are climbing or working aloft? Why or why not?
6. Do you own rescue equipment? If so, how many units do you own and is rescue equipment available at each worksite? Should OSHA require rescue equipment?
7. Should local first responders be aware or alerted that tree care operations are being conducted prior to the onset of those operations?
8. Are there alternatives to requiring aerial rescue training that OSHA has not considered that would provide protection to workers that you think should be considered? If so, what are they?

First Aid, CPR, and Automated External Defibrillators (AEDs)

Under the potential standard, the employer would need to provide first aid kits at each work site, and on each motor vehicle. The first aid kits would need to include items that are adequate for the hazards to which employees are exposed and employers would need to complete an analysis of the hazards to which their employees are exposed.

OSHA is also considering requiring that employers ensure that all employees are trained in both first aid and CPR, at worksites where an infirmary, clinic, hospital, or physician is not reasonably accessible in terms of distance and/or time. Employers would also be required to train employees on the identification of, preventive measures for, and first-aid treatment of common poisonous plants, stinging and biting insects and other wildlife to which they might be exposed.

OSHA's would require at least one Food and Drug Administration (FDA)-approved AED available at each worksite where employees are exposed to an electrical hazard, either from overhead power lines or underground utilities. OSHA believes that an AED could be life-saving first aid treatment for cardiac arrest caused by electric shock. The AEDs would need to be maintained according to manufacturer's specifications and all employees would need to receive training on the proper use of AEDs. OSHA estimates that the potential emergency response requirements, and specifically the AED requirement, would impose the highest up-front cost of all the potential provisions it has considered for inclusion in the rule. OSHA assumes that employers whose employees are engaged in tree care do not already own AEDs.

Unit Costs

- First Aid/CPR/AED training
  - 7 hours of an employee's time (5 hours for the online and hands-on course and 2 hours of travel time)
  - $95 per employee for the class
- $60 per first aid kit
- $1,700 per portable AED. Employers who have jobs at multiple worksites would need to buy enough AEDs to ensure that one is available at each worksite where employees are exposed to electrical hazards from overhead power lines or underground utilities.

APPLICABLE ALTERNATIVES AND OPTIONS

- *Require only necessary first aid supplies (PIRFA Alternative 16)*

  Under the potential standard, OSHA is considering requiring employers to provide first aid kits that meet the first aid specifications included in Appendix A of OSHA's Logging operations standard. Under this alternative, OSHA would permit the employer discretion to stock first aid kits with necessary first aid supplies, and the employer would determine which first aid supplies are necessary based on the work to be performed at the worksite.

  OSHA estimates that this alternative would reduce the cost of a first aid kit by about $25 per kit.

- *Do not require the provision of AEDs (PIRFA Alternative 17)*

  This alternative would remove the potential requirement to provide AEDs on any worksite, regardless of the hazards present.

- *Require one AED per establishment, rather than per crew, with electric hazard exposure (PIRFA Alternative 18)*

  Under this alternative, OSHA would require employers to provide one AED per establishment, rather than per crew, where employees are exposed to electrical hazards.

- *Require one AED per crew only where workers are engaged in line-clearance tree trimming (PIRFA Alternative 19)*

  Under this alternative, OSHA would require employers to provide one AED per crew, where employees are performing line-clearance tree trimming.

- *Require AEDs at all worksites (Regulatory Option 6)*

  Under this option, OSHA would require an AED at each worksite, even when there is no worker exposure to electrical hazards from overhead power lines or underground utilities.

- *Phase in of AED requirement:*
  a. *Phase-in AEDs for each crew where employees are exposed to electrical hazards from overhead power lines or underground utilities (PIRFA Alternative 20);*
  b. *Phase-in AEDs for each crew where employees are performing line-clearance tree trimming (PIRFA Alternative 21); or*
  c. *Phase-in AEDs at all worksite regardless of employee exposure to electrical hazards (Regulatory Option 7).*

  If OSHA decides to require AEDs for some or all employees engaged in tree care operations, OSHA is considering phasing in that requirement over a period of time.

- *Require fewer employees per job site to have first aid, CPR, and AED training (PIRFA Alternative 22)*

  This alternative would require that fewer employees per worksite have first aid, CPR and AED training. For example, under this alternative, OSHA might require only two employees per worksite to have this training. Alternatively, OSHA might require that two employees per worksite be trained, but only at worksites where an infirmary, clinic, hospital, or physician is not reasonably accessible in terms of distance and/or time; if OSHA promulgated such a requirement, there might be situations where no employees on a worksite had first aid, CPR, or AED training.

- *Require that only one member of each crew have first aid, CPR, and AED training, if all new employees are trained in first aid within 3 months of their hiring dates (PIRFA Alternative 23)*

  This alternative would require that only one member of each crew have first aid, CPR, and AED training, if all new employees are trained in first aid within 3 months of their hiring dates.

QUESTIONS FOR THE SERs

1. Do you currently provide AEDs? If so, how many AEDs do you have? How do you decide which worksites have AEDs if an AED is not supplied at every worksite?

2. Do you think AEDs should be required at some or all work sites? If so, which work sites and why? If not, why not?
3. If OSHA decides to require AEDs for some or all employers engaged in tree care operations, should the agency include a phase-in for some or all employers? What do you think would be a reasonable length of time for a phase-in to best allow you to absorb the cost impact of providing AEDs?
4. Have you or any of your employees or co-workers ever experienced an electrical hazard during tree care operations? If so, was anyone injured or killed and were you able to remove the employee from the area of electrical hazard safely?
5. Do you currently provide first aid kits at each work site and on each vehicle? If not, do you provide any first aid kits and under what circumstances?
6. How many employees are trained in first aid, CPR, and/or the proper use of AEDs per worksite?
7. Should OSHA develop a list of mandatory items for first aid kits, such as in the Logging Operations standard?
8. Are there specific items that OSHA should require to be included in first aid kits?

Fire Prevention

In addition to requiring that employers continue to follow the existing OSHA requirements for storing, handling, and transporting flammable liquids, a potential tree care operations standard would require the employer to provide and maintain portable fire extinguishers on equipment, such as chippers and compact lifts, and vehicles, such as chipper trucks or aerial lift trucks. OSHA would also require employers to train workers on the use and location of those fire extinguishers.

A potential tree care operations standard would also permit refueling only after the engine of a vehicle or equipment has stopped, prohibit refueling within 10 feet (3.05 m) of all operating equipment, require the removal of spilled fuel from a vehicle or equipment before restarting, require spark arresters for all internal or external combustion engines in small equipment, such as chain saws, and prohibit smoking while working in proximity to dry combustible materials. Furthermore, employers would be required to train and ensure employees remove clothing contaminated by flammable liquids, oils, and petroleum-based products at the worksite, and to store contaminated clothes properly at the worksite until properly disposed of or washed.

Unit Costs

- 5 minutes (0.08 hours) per employee per year for fire extinguisher training.
- $50 per fire extinguisher including the extinguisher and a vehicle mounting bracket.
- 5 minutes (0.08 hours), each, twice per year, for one employee to clean an average of three spark arrestors (e.g., one on the brush chipper, chainsaw, and stump grinder).

