

Explanation of Rulemaking, Final Action

**Pesticide Worker Protection Standard:
Application Exclusion Zones (AEZs)**

Department of Consumer & Business Services
Occupational Safety & Health Division
“Oregon OSHA”

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Executive Summary

Oregon OSHA – a division of the Oregon Department of Consumer and Business Services – has historically applied its workplace health and safety jurisdiction to worksite pesticide exposures, including those addressed on a federal level by the Environmental Protection Agency (EPA). In doing so, Oregon OSHA has collaborated with the Oregon Department of Agriculture (ODA) and the other agencies on the Pesticide Analytical Response Center (PARC) Board to coordinate activities and to minimize unnecessary duplication of effort.

As part of its past activities, Oregon OSHA adopted, largely by reference, the Worker Protection Standard promulgated by the EPA to address the risks experienced by agricultural employees handling or otherwise exposed to pesticides. However, Oregon OSHA also had addressed certain issues with more specificity, adopting requirements that were essentially consistent with the requirements imposed by both Oregon OSHA and the federal Occupational Safety and Health Administration (OSHA) in non-agricultural workplaces.

As a result of federal rule changes, Oregon OSHA (in collaboration with ODA) began discussions with stakeholders aimed at revising the Oregon rules to align with the new federal requirements. These revisions generally allowed Oregon OSHA to withdraw or significantly revise several existing state-unique provisions because of the federal rule's more comprehensive requirements. The revised Oregon rules were formally proposed in October of 2016 and Oregon OSHA adopted the bulk of them on February 14, 2017, with an effective date of January 1, 2018.

Oregon OSHA's comprehensive October 2016 proposal to update the Oregon version of the pesticide Worker Protection Standard had included a "compliance alternative for protected spaces" that would have allowed workers to remain within fully enclosed housing and other buildings that were "tightly constructed to minimize the entry of outside air when doors and windows are closed." Much of the public comment on the 2016 proposal focused on the AEZ requirements, with employers and their representatives generally supporting it as a more workable approach than evacuation and with workers and their representatives generally opposing it and calling for greater protection for workers and their families when pesticides were applied near worker housing.

After evaluating the rulemaking record, Oregon OSHA decided to exclude the AEZ provisions from the February 2017 adoption of the remainder of the 2016 proposal. Oregon OSHA further announced that it would work with employer and worker representatives in an attempt to develop a rule that would provide both greater flexibility to growers and workers and a higher level of worker protection, when compared to the EPA rule in relation to the AEZ. Those discussions generated the current rule, which was formally proposed in October 2017.

In the meantime, the broader context of the rulemaking had become less certain. The EPA informally indicated beginning early in 2017 that it would be reconsidering several provisions of the 2015 Worker Protection Standard, including the AEZ requirements. Oregon OSHA ultimately determined to propose its own approach to the issue without regard to uncertainty surrounding the EPA requirements, partly to resolve ongoing uncertainty within the state more quickly than would be likely at the federal level and partly to better position Oregon OSHA to argue for the equivalence of any compliance alternative that was adopted if the EPA's requirement ultimately remains in place.

At the time Oregon OSHA proposed the rule, the EPA had not yet taken any action either to delay the rule's effect or to initiate the process of reconsidering the rule. However, the EPA published such a notice on December 21, 2017. That notice indicates EPA's intention to reconsider the AEZ requirement, but it also explicitly states that the effective dates in the 2015 rule have not been modified, nor does the EPA intend to modify them. As of the date of Oregon's adoption of the rule, the EPA has not yet published the expected Notice of Proposed Rulemaking. Therefore, the EPA's AEZ requirements are fully in effect even as the EPA has indicated that it is working to propose that they be modified or withdrawn.

In summary, the revised Oregon OSHA proposal retained a more limited version of the "shelter in place" option, as well as enhanced requirements for training, notification, and protective measures that would apply regardless of whether the "shelter in place" alternative was chosen. And it proposed to replace the EPA rule's instantaneous ending of the AEZ with a brief (15-minute) waiting period after the spray

equipment had moved on. Those provisions, although with a number of modifications and clarifications, remain a part of the rule as adopted.

The decision by Oregon OSHA to appoint a Fiscal Impact Advisory Committee (FIAC) and the need to allow it time to complete its work and for that work to be subjected to public comment resulted in three extensions to the public comment period. The rulemaking record ultimately closed nearly five months after the rule had been proposed. The record of public comment on this rule, either in writing or in testimony recorded at one of the five hearings, is extensive – it appears that nearly 1,100 people either took the time to comment, to attend a hearing, or both.

The discussion of these comments and Oregon OSHA’s response to them take up much of this document. This is the participatory process that the Administrative Procedures Act envisions in its requirements that the public be provided an opportunity to comment before changes in administrative rules are finalized. Particularly in the case of a rule where there is so much genuine disagreement among the parties, Oregon OSHA welcomes the opportunity to consider the decisions to be made in light of a thorough and extensive record of public comment.

Oregon OSHA has reviewed the legal framework of this rulemaking, which falls well within Oregon OSHA’s statutory authority. Oregon OSHA has also fulfilled all its related obligations under the Oregon Safe Employment Act and the Administrative Procedures Act – and has gone beyond those requirements both by appointing the FIAC and by providing this extensive discussion of the public comments and other aspects of the rulemaking record.

The record includes a number of “form letters” and other standardized communications of different types. In addition, many of the comments made reflect either inaccurate information about existing requirements or a misunderstanding of the proposal’s effects. In all cases Oregon OSHA has evaluated the substance of the comments made based on the merits of the arguments presented.

The scope of the rulemaking decision being made by Oregon OSHA in this instance is limited in at least three important ways:

- First, Oregon OSHA’s expertise and rulemaking authority is limited by its worker protection mission – the Oregon Safe Employment Act provides a broad, but not unlimited, mandate.
- Second, Oregon OSHA’s rulemaking authority is limited by its specific ability to regulate safe and healthy work practices – not to prohibit certain types of work.
- Third, Oregon OSHA’s decision on the present rule is limited by the public notice requirements of the Administrative Procedures Act, which restricts an agency’s ability to *adopt* a rule that does not fall within the general notice parameters of the rule as it was originally *proposed*.

Oregon OSHA endeavors to make its decisions with as complete an understanding of the available information, including research, related to the subjects at hand. Oregon OSHA does recognize that science will generally not itself dictate policy decisions, and the answers to certain questions may at times be either unclear or unavailable. Nonetheless, policy decisions should be informed by the available science and made in a manner that reflects an understanding of the science involved. The present rulemaking is firmly rooted in such an understanding of the relevant science.

Oregon OSHA has reviewed that scientific record and reached the following conclusions about the general risks faced by farmworkers and their families in relation to pesticides:

- Pesticides, as a group, represent a hazard to those exposed to them, although the exact nature of those hazards – as well as the degree of certainty about those hazards – varies from pesticide to pesticide (and particularly between classes of pesticides).
- Farmworkers, in particular, remain at meaningful risk of exposure to pesticides in the workplace.
- Off-target pesticide drift remains a genuine risk to farmworkers and their families, even if its extent cannot be fully enumerated.
- Existing rules do not fully eliminate the risks or provide workers with the necessary information to do so.
- The provisions of the rule as adopted can be expected to further reduce, although not eliminate, those risks.

Many of the comments in the record supporting stronger regulation encouraged Oregon OSHA to adopt a no-spray buffer zone around worker housing. However, Oregon OSHA has concluded that no buffer zone requirement can be adopted, particularly as part of this rulemaking, making further discussion of the merits of the issue in this document unnecessary. First, and most clearly, adopting a buffer zone requirement during the current rulemaking would violate the notice requirements of the Administrative Procedures Act. Second, and more important for the longer term, Oregon OSHA does not consider itself to have the statutory authority necessary to adopt a buffer zone requirement prohibiting the application of legal pesticides by legal means to a crop – or a portion of a crop – for which the pesticides are approved.

One of the unique features of Oregon OSHA’s rule, both in contrast to its earlier 2016 proposal rule and to the rule adopted by the EPA in 2015, generated most of the discussion. This provision separates air-blast/aerial AEZ requirements into two distinct sets of requirements based on whether the pesticide represents a respiratory, rather than a contact hazard. In this manner, the rule retains a “shelter in place” option, although it is more limited than the option contained in the 2016 proposal. Most growers and grower representatives supported the option to shelter in place but argued that it should be available in all circumstances. Many worker advocates argued that it should never be available (they also frequently argued that the evacuation option was also inadequate, arguing instead for a no-spray buffer zone).

In evaluating the rule, Oregon OSHA has analyzed and considered its potential costs. Oregon OSHA has determined that, while the costs of complying with the rule are likely to be meaningful, they are also manageable. The rule provides more than sufficient value to justify those costs. Considering the record in its totality, and having evaluated the arguments made by all the commenters in the extensive rule-making record, Oregon OSHA is ultimately persuaded that the rule is both reasonable and practical.

In evaluating the record taken as a whole, Oregon OSHA is convinced of three things:

- The rule is superior to the federal rule adopted by the EPA, *both* in providing a greater measure of protection and in providing greater flexibility to employers (and to workers) in some circumstances.
- The rule will provide greater and more meaningful protections than would the rule Oregon OSHA proposed in 2016.
- The rule will provide greater and more meaningful protections than are being provided in the absence of the rule.

Put simply, Oregon OSHA believes that the rule is, indeed, a step forward. Therefore, Oregon OSHA has adopted the rule, with only limited modifications.

I. History of the Current Rulemaking

Oregon OSHA – a division of the Oregon Department of Consumer and Business Services – has historically applied its workplace health and safety jurisdiction, described broadly in the Oregon Safe Employment Act,¹ to worksite pesticide exposures, including those addressed on a federal level by the Environmental Protection Agency (EPA) and its Worker Protection Standard (WPS).² In doing so, Oregon OSHA has collaborated with the Oregon Department of Agriculture (ODA) and the other agencies on the Pesticide Analytical Response Center (PARC)³ Board to coordinate activities and to minimize unnecessary duplication of effort.

As part of its past activities, Oregon OSHA adopted, largely by reference, the Worker Protection Standard promulgated by the EPA to address the risks experienced by agricultural employees handling or otherwise exposed to pesticides. However, Oregon OSHA also had addressed certain issues (such as respirator requirements, eyewash requirements and chemical hazard communication) with more specificity, adopting requirements that were essentially consistent with those imposed by both Oregon OSHA and the federal Occupational Safety and Health Administration (OSHA) in non-agricultural workplaces.

November 2015: EPA Adopts Update to the Worker Protection Standard

In November 2015, the EPA completed a comprehensive update to its Worker Protection Standard. Generally, these changes increased the frequency and content of required training; included training recordkeeping requirements; adopted a minimum age limit for handlers and early-entry workers; more closely aligned chemical hazard communication requirements (including a provision for a “designated representative”), eyewash requirements, and respiratory protection requirements with those enforced by

¹Oregon Revised Statutes (ORS) 654.001 to 654.295.

Specifically, ORS 654.010 provides that “[e]very employer shall furnish employment and a place of employment which are safe and healthful for employees therein, and shall furnish and use such devices and safeguards, and shall adopt and use such practices, means, methods, operations and processes as are reasonably necessary to render such employment and place of employment safe and healthful, and shall do every other thing reasonably necessary to protect the life, safety and health of such employees.”

Similarly, ORS 654.015 states that “[n]o employer or owner shall construct or cause to be constructed or maintained any place of employment that is unsafe or detrimental to health.”

ORS 654.022 requires employers and others to “obey and comply with every requirement of every order, decision, direction, standard, rule or regulation made or prescribed by the Department of Consumer and Business Services in connection with the matters specified in [the Oregon Safe Employment Act and other statutes]....”

Finally, ORS 654.025 states that the Director of the Department of Consumer and Business Services “is vested with full power and jurisdiction over, and shall have such supervision of, every employment and place of employment in this state as may be necessary to enforce and administer all laws, regulations, rules, standards and lawful orders requiring such employment and place of employment to be safe and healthful, and requiring the protection of the life, safety and health of every employee in such employment or place of employment.”

²Title 40, Part 170, of the Code of Federal Regulations (generally referenced as 40 CFR 170).

³The Pesticide Analytical and Response Center (PARC) was created by executive order in 1978. The program was reauthorized under the Oregon Department of Agriculture (ODA) by ORS 634.550, in 1991.

PARC is mandated to perform the following activities with regard to pesticide-related incidents in Oregon that have suspected health or environmental effects: Collect incident information, mobilize expertise for investigations, identify trends and patterns of problems, make policy or other recommendations for action, report results of investigations, and prepare activity reports for each legislative session.

PARC itself does not have or exercise regulatory authority. Its primary function is to coordinate investigations to collect and analyze information about reported incidents. Member agencies conduct most of the investigations and take any necessary enforcement action(s). Investigation coordination includes collecting reports produced by member agencies and consultation as necessary with a toxicologist with Oregon State University. Other governmental bodies may also participate in the reporting or investigation of an incident.

The eight member agencies include the following: Oregon Health Authority (OHA), Oregon Department of Fish and Wildlife (ODF&W), Oregon Department of Environmental Quality (DEQ), Oregon Department of Forestry (ODF), Oregon Occupational Safety and Health Administration (OR OSHA), Office of the State Fire Marshal (SFM), Oregon Poison Center (OPC), Oregon Department of Agriculture (ODA).

federal OSHA; and introduced the concept of an “application exclusion zone” that prevented people from being in a designated area that was otherwise outside the treated or target area during the pesticide application.⁴ The federal rules were phased in, with most of them taking effect January 1, 2017 and other provisions taking effect January 1, 2018 (the federal training requirements were to be triggered six-month following the EPA’s completion of the training materials and the resulting publication of a notice in the federal register indicating the materials were complete⁵).

October 2016: Oregon OSHA Proposes WPS Revisions in Response to the Federal Changes

As a result of the federal rule changes, Oregon OSHA (in collaboration with ODA) began discussions with stakeholders aimed at revising the Oregon rules to align with the new federal requirements. These revisions generally allowed Oregon OSHA to withdraw or significantly revise several existing state-unique provisions because of the federal rule’s more comprehensive requirements. The revised Oregon rules were formally proposed in October of 2016⁶ and Oregon OSHA adopted the bulk of them on February 14, 2017, with an effective date of January 1, 2018.⁷

Although Oregon OSHA and its various stakeholders representing employers, workers, and other government entities were able to come to relative agreement on most of the proposed revisions, the newly created Application Exclusion Zones (AEZs) were a more difficult proposition, particularly as they applied to employer-provided on-farm housing, which is frequently located within the EPA’s 100-foot AEZ for air-blast and aerial spray applications.

Grower and grower representatives, in particular, expressed concern about the effect on the workers and their families (and on the entire operation) if the rule required removal of workers from the housing to apply pesticides, especially during the late night and early morning hours. Although the EPA AEZ provision clearly applies to such activities, a review of the federal record makes it reasonably clear that the EPA had not specifically considered the implementation of the rule in relation to worker housing located in or near orchards and other agricultural operations. Some grower and grower representatives also raised concerns about the impact on packing and other processing operations that would fall within the AEZ (again, the focus was generally on the 100-foot AEZ in relation to air-blast or aerial spray applications).

As a result of these discussions, but without complete stakeholder agreement,⁸ Oregon OSHA’s comprehensive October 2016 proposal to update the Oregon version of the pesticide Worker Protection Standard included a “compliance alternative for protected spaces” that would have allowed workers to remain within fully enclosed housing and other buildings that were “tightly constructed to minimize the entry of outside air when doors and windows are closed.” Employers who chose this “shelter in place” alternative also would have been required to implement additional notification, training and protective measures to address unintended drift into the AEZ. In the 2016 proposal (as under the federal EPA rule) employers who implemented the AEZ’s evacuation requirement – which remained an option for them under that proposed rule – would not have been required to take those additional measures.

Much of the public comment on the 2016 proposal focused on the AEZ requirements, with employers and their representatives generally supporting it as a more workable approach than evacuation and with workers and their representatives generally opposing it and calling for greater protection for workers and their families when pesticides were applied near worker housing. Criticism of the specific provisions of the rule focused on the failure to mirror the EPA requirements and the lack of a clear standard for the “tightly constructed” language used in the proposed rule. Opponents of the change were concerned, for

⁴These changes to 40 CFR 170 are summarized by the EPA in a chart found at https://www.epa.gov/sites/production/files/2017-01/documents/comparison_chart_wps_011117_cwpb.pdf.

⁵Although not directly related to this rulemaking, Oregon OSHA is aware of the delay in the EPA’s publication of the required notice, the litigation resulting from that delay, and the recent publication of the required notice. Neither the AEZ requirement nor the training requirements in the state rule adopted in 2016 are affected by this activity on the federal level.

⁶<http://osha.oregon.gov/OSHArules/proposed/2016/ltr-div4-wps.pdf>.

⁷<http://osha.oregon.gov/OSHArules/adopted/2017/ao1-2017-ltr-wps.pdf>.

⁸Employers and employer representatives generally considered the proposal to be superior to the EPA rule, while worker advocates generally opposed the proposal as lacking sufficient protections.

example, that employers might mistakenly conclude that all registered housing would qualify, even if the structure were not constructed in a manner that would minimize airflow into the building.

February 2017: Oregon OSHA's Rule Adoption Defers AEZ and Related Provisions

After evaluating the rulemaking record, Oregon OSHA decided to exclude the AEZ provisions from the February 2017 adoption of the remainder of the 2016 proposal. Oregon OSHA further announced that it would work with employer and worker representatives in an attempt to develop a rule that would provide both greater flexibility to growers and workers and a higher level of worker protection, when compared to the EPA rule in relation to the AEZ.

In preparing to reconvene the stakeholder advisory committee in a press release announcing the decision,⁹ Oregon OSHA indicated that it would “ask the committee to focus on the specific issues involving the EPA-designated Application Exclusion Zone (AEZ). The zone surrounds and moves with certain pesticide-spray equipment during applications and must be free of all people other than appropriately trained and equipped pesticide handlers.” In discussing the previous proposal for a compliance alternative, the release said that “Oregon OSHA would like the advisory committee to consider whether there are ways to strengthen not only the shelter in place alternative, but also the underlying exclusion zone requirement.”

An expanded advisory committee, including members of the Small Agricultural Employer Advisory Committee, began meeting shortly after the rulemaking decision and met several times (both as a full committee and in focused working groups) through the following six months.¹⁰ Although the rule proposal was again not the product of a consensus among the committee participants, several revised provisions resulted specifically from the discussions and certain elements – mostly related to training and informing workers and their families about pesticide applications – had broad support from the group.

In the meantime, the broader context of the rulemaking became less certain. The EPA informally indicated beginning early in 2017 that it would be reconsidering several provisions of the 2015 Worker Protection Standard, including the AEZ requirements. Some stakeholders suggested that Oregon OSHA should wait for the EPA to act. Some grower representatives, in particular, had supported Oregon OSHA in developing a proposed compliance alternative to what they viewed as an unworkable EPA rule. But if the EPA rule were to be withdrawn, they viewed any Oregon OSHA rulemaking on the subject as unnecessary and inadvisable.

Other stakeholders who served as worker advocates insisted that the EPA requirements should be enforced without any modifications that would reduce requirements – and that if the 2015 requirements were withdrawn at the federal level they should still be maintained in Oregon. Many of them also argued that the state should adopt additional requirements, regardless of federal action. Some worker advocates, however, accepted – not necessarily with enthusiasm – the inclusion of a limited “shelter in place” provision that differed from the federal rule as part of an overall package that also included proposals for other state-specific provisions related to notification and protection of workers and their families in agricultural labor housing.

Oregon OSHA ultimately determined to propose its own approach to the issue without regard to uncertainty surrounding the EPA requirements, partly to resolve ongoing uncertainty within the state more quickly than would be likely at the federal level and partly to better position Oregon OSHA to argue for the equivalence of any compliance alternative that was adopted if the EPA's requirement ultimately remains in place.

At the time Oregon OSHA proposed the rule, the EPA had not yet taken any action either to delay the rule's effect or to initiate the process of reconsidering the rule. However, the EPA published such a notice on December 21, 2017. The notice in the federal register¹¹ did not itself propose any immediate change

⁹<http://www.oregon.gov/newsroom/Pages/NewsDetail.aspx?newsid=1542>

¹⁰The committee's activities are reflected at <http://osha.oregon.gov/rules/advisory/ag-emp/Pages/default.aspx>.

¹¹<https://www.federalregister.gov/documents/2017/12/21/2017-27303/pesticides-agricultural-worker-protection-standard-reconsideration-of-several-requirements-and>

and explicitly refused to delay the rule's effective date. Instead, it indicated that the "EPA expects to publish a Notice of Proposed Rulemaking in FY 2018 to solicit public input on proposed revisions to the WPS requirements for minimum age, designated representative, and application exclusion zone." Although the notice confirmed EPA's intention to reconsider the AEZ requirement, the same notice explicitly stated that the effective dates in the 2015 rule have not been modified, nor does the EPA intend to modify them. As of the date of Oregon's adoption of the rule, the EPA has not yet published the expected Notice of Proposed Rulemaking. Therefore, the EPA's AEZ requirements are fully in effect even as the EPA has indicated that it is working to propose that they be modified or withdrawn.

October 2017: Oregon OSHA Publishes Revised Proposal

After taking into account the various discussions within the stakeholder advisory committee, Oregon OSHA formally proposed the rule that is the subject of this document in October 2017.¹² The agency scheduled five public hearings – at times and locations selected with the assistance of members of the advisory group – and originally indicated that public comment would be accepted through December 15, 2017.

The October 2017 proposal included a number of provisions that will be discussed at length elsewhere in this document. In summary, it retained a more limited version of the "shelter in place" option, as well as enhanced requirements for training, notification, and protective measures that would apply regardless of whether the "shelter in place" alternative was chosen. And it proposed to replace the EPA rule's instantaneous ending of the AEZ with a brief (15-minute) waiting period after the spray equipment had moved on. Those provisions, although with a number of modifications and clarifications, remain a part of the rule as adopted.

On November 3, 2017, Oregon OSHA received a letter from one grower organization, representing a large number of the growers who would be among those most affected by the rule, objecting to the Fiscal Impact Statement filed with the proposed rule and requesting the appointment of a Fiscal Impact Advisory Committee (FIAC).¹³ In reviewing the letter and considering the concerns raised in it, Oregon OSHA concluded that the original Fiscal Impact Statement was sufficient. Nonetheless, the agency recognized the value of having a FIAC review the statement and a committee was appointed and charged with reviewing the Fiscal Impact Statement and recommending any changes that should be made to it. The committee included seven members – three representing growers, three worker advocates, and a chair selected for his expertise in facilitation and organizational development to lead the discussions. The work of the FIAC and the resulting revisions to the Fiscal Impact Statement are discussed in more detail in a separate section of this document.

The appointment of the FIAC and the need to allow it sufficient time to meet and complete its work resulted in two extensions to the public comment period. Because the FIAC's work resulted in changes to the Fiscal Impact Statement, a further extension was necessary to allow comment on the revised document. As a result of these three extensions, the rulemaking record ultimately closed on March 15, 2018. That record provides the basis for this rulemaking.

The record of public comment on this rule, either in writing or in testimony recorded at one of the five hearings, is extensive. A total of 101 oral comments were received during the hearings, and another 938 comments were received in writing. At least 144 individuals attended at least one hearing but did not make comments at that hearing. Even after allowing for those who commented more than once, or who attended a hearing without comment but separately commented in writing or at another hearing, the record is extensive and it appears that nearly 1,100 people either took the time to comment, to attend a hearing, or both.

The discussion of these comments and Oregon OSHA's response to them take up much of the balance of this document. However, it is important to acknowledge that – while such an extensive record has taken time to evaluate and to give the arguments raised appropriate weight – this is the participatory process

¹²<http://osha.oregon.gov/OSHArules/proposed/2017/ltr-wps-pt2.pdf>

¹³Letter from Mike Doke, Columbia Gorge Fruit Growers, November 3, 2017.

that the Administrative Procedures Act envisions in its requirements that the public be provided an opportunity to comment before changes in administrative rules are finalized. Particularly in the case of a rule where there is so much genuine disagreement among the parties, Oregon OSHA welcomes the opportunity to consider the decisions to be made in light of a thorough and extensive record of public comment.

II. Description of the rule as adopted

The rule as adopted is consistent with the rule as proposed in its overall approach and with regard to most specific elements, which are summarized below:

- Like the proposal, the rule requires the recognition of an “application exclusion zone” (AEZ) that varies in size depending upon both the nature of the application method and the hazards presented by the pesticide being applied. For airblast and aerial spray applications where the droplet size is smaller than medium, the AEZ is either 150 feet if the label requires the applicator to wear a respirator or 100 feet if the label does not do so.
- Like the proposal, the rule requires evacuation of the 150-foot AEZ during such applications when the label requires the applicator to wear a respirator. The AEZ remains in place until 15 minutes after the spray equipment (and therefore the AEZ) has moved on.
- Like the proposal, the rule allows employers to give their employees during such applications the option of remaining inside enclosed agricultural structures (as defined by the rule) or evacuating the 100-foot AEZ when the label does not require the applicator to wear a respirator. Again, the AEZ remains in place until 15 minutes after the spray equipment has moved on.
- Like the proposal, the rule requires employers to ensure that prior to pesticide applications, any enclosed agricultural structures and related areas within the AEZ must be protected from pesticide intrusion in several specific ways.
- Like the proposal, the rule requires instruction for those occupants of enclosed agricultural structures that falls within an AEZ (regardless of whether those occupants will evacuate or remain in the structure). The rule was modified slightly (consistent with original intent) to clarify that this training must include methods of reporting pesticide residue or deposit.
- Like the proposal, the rule requires that information related to pending pesticide applications be provided to adult occupants of agriculture labor housing that falls within an AEZ.
- Like the proposal, the rule includes specific language encouraging the use of innovation to reduce potential for drift.

The rule also differs from the proposal in several specific respects, which are summarized below:

- In relation to those pesticide applications that do not involve airblast or aerial applications and that involve droplet size of medium or greater, the rule as adopted continues to require a 25-foot AEZ but the rule no longer includes the provision from the proposal that would left the AEZ in place until 15 minutes after the spray equipment moves on.
- The rule as adopted more clearly limits its application (consistent with both Oregon OSHA’s intent and jurisdiction) to the exposure of those employees and labor housing occupants under the employer’s direct supervision and control.
- The rule as adopted eliminates recurring references to “handler employers” that generated uncertainty about the intended scope of employer responsibility for workers not under their direct supervision and control.
- The rule as adopted eliminates the explicit reference prohibiting drift onto housing that was part of the proposal (although such drift remains illegal under other standards) and clarifies the need to identify and address any drift or deposit that exposes workers or agricultural labor camp occupants to harm when the AEZ has ended.
- The rule as adopted also includes a number of notes and additional clarifications that resulted from public comment but that do not change the underlying requirements of the rule when compared to the proposed rule.

III. Application of Statutory Requirements

This rulemaking falls well within Oregon OSHA’s statutory authority, and Oregon OSHA has fulfilled all its related obligations under the Oregon Safe Employment Act and the Administrative Procedures Act.

Summary of Oregon OSHA’s Statutory Authority and Obligations under the OSEA

The purpose of the Oregon Safe Employment Act (OSEA) and of all rules adopted under that law is found in ORS 654.003, which describes the law’s general purpose as

...to assure as far as possible safe and healthful working conditions for every working person in Oregon, to preserve our human resources and to reduce the substantial burden, in terms of lost production, wage loss, medical expenses, disability compensation payments and human suffering, that is created by occupational injury and disease.

In discussing that purpose, ORS 654.003(3) states that one of the Legislative Assembly’s intents is to “[a]uthorize the Director of the Department of Consumer and Business Services and the designees of the director to set reasonable, mandatory, occupational safety and health standards for all employments and places of employment.”¹⁴

This general statement about rulemaking is further amplified by ORS 654.035(1), which indicates that the director may

- (a) *Declare and prescribe what devices, safeguards or other means of protection and what methods, processes or work practices are well adapted to render every employment and place of employment safe and healthful.*
- (b) *Fix reasonable standards and prescribe and enforce reasonable orders for the adoption, installation, use and maintenance of devices, safeguards and other means of protection, and of methods, processes and work practices, including, but not limited to, work practices qualifications for equipment, materials and activities requiring special competence, to be as nearly uniform as possible, as may be necessary to carry out all laws relative to the protection of the life, safety and health of employees.*
- (c) *Fix and order reasonable standards for the construction, repair and maintenance of places of employment and equipment that will render them safe and healthful.*
- (d)
- (e) *Require the performance of any other act that the protection of the life, safety and health of employees in employments and places of employment may demand.*

The current rule explicitly addresses “safe and healthful working conditions” in Oregon, and it represents Oregon OSHA’s determination of appropriate “safeguards or other means of protection...well adapted to render...safe and healthful” the affected workplaces. Although other agencies, and particularly the Oregon Department of Agriculture, have a significant role in regulating pesticides, Oregon OSHA’s authority to regulate them within the workplace is clearly established within the Act (and has been relied upon for past rulemaking on the subject).

The OSEA also provides for consultation with stakeholder advisers to assist “in establishing standards of safety and health,” indicating that Oregon OSHA “may adopt and incorporate in its regulations, rules and standards such safety and health recommendations as it may receive from such advisers.”¹⁵ And although the statute referring to the Small Agricultural Employer Advisory Committee (SAEAC) to discuss the administration of the act in relation to agriculture does not specifically reference rulemaking,¹⁶ Oregon OSHA has long used an expanded version of the SAEAC to discuss rulemaking proposals that will affect agriculture, as was the case in the development of both this proposal and the 2017 rulemaking that preceded it.

¹⁴The Director has, in turn, used the authority of ORS 654.025(2) and (5) to delegate the authority to implement and enforce the Oregon Safe Employment Act to the Administrator of the Occupational Safety and Health Division (Oregon OSHA) and has delegated his rulemaking authority under the OSEA to the Oregon OSHA Administrator.

¹⁵ORS 654.090(2)

¹⁶ORS 654.172(2)

Summary of Administrative Procedures Act (APA) Requirements

The rulemaking provisions of the Oregon Administrative Procedures Act¹⁷ include a number of provisions related to public notice and to comment periods, explaining the circumstances where the agency can take immediate action or where the agency can dispense with the need for public hearings. In relation to the current rulemaking, those latter exceptions do not apply and the agency has not suggested otherwise.

The law both encourages and in some respects requires that affected stakeholders be involved in the development of proposed rules¹⁸ – both the current proposal and its predecessor were the product of a multi-year process of discussion with stakeholders to explore the issues involved. Indeed, Oregon OSHA’s effort to find a more workable approach than that adopted by the United States Environmental Protection Agency (EPA) was specifically the result of such stakeholder involvement, as were the various additional provisions proposed and ultimately adopted that differ from the federal requirements.

The law requires that notice be given when a proposal is made,¹⁹ and Oregon OSHA gave such notice²⁰ (the extent of the record itself provides ample evidence of the notice’s effectiveness). The law requires that a set of specific elements be included in the notice,²¹ particularly in relation to the anticipated fiscal impact of the proposal.²² While Oregon OSHA believes that the original Fiscal Impact Statement filed as part of the rulemaking was sufficient, the agency nonetheless determined to appoint a Fiscal Impact Advisory Committee and to abide by its recommendations. The fiscal issues themselves are discussed in greater detail in another section of this document.

The law does not require a discussion of the merits of the rule – beyond the initial Statement of Need filed with the original proposal – nor does it require a written response to the public comments provided in writing or in public testimony. Finally, the law does not require an evidentiary record nor a written explanation of the decision made.²³ However, as has been its practice in the past (particularly in relation to more controversial or substantive rulemaking activities) Oregon OSHA has provided such an explanation and discussion of the available evidence in the form of this document.

The law does include a policy statement that state “agencies shall seek to retain and promote the unique identity of Oregon by considering local conditions” when adopting rules, while at the same time promoting a policy “that agencies attempt to adopt rules that correspond with equivalent federal laws and rules.”²⁴ As this document’s remaining discussion of the rule as adopted reflects, the present rulemaking provides exactly the sort of balance between deference to federal requirements and consideration of “local or special conditions” envisioned by the statute. Oregon OSHA began with the federal rule and adjusted it only in response to concerns raised by Oregon stakeholders about the effect of the federal provisions – whether it was the need to consider the unique impact on Oregon’s agriculture labor housing or the need to provide stronger worker protections in accordance with the purpose of the Oregon Safe Employment Act.

Finally, the law prescribes the manner in which notice of the rulemaking decision will be made,²⁵ and Oregon OSHA has complied with those requirements as part of the rule adoption filing.

¹⁷ORS 183.325 to 405

¹⁸ORS 183.333

¹⁹ORS 183.335

²⁰<http://osha.oregon.gov/OSHArules/proposed/2016/ltr-div4-wps.pdf>

²¹ORS 183.335

²²ORS 183.335(2)(b)(E), ORS 183.336, ORS 183.530, and ORS 183.534

²³ORS 183.335(13)

²⁴ORS 183.332

²⁵ORS 183.355

IV. Appropriate Consideration and Evaluation of Public Comments

Given the extensive record, it is appropriate to provide some discussion of the manner in which Oregon OSHA expects to evaluate such comments. Indeed, at least some commenters chose to focus at least some of their own comments on the question of what was in the public record, how it was assembled, and who was allowed to comment.

First of all, Oregon OSHA did not exclude any timely comments from the record, although at least one commenter suggested that accepting “public testimonies from individuals, special interest groups who present no data or understanding of agricultural operations show that” Oregon OSHA’s administrator “has no respect for producers (stakeholders) and their employees!”²⁶

Oregon OSHA disagrees. Questions of expertise, residence in Oregon, understanding of the issues, and even motivation are all worthy of consideration. But they are matters for the decision-making process, when comments are evaluated based on the merit of the arguments made, rather than as part of any effort to limit public comments within the record. Indeed, Oregon OSHA understands the Administrative Procedures Act to require that such comments be accepted by any “person” who has an interest in the subject under discussion.²⁷

The Overall Nature of the Record

The record includes a number of “form letters” of different types, submitted using a variety of approaches and with varying degrees of individualized content. A total of 492 comments criticizing the rule as a failure to protect workers were submitted using two postcards (327 copies of the first postcard were received, and 165 of the second postcard). Indeed, 151 copies of the first postcard were sent to Oregon OSHA in a single envelope, while 150 copies of the second postcard arrived in a single envelope. Out of that overall total, 109 of the commenters provided some additional notation. However, a relatively small number of those notes added substantive arguments. Most either reiterated points made on the preprinted language or exhorted Oregon OSHA to take what they considered appropriate action, by using either positive encouragement or criticism.

The record also includes a petition providing a similar perspective, signed by 42 individuals, of whom 14 provided some additional comment. In a few cases, these additional comments were relatively extensive and substantive. Although most of the signatures indicated those signing were from Oregon, some were from as far away as New York.

Finally, the record includes 132 “form” e-mails suggesting the proposed rule would provide insufficient protection. However, 52 of those e-mails include additions or modifications to the “standard” e-mail.

Taken together, this suggests that 586 of the comments received criticizing the proposal as being too weak were generated by four distinct petitions and/or form letters.

From the other perspective, Oregon OSHA received two sets of “form e-mails” reflecting the concerns of growers who supported the “shelter in place” provision but generally opposed other elements of the rule as being too restrictive. The first set included 62 e-mails (of which Oregon OSHA identified three with distinct comments in addition to the template) and the second set included 60 e-mails (of which 10 with distinct additions were identified). Without further characterizing or otherwise taking into account the significant number of additional letters received that themselves often repeated near-identical talking points, this means that 122 of the comments received criticizing the proposed rule as being too stringent were generated by those two sets of form e-mails.

Taken together, this means that more than two-thirds of the comments received did not represent distinct considerations, beyond the relatively small number of substantive additions or other modifications made

²⁶E-mail from Gary Tamura, December 19, 2017.

²⁷ORS 183.335(3)(a) begins with the statement “When an agency proposes to adopt, amend or repeal a rule, it shall give interested persons reasonable opportunity to submit data or views.” And the broad phrase “interested persons” is used throughout the discussion of public comment (in contrast to a more restrictive phrase such as “affected persons”). It seems clear that the statute envisions a broad reading of the term “interested,” rather than a narrow rendering that would suggest something akin to party status or standing when pursuing a case in court.

to these e-mails. At the same time, the quantity of comments in support of the respective viewpoints does show that both viewpoints have a relatively broad base of support. Given the size of the overall record, there remains a very large number of distinct arguments and illustrations to be found in the comments as a whole.

Considering Comments Based on Inaccurate Information

More challenging than the frequency of “form letters” is the problem created by individuals commenting on the rule based upon an incomplete or even inaccurate understanding of the rule or of the situation that would exist in the absence of the rule.

Non-Existent Requirements for a No-Spray Buffer Zone.

The record is well-stocked with comments suggesting that Oregon OSHA is proposing to repeal an existing federal “no spray” buffer zone or another existing requirement. For example, one commenter criticized the proposed changes as ones that “will take away important protections like spraying near labor camp.”²⁸ Even aside from likely federal reconsideration of its rule, the EPA rule includes no such buffer zone. Both the existing federal Application Exclusion Zone and that being addressed by these Oregon OSHA rules allow workers and their families to return to normal activities *after* spraying and include no prohibition on spraying near the structures in question. While the EPA rule and the Oregon rule differ in several significant ways, the existence of a “no spray” buffer zone is not one of them.

This lack of a federal buffer zone requirement presents challenges when evaluating comments suggesting that the proposed rule would “harm workers” and that adoption of a “300 foot no spray buffer” is a “matter of immigrant and racial justice” at least in part because such a buffer “is the federal standard.”²⁹ It also makes it more difficult to evaluate comments suggesting that the Oregon proposal reduces an existing buffer zone requirement. For example, one commenter stated “...as I understand the net effect of bringing the Oregon law into harmony with the EPA, it’s a net reduction buffer zone from 200 to a hundred feet; correct?”³⁰ One commenter wrote plainly, “I am writing to request that buffer zones that protect the health of our farm workers be expanded or at least maintained, and that we do all we can to improve housing and living conditions for those who work hard for us to put food on our family tables.”³¹

Another commenter made a similar observation, declaring, “Instead of narrowing the buffer zone around housing communities, we should be talking about expanding them, to the point that absolutely prevents drift threats from spraying.... Oregon OSHA should not change the rules that were put in place to protect farmworkers.”³²

A number of comments challenge what the commenters believe to be Oregon OSHA’s proposal to repeal an “existing” 150-foot buffer zone (although in the case of these comments, it is not absolutely clear that they were advocating a complete “no-spray” buffer zone). For example, one e-mail was headed “Maintain or Expand Buffer Zone for Pesticide Spraying” and began “OSHA – Please maintain the 150 ft. buffer zone for pesticide spraying or, better yet, expand it to 300 ft.”³³ Not only is there no existing buffer zone in state or federal worker protection rules, the only place Oregon OSHA is aware of where the 150-foot distance appears is in Oregon OSHA’s own proposed rule – which expands the AEZ for pesticides requiring respiratory protection beyond the 100-foot EPA provision to 150 feet.

²⁸Maria Jaramillo, on behalf of Mano a Mano Family Center, Salem, in the public hearing at 6 pm, November 15, 2017, in Woodburn transcript p. 27.

²⁹Will Laying, on behalf of Portland Jobs with Justice, in written statement at public hearing at 6 pm, November 15, 2017 in Woodburn.

³⁰Comments by Michael Libby in the public hearing at 6 pm, December 5, 2017, in Medford, transcript pp. 17-18.

³¹E-mail from Gilda Montenegro-Fix, December 22, 2017.

³²Comments by Samuel Davila in the public hearing at 6 pm, November 15, 2017, in Woodburn, transcript p. 37.

³³E-mail from Peter and Diane Ware, February 27, 2018. See also e-mail from Micki Baker, February 26, 2018, and e-mail from Christina Kukuk, March 8, 2018.

At least one other comment appeared to believe that Oregon OSHA was proposing a 150-foot buffer zone, and suggested rather forcefully that such a proposal was inadequate:

The comments that were submitted to you, I read some of them, and it mentioned that 500 feet is the closest that they can spray to livestock? If that's true, I think that's an example of how ridiculous these rules are. If livestock are protected up to 500 feet, then why are we arguing over 150 feet, if livestock, you have to spray – can't spray closer than 500 feet; for fish, 300 feet?

We are talking about people here. It's – a distance less than 500 feet, to me, seems obviously inadequate, for 500 feet. Um, I would like to see it be a thousand feet, that's what I would like to see for the housing. At least they'd stand a chance.

Um, a little kid running out in the yard, they are not going to go, oops, let me see, where is 150 feet? The kid doesn't know. The kids play there, the people live their whole life there, um, and exposed to, you know, in the fields to a very high load, higher than any of us would ever want to imagine, but yet, then they come home and they have been sprayed, you know, within 150 feet?

I just think it's inexcusable and improper for us to even consider anything less than protections offered to livestock. So I urge you to, um, for a thousand-foot buffer zone around these exclusionary – to increase the size of them.³⁴

In addition to uncertainty about the commenter's understanding of the distinction between the AEZ and a buffer zone, Oregon OSHA must evaluate the argument made in light of the misunderstanding of written comments the commenter briefly reviewed as part of the hearing materials. Much of the argument is based on a mistaken belief that spraying is prohibited within 500 feet of livestock. It is not (the material he read apparently made a vague reference to the provision in the existing Agriculture Labor Housing standard that prohibits such housing from being located within 500 feet of a "livestock operation"³⁵). Later commenters in the same hearing either expressly³⁶ or implicitly³⁷ reflected the same mistaken belief that such a prohibition exists after hearing this individual describe it.

It is even more challenging to evaluate comments on the rule when it is not *clear* whether the commenter's assessment of what level of protection would be appropriate is or is not based on a misunderstanding of existing state or federal requirements. For example, the commenter referenced above correctly noted that "Many have testified today that the proposed changes will harm farmworkers."³⁸ But how many of those who testified against the rule as being harmful to farmworkers shared her belief that there are existing prohibitions against spraying near a camp, and how many of them shared the earlier commenter's belief that a 300-foot no spray buffer "is the federal standard"? In evaluating the comments, it would be useful to know how many of them reflect an accurate understanding of the relationship between the proposed rule and the requirements that would exist if the rule were not adopted. Unfortunately, it is not always possible to make such a determination about the commenter's underlying understanding of the issues.

Similarly, one commenter contrasted her understanding of the rigor of the EPA rulemaking process with that employed by Oregon OSHA:

The U.S. EPA went through a lengthy process, a medical and economic analysis, where they determined more regulations were necessary to protect our community from the effects of pesticide exposure. So Oregon OSHA did not go through a lengthy process of medical and economic analysis before they determined that the EPA's worker protection standards were not necessary.

³⁴Comments by Alan Widmyer in the public hearing at 6 pm, December 5, 2017, in Medford, transcript pp. 53-54.

³⁵See OAR 437-004-1120(6)(i).

³⁶Comments by Lisa Arkin, Beyond Toxics, in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 64: "Pesticide labels require buffer zones for humans, sometimes for fish, I guess now for cattle; I just learned that today."

³⁷Comments by Elise Higley, Our Family Farms, in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 654: "...we have made a stance to please ask OSHA to at least have a 300-foot buffer zone. Now that I've heard this information tonight, I feel like the minimum should be 500. So I would just like to say that on behalf of Our Family Farms."

³⁸Comments by Maria Jaramillo, Mano a Mano Family Center, Salem, in the public hearing at 6 pm, November 15, 2017, in Woodburn, p. 27.

*The U.S. EPA determined that salmon and streams need a 300-foot buffer zone, but Oregon OSHA has yet to provide the same respect for our farm workers, the foundation of our agriculture-dominated economy.*³⁹

Oregon OSHA had already adopted most of the EPA's worker protection standards, including the bulk of the revisions made by the EPA in 2015. Even in relation to the AEZ requirements, Oregon OSHA had not proposed to set them aside but rather to adopt a revised set of requirements that are more permissive in one respect but more stringent in several others. Clearly, the commenter disagreed with Oregon OSHA's proposal – but given the level of confusion reflected in comments throughout the record and the clear suggestion in the comment itself that Oregon OSHA was proposing to disregard the EPA's action entirely, it is difficult to know exactly what understanding the commenter had regarding the substance of the proposed rule.

Assessing the impact of the above comment is made even more difficult when one considers the comparison to salmon-protection buffer zones. The commenter first criticizes Oregon OSHA for not deferring to the EPA's "lengthy process," but then criticizes Oregon OSHA for not proposing a 300-foot buffer zone for worker protection, when the EPA itself did not choose to adopt such a buffer zone as part of the same lengthy process.

Similarly, another commenter suggested that the state should not develop "a compliance alternative to rules that had been established by hard-won efforts among the scientific background," after criticizing the state rule saying "to minimize these standards or to do away with some and assume that by telling people they should walk 150 feet away is going to help them is just absolutely horrifying to me."⁴⁰ Compliance with the EPA rule, of course, is possible by telling people they should walk 100 feet away.

As an illustration of the difficulty presented when an individual's comments suggest a misunderstanding of the existing requirements, but do not clearly indicate exactly what his or her understanding of those requirements actually is, one commenter indicated that she and her organization were "very concerned about the proposed rule change."⁴¹ She then discussed the hazards of pesticides and indicated that "workers should be informed when pesticides are being applied, whether they're living in camps or working in the fields."⁴² While Oregon OSHA considers that comment to be supportive of its proposal to increase requirements to provide information to housing occupants, it is not clear whether the commenter herself was aware that the Oregon OSHA proposal addressed the issue she was discussing more fully and more directly than does the EPA requirement. She then continued her comments with the following observation:

For too long, when it comes to housing, there has been no rules about how close they can be to orchards or the fields. We want Oregon OSHA to put a distance between our housing and the fields that are being sprayed with pesticides. Both the growers and the workers would benefit.

Please do not build farmworker housing within 300 feet of the orchard. If they do not have enough distance, don't build there. We believe that the proposed alternative by the Oregon OSHA is contrary to the already established Worker Protection Standard because this offers protection to farmworkers and their families.

*Farmworkers are Oregon's most valuable workers. Our economic viability depends on farmworkers being safe and healthy. We don't support the current changes. We believe that OSHA should uphold the intent and the standards of the Worker Protection Standard that was adopted by the EPA to protect these farmworkers. By proposing their current alternatives, OSHA is going against the purpose and the science that's established by the EPA. We ask Oregon OSHA to apply the federal rule in place.*⁴³

³⁹Comments by Sydney Hamlett, read by Kenda Swartz, in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 86.

⁴⁰Comments by Michelle Simon in the public hearing at 6 pm, November 15, 2017 in Woodburn, transcript pp. 43-44

⁴¹Comments by Brenda Mendoza, on behalf of the Service Center for Farmworkers, Woodburn, in the public hearing at 6 pm, November 15, 2017, in Woodburn, transcript pp. 24-25.

⁴²Ibid., p. 25.

⁴³Ibid., p. 25-26. See similar comments from Jaime Arreteondo, CAPACES Leadership Institute, in the public hearing at 6 pm, November 15, 2017, in Woodburn, transcript pp.9-10

Although she expressly criticizes the Oregon proposal and instead advocates relying exclusively upon the federal rule, it is also clear that she supports increased information requirements, which are part of the Oregon OSHA proposal. And she clearly supports a buffer zone, which is neither proposed by Oregon OSHA nor an existing federal requirement. In evaluating her comments (and other similar comments) Oregon OSHA must consider the substantive arguments made, even while operating with the understanding that the commenter's expressed conclusion (in this case, apparent opposition to the Oregon OSHA proposal in its entirety) appears to be at least partly based on a misunderstanding of what would in fact be required if Oregon OSHA had taken no action to change existing requirements.

Lack of Clarity in Commenters' Understanding of the Federal Requirements

One commenter provided what she described as “more of a legal analysis,” and suggested that Oregon OSHA's rule would violate the Supremacy Clause of the United States Constitution.⁴⁴ However, while she pointed to the Oregon OSHA rule's language regarding agricultural structures and correctly noted that those provisions are unique to Oregon's rule, she focused her substantive comments on a subject not addressed at all by the federal rule, stating that “A buffer zone around farmworker housing in the fields is the only way to protect farmworkers and their families from drift in a scenario of being adjacent to crop dusting, other aerial applications, and air blast sprays.”⁴⁵ After describing the “compliance alternative” as “illegal pursuant to federal law” and “arbitrary” she concluded, “If farmers cannot provide a no spray protective buffer around the housing where farmworkers and their families live, sleep, eat, shower, and rest, then they should not spray.”⁴⁶

In evaluating an argument such as this one where the substance of the argument appears somewhat disconnected from the conclusion, it is not critical to know whether the commenter recognized the inconsistency in her argument or believed the federal rule requires more than it does. Instead, Oregon OSHA has considered the argument on its merits. Oregon OSHA has concluded that its rulemaking is not constrained by the EPA requirement that states must either adopt the federal requirements by reference or have their own regulations that are equivalent to or more stringent than the federal requirements (and it is certainly not constrained by a general application of the Supremacy Clause).

Oregon OSHA is not the EPA designee for the state of Oregon – that responsibility is fulfilled by the Oregon Department of Agriculture (ODA). State OSHA programs are not compelled by their agreement with the federal Occupational Safety and Health Administration to adopt the EPA's Worker Protection Standard. It is Oregon OSHA's understanding that only one other state OSHA program has actually joined Oregon OSHA in doing so.⁴⁷ In addition, Oregon OSHA also believes that the additional requirements found in the Oregon OSHA rule create a credible argument that the Oregon OSHA rule provides “equivalent” protection, although in one limited circumstance – the allowance of “shelter in place” as an option in certain situations – the Oregon rule is less stringent than the existing federal rule. Oregon OSHA therefore does not believe that the EPA will have any insurmountable concerns about the ODA continuing to rely upon Oregon OSHA to handle many of the workplace enforcement aspects of the ODA's responsibilities as the EPA designee. Those concerns are even less likely to materialize, of course, if the EPA follows through on its apparent plan to relax the existing AEZ requirement.

Confusion about the Relationship of the “Shelter in Place” Alternative to Federal Requirements

Confusion about the proposal and its relationship to existing requirements, whether state or federal, is not limited to those who expressed opposition to the rule as providing insufficient protection. A number of growers commented in support of allowing workers to shelter in place and argued that it should apply in

⁴⁴Comments by Lisa Arkin, Beyond Toxics, in the public hearing at 6 pm, November 15, 2017 in Woodburn, transcript p. 54-55.

⁴⁵Ibid., p. 54.

⁴⁶Ibid., p. 55.

⁴⁷Like Oregon OSHA, the state of Washington's state OSHA program, a division of the Department of Labor and Industries (L&I), actively addresses pesticide issues by having adopted a version of the Worker Protection Standard, although L&I has not yet completed rulemaking to take into account the 2015 EPA changes. Oregon OSHA is not aware of any other state OSHA program that does so.

all situations, while at the same time arguing that Oregon’s requirements should mirror the federal requirements. While some commenters specifically stated that the AEZ *distances* should mirror federal requirements (suggesting that they understand that the Oregon version of the AEZ provides other flexibility not available in the federal rule, at least at present), others made comments suggesting that they were not fully aware of the federal requirements (perhaps either because they believe the federal AEZ has been repealed or because they do not understand its application to housing).

For example, one commenter criticized both aspects of the state proposal for pesticides requiring respirators – the increase in the AEZ from 100’ to 150’ *and* the requirement to evacuate, rather than to shelter in place. He wrote a relatively detailed critique of the challenges resulting from the inability to use shelter in place and then concluded his letter with the following:

In conclusion, I would request that OR-OSHA to follow the EPA Worker Protection Standard rule and remove the evacuation requirement from the draft rules, due to the fact that:

There is no evidence that a 150-foot requirement provides more protection than the 100-foot requirement

Evacuating and returning most probably increases possible pesticide exposure over Shelter in place

No economic analysis is provided on the negative impact of employees having to leave their cabins in the middle of the night.

Confusion created by the respirator standard for employees and enforcement when most applications are done with respirators regardless of label requirements.⁴⁸

Although his understanding of the federal requirement is not completely clear, it does not appear that he recognizes that his suggestions that Oregon OSHA follow the EPA rule *and* that the option to shelter in place be allowed across the board cannot be reconciled with one another. Another commenter who supported “shelter in place” as being “much safer” went on to ask, “What purpose is OR-OSHA after by creating its own rules rather than adopting the EPA rules, like with the rest of the WPS rules,”⁴⁹ suggesting that she does not realize that the “shelter in place” option itself is unique to Oregon.

Similarly, another commenter noted the problems with the federal rule and applauded the EPA decision to revisit it, and then criticized Oregon OSHA’s proposal as “a gross over reach” that would “take rules that federally seem not to work, and only make them more over the top for our state alone....” She then noted that a “fine example of this would be the lack of shelter in place options.”⁵⁰ Given that the new Oregon OSHA rule provides such options (although not in all circumstances) and the federal rule does not do so, it is difficult to understand such a characterization of the differences between the state and federal rule.

Mistaken Belief that the 15-Minute Extension of the AEZ after Equipment Moves Away Is a Reduction in Federal Requirements

One of the clearest examples of confusion about what would be required in the absence of the Oregon OSHA rule concerns the requirement that workers (and their family members) remain outside of the AEZ for 15 minutes after the spray equipment has moved on.

A number of comments implied that the 15-minute limit would be a reduction in worker protection, while others said so explicitly:

Those [federal] standards are minimal at best but they at least exist, and to propose to get rid of them and to have a 15-minute re-entry timeline goes totally against all the things that I think have spelled out in most of the pesticide labeling issues, where most of these very toxic chemicals require a lot of protection from

⁴⁸Letter from Dan Ericksen, Cascade Cherry Growers, January 18, 2018. See similar comments by Jim Buckovic, Polk County Farm Bureau, which support “a ‘shelter in place’ alternative” but also asks for “uniform rules” and asks Oregon OSHA to “temporarily adopt EPA’s equivalent language” until the EPA makes changes, if it does so,

⁴⁹E-mail from Kathleen Hadley, January 19, 2018..

⁵⁰Letter from Brenda Frketich, Kirsch Family Farms, January 23, 2018.

*inhalation, skin, eyes, and oral ingestion. To hear that this is going to be minimized for farmworkers' families who had less than a great housing situation is certainly disturbing to me.*⁵¹

The commenter clearly misunderstands the federal AEZ requirement, which ends immediately when the spray equipment has moved on – the state's 15-minute extension of that period means that the state's AEZ lasts 15 minutes longer than would the federal AEZ in the same situation. As did others, the commenter in this case appears to confuse the re-entry interval to the treated area (a feature of both federal and state rules, which require compliance with the re-entry interval requirements) with the state-unique prohibition on entering the AEZ for 15 minutes. Under both the federal rule and the state rule, the AEZ is *adjacent* to the treated area. It is not a part of it and it is not affected by existing re-entry intervals. With regard to the 15-minute interval, there is no federal requirement; as a result, the 15-minute requirement does not represent a reduction in protections. Rather, it is an increase in state requirements, and it plainly exceeds the requirements of the federal rule, even if that rule were to remain in place.

Confusion about Requirements in other States

Some commenters focused on what they perceived as Oregon's deficiency in contrast to requirements enforced by other states. For example, one commenter stated that "Some of the most progressive states have exclusion zones of several hundred feet, and even further. Why not in Oregon? In some states like California and Arizona have them 1,000 feet. We need this in Oregon, too, for the first step."⁵²

Similarly, another commenter stated

*...we do need more than a hundred buffer zone. The state of California has now put more than a half a mile buffer zone. Other states have also indicated bigger buffer zones. Why is it that Oregon, as we pride ourselves for economy, for our culture, for our green scenery, why cannot we do at least the bare minimum to protect our workers?*⁵³

Oregon OSHA would certainly be interested in states that have adopted such requirements, particularly as such requirements (which go further than Oregon OSHA's proposal) relate to arguments about the proposed rule's effects on the competitiveness of Oregon agricultural businesses.

However, Oregon OSHA's research into the issue has led to the conclusion that many of the public comments related to it were mistaken. A review of the requirements in the states mentioned and in other states has revealed no requirements for no-spray buffer zones for the purpose of protecting workers or that would apply to worker housing, with the possible limited exception of Arizona's buffer zones in relation to residential zones that include "at least 25 residences." It appears that the comment's reference to a 1,000-foot requirement may be based on a misunderstanding of this provision. To the degree that farmworker housing meets that "residential zone" definition, it appears that requirements enforced by the Arizona Department of Agriculture would prohibit the application of pesticides considered to be "odoriferous" within ¼ mile, would prevent spraying of "highly toxic" pesticide dusts within 300 feet, would prevent the aerial application of "highly toxic" liquid pesticides within 100 feet, and the ground-based spraying of such "highly toxic" liquid pesticides within 50 feet.⁵⁴ Although the Oregon OSHA rule does not include a no-spray buffer, the protective zone envisioned by the AEZ is both larger in at least some situations and applies to more pesticides than simply those identified by Arizona as "highly toxic" or "odoriferous." It also applies to all worker exposures and to all on-farm housing provided by employers. A comparison between the two provisions is, at the very least, not as straightforward as the commenter suggests.

California's recent pesticide-related rulemaking appears to bear even less relationship to the issues present in the Oregon OSHA rulemaking. In November of 2017, California's Department of Pesticide Regulation adopted a rule that took effect January 1, 2018. The rule does provide a temporary buffer zone

⁵¹Comments by Michelle Simon in the public hearing at 6 pm, November 15, 2017 in Woodburn, transcript p. 43; see similar comments in a letter from Scott Lee on behalf of the Clatsop County Board of Commissioners, February 16, 2018.

⁵²Comments by Julia Seidler in the public hearing at 6 pm, December 5, 2017 in Medford, transcript p. 49.

⁵³Comments by Maria Hernandez in the public hearing at 10 am, November 29, 2017, in Hood River, pp. 29-30.

⁵⁴The buffer zone requirements for various structures enforced by the Arizona Department of Agriculture are summarized at <https://agriculture.az.gov/sites/default/files/Pesticide%20Buffer%20Zone%20Chart%20-%20AZ%20Dept%20of%20Ag.pdf>

between the hours of 6 am and 6 pm when agricultural pesticides cannot be applied by air or using an air-blast sprayer within ¼-mile of a school or a daycare facility. This restriction does not apply to agricultural worksites, private residences, or employer-provided housing.⁵⁵

Evaluating Comments that Misunderstand the Proposal's Effects

With regard to the proposed rule itself, a misunderstanding of a rule's intended effect sometimes suggests a lack of clarity in phrasing a particular provision of the rule in question. Comments did identify several such provisions in the rule as proposed, and those provisions have been addressed in the rule as adopted.

In response to a number of comments suggesting the rule would require evacuation of housing developments and closure of roads, highways, bike paths, etc.,⁵⁶ the rule as adopted provides greater clarity that employers need not address such issues that are located off the property and that are not related to their agricultural operations. In response to a comment concerning the effect of the AEZ on the applicator's ability to hand spray,⁵⁷ the rule language has been modified slightly to make it even clearer that the applicator is not affected by the AEZ restrictions, but only those employees and farmworker housing residents not directly involved in the pesticide application.

However, any assumption that confusion about the rule's requirements is a result of imprecise language in the rule presupposes that those providing comments have read the rule itself rather than a third party's perhaps inaccurate, incomplete, or misleading description of the proposal. Unfortunately, in a number of cases the comments received do not reflect an apparent familiarity with the rule proposal itself.

It is even more difficult to determine how best to assess comments made, not in a misunderstanding of the rule proposal, but in the apparent belief that the existing EPA rule would provide protection beyond that proposed in the Oregon OSHA rule (and not simply in reference to the one area where the Oregon rule provides greater flexibility than the EPA rule, the provision allowing "shelter in place" as an option when the pesticides being applied do not represent a respiratory hazard). How should a decision-maker weigh an opinion offered in good faith but in an apparent misunderstanding of the issue?

To consider perhaps the most dramatic illustration of the issue, it is clear from a number of comments (including several of those already referenced) that many individuals are morally offended by the proposed rule and consider it to be a failure to exhibit respect for farmworkers and even a failure of human decency. In at least some cases, it is likely that those commenters would consider a decision by Oregon OSHA to take no action on the proposal a victory for workers and a blow struck against what they consider to be uncaring government officials and businesses.

But if Oregon OSHA had made such a decision:

- Pesticide use would continue without any change, other than whatever enforcement of the 100-foot AEZ in which the EPA (presumably through the ODA) would engage while it considers how best to repeal the provision.
- There would be no Oregon OSHA provision providing any AEZ.
- There would still be no buffer zone, whether 60, 100, 150, 300 or 1,000 feet in size.
- The housing would remain unchanged.
- There would be no additional requirements to notify workers and the residents of farmworker housing of expected pesticide applications.
- There would be no requirements to store shoes, to close windows or doors, or to determine how to protect sensitive outdoor equipment.

⁵⁵The recently adopted California rule and related rulemaking information can be found at <http://www.cdpr.ca.gov/docs/legbills/rulepkgs/16-004/16-004.htm>.

⁵⁶See, for example, the e-mail from Bryan Schmidt, December 15, 2017, concerning the bike path adjacent to his property; the e-mail from Ray Bottenberg, February 28, 2018, concerning the proximity of his property to roads, railroads, and residential housing; the e-mail from Bryan Schurter, February 7, 2018, regarding the proximity of driveways and roads; the e-mail from Lucas Rue, January 23, 2018, concerning nearby "major roadways and/or residences;" and the e-mail from David Wood, February 16, 2018, regarding the adjacent "suburban neighborhoods."

⁵⁷E-mail from Kristen Domes, December 16, 2017.

It would be difficult to reconcile that outcome – and the resulting maintenance of the status quo – with the underlying perspective of those who strongly criticized the proposed rule *because they believed that it would provide insufficient protection*. This contrasts with those growers who criticized the rule as unnecessary; in that case, a decision by Oregon OSHA not to adopt any rule would have been consistent both with the comments and with the rationale behind those comments.

Fortunately, the decision-making framework articulated by Oregon OSHA prior to the rule’s proposal (and again during at least some of the question-and-answer sessions prior to individual public hearings) provides a workable response to the dilemma. Oregon OSHA has consistently indicated that it would consider arguments based on their merits, not based on the number of individuals who made them.

In that sense, for example, it is at least as incumbent on Oregon OSHA to seriously consider the several commenters who thoughtfully and authoritatively discussed the impact of sleep deprivation on school performance⁵⁸ as it is to consider the 132 copies of an e-mail that first declares “OR-OSHA should not decline the federal rule put in place to help farmworkers” only to continue “Neither sheltering in place or walking 150 feet away from an active spray operation are adequate protections for farmworkers and their families.”⁵⁹ While those who sent the e-mail clearly support “a 300-foot no spray buffer zone,” it is equally clear that they do not know what the federal rule they are defending requires, since it is difficult to believe that they would accept the EPA’s requirement to walk 100 feet away from the spray operation as adequate after declaring that Oregon’s proposed 150-foot requirement is not.

Questions Regarding the Motivation of Commenters

Several commenters on both sides of the issue raised question about the motivations of those on the other side of the issue (and, by extension and at times explicitly, of Oregon OSHA’s motivation should it give those other opinions too great a weight). For example, one grower made the following observation:

*I can guarantee that everyone here that sits behind me thinks you folks have already made up your mind on this. I know that’s what they all think. And I ask for you to please listen to us in the tree fruit industry in the valley, not the advocates that have no experience with labor housing or current farming practices. I saw the comments that went around. I see a ton of them in Eugene, Springfield. Those folks have an agenda, and they would just as soon see pesticide applications cut off, period. That’s their agenda in Oregon. All you have to do is look at legislative bills that we see every year in the legislature. Please do not let your organization become advocate-run. It needs to be run by science and by the industry losses and what have you.*⁶⁰

Another grower offered a similar comment about the quality of the arguments made by those who argued in favor of stricter regulation:

*OR OSHA is overstepping their bounds and basing their decision on zero research. They are pandering to the reactionary university of Google, Organic is the only way to go & I don’t vaccinate my children mentality.*⁶¹

It is certainly true that many of those who think the rule is insufficiently protective are also critics of pesticide use in general. Many of them acknowledged as much in their comments. For example, Oregon OSHA received testimony from individuals raising workplace concerns out of a broader concern about the safety of pesticide applications:

*Pesticide and herbicide spraying runs counter to sustainable agricultural practices and needs to stop. Through regenerative agriculture practices, using these products increase costs and adverse health effects to farmers and farm workers.*⁶²

⁵⁸See, for example, written comments by Brandi Borton, read by Lisa Perry in the public hearing at 10 am, November 29, 2017 in Hood River, transcript pp. 43-46.