- 15 minutes (0.25 hours) longer per employee per year to perform fire safety practices that would be required by the potential standard in a safe manner (as opposed to an unsafe manner).

APPLICABLE ALTERNATIVES

- *Require only one fire extinguisher per crew instead of one per vehicle/piece of mobile equipment (PIRFA Alternative 24)*

  This alternative would require the employer to ensure the availability of one fire extinguisher per crew.

- *Require only two employees per worksite to be trained in the use of fire extinguishers (PIRFA Alternative 25)*

  This alternative would reduce the number of employees required to receive fire extinguisher training to two employees per worksite.

QUESTIONS FOR THE SERs

1. Do you currently have portable fire extinguishers on each vehicle or piece of mobile equipment, or only one at each worksite?
2. Do you provide training to employees on how to use portable fire extinguishers, and if so, how often?
3. How is spill cleanup performed at a tree care worksite?
4. What types of equipment used in tree care operations require spark arresters?
5. Is there any other equipment or technology that could be used in lieu of a spark arrester?
6. How often should a spark arrester be inspected, cleaned or replaced?
7. Do you agree with OSHA's assessment that performing the fire safety practices addressed in this section in a safe manner will take workers slightly longer than performing them in an unsafe manner? Does OSHA's estimate of 15 minutes per year for these incremental adjustments seem reasonable to you? If not, how much extra time do you expect it would take to perform the fire safety practices in a safe manner? What do you envision workers would have to do differently to perform the fire safety practices in a safe manner (as opposed to an unsafe manner)? How much time would that take?

Personal Protective Equipment (PPE)

OSHA would require employers to continue to follow the requirements in OSHA's existing standards requiring the use of PPE as protection for the eyes, head, face, foot, arms, and legs, as well as for respiratory and hearing protection. OSHA does not intend, at this preliminary stage, to propose additional PPE requirements in the potential tree care operations standard. However, under the potential JHA requirement (discussed above), employers would be required to determine which hazards are present, or likely to be present, at the worksite, whether PPE is required, and if so, what kind. Employers would also be required to train employees on what PPE is required, how to properly wear PPE, the limitations of PPE, and the proper care, maintenance, useful life, and disposal of the PPE.

QUESTIONS FOR THE SERs

1. Are there any types of PPE that you use that you think are not currently covered by an OSHA standard that should be included in a tree care operations standard?

Environmental Hazards

OSHA is considering provisions for employers to protect employees exposed to: dangerous weather conditions, such as lightning or sleet or snow; insect and animal hazards, such as venomous snakes or stinging insects; and/or poisonous plants, such as poison ivy.

- Employers would be required to check weather reports before commencing tree care operations and to monitor weather conditions periodically during the work.
- Employers would need to identify wildlife hazards (such as venomous snakes, stinging insects, birds, etc.) and poisonous plants (such as poison oak, poison sumac, and poison ivy) in the JHA, and discuss these identified hazards with all employees during the job briefing. Employees would also need to be trained to identify these hazards. Employers would be required to provide effective treatments for wildlife and poisonous plant hazards in first aid kits, as well as training on those treatments.

Unit Costs

- 15 seconds for an employee to check the weather once during each job (in addition to a weather check performed as part of the JHA, which is costed as part of the time taken to perform a JHA).

APPLICABLE ALTERNATIVE

- *Reduce weather checks from "periodic" to one per job (PIRFA Alternative 29)*

  This alternative would reduce the number of weather checks at a worksite, with the employer still required to conduct one weather check during the JHA.

QUESTIONS FOR THE SERs

1. What methods does your company typically use to monitor weather hazards? How often do you check weather reports and how long does this typically take?
2. After inclement weather, how do you determine when it is safe to return to work?
3. What are your procedures for protecting workers during adverse weather conditions?
4. How often do you encounter hazardous wildlife? How are those hazards addressed?
5. What additional items are included in your first aid kits to address wildlife and poisonous plant hazards? Do you currently train employees on how to avoid or treat poisonous or stinging animals or insects or poisonous plants?

TRAINING

OSHA's potential tree care operations standard would include minimum training requirements for all employees who perform tree care operations. Training would be required to be provided upon initial assignment for each new employee; whenever an employee is assigned new work tasks, tools, equipment, machines, or motor vehicles; or when necessary to maintain proficiency. Employers would be required to train employees based on their work tasks and roles, such as climbing trees and operating machinery such as chippers, for example. However, there are topics that each employee would need to be trained in regardless of their work assignments, such as the safety and health program, PPE, first aid, use of tools, drop and work zone safety, and worksite communication, to mention a few. Employers would also be required to maintain written training records for three years.

OSHA preliminarily believes that tree care work should be done by workers who are properly trained and equipped to perform the work safely. This means that, in some cases, employers will not be able to use their employees to perform tree care work because they lack the required training.

Unit Costs

- 4 hours of a manager's time to create and provide the training the first time it is provided and 2 hours to update and provide training in subsequent years.
- One hour per employee to receive training each year except for spray technicians.
- 30 minutes (0.5 hours) per spray technician to receive training per year because spray technicians face fewer tree care operations-related hazards than other affected occupations and because spray technicians are required by the EPA and state-level licensing boards to have training that addresses many of the sprayer-specific hazards they face.

- 5 minutes (0.08 hours) per year per employee of a manager's time to maintain training records.

APPLICABLE ALTERNATIVE

- *Do not require the employer to maintain training records (PIRFA Alternative 13)*

  This alternative would remove the potential requirement for employers to maintain employee training records.

QUESTIONS FOR THE SERs

1. Do you currently provide training for your employees? What does that training include? How long does it take?
2. Ideally, what training do you think all workers performing tree care operations should receive? Are there any workers who do not need to be trained or who need to be trained to a lesser degree than other workers? Which workers and what training should they receive?
3. Do you agree with OSHA's conclusion that tree care work requires training? Do you think there should be some allowances to allow workers who are not trained in tree care work to perform limited tree care activities? If so, how do you envision that would work? What activities should be allowed and in what circumstances should they be allowed?

ELECTRICAL HAZARDS

Workers engaged in tree care operations may be exposed to electrical hazards from both overhead power lines and underground utilities. Employers of these workers are subject to various OSHA requirements to protect their employees from electrical hazards, including OSHA's Electrical Standard for General Industry (29 CFR Part 1910 Subpart S), OSHA's Electric Power Generation, Transmission and Distribution Standard (29 CFR 1910.269), and OSHA's Telecommunications standard (29 CFR 1910.268), as applicable.

OSHA is considering requiring that employers follow OSHA's existing requirements to protect workers from the electrical hazards they face. Those requirements are consistent with the recommendations for Electrical Hazards in ANSI Z133-2017, which appear to be based on the OSHA requirements.