⁵⁹See, for example, e-mail from Jack Smith, December 18, 2017

⁶⁰Jon Laraway in the public hearing at 10 am, November 29, 2017 in Hood River, transcript pp. 35-36.

⁶¹Email from John Stehlik, December 15, 2017..

⁶²See, for example, e-mail from James Neu, November 9, 2017.

*I believe that chemical spraying should be banned outright. However, knowing this is not likely to happen due to agribusiness influence, the next best solution is to provide the most extensive exclusion zone possible near worker housing to protect workers and their families.*⁶³

*So it's not just the workers, it's the general public and especially the environment, because that is one of the major watersheds in the area, and an important watershed stream passes right through the middle of this orchard and is exposed constantly, almost everyday, to these sprayers.*⁶⁴

*...these chemicals are coming at us from all angles: From our water, from our air, the fish are dying. So it's not just the farm workers, although they are on the front line, but it's all of us, just like these other people are saying.*⁶⁵

*I really support the phasing out of all toxins in agriculture for all of us, those who grow our food and those of us who eat it. We can start by protecting farmworkers and their families as much as possible.*⁶⁶

In general, such comments allow the reader to distinguish the commenters' broader interests from those related to the workplace, and at least some commenters very clearly distinguish between that broader interest and their comments in relation to the present rulemaking. For example, one commenter clearly acknowledged the limitations of Oregon OSHA's perspective and authority:

*...I recognize that you don't have any authority over defining the safety or nonsafety of pesticides as decided by the federal government and other state agencies, and that's outside your range of authority. I recognize that your authority extends only to the question of worker safety, and that's what you are focused on, and I appreciate that....*⁶⁷

More broadly, Oregon OSHA is aware that many of the worker advocates who provided comments on the proposal do not share the belief reflected in Oregon statute⁶⁸ (and reflected in Oregon OSHA's statement regarding the proposed rule) that pesticides are often necessary in spite of the risks they may present. As perhaps the most prominent example, one of the organizations that both commented on the rule and very effectively encouraged many individuals throughout the state to do so clearly views the significant reduction in the use of pesticides as among its major organizational goals.⁶⁹

But that does not mean that the arguments made by such groups and individuals can or should be dismissed out of hand. Again, Oregon OSHA evaluates the comments from such groups based on the merit of the arguments made, rather than considering them based solely, or even primarily, on an assessment of the motivation behind those comments.

⁶³Letter from Donna Raynalds, November 16, 2017.

⁶⁴Jim Thompson in the public hearing at 11:15 a.m., December 15, 2017 in Medford, transcript p. 15.

⁶⁵Daniel Gregg in the public hearing at 11:15 a.m., December 15, 2017 in Medford, transcript p. 26.

⁶⁶Email from Daniel Gregg, December 16, 2017.

⁶⁷Milo Mecham in the public hearing at 11:15 a.m., December 15, 2017 in Medford, transcript pp. 19-20.

⁶⁸See ORS 634.005, which reads in part, "Many materials have been discovered or synthesized which are necessary and valuable for the control of insects, plant diseases and weeds. Many more pesticides will be discovered and needed. Such materials, however, may injure health, property, wildlife or environment by being distributed, stored, transported, applied or used in an improper or careless manner. The pesticide industry of this state has achieved and maintained high standards in its formulation and use of pesticides while at the same time experiencing a minimum of injury to persons, property or the environment."

⁶⁹See the Beyond Toxics discussion of pesticides on its website, which includes the following statements: "Pesticides are everywhere, especially where they should never be found. They drift beyond the site for which they were intended into surrounding areas and beyond. They're found in our streams, rivers and lakes, on our land, and in our bodies. They are hidden in our food. There is no longer any doubt that pesticides expose each of us to profound risks in our lifetime and can also harm generations to come.... Many people don't realize that the EPA and other governmental bodies responsible for regulating pesticide use acknowledge pesticides are damaging to humans and the environment, yet they still allow these pesticides to be used. How is that possible? The laws we have to 'regulate' pesticides were written by the chemical industry many years ago and are based on flawed and biased 'science.' Our fight to make these laws align with modern science and human rights is fierce. What's more, local, state and federal governments use pesticides on public lands and in public buildings without informing people or getting their permission prior to use."

Similarly, it is true that many growers are concerned about the economic viability of their operations. The overwhelming majority of them said as much in their comments.⁷⁰ But that does not necessarily suggest that they are putting “profits over people” as a number of other comments suggested⁷¹ – both farmers and farmworkers, as well as society at large, rely upon the continued viability of the agriculture sector in the state and the nation, and it would be unreasonable to expect growers to disregard such concerns. Indeed, it would be irresponsible for *any* business owner to disregard the financial viability of his or her operation.

Some commenters suggest that Oregon OSHA is not striking an appropriate balance between worker protection and the economic viability of the operation. Many of those who find the proposed rule too permissive suggested that Oregon OSHA was too solicitous of growers’ concerns.⁷² For example, one commenter offering the following observation:

As an Oregonian, I would like my state to pay much more attention to the safety of the workers rather than the convenience of the employers. And I am reminded that the mission of OSHA is to assure safe and healthful working conditions for working men and women by setting and enforcing standards.”⁷³

Others see what they consider to be the proposal’s inadequacies as a reflection of a broader and long-standing failure of government to provide sufficient protection. For example, one commenter said, “Historically, in the U.S., corporate practices controlled by state and federal regulations have allowed farm owners to maintain private power control amongst working conditions, wages, living conditions, work schedules, et cetera.”⁷⁴ Another put it even more harshly: “Now, I feel like the government has not looked after people. Big industry is who has been looked after, and you have been able to, as big industry poison people and lie consistently, all through history.”⁷⁵ A number of commenters also cast their concerns in the context of racial bias, both historically and in relation to the current proposal.⁷⁶

Oregon OSHA believes strongly in its worker protection mission, which includes a particular responsibility to address the needs of those workers who are among the most vulnerable, for one reason or another. But Oregon OSHA also recognizes the need to balance rulemaking to ensure that rules can feasibly be implemented, both economically and technologically. Although risks can certainly be reduced, and Oregon OSHA frequently encounters both employers and workers who are prepared to accept an inappropriate level of risk, it also must be acknowledged that risk cannot be eliminated from the workplace (nor from any aspect of our lives, for that matter). It is incumbent on an agency with broad rulemaking authority such as Oregon OSHA to exercise that authority thoughtfully and judiciously.

Some commenters appear to suggest that Oregon OSHA’s interest in understanding the economic impact of its proposed rule is itself misplaced and suggests misplaced priorities on the part of the agency.⁷⁷ However, as noted in a previous section, assessing the economic impact of complying with a proposed rule – and particularly the impact on small business – is required by the state’s Administrative Procedures Act. Even if it were not, no decision maker can expect to evaluate a rulemaking proposal without at least some understanding of its implications for the viability of those who are being regulated. One commenter described the issue from the grower’s perspective:

I’ve heard the phrase a couple of times, “people over profits.” And I believe that that is a false dichotomy. Businesses are nothing more than the people who run them. We are nothing without our workers. And we

⁷⁰See, for example, the e-mail sent by Wade Flegel on January 18, 2018. He and at least 59 other growers who sent very similar e-mails discussed the rule’s impact on the economic viability of their businesses and their ability to compete with out-of-state businesses.

⁷¹See, for example, comments by Maria Hernandez, in the public hearing at 10 am, November 29, 2017, at Medford, transcript p. 29 saying that “we must put people over profits.”

⁷²See, for example, comments by Manuel Mejia Gonzalez, Movimiento Estudiantil Chicanx de Aztlan (MEChA) at the University of Oregon, in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 73.

⁷³Comments by Alan Journet in the public hearing at 6 pm, December 5, 2017, in Medford, transcript pp. 19-20.

⁷⁴Comments by Lupe Partida in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 39.

⁷⁵Comments by Philip Colvard in the public hearing at 11:15 am, December 5, 2017 in Medford, transcript p. 16-17.

⁷⁶See, for example, comments by Michael Barker in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 57.

⁷⁷See, for example, the e-mail from Leslie Rubinstein dated November 10, 2017, that criticizes the proposal as a reduction in existing protections and then asks “Is Oregon OSHA trying to protect farm workers in Oregon – or business profits?” or the handwritten notation on a postcard received from Olivia Wix, which suggests, “It’s ridiculous that the economic interest of farm owners is prioritized above the health of farm workers.”

*need spray for our trees just like our workers need us to be able to pay them the fair wages they earn. Where there are no profits there are no jobs.*⁷⁸

In relation to comments about the economic impacts and how they can and should be balanced against the rule's requirements, Oregon OSHA (as with all comments) has endeavored to evaluate those comments and the arguments that they make based on their merits.

Evaluating the Record as a Whole

As it happens, the record itself includes a discussion about how Oregon OSHA intended to evaluate the record, in response to questions raised at one of the public hearings and answered on the record by the Oregon OSHA Administrator. Although such an exchange is not normally part of the record, it provides useful context in light of the particular record before the agency:

Ultimately, the decision on the rule, whether we adopt a rule or go back to the drawing board as we did with the proposal we did last year is a decision I will make, and I'll make it based on having reviewed the entire record as well as having heard comments directly in the hearings that I've been able to attend, this obviously being one of them. We'll have discussions about possible options. We'll look at the materials.

*But, ultimately, looking at the totality of the record, I'll make a decision and it will be – I will have read every written comment. Some of the written comments I may have counted because, as you know from looking at the record, we have the same comment from multiple people in some cases, but I will have read all the comments. And as I say, I'll hear comments directly when possible.*⁷⁹

In response to a further question about whether he would “take into consideration where those comments are coming from,” he continued:

I don't take into consideration necessarily the address. I do take into consideration the perspective and background to the – to the extent it's possible....Some people you can't tell where the – what their background is from the nature of the comment.

*I have said throughout this process – and Mike [Doke, Columbia Gorge Fruit Growers] heard me say it during the rule development process....Petitions and form letters do not have as much weight as thoughtful comments from people who are familiar with the issues, and that continues to be the case. And as Heather [Case, Oregon OSHA Rules Coordinator] said a moment ago, we evaluate the comments based on the substance of the comments. It's not 'we have 802 of these and 406 of those.' It isn't a vote. On some level the weight of the comments matters, but the substance of the argument is ultimately what the decision will be based upon.*⁸⁰

That remains Oregon OSHA's standard in evaluating the public record: The decision, ultimately, must be based upon the weight of the arguments made and the evidence available to the agency, taken as a whole.

⁷⁸Comments by David Wood in the public hearing at 10 am, November 29, 2017, in Hood River, transcript p. 61.

⁷⁹Michael Wood, Oregon OSHA Administrator, responding to questions in public hearing at 10 am, November 29, 2017, in Hood River, transcript pp. 71-72.

⁸⁰Ibid., pp 72-73.

V. The Scope of the Rulemaking under Discussion

As the first step in evaluating the public comments received in relation to the substance of the rule, it is important to understand the scope of the rulemaking and its limitations. The scope of the rulemaking decision being made by Oregon OSHA is limited in at least three important ways:

- First, Oregon OSHA’s expertise and rulemaking authority is limited by its worker protection mission – the Oregon Safe Employment Act provides a broad, but not unlimited, mandate.
- Second, Oregon OSHA’s rulemaking authority is limited by its specific ability to regulate safe and healthy work practices – not to prohibit certain types of work.
- Third, Oregon OSHA’s decision on the present rule is limited by the public notice requirements of the Administrative Procedures Act, which restricts an agency’s ability to *adopt* a rule that does not fall within the general notice parameters of the rule as it was originally *proposed*.

Oregon OSHA’s Authority Limited to Workplace Health and Safety

As noted previously, the Oregon Safe Employment Act provides a broad grant of rulemaking authority to the Director of the Department of Consumer and Business Services, who has in turn delegated that authority to Oregon OSHA. Described in ORS 654.003(3) as the authority “to set reasonable, mandatory occupational safety and health standards for all employments and places of employment,” that grant of authority assists Oregon OSHA in its efforts to fulfill the Act’s purpose “to ensure as far as possible safe and healthful working conditions for every working person in Oregon, to preserve our human resources and to reduce the substantial burden, in terms of lost production, wage loss, medical expenses, disability compensation payments and human suffering, that is created by occupational injury and disease.”

However, many issues remain outside the scope of this, or any, Oregon OSHA rulemaking.

The effect of pesticides on the broader community, for example, which is addressed in many of the comments on the rule, falls outside Oregon OSHA’s authority. Suggestions by certain commenters that the preemption of local regulatory authority by state pesticide laws should be rescinded⁸¹ fall outside the scope of Oregon OSHA’s authority (and would fall outside the scope of any agency’s authority, given that the preemption itself is found in statute⁸² and therefore can be changed only through legislative action).

Some commenters suggest that there are medical care issues that should be addressed.⁸³ While Oregon OSHA has the ability to address medical care in certain, very limited situations related to workplace exposures (primarily related to medical screening and medical removal from the workplace), the need for better medical care among the agricultural worker population (or any worker population) also falls outside Oregon OSHA’s authority and statutory purpose.

Finally, other commenters raised a range of concerns, although it is not always clear whether these concerns are raised to provide context or in an effort to have them addressed by Oregon OSHA. For example, one commenter wrote on a postcard in part, “We need to do the right thing – fair wages, fair protections, decent housing, health care, and education, and health working and living conditions.”⁸⁴ Although such comments remain a part of the overall record, it is clear – and probably understood by the author of the comments – that most of the listed issues are well beyond Oregon OSHA’s regulatory authority and mission.

With regard to specific provisions of the rule, Oregon OSHA’s authority remains limited even in relation to what might be appear to be similar situations. For example, the record includes recurring comments about the impracticality of closing trails, roads and highways that might fall within the AEZ. For Oregon OSHA purposes, such activity simply falls outside the scope of the rulemaking (although drift outside the

⁸¹Bob Rossi, Salem Justice Organizing Committee, of Salem, in the public hearing at 6 pm, November 15, 2017, transcript p. 21. See also Mark Siemens, comment included with signature on petition received from the Northwest Center to Alternatives to Pesticides.

⁸²ORS 634.057

⁸³See, for example, postcard from Grace Powell of Eugene, received January 2018, which includes the handwritten notation, “Please consider these are human beings and there must be adequate health care and housing provided.”

⁸⁴Postcard from Therese Picado of Eugene, received November 2017.

intended application zone remains an issue for the Oregon Department of Agriculture (ODA), regardless of whether workers are exposed or not). Similarly, employers who apply pesticides will not be affected by Oregon OSHA's rule in relation to "a nearby road or a neighbor or a housing development,"⁸⁵ nor does the rule "require farmers to evacuate themselves and their families from the housing after an application of pesticides,"⁸⁶ although it would in some situations require that their employees do so for a limited period (and beginning before the application equipment moves close enough to activate the AEZ, not after). Oregon OSHA's rule is limited to workplace exposures (including those involving employer-provided housing) resulting from on-site activities related to the employer's business. Employers are *not* required under the rule to implement an AEZ for activity by neighboring farms or orchards. Oregon OSHA has slightly revised the final rule (including the addition of a non-regulatory note) to provide greater clarity on that issue.

Some commenters, recognizing the limited nature of the rule, criticized the proposal as inconsistent. For example, one commenter suggested that the risk was actually greater for people who are not themselves involved in pesticide application: "This nonrelated family who lives next to our orchard who may have just moved here from some nonagriculturally sensitive area, you guys seem to be not concerned with their health at all."⁸⁷ In response to such observations, Oregon OSHA can only note that it is not a lack of concern, but a lack of legal jurisdiction, that limits any Oregon OSHA rulemaking to workplace exposures.

Oregon OSHA's Authority Allows Restrictions on Use, Not Prohibitions

Although Oregon OSHA's grant of authority is a broad one, certain issues remain outside of its authority even though they arguably have a relationship to the worksite. For example, Oregon OSHA does not believe that it has the authority to ban an otherwise legal product from workplace use – this would be particularly true in the case of pesticides, in relation to which the ODA has clearly been given the authority to address legal uses within the state (consistent with ODA's status as the federal Environmental Protection Agency's designee regarding pesticide labeling and use).

In this context, Oregon OSHA also believes it must avoid restrictions that by their nature create a practical ban on the use of an otherwise legal product. Without going into detail regarding the historic development of the "infeasibility" defense, Oregon OSHA simply notes that the defense is recognized in the workplace health and safety context, effectively making any implicit Oregon OSHA ban unenforceable even were the agency to adopt one. In short, if the employer can demonstrate that the work cannot feasibly be performed in compliance with a rule adopted under the Oregon Safe Employment Act in question, the employer need not comply with the rule to the extent such infeasibility exists.

The effect of Oregon OSHA's inability to ban a substance, either expressly or implicitly, is discussed in more detail in relation to the extensive public comments regarding the need for a "no spray buffer zone."

The Administrative Procedures Act (APA) Limits the Ability to Adopt a Rule that Goes Beyond Proposal

One group of commenters noted that "as part of the adoption of rules, Oregon OSHA is required to accept public comments into the record and to give serious consideration to public comments as part of their final adoption of the rule."⁸⁸ The same commenters further wrote that the "proposed rule is just that, a

⁸⁵Comments by Jeff Stone, Oregon Association of Nurseries, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript p. 30.

⁸⁶Comments by Lisa Perry on behalf of Ricardo Galvez in the public hearing at 10 am, November 29, 2017, in Hood River, transcript p. 43.

⁸⁷Comments by Tim Pitz in the public hearing at 10 am, November 29, 2017, in Hood River, transcript p. 50.

⁸⁸Letter from Carl Wilmsen, Northwest Forest Worker Center; Lisa Arkin, Beyond Toxics; Ana Molina, Beyond Toxics; Reyna Lopez, PCUN-Pineros y Campesinos Unidos del Noreste; Ramon Ramirez, PCUN-Pineros y Campesinos Unidos del Noreste; Kathy Keese Morales, NOWIA Unete-Center for Farm Worker Advocacy; and Dagoberto Morales, NOWIA Unete-Center for Farm Worker Advocacy, March 14, 2018, p. 1.

proposal, and remains subject to modification in order to reflect the needs of the most impacted stakeholders.”⁸⁹

Oregon OSHA agrees that the proposed rule is a proposal, subject to modification. Oregon OSHA historically has both modified, redeveloped, and withdrawn proposals based upon public comment; the rule before us is based on a decision to withdraw a previous rule, and the rule as adopted includes a number of modifications resulting from the comments received.

There are certain limited circumstances where a modest increase in relatively minor requirements can still be considered to have fallen within the notice provisions of the rule. However, Oregon OSHA’s approach when its evaluation of the public record on a proposal suggests the need for a significant increase in one or more requirements beyond what was proposed is to develop a new proposal and take that new proposal through the public comment process. Indeed, that is exactly the decision that Oregon OSHA made in February of 2017 in relation to the Application Exclusion Zone provisions that were part of the 2016 proposal. It was that decision that led to the current rulemaking.

But it is important to recognize that the APA does not give Oregon OSHA unlimited authority to adopt a final rule that substantively differs from the rule as proposed. Because the public comment requirements of the APA can be effective only if the public has actual notice of the subjects under discussion, Oregon OSHA recognizes that it is largely prevented from adopting a final rule that includes provisions beyond those that were part of the proposed rule, even if the provisions in question would otherwise be within its rulemaking authority.

⁸⁹Ibid., p. 2.

VI. Application of Science and Other Data in Rulemaking

Oregon OSHA endeavors to make its decisions with as complete an understanding of the available information, including research, related to the subjects at hand. Oregon OSHA does recognize that science will generally not itself dictate policy decisions, and the answers to certain questions may at times be either unclear or unavailable. Nonetheless, policy decisions should be informed by the available science and made in a manner that reflects an understanding of the science involved. The present rulemaking is firmly rooted in such an understanding of the relevant science.

The Limitations of Science in Determining Regulatory Provisions

Commenters on both sides of the issue criticized Oregon OSHA for various acknowledgements made by agency representatives that one or more provisions in the proposed rule were not expressly dictated by scientific research.

A number of advocates for stricter regulation were concerned about what they viewed as a lack of a scientific basis for the provisions in the rule. As one commenter stated, “I am very disturbed to learn that there is no scientific basis on which the one hundred-foot limit has been determined. I find that actually atrocious.”⁹⁰ Others made similar points:

*You want to eliminate an insufficient 100-foot buffer exclusion zone. The scientific data illustrates that it's necessary to have at least a 300-foot zone for our precious salmon, but you admit the halo number is not science-based. You have admitted that.*⁹¹

*When I make a decision regarding one of my patients, I use what is called evidence-based medicine. Now, that is often augmented with my 16 years of working in orthopedic surgery. But I use science. So I have an ethical concern that the application exclusion zone is not based on any scientific data.*⁹²

In the same manner, the lack of scientific basis was one of the most frequent criticisms of the partial increase in the size of the AEZ from 100 to 150 feet in both standardized e-mails submitted by a number of growers, as well as in other individual comments.⁹³ One grower organization argued, “A 150-foot AEZ for products requiring respirators has no scientific justification.” More pointedly, one individual grower wrote that the Oregon OSHA administrator “at the last two public meetings in Hood River made it very clear that he is not considering scientific data because he has none to back up his proposal that far exceeds the national standard.”⁹⁴

Oregon OSHA believes such criticisms reflect a misunderstanding of its comments – and of its position on the relationship between science and establishing specific regulatory thresholds. In responding to questions about whether or in what way a particular number was dictated “by science,” Oregon OSHA consistently acknowledged that it was not basing the rule on claims of such a specific level of scientific precision or certainty. Questions were sometimes framed in a manner such as, “What are the studies that say that 100 feet is the right number?” Oregon OSHA believes that such a request asks too much of the science. Total certainty – and total protection – are not achievable, either from a practical or a scientific standpoint. As one author has noted, “...regarding a pesticide regulation as protective because it is based on total scientific certainty is erroneous, and can be dangerous and unjust to those the regulation is assumed to protect.”⁹⁵

In proposing – and in adopting – a threshold, Oregon OSHA (as did the EPA in its own rulemaking) had to consider the interface between various and sometimes inconclusive studies, the anecdotal evidence that was also available, the practical need to adopt a rule whose requirements can be described (and followed)

⁹⁰Comments by Alan Journet in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 19.

⁹¹Comments by Louise Shawkat in the public hearing at 6 pm, December 5, 2017 in Medford, transcript p. 34.

⁹²Comments by Michael Barker in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 58.

⁹³See, for example, e-mails from Arwen McGilvra, November 22, 2017, and from Kathleen Hadley, January 19, 2018.

⁹⁴E-mail from Gary Tamura, December 20, 2017.

⁹⁵Joan D. Flocks, “The Environmental and Social Injustice of Farmworker Pesticide Exposure,” *Georgetown Journal on Poverty Law Policy*, Vol XIX, Number 2, Spring 2012, footnote 8 on p. 256.

as easily as possible, and the need to adopt a rule that applies to a variety of different chemicals used in somewhat different ways in somewhat different settings. At least some commenters appeared to recognize that the policy decisions could not always be settled with scientific precision:

And I just want to say that I think we can do better with the rules. I know that there isn't – like, we're – there's an argument of where are those. Where is the science for setting a hundred feet and 150 feet? But we still have to look at protecting farm workers. Even if it's a bare minimum of protection.⁹⁶

Oregon OSHA never endeavored as part of this rulemaking to replicate the level of analysis that is used to determine that a particular pesticide in a particular formulation requires a certain set of work practices – that chemical-specific analysis has been, and remains, the province of the U.S. Environmental Protection Agency (EPA) and its approval of pesticide label requirements. To the degree it can be addressed on a state level, such activity is the province of the Oregon Department of Agriculture (ODA). Even the EPA itself, in creating the concept of the AEZ, did not rely upon some extraordinary level of scientific precision in settling on the 100-foot requirement, or any of the other particular provisions of the AEZ. To suggest (as have some of those on both sides of the issue) that the EPA decisions were in some manner dictated by review of the science rather than informed by it is to misunderstand the potential for scientific certainty, particular in the context of rulemaking.

The need to reflect a complicated reality and to describe it in reasonably straightforward terms as part of setting workplace health and safety standards is not unfamiliar to Oregon OSHA. In adopting a 6-foot threshold for fall protection in construction, Oregon OSHA (and federal OSHA before it) was not aware of any research indicating a dramatic drop in the risk of injury from a fall at 5-feet, 11-inches when compared to falls from 6-feet, 1-inch. And even in developing exposure limits for individual chemicals, both the regulators and the various advisory bodies promulgate limits that endeavor to fit the various research analyses into round numbers.

The Need to Act in the Face of Uncertainty

Oregon OSHA believes that science should be reflected in decision-making regarding workplace health and safety rules and other policy. A thorough understanding of the available science is critically important.

At the same time, Oregon OSHA also believes that policy-making, especially in the face of genuine risks to the health of workers and (in this case) their family members, can rarely afford to wait for “perfect” or “complete” science. Policy decisions cannot be made in the absence of information. But they also cannot wait until all questions are answered and all uncertainty erased – particularly since a decision not to act is itself a decision. When Oregon OSHA sets out to make a decision on a rule, the rule will be based on the best *available* evidence. Oregon OSHA is not, however, prepared to wait until a decision can be based upon the best *conceivable* evidence. Indeed, such a course would mean that no decisions would ever be made.

Much of the remainder of this document is devoted to a discussion of the scientific research, as well as to other evidence provided in the record. While the discussion will not ultimately answer the question as to whether a particular distance threshold in the rule is dictated by the science, and it will leave open questions about the exact risks confronted by those exposed to a range of particular pesticides, it will reflect an understanding of the rule and its provisions as being consistent with the available science.

⁹⁶Comments by Ana Molina in the public hearing at 10 am, November 29, 2017 in Hood River, transcript p. 32.

VII. Analyzing Pesticide Exposure Risks

Oregon OSHA has reviewed the scientific record, as well as the comments provided as part of the rulemaking process. As a result, Oregon OSHA has reached the following conclusions about the general risks faced by farmworkers and their families in relation to pesticides:

- Pesticides, as a group, represent a hazard to those exposed to them, although the exact nature of those hazards – as well as the degree of certainty about those hazards – varies from pesticide to pesticide (and particularly between classes of pesticides).
- Farmworkers, in particular, remain at meaningful risk of exposure to pesticides in the workplace.
- Off-target pesticide drift remains a genuine risk to farmworkers and their families, even if its extent cannot be fully enumerated.
- Existing rules do not fully eliminate the risks or provide workers with the necessary information to do so.
- The provisions of the rule as adopted can be expected to further reduce, although not eliminate, those risks.

Pesticide Use and Risks of Harm

In developing the proposed rule, Oregon OSHA operated from a clear understanding that pesticides are both useful and potentially harmful, as described in the Statement of Need published as part of the proposed rulemaking:

Pesticides, although a clear necessity in many workplaces, also represent varying levels of risks to workers and others (depending on both the particular pesticide used and the circumstances of the application). The Worker Protection Standard, taken as a whole, provides a number of important protective measures to reduce those risks. However, the risk of unintended exposures due to what is typically referred to as unintended “drift” can create exposure to workers outside the intended application area. In the case of worker housing, that exposure can also involve the workers’ family members. The provisions of this proposed rule – as was true of the original EPA rule addressing AEZs – are intended to address that potential by providing an added measure of protection against unintended and unanticipated exposures outside of the locations where pesticides are intended to be applied. The rule changes are expected to lead to an overall reduction in incidents of unsafe pesticide exposure and to improve the occupational health of agricultural workers and pesticide handlers.⁹⁷

In contrast, many commenters were critical of pesticide use and expressed strong concerns about the hazards involved. For example, one biologist and entomologist offered the following observation:

I want to start by saying that the term “pesticide” is really playing a semantic game. The term “pesticide” is – means nothing more than a biocide, which means the stuff is toxic to life. And so when we think of pesticides as being toxic to specific organisms, we have to remember that they are not. They are toxic to much more than the target organisms.⁹⁸

Similarly, another commenter wrote

We know that pesticides are inherently toxic substances; they are designed to kill and prevent unwanted insects, plants and other pests. We also know that farm workers and their families live, work and play in very close proximity to treated fields....Pesticides pose risks of short- and long-term illness to farm workers and their families, particularly without proper regulation of and safety precautions for pesticides.⁹⁹

Another commenter referred to a 2012 statement by the American Academy of Pediatrics:¹⁰⁰

...these are doctors who look after children – their statement reads: Multiple peer-reviewed studies on young children show a propensity for an increased occurrence of brain cancer, blood cancer, such as leukemia, attention deficit syndrome, autism, and loss of IQ, basic cognitive or intelligence capacity.¹⁰¹

⁹⁷See the document at <https://osha.oregon.gov/OSHArules/proposed/2018/amended-fiscal-impact-wps3.pdf>.

⁹⁸Comments by Alan Journet in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 19.

⁹⁹Letter from Kate Newhall, Family Forward Oregon, December 15, 2017.

¹⁰⁰The statement itself can be found at <http://pediatrics.aappublications.org/content/130/6/e1757>.

While many studies point in similar directions, Oregon OSHA does not believe that pesticides can be readily characterized as a whole beyond a general awareness of the potential for harmful exposure. In reviewing the research, it is important to acknowledge that particular pesticides have different mechanisms and, as a result, will indeed have different effects (both intended and unintended):

Effects on animals are determined by the chemical structure of the pesticide, its action mechanism, and the fate of the chemical within the animal. Not all animals react to all pesticides in the same manner; and response can be species- or individual-specific. The system of one animal species may metabolize a pesticide to a nontoxic metabolite, whereas that of another species may not (species-specific response); and individual animals of a species can also respond differently (individual-specific response).¹⁰²

The Changing Nature of Pesticide Use

During the rule's development and in commenting on the rule, a number of growers emphasized the shift within the industry to relatively safer pesticides. For example, one commenter who wrote summarizing the history of pesticide use in Oregon declared, "Fortunately previous study findings with older chemistries (Rothlein J, et al, 2006) are no longer relevant today."¹⁰³ While many other comments in the record (including several already referenced above) suggest that characterizing any pesticide as "safe" is in error, Oregon OSHA recognizes that pesticides do present highly variable levels of risk and characterizing all pesticides as equally hazardous is not justified by any credible body of research with which the agency is familiar.

For example, Oregon OSHA believes that the continuing shift away from organophosphate (OP) and carbamate pesticides, much of it done voluntarily for a variety of reasons, is overall a positive development for the health of the workers involved. Oregon OSHA's own review of the scientific literature makes it clear that OP pesticides, when present, present a particular cause for concern. A sampling of the relevant research includes the following:

Our findings suggest that prenatal exposure to OP pesticides, as measured by urinary DAP metabolites in women during pregnancy, is associated with poorer cognitive abilities in children at 7 years of age.... However, DAP concentrations during childhood were not associated with cognitive scores in this cohort of children.¹⁰⁴

Three studies published in this issue of Environmental Health (Bouchard et al. 2011; Engel et al. 2011, Rauh et al. 2011) deliver compelling new data linking on aspect of a child's history—in utero exposure to organophosphates (OP), a commonly used class of pesticides—and early cognitive development.¹⁰⁵

Several studies in other populations have similarly reported adverse associations of prenatal exposure to OP pesticides and child neurodevelopment (Engel et al. 2011; Rauh et al. 2011), but few studies have examined the effects of other potentially neurotoxic pesticides on child cognitive development

....

We observed an inverse association between prenatal residential proximity to agricultural use of OPs and other neurotoxic pesticides and cognition in children at 7 y of age....Agricultural use of individual

¹⁰¹Comments by Ray Seidler, a microbiologist and former EPA research scientist, in the public hearing at 6 pm, December 5, 2017 in Medford, transcript p. 45.

¹⁰²Fred Whitford, Tom Fuhreman, K.S. Rao, Gail Arce, James E. Klaunig – edited by Arlene Blessing, "Pesticide Toxicology: Evaluating Safety and Risk," Published by Purdue Pesticide Programs, last reviewed March 2003, p. 6.

¹⁰³Mike McCarthy, "Active Exclusion Zone: toxicological evaluation or risks in housing at 100 feet," submitted by author, p. 3.

¹⁰⁴Maryse F. Bouchard, Jonathan Chevrier, Kim G. Harley, Katherine Kogut, Michelle Vedar, Norma Calderon, Celina Trujillo, Caroline Johnson, Asa Bradman, Dana Boyd Barr, and Brenda Eskenazi, "Prenatal Exposure to Organophosphate Pesticides and IQ in 7-Year-Old Children," *Environmental Health Perspectives*, Vol 119, Number 8, August 2011, p. 1192.

¹⁰⁵Kimberly Gray and Cindy P. Lawler, "Strength in Numbers: Three Separate Studies Link *in Utero* Organophosphate Pesticide Exposure and Cognitive Development," (Editorial) *Environmental Health Perspectives*, Vol 119, Number 8, August 2011, p. A 328.

*pesticides and classes of neurotoxic pesticides were highly correlated, making it difficult to identify the specific pesticides that were driving these associations.*¹⁰⁶

*Our study supports a positive association between depression and occupational pesticide use among applicators. Furthermore, it suggests several specific pesticides [primarily organochlorine and OP insecticides] that deserve further investigation in animal studies and other human populations.*¹⁰⁷

*Organophosphates are associated with well-known acute health problems such as nausea, dizziness, vomiting, headaches, abdominal pain, and skin and eye problems (Ecobichon 1996). Some studies have also indicated that pesticide exposure is associated with chronic health problems or health symptoms such as respiratory problems, memory disorders, dermatologic conditions, cancer, depression, neurologic deficits, miscarriages, and birth defects....*¹⁰⁸

*Children are at higher risk for pesticide toxicity than are adults because the developing brain is more susceptible to neurotoxicants and the dose of pesticides per body weight is likely to be higher in children. Children also have lower activity level and levels of enzymes that detoxify activated forms of certain OP pesticides.*¹⁰⁹

*We found strong associations for PD [Parkinson's Disease] in participants with certain NOS1 genotypes exposed to commonly used OP pesticides through two independent sources—home and agricultural use....*¹¹⁰

*We found associations of AMD [Age-Related Macular Degeneration] with use of organochlorine and organophosphate insecticides and phenoxyacetate herbicides as classes as well as with individual pesticides.... Overall, these results are consistent with experimental studies of mechanisms underlying AMD....*¹¹¹

While such studies must be used thoughtfully, Oregon OSHA does not agree with the conclusion referenced in the earlier comments that research involving the hazards of OP pesticides should be disregarded as irrelevant. Those that document exposure pathways, including drift, are certainly suggestive even if the particular chemical itself is not longer in use. And the decline in the use of OP pesticides does not alter the fact that most of them remain legal for use in Oregon agriculture.¹¹² Perhaps more important, Oregon OSHA notes that at least one reason much of the available evidence regarding

¹⁰⁶Robert B. Gunier, Asa Bradman, Kim G. Harley, Katherine Kogut, and Brenda Eskenazi, "Prenatal Residential Proximity to Agricultural Pesticide Use and IQ in 7-Year-Old Children," *Environmental Health Perspectives*, 057002, May 2017, p. 1 & p. 6.

¹⁰⁷John D. Beard, David M. Umbach, Jane A. Hoppin, Marie Richards, Michael C.R. Alavanja, Aaron Blair, Dale P. Sandler, and Freya Kamel, "Pesticide Exposure and Depression among Male Private Pesticide Applicators in the Agricultural Health Study," *Environmental Health Perspectives*, Vol 122, Number 9, September 2014, p. 990.

¹⁰⁸Linda A. McCauley, W. Kent Anger, Matthew Keifer, Rick Langley, Mark G. Robson, and Diane Rohlman, "Studying Health Outcomes in Farmworker Populations Exposed to Pesticides," *Environmental Health Perspectives*, Vol 114, Number 6, June 2006, p. 953.

¹⁰⁹Maryse F. Bouchard, Jonathan Chevrier, Kim G. Harley, Katherine Kogut, Michelle Vedar, Norma Calderon, Celina Trujillo, Caroline Johnson, Asa Bradman, Dana Boyd Barr, and Brenda Eskenazi, "Prenatal Exposure to Organophosphate Pesticides and IQ in 7-Year-Old Children," *Environmental Health Perspectives*, Vol 119, Number 8, August 2011, p. 1189.

¹¹⁰Kimberly C. Paul, Janet S. Sinsheimer, Shannon L. Rhodes, Myles Cockburn, Jeff Bronstein, and Beate Ritz,

"Organophosphate Pesticide Exposures, Nitric Oxide Synthase Gene Variants, and Gene-Pesticide Interactions in a Case-Control Study of Parkinson's Disease, California (USA)," *Environmental Health Perspectives*, Vol 124, Number 5, May 2016, p. 570.

¹¹¹Martha P. Montgomery, Eric Postel, David M. Umbach, Marie Richards, Mary Watson, Aaron Blair, Honglei Chen, Dale P. Sandler, Silke Schmidt, and Freya Kamel, "Pesticide Use and Age-Related Macular Degeneration in the Agricultural Health Study," *Environmental Health Perspectives*, 077013, July 2017, p. 7 of article.

¹¹²Oregon OSHA has not been able to confirm actual levels of use of particular pesticides because of resistance from the growers to sharing that information. In response to a request during the rule development process, Oregon OSHA was advised, "Our growers are not willing to share their pesticide information. The information may be sensitive to their small business operations, and the chemicals they use are legal and well regulated." See September 7, 2017, letter to Michael Wood, Oregon OSHA Administrator from Mike Doke, Executive Director, Columbia Gorge Fruit Growers.

pesticide risks focuses on OP pesticides is because of their widespread use for much of the past three decades.

Similar studies, particularly those looking for long-term effects and for the results of low-level chronic exposure, can only now be conducted on the various substitutes for OP pesticides (although challenging, biological monitoring is actually more readily available in the case of OP pesticides than when researching other classes of pesticides). That body of research is therefore not as robust as is the research focusing on OP pesticides – and even on the pesticides that preceded them. But that lack of conclusive research should *not* be taken to mean that the risk is not present – given the history of pesticide uses, Oregon OSHA finds this situation to be a particularly apt application of the maxim that “the absence of evidence is not [necessarily] evidence of absence.”

As a result, Oregon OSHA hesitates to consider the shift away from OP pesticides, even if it continues, to be a sufficient resolution to the risks involved, given the relative lack of research regarding many of the newer pesticides. This concern is heightened by some of the more recent research that *is* available – for example, the troubling indications for chronic exposures¹¹³ regarding the health effects of the neonicotinoids (neonics) that are among the replacement pesticides of choice:

Although the studies in this review represent an important contribution to the literature..., there remains a paucity of data on neonic exposure and human health. Given the widespread use of neonics in agriculture and household products..., more studies on the human health effects of chronic (non-acute) neonic exposure are needed.¹¹⁴

While Oregon OSHA believes that the history of pesticides does indeed reflect an overall transition to safer – or less risky – products, that same history also reflects a recurring pattern of shifting to preferred pesticides that frequently turn out to be less safe than initially believed. This is a particular concern in relation to chronic hazards, which represent particular difficulties when it comes both to identifying health effects and to reliably determining the source of those effects. It is generally recognized that risks of chronic exposures may at times be quite distinct from those experienced as a result of an acute exposure:

*Chronic effects result from continual exposure over a long period of time—a lifetime, for example. Pesticides can have cumulative effects on the body, even at doses so low that no immediate or short-term effects are apparent. While the body might be able to recover from minimal effects that a single dose or a few low doses might cause, it may not be able to recoup totally between repeated exposures over a long period of time.*¹¹⁵

*The toxicity of a pesticide is described as reversible if its effects subside or disappear when exposure ends. But in situations where adverse pesticidal effects persist even when exposure is eliminated, the toxicity is considered irreversible. The toxic effects of some pesticides are reversible when the exposure is eliminated, regardless of the dose, while the effects of others may be reversible at low doses but irreversible at high doses. Toxic effects sometimes are reversible, initially, but with continued exposure become irreversible, the dose notwithstanding.*¹¹⁶

It is also worth remembering that – as one opponent of the rule as unnecessary noted in his discussion of the transition to safer pesticides (and to safer practices generally) – when pesticides such as DDT and organochlorines left the market, organophosphates “served as the main replacement for these insecticides in agriculture.”¹¹⁷ A 2006 academic discussion of studying the health effects of pesticides noted the same

¹¹³Andrea M. Cimino, Abee L. Boyles, Kristina A. Thayer, and Melissa J. Perry, “Effects of Neonicotinoid Pesticide Exposure on Human Health: A Systematic Review,” *Environmental Health Perspectives*, Volume 125, Number 2, February 2017, p. 155.

¹¹⁴*Ibid.*, p. 160.

¹¹⁵Fred Whitford, Tom Fuhreman, K.S. Rao, Gail Arce, James E. Klaunig – edited by Arlene Blessing, “Pesticide Toxicology: Evaluating Safety and Risk,” Published by Purdue Pesticide Programs, last reviewed March 2003, p. 16.

¹¹⁶*Ibid.*, p. 16.

¹¹⁷Mike McCarthy, “Active Exclusion Zone: toxicological evaluation or risks in housing at 100 feet,” submitted by author, p. 2.

reality: “Organophosphate pesticides have gained popularity worldwide in preference to organochlorines, which are persistent and more damaging to the environment.”¹¹⁸

Much of the disagreement over the hazards of pesticide exposure relates to differing perspectives, not just on the nature of the scientific record, but also on the nature of the actions that should be taken in the absence of a more robust scientific record. Put simply, those opposing stricter regulation generally argue that the *hazardous nature* of the pesticides in question has not been sufficiently proven, while those supporting stricter regulation generally argue that the *relative safety* of the pesticides in question has not been sufficiently proven. In the absence of more compelling evidence than may be readily available, Oregon OSHA must determine how best to balance the potential for harm with the negative effects of any regulatory intervention.

Anecdotal Discussions of Pesticide Risks

Many growers and grower representatives pointed to their own experience as evidence that pesticides can be used safely, in many cases pointing to their own health and longevity or that of their family members as evidence that pesticides are not necessarily harmful.

One grower, for example, shared his family history during more than a century of farming in Oregon:

The Meyer family has been raising pears and farming in the Rogue Valley for 107 years. My house is within 25 feet of the orchard, and I don't worry at all about the spraying. The only thing, we do manage our spraying to avoid getting it on our buildings....

And in that 107 years, there has not been one member of the family become ill because of pesticides. And as far as brain damage, we did raise two valedictorians in that family history.

.....

*And I actually eat my pears off my orchard that's sprayed, so, um, I can't say anything better than that, that I'm not concerned about my own health. And I have been spraying since I was eight years old. So – I'm 79 now. I might die tomorrow, I don't know, but I'm shooting for a hundred.*¹¹⁹

Another grower shared a similar observation:

*“My grandfather lived to be hundred. My mom is still 96 and kicking well. And I tell people that the stresses in life are what kills us, and this is part of the things, the stress that you're putting on us, you know.”*¹²⁰

Yet another grower noted he is unharmed by a lifetime of exposure and he notes that many others survived much more hazardous chemical exposures than those faced today:

*I'm a local farmer. I grew up here. I currently live in the same house I grew up in, and that house is probably the least protected place on my property because it's a hundred years old. And I have lived there my entire life, and I'm okay. And I think all of these people have lived in their homes most of their life, and they're okay. We've all grown up here. And they were around a lot of chemicals that were a thousand times worse than anything I've seen in my lifetime.*¹²¹

In contrast, several advocates for stronger regulation also based their arguments, at least in part, on their own experience and the experience of others – using it as anecdotal evidence of the harm pesticides can cause.¹²²

¹¹⁸Linda A. McCauley, W. Kent Anger, Matthew Keifer, Rick Langley, Mark G. Robson, and Diane Rohlman, “Studying Health Outcomes in Farmworker Populations Exposed to Pesticides,” *Environmental Health Perspectives*, Vol 114, Number 6, June 2006, p. 953.

¹¹⁹Comments by Ron Meyer in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 75. See also e-mail from Sue Gay, December 15, 2017, and e-mail from Arwen McGilvra, November 22, 2017, both of which make a similar point.

¹²⁰Comments by Randy Kiyokawa, in the public hearing at 10 am, November 29, 2017 in Hood River, transcript pp. 17-18.

¹²¹Comments by Ron Meyer in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 75.

¹²²See, for example, comments by Alex Buron in the public hearing at 6 pm, November 15, 2017, in Woodburn, transcript pp. 47-52, and the e-mail from Catherine Kiyokawa, January 25, 2018..

For example, one Rogue Valley resident told the following story:

I have lived in, um, Jackson County since 1971, when I was a seven year old child and I was moved here. I – my parents, um, bought a home in West Medford, out towards Jacksonville, that is literally sandwiched in between four orchards, so I speak from family experience, not from OSHA experience, so I just want to give you a nutshell, um, impact statement that my family's been through.

I raised two daughters in the Rogue Valley. I have three grandchildren now being raised in the Rogue Valley, one of which has severe autism and ADHD. Um, there have been miscarriages in our family, and I was diagnosed with multiple myeloma two and a half years ago.

It does not – it's no wonder to me, where we have lived all these years in a valley that is much like a bowl and holds in many of the chemicals that are used in our orchards, that I was exposed somehow. I have had two world-renowned oncologists tell me it was a direct exposure somewhere in my life that this happened.

And I'm grateful to hear that you are strengthening your restrictions and use of pesticides for workers....But I had no career whatsoever with working around any pesticides at all. My career has been in the medical field all of my life. I know that my exposure was as a child.¹²³

While such anecdotes provide useful illustrations from a variety of perspectives – and certainly reminds all involved that both workers and growers are individuals, with individual stories – it is difficult to reach conclusions about risks and their nature based exclusively, or even primarily, on such anecdotes.

With regard to the longevity of certain individuals with a lifetime of pesticide exposure, Oregon OSHA notes that similar stories can be told of the occasional lifelong cigarette smoker. But no credible understanding of the risks of cigarettes can justify reaching a conclusion that they are safe.

At the same time, the stories of individual cases of apparently harmful exposure do not necessarily allow a meaningful assessment of the risk – nor do they always provide a strong understanding of the causation even in relation to the particular case. The stories told are heartfelt. But they do not necessarily represent a robust confirmation of the health risks among all workers.

Critical Reading of Studies Placed in the Record

Oregon OSHA endeavors to read the scientific literature critically and to understand the implications of that research for the purposes of decision-making. In doing so, the record need not be limited to research in Oregon – certainly any issues related to the toxicological effects of pesticides can be generalized across state, and in many cases national, borders.

However, at least two studies referenced in the record were not found to provide meaningful evidence of risk, although they are suggestive of possible harms and merit further research. An extended discussion of the proposed rule submitted jointly by a number of organizations included the reference:

*A 2009 study in the journal Blood indicated that pesticide applicators using restricted use pesticides had an excess risk of **multiple myeloma**.¹²⁴ [emphasis in original]*

In reviewing the study, Oregon OSHA notes that the study itself describes its findings much more cautiously: “Pesticides are associated with excess risk of multiple myeloma, albeit inconclusively [emphasis added].”¹²⁵ Given the inconclusive nature of the research as described by the authors, Oregon OSHA views this particular study as being of very limited value in relation to the present discussion.

¹²³Comments by Julie Engleson, in the public hearing at 11:15 am, December 5, 2017 in Medford, transcript pp. 11-12.

¹²⁴Letter from Carl Wilmsen, Northwest Forest Worker Center; Lisa Arkin, Beyond Toxics; Ana Molina, Beyond Toxics; Reyna Lopez, PCUN-Pineros y Campesinos Unidos del Noreste; Ramon Ramirez, PCUN-Pineros y Campesinos Unidos del Noreste; Kathy Keese Morales, NOWIA Unete-Center for Farm Worker Advocacy; and Dagoberto Morales, NOWIA Unete-Center for Farm Worker Advocacy, March 14, 2018, p. 6.

¹²⁵Ola Landren, Robert A. Kyle, Jane A. Hoppin, Laura E. Beane Freeman, James R. Cerhan, Jerry A. Katzmann, S. Vincent Rajkumar and Michael C. Alavanja, “Pesticide Exposure and Risk of Monoclonal Gammopathy of Undetermined Significance in the Agricultural Health Study,” *Blood*, Vol 113, Number 25, June 2009, p. 6386.

The same letter referred to another study regarding the risks of pesticides in relation to diabetes:

*In 2018, the Journal of Environmental Health Preventative Medicine reported that, in line with previous epidemiological and animal studies, the occurrence of diabetes among farmers was associated with pesticide exposure. This study confirms previous findings of the link between diabetes and some agricultural pesticides and sought to identify the particular pesticides most likely to pose a risk of diabetes in the community.*¹²⁶

Oregon OSHA would in any case have been somewhat cautious in generalizing from a Thai population, particularly in relation to a condition such as diabetes, which can be affected by diet and other environmental factors. However, Oregon OSHA's review of the study notes that it includes the following summary of its findings:

*...it was found that the prevalence of diabetes was positively associated with exposure to all types of pesticides, including insecticides, herbicides, fungicides, rodenticides, and molluscicides, with exposure to rodenticides being statistically significant. [emphasis added]*¹²⁷

Given that only exposure to rodenticides reached a level of statistical significance, Oregon OSHA also views this particular study as being of very limited value in assessing the risks as they relate to this particular rulemaking (the study's summary of prior research suggesting a link to diabetes is unaffected by the limited nature of its own findings).

In some cases, Oregon OSHA has found particular studies useful but has reached somewhat different conclusions about their relevance to the issues presented by this rulemaking. For example, the individual who discussed pesticide history and toxicology at some length referred to a study that concluded, "Personal measurements and biological measurements are 'the preferred approaches for pesticide exposure assessments in farmworkers' (Hoppin et al, 2006)." ¹²⁸ After further discussing the limitations of various approaches, the writer concludes, "There is little if any evidence that farmer caused pesticide drift creates health hazards in housing near orchards on Oregon farms with the compounds presently used." ¹²⁹

While Oregon OSHA agrees with some, although not all, of the limitations discussed, it is worth noting that the cited authors own conclusions about the value of dust sampling, for example, do not necessarily agree with that reached by the commenter. While the authors do indicate several areas for potential error in dust sampling studies, they also state plainly, "Measuring dust levels of pesticides is important, because dust appears to be one of the most important sources of pesticide exposure, given the small contribution of water and air." ¹³⁰

The article suggests that these studies (and others) should be read critically and carefully, but it does not suggest discarding them, particularly given the difficulty of using biological assessments for many pesticides and the limitations of such assessments in identifying routes of exposure:

Biological measures of exposure may be used to "reconstruct" dose from body burden measurements if information or assumptions about rates of intake, uptake, and metabolism are available. The strength of this approach is that it demonstrates unequivocally that exposure and uptake have occurred. The primary drawbacks of this approach are the lack of specific physiologically based pharmacokinetic models for many pesticides, and that it integrates exposure over all pathways, so it may not provide information on the primary pathways or routes of interest.... Most studies use biological measurements to understand the relative magnitude of different exposure pathways (e.g., inhalation versus ingestion), to identify risk factors

¹²⁶Letter from Carl Wilmsen, Northwest Forest Worker Center; Lisa Arkin, Beyond Toxics; Ana Molina, Beyond Toxics; Reyna Lopez, PCUN-Pineros y Campesinos Unidos del Noreste; Ramon Ramirez, PCUN-Pineros y Campesinos Unidos del Noreste; Kathy Keesee Morales, NOWIA Unete-Center for Farm Worker Advocacy; and Dagoberto Morales, NOWIA Unete-Center for Farm Worker Advocacy, March 14, 2018, p. 6.

¹²⁷Chudchawal Juntarawijit and Yuwayong Juntarawijit, "Association between Diabetes and Pesticides: A Case-Control Study among Thai Farmers," *Environmental Health and Preventative Medicine*, Vol 23, Number 3, 2018, p. 1 of article.

¹²⁸Mike McCarthy, "Active Exclusion Zone: toxicological evaluation or risks in housing at 100 feet," submitted by author, p. 2.

¹²⁹Ibid., p. 3.

¹³⁰Jane A. Hoppin, John L. Adgate, Monty Eberhart, Marcia Nishioka, and P. Barry Ryan, "Environmental Exposure Assessment of Pesticides in Farmworker Homes," *Environmental Health Perspectives*, Vol 114, Number 6, June 2006, p. 935.

for exposure (e.g., nonuse of personal protective equipment), to evaluate the effectiveness of an intervention in reducing exposure, or to classify individuals into groups in epidemiological studies.¹³¹

Ultimately, given the limitations and complexity of both biological and personal monitoring, the authors note that an alternative approach is frequently used:

Consequently, the most common approach is scenario-based exposure assessment, which entails the construction of a plausible set of assumptions (i.e., a scenario) that describes quantitatively how contact occurs between people and pesticides. This approach requires the use of available measurements in combination with inferences and professional judgment.

...

*The primary advantage of scenario-based approaches is that they enable assessors to estimate pesticide exposure and dose in cases where data are limited or lacking. The uncertainty introduced by the need to make assumptions and inferences in the face of inadequate or inappropriate information is also their major disadvantage.*¹³²

Oregon OSHA notes that, the more specific and precise the conclusions being drawn as the result of a particular study, the more limitations such as those noted come into play. If the underlying conclusion is a broad determination that pesticides used in agriculture have the potential to harm workers, the limitations of particular studies supporting that broader conclusion are themselves less meaningful.

The Compelling Case for the Risk of Harm

While acknowledging that certain studies have been inconclusive, and that not all pesticide risks have been fully evaluated or characterized, Oregon OSHA nonetheless operates from an understanding that pesticides represent a potential health risk. That is the public policy position reflected in Oregon statute, and it is consistent with the entire regulatory framework represented nationally by the Environmental Protection Agency (EPA) and within Oregon by the Oregon Department of Agriculture (ODA).

Given this existing regulatory framework, one may argue (as many did) that the existing regulations are sufficient and question whether additional regulation is necessary. To be persuasive, however, such an argument must be based on a belief that the hazards of pesticides are sufficiently controlled by those other measures, not that those hazards do not exist. Oregon OSHA does not believe it is a credible public policy position, in light of the existing legislative findings and regulatory framework, to conclude the pesticides do not present a potential for harm.

Even without the existing legislative findings and regulatory framework, Oregon OSHA is aware of a reasonably robust body of scientific research confirming that pesticides represent a continuing risk to health:

*Exposure to pesticides increases the risk of immediate and long-term health consequences....Extensive analysis of the Agriculture Health Study data has linked lifetime pesticide exposure to increased risk for cancer, neurological conditions, respiratory, and reproductive problems among farmers and their spouses.*¹³³

*Health effects of pesticide exposure can be immediate and may include rashes, headaches, nausea and vomiting, disorientation, shock, respiratory failure, coma, and, in severe cases, death.... Pesticide exposure can also have long-term effects on health in the form of cancer, neurologic problems, and reproductive problems.*¹³⁴

¹³¹Jane A. Hoppin, John L. Adgate, Monty Eberhart, Marcia Nishioka, and P. Barry Ryan, "Environmental Exposure Assessment of Pesticides in Farmworker Homes," *Environmental Health Perspectives*, Vol 114, Number 6, June 2006, p. 930.

¹³²*Ibid.*, p. 930.

¹³³Thomas A. Arcury, Ha T. Nguyen, Phillip Summers, Jennifer Talton, Lourdes Carrillo Holbrook, Francis O. Walker, Haiying Chen, Timothy D. Howard, Leonardo Galvan, and Sara A. Quandt, "Lifetime and Current Pesticide Exposure Among Latino Farmworkers in Comparison to Other Latino Immigrants," *American Journal of Industrial Medicine*, 57:776-787, 2014, p. 777.

¹³⁴Thomas A. Arcury, Sara A. Quandt, and Allen Deary, "Farmworker Pesticide Exposure and Community-Based Participatory Research: Rationale and Practical Applications," *Environmental Health Perspectives*, Vol 109, Supplement 3, June 2001, p. 430.

These data [involving workers in Brazil] indicate that persistent genetic instability associated with hypermethylation of DNA in soybean workers after long-term exposure to a low-level to pesticides mixtures may be critical for the development of adverse health effects such as cancer.¹³⁵

Epidemiological research has indicated a causal connection between human exposure to pesticides and endocrine disrupting effects such as poor sperm quality and increased incidence of cryptorchidism [the failure of one or more testicles to descend].¹³⁶

In conclusion, the pesticides were found to act additively in vitro. In vivo, the organ weight changes indicated that the pesticides had an accumulating effect that was not observed for the individual pesticides.¹³⁷

The overall pattern of our results suggest increases in risk of ASD [Autism Spectrum Disorder] and ID [Intellectual Disability without Autism] with prenatal exposure to higher levels of a number of OCCs [organochlorine compounds], particularly PCBs [PCBs and other OCCs are banned in the US, but persist in the environment]¹³⁸

Nevertheless, our findings show that, whatever the explanation for the stronger association of pesticides with tremor-dominant PD [Parkinson's Disease], insecticides and fungicides were associated with the most typical form of PD.¹³⁹

In summary, our analysis suggested a possible increased risk of both PIH [pregnancy-induced hypertension] and PE [preeclampsia] among women engaging in activities with potential pesticide exposure during the first trimester of pregnancy.¹⁴⁰

Specifically, we observed positive associations between ASD [autism spectrum disorder] and prenatal residential proximity [defined as within 1.5 km] to organophosphate pesticides in the second (for chlorpyrifos) and third trimesters (organophosphates overall), and pyrethroids in the 3 months before conception and in the third trimester. Our findings relating agricultural pesticides to DD [development delay] were less robust, but suggested an associated [sic] with applications of carbamates during pregnancy near the home.... These findings support the results of two previous studies linking ASD to gestational agricultural pesticide exposure.¹⁴¹

....studies reviewed in this paper have strongly suggested an adverse effect of pesticide exposures on human respiratory health in occupational settings. Respiratory symptoms, including wheezing, airway

¹³⁵Daniel Benedetti, Barbara Lopes Alderete, Claudia Telles de Souza, Johnny Ferraz Dias, Liana Niekraszewicz, Monica Capetta, Wilner Martinez-Lopez, and Juliana Da Silva, "DNA Damage and Epigenetic Alteration in Soybean Farmers Exposed to Complex Mixture of Pesticides," *Mutagenesis*, Vol 33, Number 1, 2018, p. 87.

¹³⁶Mia Birkhoj, Christine Nellemann, Kirsten Jarfelt, Helen Jacobsen, Helle Raun Andersen, Majken Dalgaard, and Anne Marie Vinggaard, "The Combined Androgenic Effects of Five Commonly Used Pesticides," *Toxicology and Applied Pharmacology*, 201, 2004, p. 10.

¹³⁷*Ibid.*, p. 10.

¹³⁸Carrie Lowenherz, Richard A. Fenske, Nancy J. Simcox, Garland Bellamy, and David Kalman, "Biological Monitoring of Organophosphorus Pesticide Exposure among Children of Agricultural Workers in Central Washington State," *Environmental Health Perspectives*, Vol 105, Number 12, December 1997, p. 1344.

¹³⁹Frederic Moisan, Johan Spinosi, Laurene Delabre, Veronique Gourlet, Jean-Louis Mazurie, Isabelle Benatru, Marcel Goldberg, Marc G. Weisskopf, Ellen Imbernon, Christopher Tzourio, and Alexis Elbaz, "Association of Parkinson's Disease and Its Subtypes with Agricultural Pesticide Exposures in Men: A Case-Control Study in France," *Environmental Health Perspectives*, Vol 123, Number 11, November 2015, p. 1128.

¹⁴⁰Tina M. Saldana, Olga Basso, Donna D. Baird, Jane A. Hoppin, Clarice R. Weinberg, Aaron Blair, Michael C.R. Alavanja, and Dale P. Sandler, "Pesticide Exposure and Hypertensive Disorders During Pregnancy," *Environmental Health Perspectives*, Vol. 117, Number 9, September 2009, p. 1396.

¹⁴¹Janie F. Shelton, Estella M. Geraghty, Daniel J. Tancredi, Lora D. Delwiche, Rebecca J. Schmidt, Beate Ritz, Robin L. Hansen, and Irva Hertz-Picciotto, "Neurodevelopmental Disorders and Prenatal Residential Proximity to Agricultural Pesticides: The CHARGE Study," *Environmental Health Perspectives*, Vol. 122, Number 10, October 2014, p. 1107.

irritation, dry/sore throat, cough, breathlessness and chest tightness, and respiratory diseases such as asthma and COPD, were associated with occupational pesticide exposures. Impaired lung function was also often observed among people occupationally exposed to pesticides.... Inconclusive results have been reported from studies of the association between occupational pesticide exposures and lung cancer.¹⁴²

It remains true that much of the broad research of “pesticide” risks continues to reflect the results of exposure to OP pesticides and even those pesticides that preceded them. However, Oregon OSHA believes that the history of pesticide hazards itself justifies a more cautious approach when assessing the current hazards presented by pesticides than would be appropriate in the absence of that history. Oregon OSHA further notes that the label restrictions on many of the pesticides remaining in current use themselves suggest an awareness of potential hazards in the event of unintended or uncontrolled exposures.

The Exposure of Agricultural Workers to Pesticides

The risk that agricultural workers will be exposed to pesticides has long been recognized as a meaningful one, both in the scientific literature and as a matter of public policy. Many of the public comments – particularly the anecdotal evidence already referenced on both sides of the issue – specifically addressed the question of the risk to agricultural workers. One supporter of stronger regulation put it succinctly:

I am an Oregon Farm Bureau member, and while I'm not personally impacted by OR-OSHA's proposed Worker Protection Standard rule making, I still would like to share my comments. I think that workers are at the bottom of a very large agricultural food chain, and I've seen from personal experience that farm workers and their family members often are not given ample warning or protection from pesticide applications. I support the proposed OR-OSHA rules regarding AEZ requirements. Although they may be different from federal standards, I think it's a good opportunity to Oregon to demonstrate its commitment to worker safety and to be on the forefront of the protection of workers.¹⁴³

Many growers, in turn, emphasized the steps they take to minimize harmful exposure – and even to reduce the use of pesticides. While a number of growers indicated that they considered pesticides to be essential to their operations, or they would not be using them, they also suggested that they minimize their use when possible. One commenter summarized that perspective:

In Oregon, especially the Hood River Valley, farmers spend as many hours spraying as their workers, so have direct knowledge of exposure and drift. Farmers do not like to use pesticides. Pesticides are expensive and extremely time consuming to apply. Whether you are an organic or conventional grower of tree fruits, pesticides are essential. Pesticides are essential for keeping trees alive, preventing devastating damage to crops and also for growing fruit that is visually acceptable to the highly demanding consumer and supermarket buyers.¹⁴⁴

Oregon OSHA acknowledges the work of many growers in reducing the use of harmful pesticides and in providing greater protection when such pesticides are used. In spite of the perspective of many commenters (and the difficulty of obtaining conclusive evidence one way or the other), Oregon OSHA believes that pesticide exposures in agriculture have been reduced during recent decades. And Oregon OSHA recognizes the previous referenced statutory acknowledgement that pesticides are beneficial and necessary. But Oregon OSHA also believes that the pesticide risks in the agricultural workplace remain meaningful ones.

A sampling of various academic and research discussions makes the increased potential for harm in agricultural pesticide use clear:

Farmworkers can be exposed to a variety of pesticides in their work. Although education programs such as those based on the U.S. Environmental Protection Agency (EPA) Worker Protection Standard promote

¹⁴²Ming Ye, Jeremy Beach, Jonathan W. Martin, and Ambikaipakan Senthilselvan, “Occupational Pesticide Exposures and Respiratory Health,” *International Journal of Environmental Research and Public Health*, 2013, Number 10, November 2013, p. 6458.

¹⁴³E-mail from Valerie Blaha, January 19, 2018.