QUESTIONS FOR THE SERs

1. How often do you encounter electrical hazards while performing tree care operations (for example, at what percentage of sites where you work are there electrical hazards)?
2. Are workers sufficiently protected by the existing regulatory requirements from electrical hazards they face during tree care operations?
3. Should OSHA require the use of insulated tools wherever there is exposure to electrical hazards or whenever employers engage in line-clearance tree trimming?
4. Under the existing regulatory requirements, line-clearance tree trimming may be covered by one of three standards, 29 CFR Part 1910 Subpart S, 29 CFR 1910.269, or 29 CFR 1910.268, which all have different requirements. Should OSHA apply one set of requirements to all line-clearance tree trimming? Which should OSHA apply and why?

MOTOR VEHICLES AND MOBILE EQUIPMENT

OSHA is considering general provisions that would apply to all motor vehicles, aerial devices, and mobile equipment. Among other requirements, employers would be required to:

- ensure that all motor vehicles, aerial devices and mobile equipment are used and maintained in serviceable condition, and inspected before initial use during each work shift; provide operating and maintenance instructions;
- maintain and, if necessary, replace slip/skid surfaces;
- ensure that transported materials and equipment is properly stored and secured;
- provide mounting steps and handholds;
- ensure seat belts are provided and used;
- ensure that the operator determines that no employee is in the path of the motor vehicle or piece of mobile equipment prior to moving, and that the operator sets the brakes prior to leaving the motor vehicle or piece of mobile equipment; and
- Train employees to, and ensure that they, inspect all motor vehicles and mobile equipment to identify any damage prior to use.

Unit Costs

- 5 minutes per job for one member of the crew to perform a pre- and post-trip equipment inspection.
- 5 minutes (0.08 hours) longer per employee per year to operate motor vehicles and mobile equipment in a safe manner (as opposed to an unsafe manner).
- 30 minutes per employee per year to maintain motor vehicles and mobile equipment in compliance with this potential standard.

QUESTIONS FOR THE SERs

1. Do you have inspection procedures for motor vehicles and mobile equipment?
2. What mobile equipment do you use? Does it have seat belts?
3. Do you agree with OSHA's assessment that operating motor vehicles and mobile equipment in a safe manner will take workers slightly longer than operating them in an unsafe manner? Does OSHA's estimate of 5 minutes per year for these incremental adjustments seem reasonable to you? If not, how much extra time do you expect it would take to operate motor vehicles and mobile equipment in a safe manner? What do you envision workers would have to do differently to operate motor vehicles and mobile equipment in a safe manner (as opposed to an unsafe manner)? How much time would that take?

Aerial Devices and Compact Lifts

OSHA would require employers to continue to follow the requirements in OSHA's Vehicle-Mounted Elevating and Rotating Work Platforms standard to protect workers from hazards associated with using aerial devices. In addition, among other potential requirements, employers would generally be prohibited from using aerial devices, aerial ladders, and compact lifts as cranes or hoists, and, with respect to aerial devices and compact lifts:

- Outriggers would need to be used;
- Only one person would be allowed in the bucket;
- Combined load limits could not be exceeded; and
- In general, no aerial device or compact lift could be moved when an employee is working in the bucket or on a platform.

Unit Costs

- 15 minutes (0.25 hours) longer per employee per year to follow the potential aerial device requirements in a safe manner (as opposed to an unsafe manner).

QUESTIONS FOR THE SERs

1. Do you allow workers to transfer from the platform/bucket of an aerial device to a tree? If so, please describe your policies. If not, why not? Should OSHA allow this activity? If so, should there be additional provisions addressing this activity?
2. Do you use modified aerial lifts or compact lifts?
3. Do you agree with OSHA's assessment that following the potential aerial device requirements in a safe manner will take workers slightly longer than working in an unsafe manner? Does OSHA's estimate of 15 minutes per year for these incremental adjustments seem reasonable to you? If not, how much extra time do you expect it would take to follow the potential requirements in a safe manner? What do you

envision workers would have to do differently to follow the requirements in a safe manner (as opposed to an unsafe manner)? How much time would that take?

Chippers

OSHA's Machinery and Machine Guarding standard requires employers to provide one or more methods of machine guarding for hazards such as those created by point of operation, in going nip points, rotating points, flying chips and sparks. Employers are required to ensure that guards are installed and maintained on equipment such as chippers and stump grinders to prevent employee injuries. OSHA would continue to require employers to follow the Machine Guarding requirements in a potential tree care operations standard.

OSHA is considering additional requirements that would specifically address chippers (e.g., potential requirements on ignition systems, access panels and door covers, infeed systems, and work practice and administrative controls to minimize the risks associated with using chippers).

Unit Costs

- 30 minutes (0.5 hours) longer per employee per year for tree trimmers, and 15 minutes (0.25 hours) per employee per year for landscapers, to use chippers in a safe manner (as opposed to an unsafe manner).

QUESTIONS FOR THE SERs

1. Do you agree with OSHA's assessment that following the potential chippers requirements in a safe manner will take workers slightly longer than working in an unsafe manner? Does OSHA's estimate of 30 minutes per year for these incremental adjustments seem reasonable to you? If not, how much extra time do you expect it would take to follow the potential requirements and work in a safe manner? What do you envision workers would have to do differently to follow the requirements? How much time would that take?

Sprayers and Related Equipment

Spraying equipment is used to apply liquids during tree care operations. OSHA would require visual inspections, removing damaged sprayers and equipment from service and ensuring that skid-resistant material and guardrails are installed when required.

Unit Costs

- OSHA has preliminarily determined that the potential requirements addressing sprayers and related equipment will not result in workers taking additional time to perform tasks

using this equipment. Based on this, OSHA is not assessing costs related to these provisions in this analysis.

QUESTIONS FOR THE SERs

1. Should OSHA include spray technicians in the scope of this potential standard for some or all provisions? Why or why not?
2. Are there any hazards related to sprayers and related equipment that OSHA has not adequately addressed? If so, what are they?
3. Do you agree with OSHA's assessment that following the potential sprayers and related equipment requirements would not result in workers taking additional time to perform tasks using this equipment? If not, how much extra time do you expect it would take to follow the potential requirements? What do you envision workers would have to do differently to follow the requirements relative to current practices? How much time would that take?

Stump Grinders

A stump grinder is required to be properly guarded under OSHA's Machinery and Machine Guarding standard. OSHA would continue to require employers to follow the Machine Guarding requirements in a potential tree care operations standard as well as ensuring that all underground utilities are identified prior to performing work, maintaining safe work zones, and procedures for safe storage when not in use.

Unit Costs

- 30 minutes (0.5 hours) longer per tree trimmer per year to use stump grinders in a safe manner (as opposed to an unsafe manner).

QUESTION FOR THE SERs

1. Do you agree with OSHA's assessment that following the potential stump grinder requirements in a safe manner will take workers slightly longer than working in an unsafe manner? Does OSHA's estimate of 30 minutes per year for these incremental adjustments seem reasonable to you? If not, how much extra time do you expect it would take to follow the potential requirements? What do you envision workers would have to do differently to follow the requirements and work in a safe manner (as opposed to an unsafe manner)? How much time would that take?

Knucklebooms, Cranes, and Related Hoists

OSHA believes that the types of cranes used during tree care operations (i.e., mobile cranes) and that the hazards associated with using cranes during tree care operations are similar to the types of cranes used during, and hazards associated with, construction work because tree care operations involve temporarily (as opposed to permanently) locating a crane at a site to perform operations. OSHA has recently revised its Cranes and Derricks in Construction Standard and the standard represents the agency's most recent view of how to address the hazards associated with crane use. Therefore, a potential standard on tree care operations would require employers to comply with OSHA's Cranes and Derricks in Construction Standard when using cranes and other equipment covered under that standard (regardless of whether the work is construction work). This would include, among other requirements, all inspection requirements (e.g., completing shift inspections, monthly inspections, and annual inspections, as well as required documentation of findings). Constant usage of cranes can wear down components and these routine inspections can help identify potential problems.

OSHA seeks input on its potential requirements for the use of cranes during tree care operations. OSHA also seeks input on whether there are other requirements beyond OSHA's Cranes and Derricks in Construction Standard, that employers should comply with when using cranes, knucklebooms, and related hoists in tree care operations.

OSHA is especially interested in information about the ANSI Z133 standard provision that allows the hoisting of personnel into position with a crane under certain conditions during tree care operations (ANSI Z133-2017 § 5.7.11). This consensus standard provision is not consistent with OSHA's existing cranes standards (either in construction or general industry) that prohibit hoisting personnel). OSHA also has concerns that hoisting of personnel into position with a crane during tree care operations is contrary to manufacturer procedures applicable to the operational functions of equipment, including its use with attachments. However, OSHA is considering including a provision that would create a limited tree care operations exception to OSHA's existing personnel hoisting prohibition when the employer is able to establish that it is either impossible or infeasible to perform the work otherwise, or that not using the crane presents a greater hazard. Before hoisting personnel, OSHA would also require employers in tree care operations to conduct a written assessment demonstrating the infeasibility or greater hazard. This might include documenting the hazards and/or drawing a diagram of the site.

Unit Costs

- 5 minutes (0.08 hours) of a manager's time (one-time cost) to locate an existing crane inspection checklist.
- 5 minutes (0.08 hours) each for one employee and crane operator for a pre-job meeting to review procedures (per job cost).

- 15 minutes (0.25 hours) longer per employee per year to perform crane work in a safe manner (as opposed to an unsafe manner).
- 30 minutes (0.5 hours) of an employee's time to perform a written assessment to justify hoist a climber using a crane. Employers would incur this cost only where a crane job involves hoisting a climber using a crane (approximately 17 percent of crane jobs according to OSHA's preliminary estimate).

APPLICABLE ALTERNATIVE

- *Do not require a written infeasibility/greater hazard assessment prior to hoisting workers using a crane (PIRFA Alternative 26)*

  This alternative would modify the assessment requirement to no longer require the assessment to be in writing, with the intention of reducing the amount of time this assessment would take to complete. Under this alternative, the employer would still need to conduct an assessment demonstrating infeasibility or greater hazard. OSHA estimates that this change would potentially reduce the time required to complete the assessment from 30 minutes to 10 minutes.

QUESTIONS FOR THE SERs

1. If your company owns a crane, do you currently follow OSHA's Cranes and Derricks in Construction standard? If not, what part or parts do you not currently follow? Should OSHA require cranes being used for tree care operations to follow parts or all of the Cranes and Derricks in Construction standard? Which provisions should be required? Which should not be required?
2. Do you currently use cranes to hoist personnel into trees? Should OSHA permit employers to hoist personnel on a crane during tree care operations? Why or why not?
3. Are the cranes used in tree care operations designed to hoist personnel?
4. Should OSHA implement a limited exception to the existing personnel hoisting prohibition that would apply when the employer is able to establish that it is either impossible or infeasible to perform the work otherwise, or that not using the crane presents a greater hazard? Why or why not?
5. Should OSHA require a written assessment showing infeasibility or greater hazard in order to allow hoisting personnel with a crane? Why or why not? If not, what level of assessment, if any, should OSHA require?
6. What criteria are used when determining that a crane is the safest or only feasible route (versus tree climbing and using aerial devices or compact lifts, for example)? Is this considered during the JHA?
7. What methods, procedures and equipment are used during personnel hoisting with a crane?

8. What type of communication system do you use when using cranes for hoisting personnel?
9. How does OSHA's estimate of the percent of jobs that involve hoisting workers using cranes compare with your experience?
10. Do you agree with OSHA's assessment that performing crane work in a safe manner will take workers slightly longer than performing crane work in an unsafe manner? Does OSHA's estimate of 15 minutes per year for these incremental adjustments seem reasonable to you? If not, how much extra time do you expect it would take to perform crane work in a safe manner? What do you envision workers would have to do differently to perform crane work in a safe manner (as opposed to an unsafe manner)? How much time would that take?

Deadman Controls

OSHA is considering requiring that the employer ensure that: deadman controls on equipment are used and maintained in good working condition; any equipment with malfunctioning or non-operational deadman controls is removed from service; and employees disengage the power source to the rotary cutter or head before dismounting if there is no deadman control.

OSHA estimates that any costs associated with these potential requirements are included in the 5 minutes per job for pre- and post-trip equipment inspection of motor vehicles and mobile equipment, discussed above.

Equipment-mounted winches

Some of the potential requirements OSHA is considering that address the use of equipment-mounted winches in tree care operations include potential requirements on: training; inspection and removing from service any damaged winches; and ensuring that employees remain clear of the operation in case of winch line breakage, winches are only used as intended, loads are pulled in a manner to avoid angles that might result in tipping, instability or unintended movement of the vehicle, and loads are pulled in line with the winch unless the winch is properly equipped with a fair lead and the winch operator is trained to pull loads at an angle.

Unit Costs

- 5 minutes (0.08 hours) of an employee's time per job to inspect winch and fastenings and attachments and ensure that winches are used in a safe manner.

QUESTION FOR THE SERs

1. Should OSHA prohibit side-pulling with winches. How should side-pulling be defined?

High-Pressure Air-Excavation Equipment

OSHA is considering requiring that the employer ensure that the operator of the compressor is trained on the proper operation of the compressor; no employee places any body parts in front of the equipment's air jets; employees are not exposed to the compressed air hazard unless their presence is needed to conduct work on or related to the use of the equipment; before the compressor is started, the air hose is secured to the compressor and properly attached; and the air line is depressurized before disconnecting the air hose from the equipment.

Unit Costs

- 15 minutes (0.25 hours) longer per tree trimmer per year to use high-pressure air-excavation equipment in a safe manner (as opposed to an unsafe manner).