¹⁴⁴Mike McCarthy, “Active Exclusion Zone: toxicological evaluation or risks in housing at 100 feet,” submitted by author, p. 1.

preventive behaviors, including the use of personal protective equipment and hygiene, studies indicate that exposure occurs for a significant proportion of workers and their coresident family members.¹⁴⁵

Migrant and seasonal farmworkers in the US are consistently exposed to pesticides at work....
Farmworkers and their families are also consistently exposed to pesticides in the places where they live....¹⁴⁶

This analysis [of data collected in North Carolina] documents the high degree of potential pesticide exposure among Latino immigrants, and that this exposure is consistently greater among Latinos employed as farmworkers compared to those employed in other occupations.¹⁴⁷

Much of the literature focuses on the particular vulnerabilities of the farmworker population, including Oregon farmworkers:

Although there has been significant attention to the health effects of pesticides on human health, there has been little focus on the vulnerable farmworker population, and significant methodological barriers makes these studies extremely difficult. The leading obstacles are difficulties in establishing the population at risk and access to health information. The work environment contributes to the difficulty in ascertaining health status and their association with pesticide exposure.... Language and education barriers contribute to this problem.¹⁴⁸

Farmworkers are a vulnerable population; because of language barriers and economic pressures, they are frequently not in a position to understand or to request their right to a safe workplace.¹⁴⁹

The migrant farmworker community in Oregon is similar to other migrant farmworker communities in being disadvantaged, medically indigent, having poor health, and having poor access to healthcare

....
The community itself is evolving, with different groups from outside the United States being replaced with others. For example, the proportion of migrant farmworkers who do not speak Spanish as their primary language appears to be increasing as persons from Mexico and Central America, where indigenous languages are commonly used, are recruited to meet the labor shortage in the United States.¹⁵⁰

Although the sample is limited to a migrant farmworker population in Oregon, the results link multiple points on the exposure-health effects pathway that underlies studies of environmental and occupational exposure and health. We have previously reported that the pesticide residues in the house dust of farmworker homes in Hood River exceed those found in homes in other agricultural and nonagricultural regions of Oregon (McCauley et al. 2001). Farmworkers are exposed to pesticides from both work practices and living in housing close to agricultural fields. Although not measured in the present study, we have

¹⁴⁵Sara A. Quandt, Haiying Chen, Joseph G. Grzywacz, Quirina M. Vallejos, Leonardo Galvan, and Thomas A. Arcury, "Cholinesterase Depression and Its Association with Pesticide Exposure across the Agricultural Season among Latino Farmworkers in North Carolina," *Environmental Health Perspectives*, Vol 118, Number 5, May 2010, p. 635.

¹⁴⁶Thomas A. Arcury, Ha T. Nguyen, Phillip Summers, Jennifer Talton, Lourdes Carrillo Holbrook, Francis O. Walker, Haiying Chen, Timothy D. Howard, Leonardo Galvan, and Sara A. Quandt, "Lifetime and Current Pesticide Exposure Among Latino Farmworkers in Comparison to Other Latino Immigrants," *American Journal of Industrial Medicine*, 57:776-787, 2014, pp. 776-777.

¹⁴⁷*Ibid.*, pp. 782-783.

¹⁴⁸Linda A. McCauley, W. Kent Anger, Matthew Keifer, Rick Langley, Mark G. Robson, and Diane Rohlman, "Studying Health Outcomes in Farmworker Populations Exposed to Pesticides," *Environmental Health Perspectives*, Vol 114, Number 6, June 2006, p. 958.

¹⁴⁹Sara A. Quandt, Haiying Chen, Joseph G. Grzywacz, Quirina M. Vallejos, Leonardo Galvan, and Thomas A. Arcury, "Cholinesterase Depression and Its Association with Pesticide Exposure across the Agricultural Season among Latino Farmworkers in North Carolina," *Environmental Health Perspectives*, Vol 118, Number 5, May 2010, p. 639.

¹⁵⁰Linda A. McCauley, Marco Beltran, Jacki Phillips, Michael Lasarev, and Diana Sticker, "The Oregon Migrant Farmworker Community: An Evolving Model for Participatory Research," *Environmental Health Perspectives*, Vol 109, Supplement 3, June 2001, p. 449.

previously reported that the average distance of farmworker housing to agricultural fields is 15 m in the Hood River community.¹⁵¹

And certain works have focused on the non-Spanish speaking portion of the farmworker population and the particular challenges faced by that community:

*Although there have been increasing reports in the literature of the extent of pesticide exposure in agricultural communities, few studies have included markers of potential health effects. The correlation between levels of pesticides in the home and pesticide urinary metabolites points to significant prevention and education implications.*¹⁵²

*Although the occupational health of migrant farmworkers is becoming increasingly well studied, there is a dearth of research specifically related to indigenous farmworkers [from Mexico and Guatemala]. For example, indigenous workers may experience discrimination both by the mainstream US population and other migrant workers. This type of “double discrimination” may push indigenous workers into the most labor-intensive jobs and poorest housing conditions.*¹⁵³

*Primary findings suggest that the farmworkers who participated in the survey are exposed to health-threatening conditions, including exposure to pesticides and discrimination, yet receive inadequate training about ways to protect themselves. Previous studies have found similar low levels of pesticide training and evidence of discrimination against indigenous farmworkers in the workplace. Indigenous farmworkers are especially at risk, because the training that is provided is presented in a language that they may not fully comprehend.*¹⁵⁴

Oregon OSHA believes that the weight of evidence is compelling: Agricultural exposures to pesticides are a particular area of concern from a workplace health and safety standpoint. And that determination is consistent with the legislative policy already referenced, which includes (as part of a broader statement that acknowledges the benefits of pesticide use) the recognition that pesticides “may injure health, property, wildlife or environment by being distributed, stored transported, applied or used in an improper or careless manner.”¹⁵⁵ The very safety and health practices that have achieved the positive results described by a number of comments in the record have themselves resulted from a recognition that the substances in question have the potential to harm.

The Reality of Drift

Because the rule explicitly focuses on risks outside the treated area itself, the question of off-target drift is central to rule, both as proposed and as adopted. But determining the exact extent of such drift based on the record presented can be challenging.

The Frequency of Drift Events

Some commenters, perhaps based on a misunderstanding of a response given by Oregon OSHA during at least one of the question-and-answer sessions, suggested that Oregon OSHA does not take the risk of drift seriously. For example, one commenter wrote “I have seen pesticide drift in excess of 100 ft happen often on farms next door to our farm in Talent, while the sprayer is wearing a spraysuit and respirator. Drift does happen more than OSHA acknowledges.”¹⁵⁶ Another commenter wrote in part, “OSHA needs to get real about this problem. Drift is illegal ---- Drift happens. We need OSHA to set and monitor rulemaking

¹⁵¹Joan Rothlein, Diane Rohlman, Michael Lasarev, Jackie Phillips, Juan Muniz, and Linda McCauley, “Organophosphate Pesticide Exposure and Neurobehavioral Performance in Agricultural and Nonagricultural Hispanic Workers,” *Environmental Health Perspectives*, Vol. 114, Number 5, May 2006, p. 694.

¹⁵²*Ibid.*, p. 696.

¹⁵³Stephanie Farquhar, Nargess Shadbeh, Julie Samples, Santiago Ventura, and Nancy Goff, “Occupational Conditions and Well-Being of Farmworkers,” *American Journal of Public Health*, Vol 98, Number 11, November 2008, p. 1956.

¹⁵⁴*Ibid.*, p. 1956.

¹⁵⁵See ORS 634.005.

¹⁵⁶Handwritten text on postcard from Chris Hardy received January 2018.

to protect farmworkers.”¹⁵⁷ And one of the commenters addressed the issue directly in response to the apparent misunderstanding:

*Now I'm going to deviate from my prepared talk here and say that it's the understanding of your entity that drift does not occur because it's illegal, but it occurs all the time. It occurs in my yard, frequently; it occurs on the roads in my neighborhood. And people can complain, but when you complain they write a letter to the orchard telling them not to do it again. And if they do it again, they write them another letter, and that's the consequence of this.*¹⁵⁸

Commenters at that and other public hearings provided additional anecdotal evidence of drift events they had witnessed.¹⁵⁹ More than one commenter provided video or photographs to supplement their presentations.¹⁶⁰ One such commenter concluded “I see this happening day and night. When I'm on my way to the fields in the morning before the sun comes up and as the sun is going down I see this drift happen.”¹⁶¹

*Oregon OSHA is proposing these rules under the assumption that drift isn't happening, but drift does happen. According to the study, the PAN study, that 95 percent of drift lands on things outside of their targeted area. So why are we moving forward with a rule that's assuming that there's no risk for drift when there clearly is?*¹⁶²

*It is a myth that drift from crop spraying is rare. The widely known fact among all farmers who spray is that drift is very common, and is considered a fact of life....They spray on days when it is too windy to spray, and simply spray extra to account for drift that misses the crops.*¹⁶³

Other commenters referred to research of various types. For example, one commenter discussed preliminary research data that was itself later placed into the record:

*...there are plenty of studies that people can read. There's a recent one, I think, that hasn't been published yet I think Oregon OSHA knows about, the PNASH¹⁶⁴ study done recently that isn't available for some time. But the preliminary findings were that they tested up to 170 feet, and drift was found at 170 feet. We know this is happening.*¹⁶⁵

The Pacific Northwest Agricultural Safety and Health Center (PNASH) at the University of Washington subsequently submitted a summary of their recent findings, which have not yet been generally published, to the record.¹⁶⁶ In presenting a summary of the data from the study's findings, their letter notes the following:

*These data indicate that spray volume intercepted by the PE line samples decreased with distance from the sprayed orchard block, as expected. For example, the arithmetic mean was much higher at 16 feet than at either 85 feet or 170 feet. More relevant to the issue of the Agriculture [sic] Exclusion Zone, the data also indicate that spray drift still occurred at least 170 feet from the southern edge of the sprayed orchard block. This finding was consistent across all six days of spraying.*¹⁶⁷

¹⁵⁷E-mail from Kristina Lefever, March 14, 2018.

¹⁵⁸Comments by Tom Hitchcock in the public hearing at 6 pm, December 5, 2017 in Medford, transcript p. 13.

¹⁵⁹See, for example, comments by Daniel Gregg in the public hearing at 11:15 am, December 5, 2017 in Medford, transcript p. 25, comments by Gary Lisman in same hearing, transcript p. 27, comments by Elise Higley, Our Family Farms, in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 65-67.

¹⁶⁰See, for example, comments by Jim Thompson in the public hearing at 11:15 am, December 5, 2017 in Medford, transcript pp. 14-15, and Chris Hardy in the public hearing at 6 pm, December 5, 2017 in Medford, transcript pp. 21-25.

¹⁶¹Comments by Chris Hardy, from Talent, in the public hearing at 6 pm, December 5, 2017 in Medford, transcript p. 25.

¹⁶²Comments by Ana Molina,, in the public hearing at 10 am, November 29, 2017 in Hood River, transcript p. 31.

¹⁶³Ibid, p. 31.

¹⁶⁴In context, the term phonetically rendered as “Panasche” in the transcript clearly refers to the acronym for the Pacific Northwest Agricultural Safety and Health Center at the University of Washington, PNASH.

¹⁶⁵Comments by Kate Suisman, Northwest Workers Justice Project, in the public hearing at 10 am, November 29, 2017 in Hood River, transcript p. 53.

¹⁶⁶Letter from Richard A. Fenske, Michael Yost, Edward Kasner, and Magali Blanco, Pacific Northwest Agricultural Safety and Health Center, March 9, 2018.

¹⁶⁷Ibid.

In Oregon OSHA's own review of the summarized data, it is noted that although the volume of micronutrients identified at 170 feet out was less than 1/20th of that found at 16 feet, it was still roughly 2 1/3 times greater than in the unsprayed block of the orchard. As the authors of the letter note, this finding is particularly relevant to the question of the size of the AEZ. Although Oregon OSHA is primarily interested in the data for its relationship to the 150-foot AEZ, the division also believes that the data tends to undercut suggestions that a much larger AEZ is necessary. In any case, the authors themselves agree that their research supports the rule as proposed: "The Application Exclusion Zones proposed in this rule, while not fully protective, would substantially reduce the amount of spray that workers and others might be exposed to when drift events occur."¹⁶⁸ While it is true, as other commenters noted,¹⁶⁹ that this study did not measure the potential for drift at even greater distances such as 300, or 500 or 1000 feet, it is clear that the level of drift (at least in these controlled circumstances) declines precipitously as the distance increases.

*In another study by Rich Fenske, who is a well known scientist at the University of Washington, he studies orchard drift of pesticides.... Dr. Fenske showed that drift of organic [sic] pesticides, among the toxic, most toxic chemicals, can be measured out to 1200 feet in the state of Washington, drift from orchards, drift like we have seen in the pictures tonight.*¹⁷⁰

Another commenter said (without providing an identifiable reference) "There's science galore out there about how far these chemicals drift. There's been studies done placing cups 25 feet out, 50 feet out, a hundred feet out, 500 feet out, and tracking where the drift goes."¹⁷¹ And another commenter discussed a study that is further addressed later in this section:

In a study by the Environmental Health Perspective and the Environmental – and the Oregon Health Authority, analyzing pesticide poisoning data from 11 states from 1998 to 2006 shows illnesses associated with pesticides drifting from outdoor agriculture applications.

The number, however – the number, however, underestimates the true burden of drift-induced illnesses since notoriously underreported – the diagnosis of those reports oftentimes go unreported. There's a lot of folks working in the fields, like my parents themselves, that, whenever they had an illness, they never went to the doctor because oftentimes going to the doctor means extra costs, either in insurance or just another bill when they're not even making enough as a farm worker themselves.

*Additionally, the study looked only at acute illnesses: cancer, birth defects and development delays and other chronic diseases. The study does not take into consideration right now that there's a lot more other issues that you get from being pesticide exposure. You get asthma. You get pulmonary diseases.*¹⁷²

One group of commenters suggested that the evidence indicates that individual workers "could be harmed by drift as much as 9 times in a work season,"¹⁷³ but Oregon OSHA notes that this number was generated based on a misapplication of a number generated by an analysis of California data. The referenced California study indicated that drift accounted for "39% of all reported pesticide exposure cases."¹⁷⁴ Unfortunately, the authors of the letter made a logic error, mistakenly applying the 39% figure to all pesticide applications, when the two figures are not in fact related to one another.

¹⁶⁸Ibid.

¹⁶⁹Letter from Carl Wilmsen, Northwest Forest Worker Center; Lisa Arkin, Beyond Toxics; Ana Molina, Beyond Toxics; Reyna Lopez, PCUN-Pineros y Campesinos Unidos del Noreste; Ramon Ramirez, PCUN-Pineros y Campesinos Unidos del Noreste; Kathy Keesee Morales, NOWIA Unete-Center for Farm Worker Advocacy; and Dagoberto Morales, NOWIA Unete-Center for Farm Worker Advocacy, March 14, 2018, p. 3.

¹⁷⁰Comments by Ray Seidler in the public hearing at 6 pm, December 5, 2017 in Medford, transcript p. 44. Oregon OSHA notes that, in context, the phrase "organic pesticides" in the transcript appears to clearly refer to organophosphate pesticides.

¹⁷¹Comments by Lisa Arkin in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 63.

¹⁷²Comments by Maria Hernandez in the public hearing at 10 am, November 29, 2017 in Hood River, transcript pp. 27-28.

¹⁷³Letter from Carl Wilmsen, Northwest Forest Worker Center; Lisa Arkin, Beyond Toxics; Ana Molina, Beyond Toxics; Reyna Lopez, PCUN-Pineros y Campesinos Unidos del Noreste; Ramon Ramirez, PCUN-Pineros y Campesinos Unidos del Noreste; Kathy Keesee Morales, NOWIA Unete-Center for Farm Worker Advocacy; and Dagoberto Morales, NOWIA Unete-Center for Farm Worker Advocacy, March 14, 2018, p. 4.

¹⁷⁴Ibid.

The proportion of exposure incidents that occurred that were caused by drift cannot be used in any way to extrapolate the proportion of harmful drift related illnesses that occur. To illustrate, it is a fact that roughly 10 percent of the people who are struck by lightning are killed as a result. It does not, however, follow that 10 percent of *all* people will be struck by lightning and killed. Of those pesticide uses that cause a reported pesticide exposure in California, 39 percent were caused by drift. It does not, however, follow that 39 percent of *all* pesticide applications will result in a reported pesticide exposure.

Oregon OSHA proposed this rule with an understanding that illegal drift – drift outside the treated area – occurs, although it remains challenging to quantify its extent. As noted in the statement of need quoted above and filed with the original proposal (and repeated as part of the introductory text at each public hearing, including the one in question¹⁷⁵), it is a recognition of the risks created by unintended drift that leads to the current rulemaking, as well as to the original EPA rule. Both are intended to address the potential for harm caused by off-target drift “by providing an added measure of protection against unintended and unanticipated exposures outside of the locations where pesticides are intended to be applied.”¹⁷⁶ In discussing comments on various provisions of the rule, Oregon OSHA will in fact return to this purpose, focusing its deliberation on the reality that this entire rulemaking relates *not* to the intended application area, but to a zone adjacent to it – what the rule describes as the “application exclusion zone,” a concept that did not exist in rule prior to the federal EPA’s 2015 rulemaking.

The Incidence of Unlawful Off-Target Drift

Many growers and grower organizations have noted that there have been few confirmed cases of drift onto agricultural housing. One grower noted simply and correctly, “Many anecdotes used to justify additional rules describe situations that are already illegal.”¹⁷⁷

*Spray drift, as we said many times in our committee – or our rule advisory committee, is already illegal. We take that seriously. Pest management is critical for producing healthy plants. So the use of pesticides ourselves are necessary, but doing it in the most efficient way and the most safe way is what we’re after.*¹⁷⁸

One association provided the following summary of a perspective shared (and commented on) by many growers:

*Pesticide applications are already tightly regulated by the Oregon Department of Agriculture and off-target drift is subject to civil penalties. Cases of off-target drift to agricultural structures are very rare, with only one confirmed case in the past three years.*¹⁷⁹

Another association provided a similar summary of the issue:

*Under ORS 634, off-target pesticide drift is already illegal. The Oregon Department of Agriculture (ODA) routinely responds to complaints and issues civil penalties when violations have occurred. In addition, the proposed rule contains strict requirements for minimizing drift to a shelter, providing further protection to occupants. Three years of ODA pesticide investigation records confirm that allegations of off-target drift onto farmworker housing are infrequent, and that confirmed violations are extremely rare. With thousands of applications occurring each year, there was only one confirmed case of drift onto farmworker housing in the past three years.*¹⁸⁰

Another commenter suggested that the rate of “definite” cases found in the broader literature was also quite low:

*A “mega data” study (Lee S. et al, 2011) data was collected from NIOSH data and California Dept of Pesticide Regulation data from 1998-2006 from 11 states to quantify the illnesses due to pesticide drift. The study found that 70% of all drift cases were from fumigants and aircraft applications. **In this study in 1.8% of cases, the reported illnesses were considered “definite” due to pesticides. The majority were non-***

¹⁷⁵Statement by Heather Case, Oregon OSHA Administrative Rules Coordinator, in the public hearing at 6 pm, December 5, 2017 in Medford, transcript pp. 6-7.

¹⁷⁶Ibid., p. 7.

¹⁷⁷Letter from Alan Fujishin, Gibson Farms, Siletz, January 29, 2018.

¹⁷⁸Comments by Jeff Stone, Oregon Association of Nurseries, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript p. 30.

¹⁷⁹Letter from Mike Doke, Columbia Gorge Fruit Growers, March 15, 2018.

¹⁸⁰Letter from Scott J. Dahlman, Oregonians for Food & Shelter, Salem, March 15, 2018.

*occupational, not related to work or on farm housing. From this data one can calculate that illnesses due to non-fumigant and non-aerial application drift which means farmer applied airblast sprayer applications (on far) account for drift which causes 0.25% of the definite illnesses.[emphasis in original]*¹⁸¹

The commenter appears to disregard the conclusions of the study authors themselves because of the admitted “limitations of this type of data where there is no way to quantify the rate of under reporting or over reporting (false positives).”¹⁸² For that reason, he apparently discards the study’s identification of cases as “probable,” “possible,” and “suspicious,” as well as the authors’ own conclusions with regard to the rates reported:

*This study also has several limitations. First, our findings likely underestimate the actual magnitude of drift events and cases because case identification principally relies on passive surveillance systems.... Second, the incidence of drift cases from agricultural applications may have been underestimated by using crude denominators of total population and employment estimates, which may also include those who are not at risk.*¹⁸³

The authors go on to note possible factors that might cause the rates to be over-reported – but their overall conclusion remains that the rates they have reported are likely to be under-estimates, not over-estimates. And because their discussion focuses on the rates, rather than on counting the number of incidents in a given population and comparing that to the total, their conclusions that the rate of *acute* illness (the analysis did not address chronic exposure) is higher for agricultural workers and is higher for those who live in proximity to agricultural activity are much more useful in the context of the present discussion about regulatory policy:

*These study findings suggest that the incidence of acute illness from off-target pesticide drift exposure was relatively low during 1998-2006 and that most cases presented with low severity illness. However, the rate of poisoning from pesticide drift was 69 times higher for residents in five agriculture-intensive California counties compared with other counties, and the rate of occupationally exposed cases was 145 times greater in agricultural workers than in nonagricultural workers. These poisonings may largely be preventable through proper prevention measures and compliance with pesticide regulations. Aerial applications were the most frequent event associated with drift events, and soil fumigations were a major cause of large drift events.*¹⁸⁴

Oregon OSHA understands that such off-target drift is already illegal. However, as other commenters have noted, that does not mean it does not occur. With regard to the ODA activity, Oregon OSHA notes with interest the infrequency of such cases involving labor housing in ODA records. However, as a regulatory agency itself, Oregon OSHA is also aware of the challenges that can be presented by an enforcement approach that relies almost entirely on complaint-driven enforcement to identify violations.

Several commenters were skeptical of enforcement effectiveness. For example, one commenter offering the following observation:

*I don't think – I appreciate the fact that they are looking into an application exclusion zone, but I don't think it's going to do any good, especially when you look at these pictures, that every day, every day these laws are being violated. And we call and we complain, and they send a letter to the grower. Well, that's pretty easy for them to get away with it.*¹⁸⁵

Given that the record includes a number of suggestions of dissatisfaction with past enforcement activities by both ODA and Oregon OSHA, it would be an error to assume that all – or even most – such instances will be reported to the regulatory authority. Even if workers’ and others’ beliefs that enforcement is less robust than it might be are either mistaken, outdated, or both, Oregon OSHA notes that it is primarily the

¹⁸¹Mike McCarthy, “Active Exclusion Zone: toxicological evaluation or risks in housing at 100 feet,” submitted by author, p. 3.

¹⁸²*Ibid.*, p. 3.

¹⁸³See-Jeong Lee, Louse Mehler, John Beckman, Brienne Diebolt-Brown, Joanne Prado, Michelle Lackovic, Justin Waltz, Prakash Mulay, Abby Schwartz, Yvette Mitchell, Stephanie Moraga-McHaley, Rita Gergely, and Geoffrey M. Calvert, “Acute Pesticide Illnesses Associated with Off-Target Pesticide Drift from Agricultural Applications: 11 States, 1998-2006,” *Environmental Health Perspectives*, Vol 119, Number 8, August 2011, p. 1168.

¹⁸⁴*Ibid.*, p. 1168.

¹⁸⁵Comments by Kathy Keese in the public hearing at 6 pm, December 5, 2017 in Medford, transcript p. 29.

belief itself (whether justified or otherwise) that limits the effectiveness of a system that relies upon complaint-based enforcement.

Barriers to Accurate Incident Reporting

Several commenters also suggested that workers are sometimes hesitant to complain because of fear of the consequences. For example, one commenter described an encounter with a worker who believed he and his family were being harmed by pesticide exposures: “We were, like, you know, there’s things you can do, there are people who can call. Why aren’t you doing anything? And he looked at his family and he said, “I can’t afford to complain about it, I’m just happy to have a job.”¹⁸⁶

Another commenter made a similar observation: “Like they say, people who are actually working on the farms, they are not going to complain, they don’t want to get laid off, they don’t want to get fired, they don’t want to get blacklisted and not get to work in the industry anymore: They can’t afford that.”¹⁸⁷

Even without such constraints, the same commenter noted that complaints in general represent only a sample of actual occurrences:

*And I don’t know if any of you have read things, statistics on, say you own a business and you get a complaint, you get five people complaining, oh, this product wasn’t any good. The statistics marketing people will tell you that five represents at least 50 people. So when you get a complaint of pesticide drift, at a minimum, there’s at least ten times that many more people that are being affected than what you are hearing about. So don’t assume that that number means anything.*¹⁸⁸

And yet another commenter suggested that pesticide incidents are likely under-reported in the same way that other issues are sometimes under-reported in the workplace.

My job is to speak with women and men who are laborers in regarding sexual harassment in the workplace. You could ask what does the sexual harassment have to do with the subject of pesticides. So many people who suffer from sexual harassment never make a report or never inform at their place of work as to what happened to them. And that’s out of fear of losing their housing if they live at their places of work, because we all know that housing is very expensive here in the state of Oregon.

*Same thing can also happen with pesticides. The people may never report the pesticide problem of what happens due to that. And the reason why they’re fearful of that is because they’re afraid of possibly losing their housing and, repeating what I mentioned, it’s difficult to find suitable housing, and essentially, if you have a family.*¹⁸⁹

Other commenters focused on the particular vulnerability of the population as a factor in reporting:

*...mention was made of the low number of reported drift instances. There are many reasons why this might be true. One of the biggest reasons is the fear of reporting. Especially in the current political climate, workers are afraid. We receive calls each week from workers who know they were wronged at work but decided not to pursue a claim for fear of being fired, harassed, or deported. This is perhaps even more of the case for farmworkers who often do not wish to inconvenience or anger the boss. Another important factor is that many workers are not receiving proper notice of what is being sprayed around them and when they’re at most risk of exposure.*¹⁹⁰

These comments in the record about the prevalence of under-reporting are well-documented in the literature on the subject. The problem with under-reporting generally, particularly in relation to occupational diseases, has been well-known within the workplace health and safety community for many years.

¹⁸⁶Comments by Elise Higley, Our Family Farms, in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 67. See also comments by Santiago Ventura, Oregon Law Center, in the public hearing at 6 pm, November 15, 2017, in Woodburn, transcript p. 15.

¹⁸⁷Comments by Mary Alionis, Our Family Farms, in the public hearing at 6 pm, December 5, 2017 in Medford, transcript p. 70.

¹⁸⁸Ibid., p. 69-70.

¹⁸⁹Comments by Marcelina Martinez, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript pp. 33-34.

¹⁹⁰Comments by Kate Suisman, Northwest Workers Justice Project, in the public hearing at 6 pm, November 15, 2017 in Woodburn, transcript pp. 41-42.

One article, for example, discussed these barriers at length:

*The lack of a comprehensive occupational health data collection system in the United States has led to reliance on piecemeal data sets produced by systems not designed for surveillance. These systems involve obstacles that filter out work-related health problems at each step. Such filters particularly block documentation of health problems affecting populations especially vulnerable to workplace hazards, including immigrant and low-wage workers.*¹⁹¹

Consistent with many of the comments in the record, the authors focused on the barriers created by fear of the consequences if an occupational disease is reported:

*Workers who report health problems to supervisors may risk disciplinary action, denial of overtime or promotion opportunities, stigmatization, drug testing, harassment, or job loss. Others may fear such outcomes even in the absence of demonstrable risk.*¹⁹²

It is worth noting that, as the authors point out, the fear of adverse consequences can discourage reporting even if the fear itself is not well-grounded. And the fear of reporting is not the only barrier to reporting such cases:

*Workers who develop diseases without easily recognized symptoms or with long latency periods are not likely to recognize that they are sick, or sick enough to require care. Workers who do realize that they require medical care may nonetheless forgo treatment because they are not able to pay for the care and do not expect their health costs to be covered by workers' compensation. They may not rely on workers' compensation because they fail to perceive the work relatedness of their condition; anticipate difficulty in demonstrating the work relatedness; assume, incorrectly, that having a job without benefits excludes them from this system; assume, incorrectly, that incomplete employment or immigration documentation excludes them; or assume, correctly, that obtaining this coverage can be difficult and costly. Other workers are entirely unfamiliar with workers' compensation.*¹⁹³

Other analyses have attempted to estimate the level of under-reporting, although they were able to develop only rough estimates of the problem:

*This study estimates the rate at which workers suffering from occupational illnesses file for workers' compensation lost wage benefits and identifies some of the factors that affect the probability that a worker with an occupational illness will file. A database of known or suspected cases of occupational illness is matched with [Michigan] workers' compensation claims data. Overall, between 9% and 45% of reported workers file for benefits.*¹⁹⁴

*...it is likely that the level of unionization is much higher in our sample than it would be for a random sample of workers. A recent study indicates that workers' compensation reciprocity rates are significantly higher in unionized versus non-unionized workplaces. This suggests that had our sample been more representative of the general population of workers with occupational illnesses, we would have estimated even lower rates of filing for workers compensation.*¹⁹⁵

In addition to these broader analyses, the problem has also been identified specifically in relation to pesticide-related illnesses:

For multiple reasons, the data provided in this report are likely to be underestimates of the actual magnitude of acute pesticide-related illness and injury. Many cases of pesticide-related illness or injury never are ascertained because affected persons neither seek medical care, nor call appropriate authorities. Furthermore, because the signs and symptoms of acute pesticide-related illnesses are not pathognomonic, and because most health care professionals are not acquainted with the recognition and management of these illnesses, many persons who seek medical care might not receive an accurate diagnosis. Even among those who do receive an accurate diagnosis, many cases are not reported to state surveillance systems,

¹⁹¹Lenore S. Azaroff, Charles Levenstein, David Wegman, "Occupational Injury and Illness Surveillance: Conceptual Filters Explain Underreporting," *American Journal of Public Health*, Vol 92, Number 9, September 2002, p. 1426.

¹⁹²*Ibid.*, p. 1422.

¹⁹³*Ibid.*, p. 1423.

¹⁹⁴Jeff Biddle, Karen Roberts, Kenneth D. Rosenman, Edward M. Welch, "What Percentage of Workers with Work-Related Illnesses Receive Workers' Compensation Benefits?" *Journal of Occupational and Environmental Medicine*, Vol 40, Number 4, April, 1998, p. 325.

¹⁹⁵*Ibid.*, p. 328.

despite the fact that each of the participating states has mandatory reporting of occupational pesticide-related illness and injury. For these reasons, the reported counts and rates provided in this report must be considered minimum estimates.¹⁹⁶

While concern about health effects resulting from pesticide exposure has increased, those providers (rural and migrant clinicians) most likely to see these effects have not been trained to recognize them. Many cases of low-level pesticide exposure are not properly diagnosed. Those undiagnosed cases include those for which patients do not seek treatment and those patients who seek treatment but whose illness is misdiagnosed.¹⁹⁷

The problem of underreporting AOPI [acute occupational pesticide-related illness] to public health authorities is well-known, and this hampers the effective operation of AOPI surveillance. Farmworkers are vulnerable and economically disadvantaged and this compounds the underreporting of farmworker AOPI. Farm work is among the lowest paid jobs in the United States, is physically laborious, and offers little job security.¹⁹⁸

Factors that contribute to farmworker AOPI [acute occupational pesticide-related illness] underreporting include fear of job loss or deportation, limited English Proficiency (LEP), limited access to health care, lack of clinician recognition of AOPI, farmworker ineligibility for workers compensation benefits in many states [does not apply to Oregon] insufficient resources to conduct AOPI surveillance, and constraints in coordinating AOPI investigations across state agencies.¹⁹⁹

The Scientific Literature on Drift

In addition to the preliminary results of the PNASH study already referenced, the scientific literature contains considerable evidence, much but not all of it indirect, suggesting that off-target drift is a reality in many agriculture workplaces – and in relation to housing as well. For example, one review published in 2015 noted that “[a]lthough disentangling exposure pathways was challenging, overall, we found reasonably consistent evidence that paraoccupational and agricultural drift pathways contributed to pesticide exposure to women...” while noting that “[m]ost of the evidence reviewed came from studies of residential dust, which is not specific to women.”²⁰⁰

A number of studies in homes near treated fields have shown “concentrations of agricultural pesticides in carpet dust are higher in residences closer to treated fields and in farm homes”²⁰¹ than in other residences, which suggests that drift and other unintentional pathways result in higher pesticide exposures, although data on actual health effects from such exposures is less clear. A 2011 study concluded, “Residences with reported use of agricultural pesticides nearby [within 1,250m] had significantly higher concentrations of

¹⁹⁶Geoffrey M. Calvert, John Beckman, Joanne Bonnar Prado, Heidi Bojes, Abby Schwartz, Prakash Mulay, Kathy Leinenkugel, Sheila Higgins, Michelle Lackovic, Justin Waltz, Derry Stover, and Stephanie Moraga-McHaley, “Acute Occupational Pesticide-Related Illness and Injury – United States, 2007-2011,” *Morbidity and Mortality Weekly Report* (NIOSH), Vol 63, Number 55, October 14, 2016, p. 13.