QUESTIONS FOR THE SERs

1. Do you agree with OSHA's assessment that following the potential high-pressure air-excavation equipment requirements in a safe manner will take workers slightly longer than working in an unsafe manner? Does OSHA's estimate of 15 minutes per year for these incremental adjustments seem reasonable to you? If not, how much extra time do you expect it would take to follow the potential requirements in a safe manner? What do you envision workers would have to do differently to follow the requirements in a safe manner (as opposed to an unsafe manner)? How much time would that take?
2. ANSI Z133-2017 contains requirements for the use of PPE and other clothing to protect against the compressed air hazard (a hard hat with attached face shield, hearing protection, eye protection, gloves, long pants, a long-sleeved shirt, and/or coveralls). What PPE and other clothing are workers currently wearing/using for protection against this hazard? What PPE and other clothing do you believe is needed, if any, to protect against this hazard?

PORTABLE POWER HAND TOOLS AND EQUIPMENT

In addition to the potential requirements discussed below for specific types of equipment (e.g., chain saws), OSHA's Hand and Portable Powered Tools and Other Hand-Held Equipment standard would continue to apply generally to all portable power hand tools and equipment.

Portable Electric Powered Tools

Workers engaged in tree care operations may be exposed to electrical hazards from both overhead power lines and underground utilities, and from the use of portable electric powered tools themselves. Employers of these workers are subject to various OSHA requirements to protect their employees from electrical hazards, including OSHA's Electrical Standard for General Industry (29 CFR Part 1910 Subpart S), OSHA's Electric Power Generation, Transmission and Distribution Standard (29 CFR 1910.269), and OSHA's Telecommunications standard (29 CFR 1910.268). OSHA is considering requiring that employers continue to follow OSHA's existing requirements. Under a potential tree care operations standard, therefore, employers would need to consult those standards to determine requirements applicable to the use of portable electric powered tools.

Chain Saws

OSHA's Guarding of Portable Powered Tools standard would continue to apply to tree care operations. That standard contains requirements to protect workers from the hazards of using chain saws. Among other potential requirements, OSHA is also considering: requiring that the chain brake be engaged prior to starting a chain saw; requiring that a chain saw be started on the ground or where otherwise firmly supported; prohibiting drop starting a chain saw; prohibiting the running of a chain saw when the saw is being carried up into a tree; and requiring that employers ensure that chain saw operators use a second point of attachment when operating a chainsaw when in a tree (unless the employer can demonstrate a greater hazard is posed by using a second point of attachment) and maintain a stable position and secure footing when starting a chain saw.

Powered Pole Tools

Employers would be required to ensure: that powered pole tools, such as pole saws and pole pruners, are not hung on electrical conductors or left unattended in trees; that, when hung, powered pole tools are securely positioned to prevent dislodgment and hung so sharp edges are away from the tree care worker; and that powered pole tools are removed when the tree care worker leaves the tree. In addition, OSHA would require employers to only use fiberglass pole tools.

Backpack Power Units

OSHA is considering requiring that backpack power units meet the requirements of the Electric Power Generation, Transmission and Distribution standard, 29 CFR 1910.269(r)(6).

Unit Costs

- 30 minutes (0.5 hours) longer per employee per year to engage in safe work practices related to the portable electric power tools discussed above (portable electric powered tools, chain saws, powered pole tools, and backpack power units).

HAND TOOLS AND EQUIPMENT

OSHA's Hand and Portable Powered Tools and Other Hand-Held Equipment standard would continue to apply during tree care operations. A potential tree care operations standard would include additional general requirements addressing safe work practices for all hand tools and equipment used in tree care operations; among other potential requirements, employers would be required to ensure that the correct hand tool or equipment is selected for the job, damaged or defective hand tools and equipment are removed from service, hand tools and equipment are not carried in workers' hands when climbing unless they are used to assist in climbing, and hand tools and equipment being raised or lowered using climbing lines or handlines are raised or lowered in a manner that prevents the cutting edge from contacting the climbing lines or handlines.

Cant Hooks, Cant Dogs, Peaveys, and Tongs

Employers would be required to ensure that cant hooks, cant dogs, peaveys, and tongs be firmly set before force is applied, that the points of the hooks on this equipment be at least two inches long and maintained in a sharp condition, and that all workers stand uphill from rolling logs and be warned prior to logs being moved.

Wedges, Chisels, and Gouges

Employers would be required to ensure that all chisels and wedges used are properly pointed and tempered; only wood, plastic, or soft-metal wedges are used while operating chains saws; and chisels with wood handles are protected with a ferrule on the striking end, and only wood, rubber, or high-impact plastic mauls, sledges, or hammers are used with these chisels.

Chopping Tools

OSHA is considering the following work practice controls for the use of chopping tools. Employers would be required to ensure that workers do not use chopping tools while working aloft, chopping tools are not used as wedges or to drive metal wedges, and chopping tools are swung in a safe manner.

Unit Costs

- 30 minutes (0.5 hours) longer per employee per year to engage in safe work practices related the hand tools and equipment discussed above (cant hooks, cant dogs, peaveys, tongs, wedges, chisels, gouges, and chopping tools).

QUESTIONS FOR THE SERs:

1. Are these potential provisions addressing portable power hand tools and equipment and hand tools and equipment necessary and appropriate? Are there any provisions

that should not be applied to tree care operations? Are there any provisions that OSHA should consider that are not included here?

2. Do you agree with OSHA's assessment that engaging in work practices related to using hand tools and equipment (portable power or not) in a safe manner would take slightly longer than engaging in these work practices in an unsafe manner? Does OSHA's estimate of 30 minutes per year for these incremental adjustments seem reasonable to you? If not, how much time do you expect it would take to engage in work practices relating to portable power hand tools and equipment and hand tools and equipment in a safe manner? What do you envision workers would have to do differently to engage in work practices relating to hand tools and equipment (portable power or not) in a safe manner (as opposed to an unsafe manner)? How much time would that take?

LADDERS

OSHA's Walking-Working Surface standard (29 CFR Part 1910 Subpart D) would continue to apply to tree care operations. Thus, for example, OSHA would continue to require that ladders only be used for the purposes for which they were designed, ladders be inspected in accordance with the standard, ladders with structural or other defects be removed from service, and employees be prohibited from carrying any object or load that would cause them to lose balance and fall while climbing up or down a ladder. In addition, among other potential requirements, a potential tree care operations standard would require that the third or hinged leg of a tripod/orchard ladder be braced or fastened when on hard or slick surfaces, the employer ensure that ladders are not altered in any way that circumvents the manufacturer's specifications, and when a climber uses a ladder to gain access to a tree, they not leave the ladder until they are tied into the tree.

Unit Costs

- 30 minutes (0.5 hours) longer per employee per year for safe work practices relating to ladders.

QUESTIONS FOR THE SERs

1. Are additional protections for ladders needed? Are there any existing provisions that should not be applied to tree care operations?
2. Should all of the provisions on ladders located in OSHA's Walking-Working Surface standard continue to apply to tree care operations?
3. Should OSHA require fall protection for employees working on portable ladders during tree care operations? What are the benefits of providing fall protection in this situation? Are there any impediments to providing fall protection here? Should

OSHA require fall protection for employees while they ascend and descend portable ladders during tree care operations as well?