¹⁹⁷Anne E. Hiott, Sara A. Quandt, Julie Early, David S. Jackson, and Thomas A. Arcury, “Review of Pesticide Education Materials for Health Care Providers Providing Care to Agricultural Workers,” *The Journal of Rural Health*, Vol 22, Number 1, Winter 2006, p. 17.

¹⁹⁸Joanne Bonnar Prado, Prakash R. Mulay, Edward J. Kasner, Heidi K. Bojes, and Geoffrey M. Calvert,” *Journal of Agromedicine*, Vol 22, Number 4, 2017, p. 395.

¹⁹⁹*Ibid.*, p. 395.

²⁰⁰Nicole Deziel, Melissa C. Friesen, Jane A. Hoppin, Cythia J. Hines, Kent Thomas and Laura E. Beane Freeman, “A Review of Nonoccupational Pathways for Pesticide Exposure in Women Living in Agricultural Areas,” *Environmental Health Perspectives*, Volume 123, Number 6, June 2015, p. 523.

²⁰¹Robert b. Gunier, Mary H. Ward, Matthew Airola, Erin M. Bell, Joanne Colt, Marcia Nishioka, Patricia A. Buffler, Peggy Reynolds, Rudolph P. Rull, Andrew Hertz, Catherine Metayer, and John R. Nuckols, “Determinants of Agricultural Pesticide Concentrations in Carpet Dust,” *Environmental Health Perspectives*, Volume 119, Number 7, July 2011, p. 970 (citing previous work by Curwin et al. 2005; Fenske et al. 2002; Harnly et al. 2009; Lu et al. 2000; Obendorf et al. 2006; Simcox et al. 1995; Ward et al. 2006).

pesticides in carpet dust compared with residences without nearly agricultural use for five of the seven agricultural pesticides we evaluated.²⁰²

*The farmworker population in Hood River tends to consist of newly arrived and more permanent Hispanic residents who live in cabins, trailers, single- and multifamily homes, or apartments that are located in or alongside orchards. Harvesting of tree fruit begins in August and extends through October.*²⁰³

*Proximity to spray areas appears to have been the predominant, though not the only, factor responsible for elevated pesticide concentrations in household dust in this study.*²⁰⁴

*Our analyses found that homes near treated fields, homes of farmers who applied pesticides more frequently or recently, and homes of those who applied pesticides around the home, garden, and yard, had quantifiably higher pesticide concentrations in the dust compared to their reference groups.*²⁰⁵

*Overall, house dust pesticide concentrations decreased sharply and non-linearly with increasing house distance from treated fields that was linear on a log-log scale [and the predicted decreases continued sharply at distances considerably higher than in the proposed rule].*²⁰⁶

*For five of the seven pesticides evaluated, residences with use of agricultural pesticides within 1,250m during the previous 365 days had significantly higher concentrations of pesticides than did residences with no nearby use.*²⁰⁷

*Children living in households with pesticide applicators and in proximity to pesticide-treated orchards experienced greater OP pesticide exposure than did children of families with no occupational connection to agriculture who resided at a distance from agricultural spraying.*²⁰⁸

*Children living with parents who work with agricultural pesticides, or who live in proximity to pesticide-treated farmland have higher exposures than do other children living in the same community. These children thus have additional exposure pathways beyond diet, drinking water, and residential pesticide use, the pathways considered common to all children.*²⁰⁹

While not all studies reviewed have reached clear conclusions on the extent of drift and the nature of its harmful effects, the balance of information in the record supports a conclusion that drift remains a

²⁰²Robert b. Gunier, Mary H. Ward, Matthew Airola, Erin M. Bell, Joanne Colt, Marcia Nishioka, Patricia A. Buffler, Peggy Reynolds, Rudolph P. Rull, Andrew Hertz, Catherine Metayer, and John R. Nuckols, "Determinants of Agricultural Pesticide Concentrations in Carpet Dust," *Environmental Health Perspectives*, Volume 119, Number 7, July 2011., p. 975.

²⁰³Joan Rothlein, Diane Rohlman, Michael Lasarev, Jackie Phillips, Juan Muniz, and Linda McCauley, "Organophosphate Pesticide Exposure and Neurobehavioral Performance in Agricultural and Nonagricultural Hispanic Workers," *Environmental Health Perspectives*, Vol. 114, Number 5, May 2006, p. 691.

²⁰⁴Nancy J. Simcox, Richard A. Fenske, Sarah A. Wolz, I-Chwen Lee, and David Kalman, "Pesticides in Household Dust and Soil: Exposure Pathways for Children of Agricultural Families," *Environmental Health Perspectives*, Vol. 103, Number 12, December 1995, p. 1133.

²⁰⁵Nicole C. Deziel, Laura E. Beane Freeman, Barry I. Graubard, Rena R. Jones, Jane A. Hoppin, Kent Thomas, Cynthia J. Hines, Aaron Blair, Dale P. Sandler, Honglei Chen, Jay H. Lubin, Gabriella Andreotti, Michael C. R. Alavanja, and Melissa C. Friesen, "Relative Contributions of Agricultural Drift, Para-Occupational, and Residential Use Exposure Pathways to House Dust Pesticide Concentrations: Meta-Regression of Published Data," *Environmental Health Perspectives*, Vol 125, Number 3, March 2017, p. 304.

²⁰⁶*Ibid.*, p. 299.

²⁰⁷Robert B. Gunier, Mary H. Ward, Matthew Airola, Erin M. Bell, Joanne Colt, Marcia Nishioka, Patricia A. Buffler, Peggy Reynolds, Rudolph P. Rull, Andrew Hertz, Catherine Metayer, and John R. Nuckols, "Determinants of Agricultural Pesticide Concentrations in Carpet Dust," *Environmental Health Perspectives*, Vol 119, Number 7, July 2011, p. 970.

²⁰⁸Carrie Lowenherz, Richard A. Fenske, Nancy J. Simcox, Garland Bellamy, and David Kalman, "Biological Monitoring of Organophosphorus Pesticide Exposure among Children of Agricultural Workers in Central Washington State," *Environmental Health Perspectives*, Vol 105, Number 12, December 1997, p. 1344.

²⁰⁹Chensheng Lu, Richard A. Fenske, Nancy J. Simcox, and David Kalman, "Pesticide Exposure of Children in an Agricultural Community: Evidence of Household Proximity to Farmland and Take Home Exposure Pathways," *Environmental Research Section A* 84, 2000, p. 301.

genuine risk to workers and their families if they are working or living near active pesticide applications. In this case the “anecdotal” information – even that not directly related to worker housing or workers in fields – provides more meaningful information than it does in relation to the health effects, although it would be difficult to rely upon that record alone.

One commenter pointed to studies that he suggested supported the conclusion that drift is not an issue. In his oral testimony, he stated,

One thing of note is in the Fenske study higher concentrations of urinary metabolites of organophosphates were found in Seattle children than children in orchards of farmworkers in Central Washington.²¹⁰

Oregon OSHA is familiar with the study in question,²¹¹ and notes that the comment is mistaken both in stating that the reference population’s metabolites were higher than the agricultural population and in identifying the reference population as being located in Seattle. First of all, the study found no statistically significant difference between the study groups. While it is true that the study reported a lower mean level in metabolites related to one of the pesticide groups for the children of pesticide *handlers* compared to all other groups (although the difference with the reference population was very slight and not statistically meaningful), the children of other farmworkers (and the children of all agricultural workers combined) showed higher average levels than did the reference population,²¹² which reflected families in Central Washington whose residences were located at least ¼ mile from any treated orchards.²¹³

In his later written analysis, the same commenter did not repeat the errors made in his oral comments, describing the same study as follows:

In an additional study by Fenske (Fenske et. Al, 2002) Chlorpyrifos and parathion exposures of children were evaluated in three study groups in Washington State. The groups were (1) parental occupation in agriculture, (2) housing near spraying activity and (3) non-agricultural homes. “Child urinary metabolite concentrations did not differ across parental occupational classifications”. And “Children living in these homes (in Ag areas) did not appear to have increased exposures, as measure through biological monitoring”.²¹⁴ [emphasis in original]

This discussion of the study correctly notes that the urinary metabolite levels did not present a statistically meaningful distinction. However, the study also included a discussion of the particular limitations of its urine sampling,²¹⁵ and it *also* concluded, “Residences that include household members who work with agricultural pesticides or that are in proximity to pesticide-treated farmland have higher diethyl OP pesticide concentrations in house dust than do homes without these characteristics.”²¹⁶ The study, taken alone, raises questions specifically about the transfer of OP pesticides into biologically identifiable exposures. But it tends to confirm the presence of pesticide drift – and it does not provide conclusive evidence that such drift presents no harm (particularly in relation to other pesticides). Finally, the study need not be taken alone – the record of the potential for illegal drift remains extensive.

The same commenter also referenced a study involving another OP pesticide, methamidophos, and its aerial application in Washington state. He notes that the study in question²¹⁷ applied only to aerial applications, “not airblast sprayers.”²¹⁸ And he notes that the “Authors concluded that ‘the aerial application was very well controlled and that nearly all of the material applied reached the targeted fields,’” further noting that “**In this study they did not find residues in the nearby housing.** [emphasis

²¹⁰Comments by Michael McCarthy in the public hearing at 10 am, November 29, 2017 in Hood River, transcript p. 11.

²¹¹Richard A. Fenske, Chensheng Lu, Dana Barr, and Larry Needham, “Children’s Exposure to Chlorpyrifos and Parathion in an Agricultural Community in Washington State,” *Environmental Health Perspectives*, Vol 110, Number 5, May 2002, pp. 549-553.

²¹²*Ibid.*, p. 549.

²¹³*Ibid.*, Table 1 on p. 550.

²¹⁴Mike McCarthy, “Active Exclusion Zone: toxicological evaluation or risks in housing at 100 feet,” submitted by author, p. 3.

²¹⁵Richard A. Fenske, Chensheng Lu, Dana Barr, and Larry Needham, “Children’s Exposure to Chlorpyrifos and Parathion in an Agricultural Community in Washington State,” *Environmental Health Perspectives*, Vol 110, Number 5, May 2002, p. 553.

²¹⁶*Ibid.*, p. 553.

²¹⁷Sarah Weppner, Kai Elgethun, Chensheng Lu, Vince Hebert, Michael G. Yost, and Richard A. Fenske, “The Washington Aerial Spray Drift Study: Children’s Exposure to Methamidophos in an Agricultural Community Following Fixed-Wing Aircraft Applications,” *Journal of Exposure Science and Environmental Epidemiology*, (2006), pp. 387-396.

²¹⁸Mike McCarthy, “Active Exclusion Zone: toxicological evaluation or risks in housing at 100 feet,” submitted by author, p. 2.

in original]”²¹⁹ Oregon OSHA agrees that this study did not provide evidence of hazardous drift into housing, although it is worth noting the broader context described in the following statement from the authors’ discussion of their results:

*These data indicate that the aerial application was very well controlled, and that nearly all of the material applied reached the targeted fields, at least along those boundaries where measurements were taken. It seems likely that the presence of our field investigation team had an influence on the application procedures. According to the farm operator, the pilot scheduled for the aerial application observed our field sampling apparatus from the air and chose to return to base prior to spraying. The application that was the focus of this study occurred the next day with a different pilot.*²²⁰

Taken as a whole, Oregon OSHA finds the record to justify its conclusion the risk of off-target pesticide drift remains a meaningful one, in spite of the existing regulatory prohibitions against such drift.

The Need for Accurate and Timely Information

Several comments, both supporting the proposal and implicitly criticizing it as being weaker than the federal rule, noted the value of information in preventing risks:

*This regulation will help farmworkers at least understand what is applied near where they live and bathe and eat so that they’re more prepared, or at least able to get out of the way of the spray.*²²¹

*We recommend that if they’re going to spray, at least they should give notice to the fieldworkers. Our organization supports the law that was approved by the Environmental Protection Agency in 2016. Oregon OSHA has the legal and moral duty to protect the fieldworkers.*²²²

Oregon OSHA agrees that access to timely information is critical to workers (and their families) taking the necessary steps to protect themselves from risks in the workplace (and in employer-provided housing). Oregon OSHA also notes that it is a firm principle of risk communication that providing information decreases, rather than increases, unnecessary fear. One publication specific to communicating about pesticide risks describes the “myth” that communication will increase alarm:

Myth 2: Communicating with the public about risk is likely to alarm people. *Risk communication itself can be risky, but not giving people a chance to express their concerns is more likely to increase alarm than decrease it. Balanced communication of pesticide benefits and risks more likely to decrease public concern.*²²³

In reviewing the record, Oregon OSHA believes that the risks of pesticides are real ones. But Oregon OSHA also believes that many of those risks can be further reduced, although not eliminated, through a combination of existing protections and the provisions of the current rule.

²¹⁹Ibid., p. 2.

²²⁰Sarah Weppner, Kai Elgethun, Chensheng Lu, Vince Hebert, Michael G. Yost, and Richard A. Fenske, “The Washington Aerial Spray Drift Study: Children’s Exposure to Methamidophos in an Agricultural Community Following Fixed-Wing Aircraft Applications,” *Journal of Exposure Science and Environmental Epidemiology*, (2006), p. 394.

²²¹Comments by Connie Yost, Farmworker Ministry in the Northwest, in the public hearing at 6 pm, November 15, 2017, in Woodburn, transcript p. 33.

²²²Comments by Rebecca Velasquez, Women Striving for Progress, in the public hearing at 6 pm, November 15, 2017, in Woodburn, transcript p. 23.

²²³Fred Whitford, Richard Feinberg, Amy Mysz, Katherine Rowan, Robert Earl, Otto Doering, Thomas Neltner, and Arlene Blessing, “Pesticides and Risk Communication: Interaction and Dialogue with the Public,” Published by Purdue Pesticide Programs, November 2001, p. 35.

VIII. No Spray Buffer Zones vs. Application Exclusion Zones

The rulemaking record includes extensive comments regarding no-spray buffer zones. To distinguish such zones from the Application Exclusion Zone (AEZ) found in the Environmental Protection Agency (EPA) rule and in the Oregon OSHA rule currently before us, a “buffer zone” would involve a prohibition on spraying in a certain location, adjacent to the intended spray application area (most of the related comments explicitly refer to “no-spray buffer zones”). The AEZ, by contrast, allows spraying to go forward but requires that the potential “off target” exposure be mitigated by either removing employees and other individuals from the AEZ or – in the case of certain applications under the state rule – by allowing employees and certain other individuals to “shelter in place” as described in the rule.

As discussed previously at some length, the EPA rule does not include a buffer zone and no pesticide worker protection buffer zone outside the treated area exists in existing Oregon rules (except as dictated by particular pesticide labels). If Oregon OSHA were to discard the proposed rule and simply adopt the existing EPA rule by reference, no buffer zone would be required (again, except as dictated by particular pesticide labels, which are unaffected by the present rulemaking).

Comments in Support of a No-Spray Buffer Zone

In that light, and as also noted previously, the overwhelming majority of comments made in support of a buffer zone – whether 100’, 150’, 300’, or 1000’ – are in error about either the existing requirements, the federal rule, or both. But they also clearly take a position in favor of such buffer zones. As noted previously, it is not always clear whether the commenters supporting a buffer zone are aware of the exact nature of the federal requirements, but their support for the buffer zone is nonetheless clear:

Oregon OSHA estimates that workers in their housing may be exposed to 24 adjacent pesticides spraying each season, but your agency is proposing two pesticide exposure options that do not reduce the high health and safety risks to farm workers. Option one, which is shelter in place without protection and a no-buffer zone; And option two, if a pesticide application is a respiratory hazard – is a respiratory hazard, stand a hundred feet away from the pesticide equipment from – for 15 minutes.

In both scenarios, farm workers and their families will be at risk because they will come into contact with pesticides that contaminate farm worker housing, the kitchen areas, bathrooms, and laundry areas.

As an organization, we believe 300 feet should be the minimum. This is a more ethical standard. We value our farm workers and families.²²⁴

I am appalled by the thought that you would ask families like mine to merely stand at a minimum distance while growers spray around them. My aunts, uncles, and many other family members still work in agriculture in Oregon. The thought that they might be asked to do this sickens me. I’m asking Oregon OSHA to mandate a 150-foot buffer zone between farm labor housing and treated areas as the least you can do to protect people’s lives.²²⁵

In addition, some commenters clearly understood the difference between a no-spray buffer zone and the AEZ and explicitly encouraged Oregon OSHA to adopt such an additional provision. For example, one commenter offered the following:

And I would also like to encourage you to increase the buffer zone to actually have a buffer, not just the exclusion zone, but to actually have a buffer between worker housing and where the trees are planted. And in our case, trees, with the pear and peach and apple industries down here, at least a hundred-foot barrier.

.....

So my request is: Please, at least a hundred – ideally, a 350-foot buffer zone – but at least the hundred or 150-foot buffer zone....²²⁶

²²⁴Comments by Lupe Garcia of Rogue Climate in the public hearing at 6 pm, December 5, 2017 in Medford, transcript p. 41.

²²⁵Comments by Nick Morales in the public hearing at 6 pm, December 5, 2017, in Medford, transcript pp. 55-56.

²²⁶Comments by Kathy Keese in the public hearing at 6 pm, December 5, 2017 in Medford, transcript p. 28 and p. 33.

Buffer Zone Requirements from other States

As discussed in some detail in a previous section²²⁷, Oregon OSHA is unaware of any requirements in other states directly comparable to the one being suggested by advocates of a no-spray buffer zone. Neither workplaces nor employer-provided housing (in agriculture or in other industry sectors) are addressed by the provisions in other states that Oregon OSHA has reviewed.

Not all comments referencing other states, however, suggested that the provisions in those states addressed workplace exposures. For example, at least one commenter suggested that Oregon OSHA should be motivated to adopt such a requirement based on protections afforded schools in certain other states:

*I would like to know why two other states, California and Arizona, have a quarter-mile buffer zone around schools, and Oregon OSHA does not feel that same protection is necessary for where our farm workers live and sleep.*²²⁸

Beyond noting that there is frequently a variation between the level of protection provided to workers and that provided to the general public, and noting further that neither of the two states in question provides that protection to workers (on the farm or elsewhere), Oregon OSHA leaves further discussion to the conclusion of this section.

Buffer Zone Requirements in relation to Salmon-Bearing Streams

Many commenters also suggested that the need for such buffer zones is reinforced by the restrictions with regard to fish-bearing streams. Several individuals made comments similar to the following:

*Consider this: by law here in Oregon, there is a 300-foot no spray buffer of commonly used pesticides that protects salmon and other endangered fish from pesticide drift.*²²⁹

*I am very glad that in Oregon, fish and our precious water sources are provided the 300-foot no-spray buffer zone. I do believe that scientific studies were used to determine this distance so that these beautiful fish would be protected, or at least have a reduced chance of being hit with pesticide drift. People deserve to have at least the same distance.*²³⁰

Again, Oregon OSHA plans to discuss the issue of buffers in general as part of the conclusion to this section. But it is appropriate to briefly touch on the existing salmon-protection provisions, which are result of a federal court order under the U.S. Environmental Protection Act. A description of these restrictions can be found on the Oregon Department of Agriculture's website.²³¹ The restrictions apply to a relatively short list of pesticides, although many of them are or have been in widespread use. In considering these provisions as they relate to the current proposal, it is worth noting that while the buffer for these pesticides for aerial spray applications is indeed 300 feet, the buffer for ground-based applications (which would include those using air-blast sprayers) is only 60 feet.

Buffer Zones for Forestry Applications

The record includes references to an existing buffer zone requirement, found in Oregon law. One commenter noted that "Oregon law already establishes an aerial spray buffer zone adjacent to all dwellings or schools. See ORS 527.672. Accordingly, OAR 437-004-6405 must be altered so as not to undermine existing statutory protections."²³² Oregon OSHA notes that, while the 60-foot buffer zone mandated by ORS 527.672 does apply to all inhabited dwellings or schools, it does not apply to all

²²⁷See Section IV, "Appropriate Consideration and Evaluation of Public Comments," pp. ##-##.

²²⁸Comments by Kristina Lefever, Ashland, at hearing at 6 pm, December 5, 2017, in Medford, transcript p. 50.

²²⁹Kayse Jama, Unite Oregon, in written comments at hearing at 6 pm, November 15, 2017, in Woodburn.

²³⁰Comments by Kristina Lefever, Ashland, at hearing at 6 pm, December 5, 2017, in Medford, transcript p. 50.

²³¹<http://www.oregon.gov/ODA/programs/Pesticides/Water/Pages/Buffers.aspx>.

²³²Letter from Daniel Galpern, Beyond Toxics, Eugene, March 12, 2018; a similar reference to this statutory provision appears in the letter from Carl Wilmsen, Northwest Forest Worker Center; Lisa Arkin, Beyond Toxics; Ana Molina, Beyond Toxics; Reyna Lopez, PCUN-Pineros y Campesinos Unidos del Noreste; Ramon Ramirez, PCUN-Pineros y Campesinos Unidos del Noreste; Kathy Keese

pesticides but only to herbicides (this exclusion is not meaningless; the larger statute in which it appears clearly involves use of insecticides in forestry applications). And, as the comment indicates, this 60-foot buffer zone applies only to aerial applications, not to air-blast or other ground applications. Perhaps most important, it applies only to forestry applications, which generally would fall outside the scope of the pesticide worker protection standard rules included in Oregon OSHA's agriculture standard.²³³

In any case, it is unclear how the lack of a reference to this aerial herbicide buffer zone for forest operations in the newly adopted Oregon OSHA rules would undermine the existing statutory requirement when Oregon OSHA is unaware of any problems caused by the lack of any such reference in the current rule. However, Oregon OSHA does agree that it would be useful to advise those who might be subject to both requirements of the existence of the statutory provision, and the final rule as published by Oregon OSHA will include a note providing information about the forestry herbicide buffer zone requirement.

Oregon OSHA notes that another commenter mentioned the same requirement in support of a buffer zone and in doing so indicated a clear understanding of its limitations, using it to argue that a workplace buffer zone would be reasonable, not suggesting that such a buffer already existed:

*Oregon law already requires a 60 feet no-spray buffer around homes and schools for aerial forestry sprays that occur less frequently and are limited to the types of pesticides applied. Considering the exposure farmworkers and their family live with due to the nature of their jobs, it is not unreasonable to require a minimum of 100 feet buffer zone around farm worker housing.*²³⁴

Oregon OSHA Cannot Adopt a Buffer Zone Requirement

Oregon OSHA has concluded that no buffer zone requirement can be adopted, particularly as part of this rulemaking, making further discussion of the merits of the issue in this document unnecessary.

First, and most clearly, adopting a buffer zone requirement during the current rulemaking would violate the notice requirements of the Administrative Procedures Act. *If* it were possible for Oregon OSHA to adopt such a rule, it would first be necessary to develop a new proposal that included such a buffer and submit it for public comment. Those affected by such a buffer zone were certainly not put on notice that it was a possibility as part of Oregon OSHA's current proposal, and they cannot be expected to have addressed it as part of the public record.

Second, and more important for the longer term, Oregon OSHA (as it repeatedly informed those on the advisory committee as the proposed rule was being developed) does not consider itself to have the statutory authority necessary to adopt a buffer zone requirement prohibiting the application of legal pesticides by legal means to a crop – or a portion of a crop – for which the pesticides are approved. We view such a restriction as tantamount to a partial ban on the use of the product, which has never been viewed as consistent with Oregon OSHA's authority to dictate safe work practices and working conditions.

While Oregon OSHA does believe it has the authority to address issues with regard to the siting of agricultural labor housing, that is not the issue before us in this rulemaking (in any case, the feasibility of a requirement that would apply to existing housing, rather than future housing, and that would effectively close a good deal of existing worker housing would require serious evaluation before it could even be considered).

Morales, NOWIA Unete-Center for Farm Worker Advocacy; and Dagoberto Morales, NOWIA Unete-Center for Farm Worker Advocacy, March 14, 2018, p. 3.

²³³ORS 527.672 reads in its entirety: "Aerial herbicide applications. When a forest operation involves applying herbicides by aircraft near an inhabited dwelling or school, the operator is responsible for leaving an unsprayed strip of at least 60 feet adjacent to the dwelling or school. The responsibility of the operator under this section is in addition to any responsibility of the aerial pesticide applicator under ORS chapter 634. [2015 c.833 §21]."

²³⁴Letter from Scott Lee on behalf of the Clatsop County Board of Commissioners, February 16, 2018.

IX. The Question of Limited “Shelter in Place” Allowances

One of the unique features of Oregon OSHA’s rule, both in contrast to its earlier 2016 proposal rule and to the rule adopted by the EPA in 2015, is the separation of air-blast/aerial AEZ requirements into two distinct sets of requirements based on whether the pesticide represents a respiratory, rather than a contact hazard. In this manner, the rule retains a “shelter in place” option, although it is more limited than the option contained in the 2016 proposal, since it does not apply to those pesticides that represent a respiratory hazard.

This provision received a large number of comments, from a variety of perspectives.

Sheltering in Place versus Evacuation

Most growers and grower representatives supported the option to shelter in place but argued that it should be available in all circumstances. Both form e-mails received from growers endorsed sheltering in place as a safer alternative, as did the standard talking points on which many of the letters received were based. In addition, the record includes specific comments such as the following:

*Allowing a shelter-in-place alternative is safer for workers than having them leave their homes or workplaces during an application. Agricultural structures including farmworker housing, office spaces, shops and greenhouses can provide adequate protection in the rare event of off-target drift.*²³⁵

*We support the “shelter in place” alternative for products applied aerially or by airblast sprayer. It is a safer alternative for workers than having them leave their homes or workplaces during an application. Agricultural structures (i.e. farmworker housing, office spaces, shops, and greenhouses) can provide adequate protection in the rare event of off-target drift from a misapplication of pesticides.*²³⁶

*We appreciate that OR-OSHA has considered and proposed a shelter-in-place compliance alternative which is not specified in the United States Environmental Protection Agency’s (EPA) version of the AEZ, 40 CFR 170.405, within the revised WPS. This alternative will increase worker safety and decreases potential hazards.... The BOA does not support the elimination of the shelter-in-place option in situations in which the handler is applying a pesticide which requires respiratory protection.*²³⁷

*This sheltering in place is something that you recognize the importance of by allowing them to shelter in place at a hundred feet instead of going with what EPA suggested. That was the right thing to do. As a person who both lives next to spray and sprays, applies sprays, supervises people applying sprays, deals with family living in housing where we are applying pesticides, it is a much safer way to go. And at 150 feet it would also be a safer way to go.*²³⁸

*We do believe that the shelter in place rule while at difference – that differentiate from federal rule is actually a well-thought out idea.*²³⁹

*For anybody that suggests evacuating and returning provides more protection than staying indoors with the cabin sealed, I would suggest that without substantiating evidence to the contrary, that argument does not pass the “red face test”.... the proposed OR-OSHA rule, with different requirements for different chemicals will lead to confusion and, perhaps, to complaints which turn out not to be violations. “Shelter in place” can be easily understood by employees, provides consistency of protection during applications, and would be more readily enforceable.*²⁴⁰

²³⁵Letter from Mike Doke, Columbia Gorge Fruit Growers, March 15, 2018.

²³⁶E-mail from Dana Estensen, March 15, 2018.

²³⁷Letter from Barbara Boyer, State Board of Agriculture, March 14, 2018.

²³⁸Comments by Jennifer Euwer, in the public hearing at 10 am, November 29, 2017 in Hood River, transcript p. 22.

²³⁹Comments by Jeff Stone, Oregon Association of Nurseries, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript pp. 30-31.

²⁴⁰Letter from Dan Ericksen, Cascade Cherry Growers, January 18, 2018.

The record also includes a number of comments directly criticizing the remaining requirement for evacuation in the rule (the rule requires evacuation from a 150-foot AEZ when the label indicates that the use of a respirator by the applicator is required). These comments suggested that the provision will create significant logistical challenges and risks to workers:

I'm an orchardist in The Dalles, and we frequently have lots of wind. And the best time to spray to avoid the drift that you're talking about is at night, and we rarely spray during the day. So these families are going to have to move out at night. And the disruption there seems to me to be much more destructive than the potential contamination that it might have. And it really – it makes sense to me for them to shelter in place.²⁴¹

Since a large number of spray applications are done at night in our area, evacuating a labor camp with 50 to 150 or more becomes a logistical challenge. Once the camp is vacated, it may take a considerable amount of time to complete an application because rows in orchards can be long and there may be several rows that need to be sprayed before the 150 foot threshold is reached. It likely would take more than an hour in most cases and, in the meantime, there is no place for the employees to go to seek shelter other than in their vehicles. Providing motel rooms would not only be prohibitively expensive, but it is doubtful that enough vacancy exists in The Dalles area to house people from even one camp, let alone many on the same night.²⁴²

Oregon OSHA seems to have a firm foundation of the risks to families remaining in housing during pesticide applications but have not assess potential risks as a result of the evacuation process or chose to ignore these risks.²⁴³

Most, but not all, workers and worker representatives argued that the option to shelter in place should never be available. It was explicitly criticized in both form postcards and both form e-mails received from those advocating stricter regulation. Most such commenters did not contrast it with the evacuation, option, however. And many of them insisted that the only solution was a no-spray buffer zone of some kind (discussed in the previous section of this document).

At least one comment from both perspectives agreed that the requirement with regard to the option to shelter-in-place should be the same, based on an argument that the risks themselves were not sufficiently distinct. For example, a worker advocate argued against the provision that would allow employees to shelter in place when the hazard was a dermal hazard:

I understand it's just dermal, but I understand also, like, 95 – the reports that I have read – and these are from places like the Penn State extension office and other universities that study pesticide exposure, 95 to 97 percent of pesticides are all, um absorbed dermally. So they make it seem like a dermal risk is somehow lower than a respiratory risk, and to me, is crazy.²⁴⁴

A grower, on the other hand, made a similar argument against distinguishing between the two, but reached the opposite conclusion:

And I would ask if there's any evidence at all that the need, the requirement for a respirator on the part of the applicator or the mixer, if there's any correlation between that and any proof of any kind of increased risk at 150 feet inside a house with closed windows.... If 150 [verbatim] feet sheltering in place is a good idea, it's a good idea at 150 feet too. It's safer. It's a safer thing to do for people.²⁴⁵

²⁴¹Comments by Gary Wade in the public hearing at 10 am, November 29, 2017, in Hood River, transcript p. 51.

²⁴²Letter from Dan Ericksen, Cascade Cherry Growers, January 18, 2018.

²⁴³Comments by Adam McCarthy in the public hearing at 10 am, November 29, 2017 in Hood River, transcript p. 36.

²⁴⁴Comments by Kathy Keesee in the public hearing at 6 pm, December 5, 2017 in Medford, transcript p. 31-32.

²⁴⁵Comments by Jennifer Euwer in the public hearing at 10 am, November 29, 2017 in Hood River, transcript p. 23. In context, as highlighted by the court reporter who prepared the transcript, the second “150” in the quoted text should be read as “100.”

The Adequacy of Worker Housing

For those opponents of the provision to allow employees to shelter in place directly, many of their comments focused on the condition of worker housing:

...one of the issues that you've heard about today that is really tied into this issue is the farmworkers' housing and really just how inadequate some of that – those living quarters are to protect them from the pesticides and how close they are to the fields that are being treated. Often just actually abutting those fields. And I think what you've heard is sometimes these structures don't provide adequate protection from outside air coming in. They don't have bathrooms, running water. They have windows that are made of cardboard. And the only reason I mentioned bathrooms, running water is because I think sometimes workers – even if they are in housing – still need to go out to access some of their kitchen areas, their laundry facilities. And these structures are definitely not protective of from infiltration of pesticide sprays, mists and fumes. So given the reality of some of these inadequate farmworkers' living quarters, we do recommend that there be larger buffer zones around the treated areas. And while we appreciate the current proposal going a bit further, we do think that a more reasonable buffer zone around the automatic exclusion zones would be 300 feet.²⁴⁶

So this is one of the – this is local housing here, this building under this shed here on the – on the right – on the left-hand side, if this is considered, like, adequate housing where these people can shelter? And I'm very concerned, because the windows underneath here, underneath this shelter, are cardboard, the windows are broken out or the windows are cracked, and they are filled in with pieces of cardboard. People who live in this area of this camp say the smell of pesticides is so strong, it makes them sick inside of their house.