4. Do you agree with OSHA's assessment that engaging in work practices related to using ladders in a safe manner would take slightly longer than engaging in these work practices in an unsafe manner? Does OSHA's estimate of 30 minutes per year for these incremental adjustments seem reasonable to you? If not, how much time do you expect it would take to engage in work practices relating to ladders in a safe manner? What do you envision workers would have to do differently to engage in work practices relating to ladders in a safe manner (as opposed to an unsafe manner)? How much time would that take?

WORK PROCEDURES

General Questions on Climbing, Changing Location, and Working in Trees

A potential tree care operations standard would contain requirements, specific to climbing, changing location, and working in trees, for the provision, use, and care of personal fall protection systems. Personal fall protection systems are systems (including all components) an employer uses to provide protection from falling or to safely arrest an employee's fall if one occurs.

Under a potential standard, employers would be required to provide, pay for, and perform daily inspections on, all personal fall protection systems, including all components. Employers would also be required to provide training to employees who use personal fall protection systems. This training would need to be understandable to all employees. Among other potential requirements, employers would need to provide training on fall hazards and how to recognize and minimize them, the correct procedures for installing, inspecting, operating, maintaining, and disassembling personal fall protection systems, and the correct use of personal fall protection systems. Retraining would be required in certain circumstances.

QUESTIONS FOR THE SERs

1. OSHA seeks information on potential requirements for anchorages and anchor points for workers engaged in climbing, changing location, and working on trees. Should OSHA require that anchorages be capable of supporting a certain weight (e.g., at least 5,000 pounds (22.2 kilonewtons (kN)) for each employee attached)? Should factors other than, or in addition to, a weight requirement determine whether an anchorage is of sufficient strength? How do employers determine whether a tree or limb is safe or unsafe to climb or use as an anchorage point for fall protection equipment?
2. OSHA seeks information on whether the use of personal fall protection systems while climbing, changing location, and working in trees should only be required above a

certain height. Should personal fall protection be required whenever a worker is climbing, changing location, or working on trees? Or should personal fall protection systems be required only when an employee is at a certain height above the ground? If so, what should the height be? 4 feet (1.2 m) above the ground? Higher? Lower?

3. Are personal fall protection systems used during tree climbing and changing location typically integral to the climbing or changing location activities (i.e., is the personal fall protection system used to climb or change location in addition to providing protection from falls)? If so, does it make sense to have a requirement that personal fall protection systems be required only when an employee is at a certain height above the ground?
4. Are there systems that can fulfil the functions of both a personal fall arrest system and a positioning system? If so, please explain.
5. OSHA understands that employers engaged in tree care operations sometimes require workers to move between the platform (e.g., bucket) of aerial devices or compact lifts, or the load or hook of a crane, and a tree (to make a cut, for example). OSHA seeks information on the types of personal fall protection systems that employers use when moving between aerial devices or compact lifts, or the load or hook of a crane, and trees. How do employers protect their employees from falls during movement to and from the tree from an aerial lift, bucket truck or compact lift? Can one personal fall protection system be used to protect the employee throughout the time he or she is aloft? Or do workers need to use different personal fall protection systems to protect their employees depending on where the employee is located? Do employees use both a personal fall arrest system(s) and positioning equipment, for example? Please also provide information related to the time, effort and costs involved.

Ropes and Equipment

Among other potential requirements, employers would be required to ensure that tree saddles and lanyards used for work positioning are not altered in a manner that would compromise the integrity of the equipment; hardware used in the manufacture of tree saddles meets the hardware material, strength and testing requirements outlined in ANSI 359.1, which OSHA would incorporate by reference; climbing lines are identified by the manufacturer as suitable for tree climbing; splicing is done in accordance with cordage manufacturers' specifications; and rope ends are finished in a manner to prevent raveling.

Unit Costs

- 30 minutes (0.5 hours) longer per tree trimmer per year to use ropes, arborist equipment, and fall protection systems in a safe manner (as opposed to an unsafe manner).

Climbing Procedures

Among other potential requirements:

- OSHA would require employers to ensure that all climbing equipment, such as climbing lines, work lines, body harnesses, and lanyards, is inspected before being put into service, and that all personal fall protection systems be inspected before initial use during each work shift for mildew, wear, damage, and other deterioration, and that defective components be removed from service. The climber would be required to have a climbing line and at least one other means of being secured on his/her person at all times when aloft.

- Climbers working at heights greater than one-half the length of the climbing line would be required to tie a figure-8 knot in the end of the climbing line to prevent pulling the rope through the climbing system, and the tie-in position would need to be such that the worker will not be subjected to an uncontrolled pendulum swing in the event of a slip.

- OSHA is considering a provision that would require all climbers to be protected from falls whenever the climber is off of the ground, including, but not limited to, when the climber ascends and descends the tree (including when using climbing spurs/gaffs), when the climber is at the work position, when the climber repositions his/her climbing line, and when the climber changes location in the tree (but see General Questions on Climbing, Changing Location, and Working on Trees at the beginning of the Work Procedures Section). Once at the work position, the climber would need to be tied in, and remain tied in, until the work is completed and he/she has returned to the ground. When changing location, the climber would need to continue using, and could not release, the current means of being secured until the climber tests the new tie-in point with, and ensures the tie-in point will bear, that climber's full weight.

- OSHA is considering requiring several work procedures to be implemented prior to and during climbing activities, including, for example, procedures on false crotches, tie-in points, working from a stem or spar, the placement of the hands and feet of employees working aloft, and the ground crew.

Unit Costs

- 7 minutes per job for a tree trimmer to inspect lines, equipment, and fall protection systems.
- 30 minutes (0.5 hours) longer per tree trimmer per year to engage in safe climbing practices.
- $270 per employee to repair or replace equipment annually.
- 15 minutes (0.25 hours) longer per employee per year for safe operation of high pressure air-excavation equipment.

QUESTIONS FOR THE SERs

1. OSHA understands that lowering devices, such as Port-A-Wraps, are commonly used in tree care operation activities. OSHA is seeking input about Port-A-Wrap usage in the tree care industry:
   - What are the factors that prompt the use of a lowering device in tree care operations activities? What are the advantages of using a Port-A-Wrap?
   - What are the training requirements for using a lowering device? Is specialized training or instruction required for workers that use this equipment?
   - What are the precautionary measures needed to protect workers?
2. ANSI recommends that two means of being secured be used when the climber decides it is advantageous (ANSI Z133, section 8.1.4). OSHA seeks information on this recommendation. On what factors does, or should, the climber base his or her decision? Also, when is the decision made? Prior to climbing? Please provide examples of when a second line would not be advantageous.

Other procedures to protect on-site employees

Among other requirements, OSHA would also require employers to ensure that employees use wireless, hands-free communication methods and use hand signals where wireless communication is ineffective; prohibit workers from entering the drop or work zone until it is communicated the zone is safe to enter; and identify all overhead electric power lines and underground utilities, and designate job work assignments, prior to starting work.

Unit Costs

- $250 per employee (the cost of one hands-free wireless radio)

APPLICABLE ALTERNATIVES

- *Do not require hands-free, wireless communication methods (PIRFA Alternative 27)*

  This alternative would entirely remove the requirement for hands-free, wireless communication methods (e.g. two-way radios).

- *Require hands-free, wireless communication methods only when workers are aloft or during crane operations (PIRFA Alternative 28)*

  This alternative would remove the requirement for hands-free, wireless communication methods (e.g. two-way radios), except during crane operations or when workers are aloft.

- *Require hands-free, wireless communication methods only during crane operations (PIRFA Alternative 30)*

  This alternative would require hands-free, wireless communication methods (e.g. two-way radios) only during crane operations.

QUESTIONS FOR THE SERs

1. Should OSHA include a requirement for hands-free, wireless communication methods? Should they be required for all tree care operations or just some? If you think they should be required for just some operations, which ones?
2. Are you currently using any form of hands-free, wireless communication methods? If so, what are you using? Have you found this to be beneficial? If so, what benefits have you seen?

Pruning and Trimming

OSHA is considering that when employers are pruning and trimming palm fronds, they would be required to remove palm frond skirts that have three years or more of growth from the top down; and ensure that workers are supported by a climbing line or work from an aerial lift, workers do not remove tree skirts from below, or in between, the skirt and the trunk of the tree, and cut branches are not left in trees upon completion of work.

Cabling

OSHA would require employers to prohibit workers who are not involved in the cabling installation from entering the work zone; and to ensure that those employees who are installing cabling are positioned off to one side; that, when removing a cable from a tree, a block and tackle, or come-along system is installed before removing the existing cable; and that a replacement cable is fully installed prior to removing the outdated cable.

Unit Costs

- 30 minutes (0.5 hours) longer per tree trimmer per year for safe cabling practices.

Rigging

OSHA's Slings standard, which would continue to apply to tree care operations, requires, among other things, safe operating practices, inspections, and design specifications applicable to different types of slings. Among other potential requirements, the employer would need to inspect the tree to ensure its health prior to lifting, as required in the JHA. Additional potential requirements would include (for example) requirements for limiting the number of connecting links for rigging systems, ensuring that rigging components are in compliance with

manufacturer's recommendations, inspecting all rigging points, proper positioning of the climber and their climbing systems, and developing an escape plan for climbers and communicating that plan to them as part of the job briefing.

Unit Costs

- 30 minutes (0.5 hours) per tree trimmer per year for safe rigging practices.

Tree Removal

Among other potential requirements:

- A potential tree care operations standard would include a provision specifying that the employer would need to ensure that the gaffs being used are the appropriate type and length for the tree being climbed and that, where pull lines are used, workers involved in pulling are clear by at least one tree length.
- OSHA is considering requiring the use of notches on all trees and trunks greater than five inches in diameter at breast height.
- Notches and back cuts would need to be made at a height that allows the chainsaw operator to safely begin the cut, control the tree or trunk, and have freedom of movement for escape.

Unit Costs

- 30 minutes (0.5 hours) longer per tree trimmer per year for safe tree removal practices.

Limbing and Bucking

OSHA is considering requiring employees to only perform limbing and bucking on the uphill side of each tree or log, to ensure that logs are chocked with a suitable material to keep them from rolling, and that natural barriers between the saw and the body, such as limbs, are used where possible. Employers would also be required to train employees on proper limbing and bucking practices, including (for example) not to stand on loose chunks or logs that could roll after being sawed off, to use wedges appropriately and to use appropriate cutting methods.

Unit Costs

- 30 minutes (0.5 hours) longer per tree trimmer per year to use safe limbing and bucking work practices.

QUESTION FOR THE SERs

1. Do you agree with OSHA's assessment that engaging in work practices relating to cabling, rigging, tree removal, and limbing and bucking in a safe manner would take slightly longer than working in an unsafe manner? Does OSHA's estimate of 30 minutes per year for incremental adjustments in each of these areas seem reasonable

to you? If not, how much time do you expect it would take to engage in work practices relating to cabling, rigging, tree removal, and limbing and bucking in a safe manner? What do you envision workers would have to do differently to engage in work practices relating to the above activities in a safe manner (as opposed to an unsafe manner)? How much time would that take?

4. Other Topics for Consideration and Comment

Adopting the ANSI standard

OSHA is considering an alternative whereby the agency would adopt by reference the ANSI Standard for Arboricultural Operations – Safety Requirements (ANSI Z133 standard), rather than an OSHA-specific standard. OSHA's potential standard discussed in the Section IV of the PIRFA is largely consistent with the ANSI Z133 standard but adds certain provisions, including potential requirements for:

- a written tree care safety and health program;
- a first aid kit that is consistent with Appendix A of OSHA's Logging operations standard;
- the provision of AEDs;
- job briefings for all employees (even those working alone);
- using wireless hands-free communication;
- accounting for employees working alone; and
- a written infeasibility/greater hazard assessment prior to hoisting employees with cranes.

The ANSI standard includes recommendations that OSHA has not included in the potential tree care operations standard. For example, the ANSI standard applies to cutting brush. At this time, OSHA is not considering including the cutting of brush in the scope, although OSHA has included in the PIRFA a regulatory option for doing so. The ANSI standard also has provisions for "Mixing Pesticides", "Pesticide Application" and "Fertilization/Soil Management." OSHA's potential standard would not regulate these hazards and chemicals, as OSHA believes preliminarily they are already adequately regulated.

PIRFA Alternative 31 explores adopting the ANSI Z133 standard.

QUESTIONS FOR THE SERs

1. Do you think OSHA should adopt the ANSI Z133 standard rather than developing its own standard? Why or why not?

2. Are there provisions in the ANSI standard that OSHA has not preliminarily included that you think should be included in an OSHA tree care standard? If so, what provisions?
3. Are there provisions in OSHA's regulatory framework that are not included in the ANSI standard that you think should be included in a tree care operations standard?

Other Industry Characteristics

OSHA has made a number of estimates for the purposes of estimating the costs of a potential tree care operations standard and welcomes feedback on these estimates.

OSHA has preliminarily estimated that tree care operations are generally performed by crews of four workers. This may include any combination of workers with any job title, including but not limited to, tree trimmers and pruners, landscapers, crane operators, general laborers, etc. However, for spray technicians, OSHA estimated an average crew size of two workers rather than four.

To estimate the costs of a potential tree care operations standard, OSHA preliminarily estimated the number of tree care jobs an average company might do in any given year. OSHA estimated that the average tree trimming crew would complete 300 jobs per year. Landscapers and spray technicians were preliminarily estimated to complete the same number of jobs per year but OSHA estimated that only 5 percent of those jobs – or 15 – would include tree care operations covered by this potential standard.