....

So here is a perfect example of the housing. You can see where they eat at their picnic table, and you can see where the orchard is, within – it's not a hundred feet from there, it's very close. You can see cracks on the side of the building that they live in where any type of respirator concerns or dermal – it's not going to protect them.

Here's another picture of the windows, and underneath that, um, that lean—that big white harvest building, you can see they are taped up with cardboard, some of the windows are broken, they have been asking them to have them replaced and they are not getting replaced.

Here's another one inside one of those little shacks or the little huts, that is – where the circle is at the top, that's just wire mesh. It's not going to protect them at all. And the little white dot off to the side is actually daylight coming through from the outside of the – of that cement wall.²⁴⁷

I hear the growers saying that shelter in place is more effective, and that may be true for a lot of the folks in this room who provide adequate, good housing for their workers. But we have to look at the lowest common denominator, and there are plenty of really third-world conditions that many, many workers in this state live in.²⁴⁸

Many comments also spoke about the problems created by outside storage, equipment and activities:

Also, if you can see the bicycles there, there are children there, you can see how close the trees are in the back where that yellow color is on the side –

Here's another, um, here's another issue. Like, here's a barbecue, and you can see how close it is to – this is right off to the side of that hut, that white shed, like, barn-type thing. And if this is – Ideally, these won't be considered adequate housing for these people to shelter in when they are spraying. But I mean – And these are little sheds – not little sheds – little concrete block houses that the workers stay in. The center is where they – for bathroom and – basically, bathroom and toilet services and things are in there, and then that big house in the back is where there's a lot of the workers are housed.²⁴⁹

²⁴⁶Comments by Kate Newhall, Family Forward, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript p. 26

²⁴⁷Comments by Kathy Keese in the public hearing at 6 pm, December 5, 2017 in Medford, transcript pp. 29-31.

²⁴⁸Comments by Kate Suisman, Northwest Workers Justice Project, in the public hearing at 10 am, November 29, 2017 in Hood River, transcript p. 54.

²⁴⁹Ibid., pp. 30-31.

Few of these comments acknowledged that the federal rule adopted by the EPA makes no provision at all to address these issues, although some other commenters noted that the state rule does include provisions designed to provide a measure of protection involving outside storage (whether the employees are evacuating or sheltering in place):

These regulations will offer workers a place to store their things like that toys and child bicycles away from the spray of pesticides and will require that other personal items are covered too. This is good because workers often think that hanging these toys on a hook means that they are safe. They may believe it's only the soil near their housing and not transported by air into the housing close to the fields.²⁵⁰

While the rule does not expressly require storage be constructed (other than the provision to provide outdoor storage for shoes), the commenter is correct that the rule requires that methods of protecting sensitive operations and equipment (whether covering, removing, or storing) must be addressed as part of the training for camp residents.

In contrast to comments such as most of those above, many growers emphasized the positive condition of their housing as a justification for expanding the option to shelter in place:

I've spent pretty much all my profits building housing for the last ten years, so I've built seven different housing units. They have laundry facilities for the most part either right next door or inside so people don't have to leave to do that sort of thing. My hope was that they could live a more secure, calm life in their home with their children so they could study and get ready to go to school in the morning.²⁵¹

These cabins are inspected by Oregon OSHA, and meet all of the physical requirements including enclosed sleeping spaces with operative windows and self-closing doors. We spray in the night to avoid windy conditions and drift. The cabins can be effectively sealed against any small amount of drift that might occur.²⁵²

It's clear OR-OSHA recognizes the common-sense practices that allow these occupants to remain inside their homes during most pesticide applications.... Our farm housing is solid, fully enclosed and safe, the ideal location for occupants during application.²⁵³

It is in the best interest of our On-Farm employees to be allowed to: A) Be notified of a pending spray application in the vicinity of Employee Housing. B) Choose to close all doors and windows and maintain their position within their home.²⁵⁴

Several commenters also emphasized the limited options available to agricultural workers when it comes to housing. For example, one commenter emphasized the limited options available to such workers:

Here in Oregon, as the cost of living increases, workers often find that the only housing that are available to them are units offered by their employers. As a result of limited housing options, some workers end up living in labor camps, where they often suffer from inadequate conditions without access to water, restrooms, or spaces to cook meals for their families. Their housing tends to be close to the orchards and fields where they work, which often means that they are exposed to harmful pesticides. But we're here – we are here today to demand better.²⁵⁵

Another commenter made a similar observation about the situation in which workers find themselves (in criticizing both the evacuation and the shelter-in-place provisions of the rule):

Would you be willing to stand 150 feet from a potential chemical that can kill you or your children by absorbing it through your skin? Would you stand there and have to go back – because it's being sprayed and getting in contact with your home – after only 15 minutes?

²⁵⁰Comments by Santiago Ventura, Oregon Law Center, in the public hearing at 6 pm, November 15, 2017 in Woodburn, transcript pp. 15-16.

²⁵¹Comments by Jennifer Euwer, in the public hearing at 10 am, November 29, 2017 in Hood River, transcript pp. 21-22.

²⁵²Comments by Gary Wade in the public hearing at 10 am, November 29, 2017, in Hood River, transcript p. 51.

²⁵³Letter from Steven Bickford, Bickford Orchards, Inc., January 25, 2018.

²⁵⁴Letter from Allan Van Metre, West Valley Farms and Wimmer Orchards.

²⁵⁵Comments by Teresa Alonso Leon, State Representative, in the public hearing at 6 pm, November 15, 2017 in Woodburn, transcript p. 31-32.

*I believe your answer would be no. Why? You have somewhere else to live that can protect you from more of these environmental hazards. These people who work in the labor camps don't have anywhere else to go. They are minimum wage, and with our current housing shortages in the state of Oregon, they can't afford the exorbitant rent prices and they have no other options available to them.*²⁵⁶

Both those testifying in support of the rule as an important first step and those arguing for a higher level of protection highlighted a number of concerns about worker housing and urged Oregon OSHA to take up improvements to the agriculture labor housing (ALH) rules in the near future.²⁵⁷

In relation to housing conditions, certain growers made the point that substandard housing should not be treated in the same way as better-quality housing:

The other thing I heard – I heard in some of these – in some of these meetings I've heard people describe housing with gaps in the walls, or I've heard people talk about a house that has branches extending over the house and they're getting sprayed, I think we can all agree that – that those things shouldn't happen. So if you have a house that's not really a house because it has holes, then we could address that, and we cannot call it a house you can shelter in place in. Of if you have a tree that's over your house, obviously that shouldn't be sprayed. We can all agree that should be cut down.

*And if we did those common sense things and assumed that by "house" we meant "house" and talked about what kind of housing people could shelter in, it seems to me that that would be a much more practical, safer, better thing, better outcome for our employees than deciding that 150 feet is – is some magic numbers because the label says to use a respirator.*²⁵⁸

Oregon OSHA agrees that not all ALH meets the rule's requirement that a structure be able to be fully closed (although even those that can be fully enclosed will not be "airtight"). And housing or other structures that cannot be closed, either because of the lack of doors and closeable windows or for other reasons, would not be available as a "shelter in place" option under the rule. While many of the situations highlighted in the rulemaking record represent violations of the pre-existing ALH rules adopted and enforced by Oregon OSHA,²⁵⁹ the division remains aware that certain housing that cannot be fully closed nonetheless meets the ALH requirements and can be legally operated. It is for this reason that ALH compliance and Oregon OSHA's evaluation of such housing does not in and of itself indicate that it is adequate to comply with the AEZ shelter-in-place requirements. The grower (and, ultimately, Oregon OSHA) must make that assessment, without relying upon the ALH certification alone.

Oregon OSHA also notes that the rule provides an option for growers, such as the commenter, who believe their housing is sufficiently protective even from respiratory hazards to apply for a variance, perhaps in combination with other factors such as enhanced training or additional barriers of one kind or another. For many of the reasons discussed in remainder of this section, Oregon OSHA acknowledges evacuation of worker housing is not an ideal option, and requests for a variance from the rule requirements – provided they represent a level of protection at least as great as that provided by the rule – will be evaluated with that understanding.

Challenges in Relation to Evacuation Requirements

The record includes a number of comments specifically criticizing the evacuation provisions of the rule. For example, Oregon OSHA received comments such as the following from both advocates and opponents of stricter regulation:

If they say they going to spray at 2:00 in the morning, they going to knock on the door, hey get out of there because we are going to spray. How – if they have children, how are they going to move and wait for 15

²⁵⁶Comments by Nick Morales in the public hearing at 6 pm, December 5, 2017, in Medford, transcript pp. 56-57.

²⁵⁷See, for example, comments by Santiago Ventura, Oregon Law Center, in the public hearing at 6 pm, November 15, 2017 in Woodburn, transcript pp. 17-18. See, also the comments by Valentin Sanchez, Oregon Law Center, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript p. 19-22, and comments by Connie Yost, Farmworker Ministry in the Northwest, in the public hearing at 6 pm, November 15, 2017, in Woodburn, transcript p. 34. See also the conclusion of the letter from Nargess Shadbeh, Oregon Law Center, March 15, 2018.

²⁵⁸Comments by Jennifer Euwer, in the public hearing at 10 am, November 29, 2017 in Hood River, transcript pp. 23-24.

²⁵⁹See OAR 437-004-1120.

*minutes, go back in? Have you done it to your family? You done it to your kids? Honestly, it's not workable.*²⁶⁰

*My comments were that this total evacuation that you're requiring, this 150 foot thing is not going to be very workable. A lot of us spray at night. So what do we do? We wake up these families at night and tell them to gather their kids and leave. I'm not sure a lot of thinking was put into this, and how we're going to do this.*²⁶¹

*Imagine if your doorbell rang at 5:00 a.m. and you're abruptly told to evacuate your home, stand 150 feet away and watch in the cold of the morning as dangerous chemicals are sprayed close enough for you to smell them. You are told you must wait until you can go back to your home. Is there anyone who would elect to have themselves and their families put in that position?*²⁶²

Some other comments focused on specific problems that they feared would result from the evacuation requirement.

*What are we going to do when we tell people to leave for spray application at 3 AM, and they refuse? Let's say a child is sick, and the workers says, "I just can't leave"? Can an orchard be held hostage on time-sensitive spray applications, risking an entire crop because one family in a hundred chooses not to leave. What are our alternatives and options to enforce this rule if they voluntarily choose to stay?*²⁶³

Oregon OSHA has considered this comments and notes that, unlike a situation where housing is rented to individuals in a traditional landlord-tenant arrangement, workers (and their families) in housing provided as a condition of employment can be required to leave the housing, particularly in order to comply with a rule requirement. While the need to minimize conflicts such as that addressed in the hypothetical is one of the reasons that employers should provide as much advance notice as possible when spray applications are going to be – or even likely to be – occurring, if necessary the employer can in fact require workers to evacuate even over their objection.

As clearly acknowledged in the final rule (and as a practical matter in any case) the decision to shelter-in-place in employer-provided housing while off duty is one that can be rejected by the worker (and other residents) who can always choose to leave their housing. The decision that the housing must be evacuated in order to comply with the rule, in contrast, is not a voluntary one, either on the part of the employer or the worker.²⁶⁴

A number of lengthy comments in the record specifically highlighted the challenges created by frequent evacuations during the night or early morning hours, especially in relation to school-age and younger children. For example, one trained special educator wrote at length regarding the challenges, including the following comments:

*I worry about the effect on students' academic lives. The students would either be missing out on sleep to build in the commute time. Already we know that students are chronically sleep deprived. If this proves to be too difficult for the families to get students to school on these days, the attendance of students could plummet. School attendance is directly tied to student success. Research shows that young primary students who are chronically absent are less likely to read at grade level. Students in middle school or older who have chronic absences are less likely to graduate on time if at all.*²⁶⁵

²⁶⁰Comments by Dagoberto Morales in the public hearing at 11:15 am, December 5, 2017, in Medford, transcript p. 31.

²⁶¹Comments by Don Brocklesby in the public hearing at 10 am, November 29, 2017, in Hood River, transcript p. 13.

²⁶²Comments by Samuel Davila in the public hearing at 6 pm, November 15, 2017, in Woodburn, transcript p. 39.

²⁶³Comments by David Wood in the public hearing at 10 am, November 29, 2017, in Hood River, transcript p. 60.

²⁶⁴This is distinct from the question of employer knowledge of the violative condition, which is a factor in any violation cited by Oregon OSHA. To the degree that the employer takes steps to evacuate the housing and a worker remains in the housing but the employer did not know and could not have known even with the exercise of reasonable diligence, the employer is not responsible for the violation and cannot be cited under the Oregon Safe Employment Act (see ORS 654.086(3)).

²⁶⁵Letter from Brandi Borton, read by Lisa Perry in the public hearing at 10 am, November 29, 2017, in Hood River, transcript p. 44.

Others echoed similar concerns:

So the consequences of insufficient sleep have been well-researched. There is ample evidence that chaotic or unstable circumstances such as repeat awakening during a typical sleep time can result in sustained extreme activation of the stress response system. Prolonged activation of these stress hormones in early childhood can weaken and reduce the neuro connections in the brain. Asking families to evacuate and interrupt their lives is throwing a wrench in the daily routine.

Even planned, nonemergency evacuations multiple times a year can lead to trauma. Routines give infants and toddlers a sense of security stability. I'm sure you can ask anyone who has ever had a toddler the consequences that can come from getting them out of a routine, tantrums and other undesired behavior.
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*Lack of quality sleep is a huge factor in contributions to fatal crashes. Also chronic absence in school which we talked about earlier is also considered bad. I have spoken with family educators who primarily work with low-income families and children. They agree the negative side effects far outweigh the benefits of this proposed law.*²⁶⁷

One grower noted that she had improved the housing she provides precisely in the hope of giving her workers and their families a better living situation:

*My hope [with recent housing improvements] was that they could live a more secure, calm life in their home with their children so they could study and get ready to go to school in the morning. And the idea that they are now going to have to possibly be evacuated day after day in the springtime, in my opinion, will make their lives more dangerous and also perhaps impact their children and their education in terms of having to leave the house at night and having – having their lives discombobulated that way.*²⁶⁸

Oregon OSHA does not take the concerns expressed by such comments lightly, and such concerns remain one of the reasons that the final rule includes the option to shelter in place for those situations where the pesticide does not present a respiratory hazard. During the rule development, Oregon OSHA was advised by growers that most applications did not require respirators, although that was not confirmed by actual documentation of the pesticides applied. And certain comments in the record suggest that understanding may not be entirely accurate. Oregon OSHA is aware that the rule's distinction between two types of applications (those requiring respirators and those not requiring respirators) was developed in the absence of precise information about the relative frequency of the two applications, and the lack of such information²⁶⁹ continues to limit Oregon OSHA's complete understanding of the issue.

However, Oregon OSHA believes that the pesticides that present a respiratory hazard also present a greater risk to those sheltering in place – not because of the intrinsic harm of the pesticide but because the route of exposure itself makes harmful exposure to those inside a structure in the event of pesticide drift more likely. To the degree that the requirement to evacuate under the rule (as well as the burden associated with that evacuation) is triggered more frequently, it will be because the underlying risk itself is more frequent and therefore greater. In this way, the extent of the exposure and the extent of the regulatory burden are at least somewhat balanced by the inevitable relationship between the two.

Justification for the Increase of the AEZ in some Situations to 150 feet

Separate and apart from restricting the availability of the option to shelter in place, the Oregon also increases the size of the AEZ – in comparison both to the EPA rule and other portions of the Oregon rule – when the label requires that the applicator use a respirator. This is one of several areas where the Oregon rule clearly provides a greater measure of protection than does the federal rule adopted in 2015.

²⁶⁶Comments by Lisa Perry in the public hearing at 10 am, November 29, 2017, in Hood River, transcript pp. 47-48.

²⁶⁷Ibid., p. 49.

²⁶⁸Comments by Jennifer Euwer in the public hearing at 10 am, November 29, 2017, in Hood River, transcript p. 21.

²⁶⁹In relation to the growers' concerns about sharing such information, see the previously referenced letter from Mike Doke, Columbia Gorge Fruit Growers, September, 7, 2017.

Many growers argued that there was no basis for such a determination. Indeed, it was addressed by both form e-mails on the subject, as well many of the letters that relied upon a standard set of talking points. In addition, the record includes a number of specific comments such as the following:

And so our main question is why does Oregon believe that you have sufficient guidelines to provide a 50 percent greater area for an AEZ than what the EPA established at between 100 feet and 150 feet. And so I guess my question is do you have scientific data that provides information to show that – you know, that having a 150-foot area is required. And so, you know, we in the potato industry are committed to providing the best safest farming activities that we can, but that, you know, having this additional area requirement could become a financial burden. And so if you have scientific data, we would like to know what that is.... [A]re there scientific, I guess, models that you used to determine this 150-foot zone rather than the 100-foot zone EPA has established?²⁷⁰

A 150-foot AEZ for products requiring respirators has no scientific justification. The respiratory requirement does not indicate a product is more hazardous than one that requires only dermal or eye protection.²⁷¹

EPA determines whether a respirator is required based upon data from inhalation toxicity studies, and possible pesticide applicator exposure. A respirator is required to reduce risk to applicators, not bystanders outside of the application area. It would be extremely improbable that a person in an enclosed agricultural structure within an AEZ would be exposed to comparable levels as that of a pesticide applicator.²⁷²

Oregon OSHA has considered the comments in the record and made two distinct, but interrelated determinations:

First, Oregon OSHA believes that the record does justify an added protective measure in relation to worker housing – even without the preliminary research showing a distinct possibility of drift up to at least 170 feet.²⁷³ Oregon OSHA believes the totality of the record indicates that drift is clearly a meaningful possibility at 150 feet. However, Oregon OSHA believes that the structure – even a structure that is less than ideal – provides a measure of protection from deposition of pesticides within the structure. For this reason, the use of the EPA’s 100-foot limit for such hazards, while adopting a longer 150-foot limit for respiratory hazards, appears justified. Some have argued that the 150-foot limit should be adopted for all aerial/airblast hazards (particularly since the structure as a protective measure is not present in all situations). Others have argued that Oregon OSHA should defer to the EPA on the AEZ distances (generally while at the same time arguing that Oregon OSHA should *not* defer to the EPA on the evacuation requirement).

Oregon OSHA has assessed the balance of the arguments made and determined to leave in place the thresholds as proposed.²⁷⁴

Second, Oregon OSHA believes that the distinction in the exposure pathways, as noted previously, justifies making the shelter-in-place option available when only dermal hazards are present but requiring evacuation when respiratory hazards are present. As noted, this is not because respiratory hazards are necessarily greater than dermal hazards, but because the nature of the exposure route itself means that the risks of respiratory exposure are greater while inside a structure.

²⁷⁰Comments by Bill Brewer, Oregon Potato Commission, in public hearing in Woodburn at 11:15, November 16, 2017, transcript pp. 12-13.

²⁷¹Letter from Mike Doke, Columbia Gorge Fruit Growers, March 15, 2018.

²⁷²Letter from Barbara Boyer, State Board of Agriculture, March 14, 2018.

²⁷³See the letter from Richard A. Fenske, Michael Yost, Edward Kasner, and Magali Blanco, Pacific Northwest Agricultural Safety and Health Center, March 9, 2018 and the accompanying discussion on page ##.

²⁷⁴Although not the basis for the division’s determination, Oregon OSHA also notes that a decision at this point to increase the proposed 100-foot threshold for non-respiratory hazards to 150 feet would at least arguably exceed the notice provisions of the present rule and therefore require a new proposed rule and public comment period.

As a result, and after considering the comments made – as well as the other provisions of the rule, including the availability of variances when appropriate – Oregon OSHA has adopted the proposed AEZ thresholds for aerial and air-blast applications without substantive modifications.

X. Discussion of Other Suggested Changes to the Rule

In addition to the major issues discussed in the preceding sections, Oregon OSHA evaluated a number of other potential changes to the rule as proposed, based on the comments received and their relationship to the record as a whole.

Essentially, Oregon OSHA responded to each of these issues in one or more of the following ways:

- In some cases Oregon OSHA made a change that the division views as a clarification or correction to the rule as proposed, without intending to make a substantive modification. In some cases, these changes are reflected in non-regulatory notes, while in others (the need to restructure and clarify the table, for example) the changes better align the rule with the original intention.
- In other cases a change in the rule represented more than a clarification and instead reflected an actual change in the intended approach. One example of this would be the adjustments of the AEZ definition as it relates to the time frame involving pesticide applications other than aerial or airblast spraying.
- In still other cases the issues were considered but did not result in a change to the rule (or resulted in a change that was less sweeping than the commenter might have intended). Examples of this sort of issue would include both the suggestion to eliminate the 15-minute extension of the AEZ altogether and the suggestion that the Application Exclusion Zone (AEZ) should somehow reflect the particular reentry interval for the pesticide in question.

Suggested Clarifications to the Regulatory Text

A number of comments received either directly suggested that clarification of one or more provisions of the rule was needed or indirectly raised the need for such a clarification. Oregon OSHA responded to many of these issues by either clarifying the regulatory text or by adding a non-regulatory note providing such clarification.

Need to Clarify “Respiratory Hazard” Trigger

A significant number of comments noted in some fashion that the rule “makes no distinction between products that require respirators for applying the pesticide and those that only require respirators for mixing and/or loading.”²⁷⁵ It had always been Oregon OSHA’s intention that the assessment of whether the pesticide involved a respiratory hazard for the purposes of the AEZ would be based on the label requirements as they relate to the applicator. The final rule has been adjusted to better reflect that intention.

Suggested Need to clarify language regarding “extending downward”

One commenter found the language of the rule defining the AEZ to be confusing in several respects.

First, what does “extending downward mean? Did you mean “outward” instead? If so, how far outward?”²⁷⁶

Although the rule could be clearer (and the rule as adopted attempts to describe the relationship more clearly), the commenter’s concerns about “how far outward” are misplaced. The language “extending downward” is correct. The point being made is that the AEZ is defined by the horizontal distance from the spray equipment. To the degree that the spray equipment is some distance off of the ground, the AEZ extends “downward” from that horizontal plane to the ground below it – essentially, the language is indicating that the AEZ is a three-dimensional cylinder (although a relatively flat one), rather than a two-dimensional circle.

²⁷⁵Letter from Mike Doke, Columbia Gorge Fruit Growers, March 15, 2018. See similar comments (among many others) in letters from Garry Rodakowski, Associated Oregon Hazelnut Industries, December 11, 2107; and Scott J. Dahlman, Oregonians for Food & Shelter, March 15, 2018.

²⁷⁶Letter from Scott Rawlins, Wilbur-Ellis Company, January 23, 2018.

The same commenter also was confused by the rule’s observation that the AEZ might extend outside of the treated area:

*Second, what does “extend beyond the treated area” mean? Does this mean that a 150-foot AEZ could be larger? If so, how large and in what situations would a larger AEZ be justified?*²⁷⁷

It appears that the commenter misunderstands the relationship between the treated area and the AEZ. The primary purpose of the AEZ is precisely to provide a measure of protection *outside the treated area* – as noted previously (and as reflected by comments both in support of and opposing stricter regulation), the rule is actually intended to protect against off-target drift. The outer edge of the AEZ is measured from the spray equipment, which means that any time the edge of the treated area is inside the particular AEZ distance, the AEZ will necessarily extend beyond the treated area. It is not the size of the AEZ that changes, but its position in relation to the treated area that changes as the spray equipment moves within the treated area. The AEZ is like a halo extending around the spray equipment, and as the spray equipment approaches the perimeter of the treated area, the AEZ (halo) extends beyond the perimeter to provide an extra measure of protection. The language in the rule is correct in stating that the AEZ “may extend beyond the treated area.” In fact, it is almost certain that it will do so during at least part of every application.

The final sentence in the same section also generated comments regarding its clarity.

*Third, the final sentence makes no sense. We’re assuming it’s an editing issue. If it’s not, it’s completely unclear as to what is required and needs to be clarified.*²⁷⁸

The sentence in question was intended to indicate that the AEZ does not end immediately when the spray equipment moves on, but rather lasts for an additional 15 minutes. The final rule clarifies this language to make it clear that the entire application need not be completed; rather, the 15 minutes is triggered when the spray equipment moves out of the area.²⁷⁹ As noted below, the final rule also eliminates this 15-minute extension of the AEZ time frame in relation to applications other than aerial and airblast spray applications.

The same sentence is also one of several references to “handler employers,” which generated a number of comments:

*Another unsettled question is around liability. Under the EPA rules, the agricultural employer is responsible for ensuring that the AEZ requirements are complied with. In contrast, the OR-OSHA proposal puts additional liability on the handler as well. This is completely impractical. A handler employer is often not the person applying pesticide in a commercial operation. And even if they were, they have no control over the employees of the agricultural employer that they are contracted to make applications for.*²⁸⁰

With regard to employer responsibility for employees, the proposed rule was not intended to expand employer responsibility but simply to reflect the existing relationship – the reference to handler employers was intended to make clear that the provisions applied whenever an employer was exercising direction and control over workers (typically, as noted by the above comment, these would be its own workers, if any; not the grower’s workers) and in relation to those individuals living in housing provided as a condition of employment. The final rule removes the explicit reference to employers by type, leaving employers responsible for their own employees and housing residents (or for other employees over whom they are exercising direction and control).

²⁷⁷Letter from Scott Rawlins, Wilbur-Ellis Company, January 23, 2018.

²⁷⁸Letter from Scott Rawlins, Wilbur-Ellis Company, January 23, 2018.

²⁷⁹In many situations, the same space outside the treated area will fall within the AEZ multiple times during a single application, as the spray equipment moves up and down the rows. This would be true under the existing EPA rule as well.

²⁸⁰Letter from Scott J. Dahlman, Oregonians for Food & Shelter, March 15, 2018, p. 2.

Suggested Need to Clarify Oregon OSHA's Jurisdiction

The record includes comments highlighting language in the rule that appears to exceed Oregon OSHA jurisdiction:

The opening paragraph of the rule states that, "[T]his rule applies in Oregon where worker or other people are adjacent to pesticides..." (emphasis added). While the EPA rule clearly applies to some people who are not workers, it is unclear what OR-OSHA's jurisdiction over non-employees is. While OR-OSHA clearly has jurisdiction over employers, there are some requirements within the proposed rule which would ask employers to impose standards on non-employees that they may not have control over. We do not believe that OR-OSHA has the regulatory authority to impose those kinds of requirements.²⁸¹

The commenter correctly notes a drafting flaw in the proposed rule that appears to extend Oregon OSHA's jurisdiction.²⁸² This is partly the result of adopting EPA language and partly the result of the need to ensure that the rule addressed potential exposure to non-employee residents of housing that has been provided as a condition of employment (in other words, non-employee members of an employee's household). The final rule has been clarified to more closely match the limits of Oregon OSHA's jurisdiction.

Suggested Need to Clarify Employer Liability for Worker Failure to Follow Instructions

A number of other individuals commented on a related issue, regarding the employer's responsibility if one or more of the workers fail to follow employer instructions.

The liability for agricultural employers is unclear. It needs to be clearly defined in the rule that employers who provide the proper notification and instruction are not liable if workers fail to follow them.²⁸³

Employers who provide the proper notification and instruction are not responsible for an employee's failure to follow such guidance if the employer did not know about the violation and could not have known about the violation even with the exercise of reasonable diligence.²⁸⁴ That standard exists in relation to all Oregon OSHA enforcement activity, independent of this rule, and Oregon OSHA has concluded that further clarification of it within this rule is neither necessary nor useful.

Relationship Between AEZ Time Frames and Re-entry Intervals

The record includes a large number of comments on the relationship between the 15-minute AEZ time frame and the existing re-entry intervals, reflected on the label and already enforced in relation to the treated area itself.

Many comments questioned the adequacy of the 15-minute waiting period. The bulk of such comments appeared to equate the AEZ with the treated area itself, which would put the AEZ requirements in direct conflict with the re-entry intervals specified on the label:

How can we assume that that's a safe thing for them to re-enter, where the pesticide may have a four-day re-entry interval, that we ask them to go back in after 15 minutes? So I'm requesting that you at least follow the re-entry intervals for the application exclusion zones that are listed on the pesticide containers. They have been studied, they meet EPA requirements. And all those may be even minimum requirements, even four days may be a minimum requirement; at least it's still better than 15 minutes.²⁸⁵

²⁸¹Letter from Scott J. Dahlman, Oregonians for Food & Shelter, March 15, 2018, p. 2.

²⁸²As a practical matter, such language would have no legal effect. Oregon OSHA's rulemaking ability is, of course, limited by its jurisdiction and no rule would have effect outside the agency's jurisdiction, regardless of the language used.

²⁸³Letter from Mike Doka, Columbia Gorge Fruit Growers, March 15, 2018.

²⁸⁴ORS 654.086(2) reads in its entirety: "For the purposes of ORS 654.001 to 654.295, 654.412 to 654.423 and 654.750 to 654.780 a serious violation exists in a place of employment if there is a substantial probability that death or serious physical harm could result from a condition which exists, or from one or more practices, means, methods, operations or processes which have been adopted or are in use, in such place of employment unless the employer did not, and could not with the exercise of reasonable diligence, know of the presence of the violation." Oregon OSHA has historically applied the same limitation to other-than-serious violations, although the statute does not address them directly.

²⁸⁵Comments by Kathy Keese in the public hearing at 6 pm, December 5, 2017 in Medford, transcript p. 27.

We are also concerned with the amount of time individuals are required to remain outside the AEZ and believe a 15-minute exclusion is woefully insufficient. Pesticides linger and drift. This is why the EPA requires a Restricted Entry Interval (REI), which is a set waiting period before workers can return to a treated area. The EPA classifies and requires labeling of pesticides with a REI and sets a specific exclusion timeframe for specific pesticides. If the legal requirements of the pesticide require a REI, this protection should be mirrored in OR-OSHA rules and be provided to anyone in the treated area, including farmworker families. The 15-minute waiting period currently proposed is arbitrary and contradicts existing EPA standards.²⁸⁶[emphasis in original]

Additionally, I would like to see re-entry intervals to the application exclusion zone that meet or exceed the pesticide's re-entry limits set by the EPA. The EPA standards for when people can re-enter are based on real science and they protect people from the dangerous toxins contained within pesticides.²⁸⁷

Distance and time are both important factors when dealing with pesticides. There is no scientific basis to support the proposed standard of allowing workers to reenter sprayed areas after 15 minutes, especially when such a standard would conflict with the reentry times products suggest based on the toxicity of said products being used.²⁸⁸

In addition, re-entry intervals should be at least as long as what is on the pesticide label, and not shortened for grower convenience and profit.²⁸⁹

In evaluating these comments, it is important to recognize two legal realities and to recognize that it is not always clear whether the commenters themselves are aware of these distinctions:

- first, in the absence of the 15-minute provision, the AEZ – which exists separate and apart from the “treated area” – ends immediately as the spray equipment move on. That is the requirement adopted by the EPA, and the Oregon rule represents an increase in that requirement, not a decrease.
- second, the 15-minute provision does not affect the existing re-entry intervals dictated by the particular product's pesticide label, which apply not only to applicators but to all workers entering the area covered by them.

At least some comments, however, more clearly reflect an understanding that they are asking for the 15-minute requirement to be extended even further. One commenter suggested that the AEZ time frame should be “more consistent with” the re-entry intervals on the label and should “align” with those time frames:

We think that that 15-minute exclusion is not sufficient given that, as you've heard, pesticides linger and drift. We think that the time that workers spend outside of the AEZ should be more consistent with the EPA's required restricted entry interval that as you guys know is different depending on the different types of pesticides, that there is one set for each of these. And I think the exclusion zone amount of time should align with that restricted entry interval.²⁹⁰

Another comment (by one of the individuals already quoted above) suggested that the re-entry interval should be based on the presumption that drift occurs, and therefore the AEZ should be handled in the same manner as the treated area:

...the waiting period of 15 minutes is arbitrary and inadequate. The re-entry interval for workers should be the same as that for the applicator. If the intent is to protect workers here, we need to assume drift happens, and that workers and their families will be returning to the labor camp, or to work in the areas that were

²⁸⁶Comments by Kate Suisman, Northwest Workers Justice Project, in the public hearing at 6 pm, November 15, 2017 in Woodburn, transcript p. 41.