OSHA also preliminarily estimated the non-compliance rate for the various provisions of the potential standard. The non-compliance rate estimates how many employers are not currently performing work in a way that would comply with the potential tree care operations standard. A non-compliance rate of 100 percent means that no one is currently doing what OSHA might require. A non-compliance rate of 25 percent means that 75 percent of establishments are working in a manner that would comply with the potential tree care operations standard. See Table 2 below. The agency welcomes comment on these estimates.

Table 2. Estimated Non-Compliance Rate by Provision

Provision	Non-Compliance Rate
Rule Familiarization	100%
Employee Qualifications	100%
Written Tree Care Safety and Health Program	100%
Training	45%
Emergency Procedures	25%
AEDs	100%
Aerial Rescue Training	25%
Job Hazard Analysis, Job Briefing, and Worksite Setup	25%
Fire Prevention	25%
Hands-Free Wireless Radios	25%
Vehicle Inspection & Safety	82%
Aerial Devices	4%
Chippers	30%
Stump Grinders	25%
Cranes and Knucklebooms	25%
Equipment-Mounted Winches	25%
Maintain Equipment	25%
Portable Power Hand Tools	50%
Hand Tools	13%
Ladders	25%
Pruning and Trimming	25%
Weather Hazards	25%
Tree Climbing and Removal	15%
Traffic Control	44%

Sources: See the PIRFA for the references

Not every tree care job would involve all types of hazards or activities. For the purposes of estimating the costs of this potential standard, OSHA estimated the percentage of tree trimming jobs that would involve the various activities covered by the potential provisions. For example, OSHA preliminarily estimated that 100 percent of tree trimming jobs would involve a job hazard analysis, job briefing and worksite set up, but only 25 percent of jobs would involve stump grinders. See Table 3. OSHA welcomes your thoughts and feedback on these estimates.

Table 3. Estimated Percentage of Tree Trimming Jobs Covered by Potential Tree Care Provisions

Provision	% Jobs
Employee Qualifications	100.0%
Rule Familiarization [b]	100.0%
Employee Qualifications [b]	100.0%
Written Tree Care Safety and Health Program [b]	100.0%
Training [b]	100.0%
Emergency Procedures [b]	100.0%
Electric Hazard Exposure	
NAICS 2211 Electric Power Generation, Transmission and Distribution [c]	100.0%
All Other NAICS industries [c]	7.5%
Job Hazard Analysis, Job Briefing, and Worksite Setup	100.0%
Vehicle Inspection & Safety	100.0%
Aerial Devices	60.3%
Chippers	98.5%
Sprayers and Related Equipment	100.0%
Stump Grinders	25.0%
Cranes and Knucklebooms	15.4%
Equipment-Mounted Winches	25.0%
Maintain equipment	100.0%
Portable Power Hand Tools	100.0%
Hand Tools	100.0%
Ladders	100.0%
Pruning and Trimming	56.4%
Tree Climbing and Removal	38.0%
Weather Hazards	100.0%
Electric Power	7.5%
Traffic Control	74.8%

Sources: See the full PIRFA for references.

Table 4 presents OSHA's estimates of the percent of occupations and establishments affected by the potential emergency procedures provisions. This table shows the agency's estimates of how many employees will be affected by the requirement that AEDs be provided where workers are exposed to electrical hazards. OSHA welcomes your thoughts and comments on these estimates.

Table 4. Occupations/Establishments Affected by Emergency Procedures Provision

Provision	Tree Trimmers	Landscapers	Spray Technicians	Crane Operators	Establishment
Emergency Procedures					
Emergency Procedure Instruction	100%	100%	100%	100%	—
Aerial Rescue Training	—	—	—	—	100%
First Aid/CPR/AED Training	100%	100%	100%	100%	—
First Aid Kit	—	—	—	—	100%
AEDs - NAICS 221121 Electric Bulk Power Transmission and Control	100%	100%	100%	100%	0%
AEDs - NAICS 221122 Electric Power Distribution	100%	100%	100%	100%	0%
AEDs - NAICS 561730 Landscaping Services	72%	72%	72%	72%	0%
AEDs - Other NAICS	57%	57%	57%	57%	0%

Sources: See the full PIRFA for references

Based on OSHA's preliminary analysis in the PIRFA, a tree care operations standard would contain provisions that might address the causes of and thereby potentially prevent 35 to 41 fatalities a year. Examining data both from the Bureau of Labor Statistics and from OSHA's internal databases show that falls, contact with objects and equipment (sometimes referred to as "struck-bys" which includes workers struck by falling tree limbs among other things), and electrocutions are the leading causes of fatalities among tree care workers.

Tree trimmers and pruners also suffer about 1,100 nonfatal occupational injuries on average each year. While OSHA's analysis thus far has been focused on preventing fatal accidents, it is likely that nonfatal injuries are caused by the same types of hazards that cause fatalities. While OSHA has not done a close analysis of the issue, the agency believes that addressing the causes of fatalities will reduce the number of nonfatal injuries as well.

Compliance costs and profitability

As discussed above, the average costs of complying with a potential tree care operations standard could exceed 10, 15, 30, or even 50 percent of current profits for some businesses depending on a variety of factors specific to an affected entity and/or industry. Compliance costs could also be substantially less than 10 percent of current profits, perhaps even as low as less than 1 percent. These comparisons of costs to profits do not account for the possibility that firms could raise prices to help offset any potential new costs associated with the draft regulatory framework.

QUESTIONS FOR THE SERs

1. OSHA estimated that tree care operations are generally performed by crews of four workers (two workers for spray technicians only). How many workers make up a crew at your establishment? And what type of workers make up your crews?
2. How do OSHA's estimates of non-compliance (Table 2) line up with your experience?

3. OSHA estimated that the average tree trimming crew would complete 300 jobs per year. How does OSHA's estimate line up with your experience? How many jobs per year do you complete on average?
4. Do you agree with OSHA's assessment that landscapers and spray technicians perform only 15 tree trimming jobs that would be subject to the provisions of this potential standard per year? If not, what do you think is a more accurate estimate?
5. Do you agree with OSHA's estimates about the percentage of jobs that involve various activities or hazards (Table 3)? If not, what do you think would be more reasonable estimates?
6. If you are a landscaping firm, what percent of your business involves tree trimming work? What percent of your workers' time is spent on tree care activities?
7. OSHA's estimate of costs included an adjustment for overhead costs. What are your overhead costs? Do you expect you would incur additional overhead costs to comply with a tree care operations standard? What additional overhead costs would you incur and how much do you expect they would cost?
8. OSHA has identified a number of causes of fatal occupational injuries related to tree care operations and based this potential standard around addressing those causes. However, no such determination has been made related to causes of nonfatal injuries. Are the causes of nonfatal occupational injuries related to tree care operations the same as the causes of fatal occupational injuries?
9. If you were required to comply with the draft regulatory framework, how would you compare the potential costs described above to your existing profits? Would you be able to recover some or all of these costs through price increases? If so, would raising prices have any impacts on the number of tree care jobs you would expect to perform? If so, what kind of impacts?