²⁸⁷Comments by Nick Morales in the public hearing at 6 pm, December 5, 2017, in Medford, transcript p. 56.

²⁸⁸Letter from Scott Lee on behalf of the Clatsop County Board of Commissioners, February 16, 2018.

²⁸⁹E-mail from David Tvedt, January 26, 2018.

²⁹⁰Comments by Kate Newhall, Family Forward, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript p. 26

*affected by drift. 15 minutes is not long enough for pesticides to dissipate, and workers will be walking through high concentrations of pesticides and breathing pesticides if they return in just 15 minutes.*²⁹¹

With regard to the suggestion that the waiting period to return to the AEZ should mirror the label requirements for the treated area, such a change would essentially change the definition of the treated area to include a larger space outside of it. Oregon OSHA does not believe such a modification is appropriate.²⁹² While Oregon OSHA recognizes that drift is a meaningful risk, and is likely to be a reality in some situations, the agency is not convinced that it is inevitable or that it occurs in all pesticide applications. It certainly is not persuaded that the EPA's enforcement of label-required re-entry intervals justify a conclusion to apply them in a manner that the EPA itself has never chosen to do.

The suggestion that the AEZ waiting periods should be *somehow* tied to the label re-entry intervals is a more intriguing one. Oregon OSHA considered such an approach as the rule was under development, either through the creation of categories or through some direct ratio between the re-entry intervals and the AEZ time frames. However, the agency determined at that time that such a scheme would be too cumbersome to be either practical or readily enforceable. That remains its conclusion after reviewing the rulemaking record.

Growers, and some others, argued that the increased restriction presented by the rule itself is unnecessary and unjustified. Several of their comments, such as the following, also questioned the application of the 15-minute waiting period regardless of application method:

*OFB opposes this arbitrary provision. OR-OSHA takes a one-size-fits-all approach and fails to distinguish between application methods. Additionally, the 15-minute re-entry interval is not based on data. OR-OSHA should remove section 3 before finalizing its rules.*²⁹³

*OR-OSHA proposes to essentially create a 15-minute Restricted Entry Interval for the area outside the Application Exclusion Zone. This is regardless of whether the use of a respirator is required by the pesticide label, or if the application is by air, air blast sprayer or certain other types of ground equipment. The Application Exclusion Zone is outside of the treated area. We are not aware of any data to support the creation of a 15-minute REI for an area 25-150 feet outside of the treatment area. Additionally, it is unspecified whether this requirement would require occupants, who are sheltering in place, to remain in the agricultural structure for at least 15 minutes before exiting.*²⁹⁴

*The problem is that the standard is applied regardless to the application method. The same 15-minute period is required for a backpack application as an aerial one. While we believe that the re-entry interval is unnecessary, at the very least it should be removed for applications that are not aerial or air blast.*²⁹⁵

With regard to those comments suggesting that the provision should simply be removed from the rule, Oregon OSHA made its original proposal in the belief that the EPA rule was incomplete due to its lack of any time frame beyond the presence of the equipment itself. With that understanding, the 15-minute interval represented a minimal requirement that would at least allow some settling of any drift, as well as potential recognition that it had occurred, prior to the return of the workers (and their resident families) to the AEZ. Oregon OSHA continues to believe that extending the EPA's original AEZ by an additional 15 minutes is a reasonable – and not excessive – approach to providing an added measure of safety.

With regard to some of the same commenters' suggestions that the 15-minute provision need not be applied to applications other than aerial or airblast spray applications, Oregon OSHA agrees. The logic behind the extended time frame was consistent with the discussion's focus on such applications. As the commenter notes, a backpack spray application, for example, involves a distinctly different set of factors.

²⁹¹Comments by Kate Suisman, Northwest Workers Justice Project, in the public hearing at 6 pm, November 15, 2017 in Woodburn, transcript p. 41.

²⁹²Again, although it is not the primary reason that Oregon OSHA is choosing not to adopt the change, the agency does note that such a change would be both substantive and significant enough to at least arguably exceed the notice provisions of the rulemaking, thereby requiring a new proposed rule and further public comment.

²⁹³Letter from Jenny Dresler Oregon Farm Bureau Federation, March 15, 2018.

²⁹⁴Letter from Barbara Boyer, State Board of Agriculture, March 14, 2018.

²⁹⁵Letter from Scott Dahلمان, Oregonians for Food & Shelter, Salem, March 15, 2018.

Therefore the final rule has been rewritten so that the 15-minute extension of the AEZ applies only to aerial and airblast spray applications.

Spray-Nozzle Size

One commenter raised an issue regarding what he described as the “12-inch rule,” which triggers a different set of requirements if the spray is more than 12” above what the rule calls “the planting medium,” which in most cases would be the ground:

So whoever made up this 12-inch rule didn't use any science. Because there's no nozzles in here you can use. You can't – so the 12-inch rule doesn't work. So I don't know who made up the 12-inch rule, but they don't know what they're talking about because they've never been out in the field. Apparently they work behind a desk.²⁹⁶

Oregon OSHA notes that the language in question was developed by the EPA and adopted as part of its 2015 rulemaking. While the practical efficacy of the provision may be minimal or even non-existent at the present time the rule appears to be intended as a technology-forcing provision that could encourage innovations in the design of spray nozzles. Further, the provision in question is not itself a requirement; rather, it provides an exception to what is otherwise a requirement to eliminate the AEZ. As a practical matter, if no spray nozzles exist for any application in any context, the rule effectively requires the application of an AEZ without regard to the height of the spray. If the provision were eliminated, the rule would say exactly that. Leaving it in the rule allows both for potentially rare exceptions and for future development of different spray nozzles and methods that would lower the height of the spray. For that reason, Oregon OSHA is adopting that provision as proposed (and as adopted by the EPA).

Suggestions to Incorporate Wind Direction into the Rule

While a large number of commenters who are directly involved in pesticide applications discussed using the wind to advantage when determining spray times and patterns, one commenter in particular suggested that the rule should take wind direction into account in determining the AEZ requirement:

...the biggest issue is what direction is the wind blowing. And I didn't see the whole – I just saw in this summary, and they didn't talk about wind directions at all. And that is way more important than the distance. Because if I have a neighbor over here and I have a field and wind's blowing that way, I'm going to spray next to him. If I have a neighbor here when the wind's blowing that way, I'm not going to spray that day next to him. And I'd rather be – when the wind's blowing this way, I'd rather be put in 10 feet this way, and I'd rather be way – way, way on this.

So I don't understand why you don't talk about the wind direction. All because it changes all the time and they'd like to have hard – you know, hard fast facts. But that's – they're missing a lot.²⁹⁷

Oregon OSHA agrees that wind direction (and strength) are important factors in preventing illegal drift, and they have long been recognized as such. However, the AEZ provision does not substitute for other drift prevention efforts – rather, it is an additional protective measure that is designed to provide an additional measure of protection even in the event those drift prevention efforts fail.

Suggestion to Restrict Application Methods Near Housing

In contrast to the suggestion that a no-spray buffer zone be adopted, which has been discussed at length in a previous section, one commenter suggested that the application methods in such locations be restricted:

What I would like you to do is have a residence – if there's agricultural residences, or any other kind of residences within the area of exclusionary zone, then no spraying can be done there other than the reduced kind of spraying that's allowed. So instead of aerial spraying, maybe it has to be hand spraying or something like that. But a reduction in the type of spraying, if there's any residences in the area, so that there's no chance that the pesticide gets into that residence and gets on cooking utensils, gets on toys, and all the rest that people come into exposure with.

²⁹⁶Comments by Terry Beilke in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript p. 9.

²⁹⁷Ibid., transcript p. 10.

*So that's what I would recommend to you is, within your authority, to have the aerial exclusionary zone permanent around any residence or structure where there are workers or other people that are sheltering there at any time. So that's what I request you do.*²⁹⁸

Unlike the absolute prohibition, such a restriction would appear to fall within Oregon OSHA's legal authority. However, the record did not provide a sufficient basis to evaluate its merit and its feasibility – particularly in relation to the increased potential for exposure to the applicator – nor could it have been adopted without a new proposal and comment period.

Suggestion to Restrict Location of New Agricultural Labor Housing (ALH)

The record includes comments suggesting that Oregon OSHA should adopt a prohibition against building labor housing within 300 feet of the orchards and fields affected by the AEZ. For example, one commenter highlighted the issue as part of his suggestion (highlighted in an earlier section) that the ALH standards should be updated as part of rulemaking in the immediate future:

*One of the most important items left out that would benefit both the growers and the workers is to set a standard that labor housing cannot be built within 300 feet of the orchards and fields that are being sprayed with pesticides by air blasters or aerial. You have other limitation for livestock. But what about labor housing?*²⁹⁹

Oregon OSHA notes that some growers also offered similar suggestions during the rule's development, and it is among those issues that will be considered and addressed as part of such future rulemaking.

Suggestions Regarding Applicator Certifications

At least two commenters specifically raised issues involving either the legal approval of pesticide applicators or some sort of incentive-based recognition program.

*Well, how about we certify these people that are spraying chemicals, and make them pay big bucks, who are spraying chemicals on us.*³⁰⁰

I would like to suggest that there be a program – I mean, this – this department is called Occupational Safety and Health. Okay. Why not incentivize these growers and have a seal, have an OSHA seal: This product didn't cause any sickness or damage to its workers. You know we have this on cosmetics: No animals suffered for this product to be made. Can't we do this for human beings, for our farm workers, and say, "This bottle of wine was produced with workers' safety," and create a seal of approval or something – maybe not approval but at least an acknowledgement.

*Let's incentivize these growers to a standard instead of sitting here, talking about how much poison we can spray on people.*³⁰¹

Oregon OSHA notes that applicators of restricted use pesticides are already licensed, by the Oregon Department of Agriculture (ODA). The division realizes that the first comment envisions a financial burden applied as part of such licensing, while the second envisions an incentive based "seal" of approval. However, both seem better suited for ODA consideration – and fall outside the scope of this rulemaking.

Suggestions Regarding Worker Notification, Evacuation and Sheltering in Place

The record includes a number of suggestions related to the implementation of the worker notification requirements and other specific elements of either evacuating or sheltering in place.

²⁹⁸Comments by Milo Mecham, in the public hearing at 11:15 am, December 5, 2017, in Medford, transcript pp. 21.

²⁹⁹Comments by Valentin Sanchez, Oregon Law Center, in the public hearing at 11:15 am, December 5, 2017, in Medford, transcript p. 18 (the last words quoted here notwithstanding, Oregon OSHA understands the comment to be referring to the existing labor housing provision prohibiting such housing near livestock operations and suggesting a similar restriction could be adopted related to housing located near activities requiring pesticide applications).

³⁰⁰Comments by Daniel Gregg, in the public hearing at 11:15 am, December 5, 2017 in Medford, transcript p. 27.

³⁰¹Comments by Laura Baden, in the public hearing at 11:15 am, December 5, 2017 in Medford, transcript p. 24.

Communication and Worker Notification

Several comments highlighted the value of notification and of communication, particularly highlighting the need for such communication to be effective. For example, the record includes the following suggestion for a specified notice period:

I think there should be a clear spelled-out time frame of – excuse me – how much advance notice the farmworker should get. We suggest a 48-hour advance notice because of when the pesticides are going to be applied because – and this is related to my other piece, which is if farmworkers want to be farther away from the pesticide application, I think they should be allowed to do that and give them advance notice, and give them time to make arrangements either for themselves or for their families to just not be in the area when it's being sprayed.³⁰²

While such a specific requirement has its attractions, Oregon OSHA is not persuaded that its implementation is either realistic or practical. Under the rule, the combination of the spray notification and the training that precedes it must be effective in achieving the required results, whether evacuation or sheltering in place. It is that effectiveness that will provide the most complete test of the notification method. Providing more specificity in an across-the-board requirement does not appear to be workable based on the record before the division.

Notice in Language the Worker Understands

Several commenters emphasized the importance of communicating in a language the understands:

...we also think that the notice needs to be provided in a language that the worker can understand. And if the worker is not able to understand written posted instructions, that that's also communicated clearly to them orally, and again, in the language that they can understand.³⁰³

For example, when asked in surveys conducted between 2006-2012 by multilingual, indigenous-speaking community educators, pesticide training discussed by workers had been conducted in Spanish and English. No training had been conducted in any indigenous language. Only roughly half of the farmworkers who reported working in treated areas said they received any type of pesticide safety training.... less than half of the workers noted that they could understand Spanish well enough to understand written information.³⁰⁴

Even some growers who questioned the value of other provisions of the rule recognized the importance of effective communication (although they did not highlight the language barriers):

Simple communications to ensure no one will come into contact with spray chemicals is by far the easiest way to avoid exposure to chemicals. Whether it be through signage, e-mail, phone or direct communication, with the rules in place that we have now, we can avoid all unnecessary exposure. Why make us evacuate? Why can we not put shelter in place.³⁰⁵

Oregon OSHA has concluded that the rule provides an appropriate balance between specific and general requirements when it comes to training. Again, the primary question is the effectiveness – put simply, training that cannot be understood by the affected workers will not be effective. And the employer must take responsibility for ensuring that both the training and the communication methods used are ultimately effective. The final rule includes slight adjustments in language to better reflect this reality.

³⁰²Comments by Kate Newhall, Family Forward, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript pp. 26-27.

³⁰³Comments by Kate Newhall, Family Forward, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript p. 28.

³⁰⁴Letter from Stephanie Farquhar, December 31, 2017.

³⁰⁵Comments by Lisa Perry on behalf of Richard Galvez in the public hearing at 10 am, November 29, 2017, in Hood River, transcript p. 43.

Worker Option to Stay

In addition to the large number of comments suggesting that shelter in place should be the preferred option (as well as those other comments suggesting it should never be allowed), at least one individual suggested that the workers and their families should have the option of choosing to shelter in place rather than to evacuate:

I am of the opinion that it makes more sense and is less intrusive to allow people, employees to remain inside or choose if they want to evacuate. I have been an Agricultural Employer for about 15 years now. Prior to this my wife and me worked for a Grower on the Eastside of the Valley. When we worked, we went our kids to school or daycare. We came home in the evening, spent time with our kids, fed them, etc. and then all went to bed ready for the next day. Structure and routine is important. If my employer would have told me we all had to evacuate because they planned to spray, I would have refused. This is very disruptive for a family. At that time our employer always notified us in advance when they were going and we took precautions i.e., shut all windows and curtains.³⁰⁶

Oregon OSHA considered such an approach. However, because its effectiveness depends upon fully informed consent, the training requirements related to such an approach would need to be more effective. In addition, leaving protective measures up to the worker to determine creates implementation challenges for employers – who will still need to be prepared to fully implement the evacuation requirements – and enforcement challenges for the regulator. It is almost impossible to determine if a choice in such circumstances is being made freely – explicit, implicit and even accidental coercion can interfere with the employee’s apparent choice. Because Oregon OSHA has determined that, on balance, evacuation is necessary when the hazard is a respiratory one, Oregon OSHA cannot leave the determination whether to do so up to the exposed worker – just as Oregon OSHA does not let roofing employees decide whether or not to wear fall protection.

Worker Option to Leave

At least one individual suggested the opposite – that workers should always have the option to leave, even when the employer has decided to make use of the option to shelter in place.

We also think that no worker should ever be forced to shelter in place even if it is a facility that meets the sort of standards and criteria spelled out in the rule, and that they should be able to – if shelter in place is one of the provisions that’s required in the specific application on a farm, they should be able to be given a 30-minute buffer on each side of the application to be able to actually leave to a different site that would have – not be anywhere near the pesticide application should they choose to do that.³⁰⁷

Oregon OSHA has provided clarifying language in the rule indicating that workers and other ALH residents (or any other employees who for some reason are not “on the clock” at the time) need not shelter in place but can always decide to leave. Even without such a regulatory confirmation, Oregon OSHA sees no way that the employer would have the authority to prohibit someone’s departure when they are not in paid status. The employer can require people to leave the housing; the employer cannot, however, require them to remain there.

With regard to workers who are on paid status – such as workers involved in food packing or processing during a nearby pesticide application – remain subject to the employer’s direction and control and can therefore be required to remain at work to shelter in place in those situations where the rule allows it. This does not affect issues related to either disability accommodation or the employer’s general obligations under the Oregon Safe Employment Act to take into account known chemical sensitivities of a particular employee – these realities exist separately from the rule under consideration and are in no way affected by it.

³⁰⁶Letter from Josh D. Galvez, Galvez Orchards Inc., January 26, 2018..

³⁰⁷Comments by Kate Newhall, Family Forward, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript p. 27.

Payment for Worker's Time in re AEZ

The same individual suggested that workers who leave work should be paid for the time as “work time” because it is job related and imposed by the employer:

And we also think that they should be able to do that [leave] without any negative work repercussions. So if that application was happening during work time, that they would be able to leave and have that 30-minute buffer on both sides and not face any sort of retaliation. In addition, we also think that workers who spend time evacuating or sheltering in place should definitely be paid for this time. And this may not necessarily be something under OSHA's purview, but in our mind, it's definitely something that is clearly work related, job related, and that their employer imposes on them.³⁰⁸

As the commenter notes, Oregon OSHA ultimately does not have the final authority to define what is “work time” and “off work time” – but Oregon OSHA does not consider the act of being evacuated to be work time and has not analyzed the fiscal impacts of the rule with such an understanding. It is particularly difficult to see how such an expectation could be implemented in relation to those camp residents who are not themselves employees (and in some cases are themselves too young to work legally).

Walk around Housing and other Sensitive Areas after Spraying

Several commenters highlighted the need for the employer to take responsibility to identify drift and to take the necessary corrective measures:

The rule should also put the responsibility on the applicator, not only to spray safely, but to walk around the sensitive areas near the treated area, the post-spray time to clean up unintended deposits and overspray. No applicator or grower should make the workers clean up the pesticides overspray. The farmworkers do not have the safety training as a mixer or loader. They do not have protective clothing. There should be no sign-up sheets to clean up the pesticide overspray at the labor housing.... The regulations should specifically say that there must be a protocol for post-spray check and cleanup, and this is by a trained applicator, not the farmworker occupants.³⁰⁹

Oregon OSHA has included a note in the final rule pointing out that identifying and addressing any issues resulting from the spray application are the responsibility of the employer, and that any employees recruited to do so must have training appropriate to whatever their job expectations are (and that the employees would be in pay status while they did so). Oregon OSHA cannot – and should not – prevent the employer from hiring the same individuals who live in the camps to do the work. In addition, dealing with drift is not itself sufficient to turn the AEZ into a treated area. But that does not mean that employers can ask completely untrained workers (or their families) to deal with any unintended drift and its effects.

Clean-up of Drift

One commenter included a number of suggestions specifically focusing on how to handle the removal of drift when it occurred.

First, she made a suggestion to add the following language to the definition of “Treated Area” in the rule:

If there is pesticide directed/and/or deposited during application on occupied labor housing units or related facilities, the structure which is affected, must be evacuated immediately for the full REI period unless; it can immediately be safely decontaminated prior to occupancy or use.

The commenter explained the suggestion as follows:

The REI regarding post-application for entry restrictions must apply to those areas where pesticide is directed and/or deposited albeit inadvertently as defined by this proposed regulation. If pesticide

³⁰⁸Comments by Kate Newhall, Family Forward, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript pp. 27-28.

³⁰⁹Comments by Santiago Ventura, Oregon Law Center, in the public hearing at 6 pm, November 15, 2017 in Woodburn, transcript pp. 16-17.

deposited inadvertently, the occupants must have immediate solution in place for alternative housing during the REI.³¹⁰

Oregon OSHA distinguishes this suggestion from those that would have effectively expanded the treated area in all cases, which are discussed above. This language would only trigger those requirements in the event of illegal drift. However, in addition to noting that the definition would probably not be the appropriate place to place such language, Oregon OSHA does not believe it would be appropriate to effectively redefine the “treated area” phrase that is part of pesticide training and that is enforced by the ODA. In addition, such an increase in requirements would appear to require a new rule proposal and a new opportunity for public comment.

Suggestion related to storage and tarps

One commenter suggested that tarps or other outside covers should be disposable tarps and used only once, and that the outside storage requirement should be expanded.

We recommend the amended language to (4)(c) to assure that while personal and household items not located in an enclosed agricultural structure are covered for example, by a tarp provided by the employer that the occupants are not further exposed to pesticides residue or deposits in handling the tarps post application.... Though the current proposed language does not specifically specify the provision of storage for personal items, it is clear from the Statement of Need and Fiscal Impact, page 3 of October 13, 2017 that the storage for household items was specifically contemplated and the final rules simply erred to reflect the intent of OR OSHA and the Small Agriculture Advisory.³¹¹

The lack of such provisions in the proposed rule was not an oversight on Oregon OSHA’s part. The use of tarps is intended to present one option, as is the use of expanded storage. There is no need to discard types unless drift occurs, and the reporting and clean-up provisions can be applied to tarps at least well as they can be to the siding of a structure.

Encouraging Worker Reporting of Overspray

Some commenters focused on the need to encourage worker reporting where there are problems, which is certainly an area of concern (as discussed more extensively in the section on the application of the scientific research):

In addition, if there should be an overspray, labor housing must have specific ways on how the workers can alarm others immediately and with complete support without fear of retaliation. The farmworkers should be regularly reward and recognized at safety meetings or company gatherings when they report overspray, drift, or deposits as safe champions.³¹²

One such commenter specifically suggested the following language be added to the rule’s guidance regarding the training content:

Instruction on how to report any pesticide residue or deposit on enclosed agricultural structure (such as window sills, porch, or screen doors) or on personal or household items in the AEZ to employer for immediate decontamination by the employer.³¹³

She explained her concern as follows:

We must avoid a situation where the occupants see but are reluctant to report pesticides deposit or residue in or on areas where they live and use at the labor housing. The decontamination is not the farmworkers’ responsibility....³¹⁴

Although Oregon OSHA believes that the expectation was implicit in the proposed rule, the final rule includes language clarifying the need to address reporting mechanisms as part of the training.

³¹⁰Letter from Nargess Shadbeh, Oregon Law Center, March 15, 2018, pp. 1-2.

³¹¹Letter from Nargess Shadbeh, Oregon Law Center, March 15, 2018, p. 2.

³¹²Comments by Santiago Ventura, Oregon Law Center, in the public hearing at 6 pm, November 15, 2017 in Woodburn, transcript p. 17.

³¹³Letter from Nargess Shadbeh, Oregon Law Center, March 15, 2018, p. 3.

³¹⁴Letter from Nargess Shadbeh, Oregon Law Center, March 15, 2018, pp. 3-4.

Suggestions about Addressing Emergencies in the Housing

The record includes comments raising a number of concerns with activities in Agricultural Labor Housing and suggesting that they might be possible to address as part of the present rulemaking because of their relationship to pesticides.

Emergency Telephone Availability

*...working emergency telephones should be available at the labor housing site where the cell phones have no signal. It is not enough that the landlines are at the owner's house. Many farmworkers in the middle of the night will not go to the boss' house in an emergency to report an exposure incident.*³¹⁵

Emergency Kit Availability

*...there should be an emergency kit at the housing too in case the workers or their family members need it for an eye exposure.*³¹⁶

Oregon OSHA views these as ALH requirements that fall outside the scope of the present rulemaking and that would more appropriately be addressed in rulemaking directly related to the ALH rules.³¹⁷ However, the division does note that an existing requirement regarding requiring the availability of telephones for emergency use already exists in the rules adopted by the Oregon Bureau of Labor and Industries, and that the rule in question can be enforced by Oregon OSHA when applicable.³¹⁸

Incentives for New and Existing Technology and Approaches

The record includes a number of comments on the section in the rule that encourages innovation in new spray technologies.

*I also applaud the inclusion of a variance mechanism that allows further flexibility in complying with the intent of these rules. I believe in the ingenuity of our industry to find innovative ways to keep people safe during spray applications.*³¹⁹

*I was glad to see that there is wording in there to encourage new sprayer technology and possibly decreasing that 150 feet, but this fails to look at the technology that is out there that is much safer! And what about incentives for safer chemicals and chemistries? Wouldn't encouraging at least some give and take on the AEZ be a good reason for many farmers to look into safer products? I think it would to a long way.*³²⁰

*Our sprayer is a dual boom sprayer in which we can operate each boom independently thus allowing us to spray towards the target area and prevent drift to off target areas. I see no allowance reduction in the AEZ for using one side of the boom on the sprayer.*³²¹

Comments on the rule provision were generally positive. However, as is the case with two of the examples above some commenters say it as too limited. Oregon OSHA always intended that “technology” should be read broadly and not simply limited to specific pieces of equipment. It certainly would include using the available equipment in an “innovative” manner – such as using only

³¹⁵Comments by Valentin Sanchez, Oregon Law Center, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript p. 18.

³¹⁶Ibid., transcript p. 18.

³¹⁷Although not addressed in this rulemaking, Oregon OSHA does take note of the encouragement by several commenters to address concerns regarding the existing agriculture labor housing (ALH), in several cases with a number of suggested changes to the existing ALH rules. See, for example, the list of concerns in the comments by Valentin Sanchez, Oregon Law Center, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript p. 19-22. Oregon OSHA has taken note of those issues for potential future rulemaking. See also comments about housing requirements by Connie Yost, Farmworker Ministry in the Northwest, in the public hearing at 6 pm, November 15, 2017, in Woodburn, transcript p. 34.

³¹⁸See OAR 839-014-0610(1)

³¹⁹Letter from Alan Fujishin, Gibson Farms, Siletz, January 29, 2018.

³²⁰Letter from Brenda Frketich, Kirsch Family Farms, January 23, 2018.

³²¹Letter from Pat & Gail McAllister, February 18, 2018.

one side of the boom in certain circumstances. And Oregon OSHA would expect to consider “safer chemicals and chemistries” within that context as well. The final rule has been revised slightly to clarify the potential breadth of that provision.

Location of Information Stations Near Unoccupied Structures

The record included comments raising concerns that information stations would be required at all agricultural structures:

*This language creates a need for information stations adjacent to shops, offices, seed cleaners, hay presses, greenhouses, and other structures. It adds an unnecessary burden to family scale operations. Notification requirements (i.e. containers for shoes, protections for personal item, etc.) should apply only to worker housing.*³²²

This was the result of a drafting error. Oregon OSHA’s intention was that the required information station would be located in labor housing because non-workers may be in the housing and the Central Posting may not be accessible. The final rule reflects that understanding.

Notification of Neighboring Farms

*During the public testimony and stories from our clients raised a concern that is unaddressed by the newly proposed notification section, but could easily be resolved with the addition of a requirement to have the applicator or employer notify the neighboring farm if the labor housing of the neighboring farm is within the AEZ area. It might be that this is a widespread practice in any case and so the requirement should not be burdensome.*³²³

While Oregon OSHA considers such a practice appropriate and will encourage it where possible, it would present implementation and enforcement challenges. In any case, it at least arguably falls outside the scope of the notice provisions of the present rulemaking.

Confusing Regulatory Oversight

A large number of employers made comments regarding what they viewed as confusing or duplicative regulatory oversight. For example, many commenters made observations very similar to the following:

*Pesticide applications are already tightly regulated by the Oregon Department of Agriculture and off-target drift is subject to civil penalties. OR-OSHA’s proposed rules now effectively provide that two agencies regulate pesticides which is confusing for Oregon growers.*³²⁴

As discussed in the “History of Rulemaking” that begins this document, Oregon OSHA is one of a number of agencies that regulate certain aspects of pesticides within their statutory mission. Oregon OSHA’s regulation of workplace pesticide risks is not new with either this rulemaking or the 2016 rulemaking that it completes. However, Oregon OSHA has determined that the explicit reference to enforcement of prohibitions against drift in the proposed rule is unnecessary and may provide a source of confusion. Even without that reference, drift remains illegal and can be addressed by the ODA based on the label requirements – as well as by Oregon OSHA when appropriate and when worker exposure is at issue.

Clarification of Table

A number of commenters indicated that the table in the proposed rule was confusing, inconsistent with the rule language, or otherwise in need of clarification:

In the proposed rule, the table (Table 1) of AEZ requirements is confusing and does not reflect the language in the rule. For example, the current Table 1 seems to indicate that an aerial application would have no AEZ if the spray quality was medium or larger. This is not reflective of the current proposal’s

³²²Letter from Jenny Dresler, Oregon Farm Bureau, March 15, 2018.

³²³Letter from Nargess Shadbeh, Oregon Law Center, March 15, 2018, p. 5.

³²⁴Letter from Timothy J. Bernasek, Dunn Carney Allen Higgins & Tongue LLP, on behalf of the Columbia Gorge Fruit Growers, March 13, 2018, p. 2.

language around AEZ distances. OR-OSHA should update the table to adequately reflect what the final requirements are in a clear and understandable way.³²⁵

[In a letter describing the problems and providing a suggested revision to the table] We therefore recommend that a revised table that includes both the EPA approach and the Oregon approach be the basis for the new rule.³²⁶

Oregon OSHA agrees. The decision matrix in the table has been reconfigured into a diagram to provide better clarity has been revised for clarity (and to reflect the changes made) in the final rule.

³²⁵Letter from Scott Dahlman, Oregonians for Food & Shelter, Salem, March 15, 2018, p. 3.

³²⁶Letter from Richard A. Fenske, Michael Yost, Edward Kasner, Pacific Northwest Agricultural Safety and Health Center, January 17, 2018.

XI. Discussion of Financial Impacts of Rule

One of Oregon OSHA's obligations in relation to any rulemaking, found in the Administrative Procedures Act (APA), concerns the financial impacts of the proposed rule.

Description of the APA Fiscal Impact Requirements

The APA provides that the required notice of rulemaking, discussed in a previous section, must include the following:

*A statement of fiscal impact identifying state agencies, units of local government and the public that may be economically affected by the adoption, amendment or repeal of the rule and an estimate of that economic impact on state agencies, units of local government and the public. In considering the economic effect of the proposed action on the public, the agency shall utilize available information to project any significant economic effect of that action on businesses which shall include a cost of compliance effect on small businesses affected.*³²⁷

The required statement of cost of compliance on affected small businesses must include the following:

- (a) An estimate of the number of small businesses subject to the proposed rule and identification of the types of businesses and industries with small businesses subject to the proposed rule;*
- (b) A brief description of the projected reporting, recordkeeping and other administrative activities required for compliance with the proposed rule, including costs of professional services;*
- (c) An identification of equipment, supplies, labor and increased administration required for compliance with the proposed rule; and*
- (d) A description of the manner in which the agency proposing the rule involved small businesses in the development of the rule.*³²⁸

As with the entire statement of fiscal impact, the statute states that the agency must "utilize available information in complying with the requirements of this section."³²⁹

In situations where the fiscal impact on small businesses represents "a significant adverse impact," the law requires the agency to reduce that economic impact "to the extent consistent with the public health and safety purpose of the rule...."³³⁰ Such reductions are to be achieved by one or more of the following:

- (1) Establishing differing compliance or reporting requirements or time tables for small business;*
- (2) Clarifying, consolidating or simplifying the compliance and reporting requirements under the rule for small business;*
- (3) Utilizing objective criteria for standards;*
- (4) Exempting small businesses from any or all requirements of the rule; or*
- (5) Otherwise establishing less intrusive or less costly alternatives applicable to small business.*³³¹

The consequences of a failure to adopt the required fiscal impact statement are described in ORS 183.335(11)(a).³³²

The law further requires that, for Oregon OSHA rulemaking,³³³ "...the statement of fiscal impact shall also include a housing cost impact statement as described in ORS 183.534."³³⁴ The referenced statute in turn indicates that the required "housing cost impact statement is an estimate of the effect of the proposed rule or ordinance on the cost of development of a 6,000 square foot parcel and the construction of a 1,200

³²⁷ORS 183.335(2)(b)(E).

³²⁸ORS 183.336(1).

³²⁹Ibid.

³³⁰ORS 183.540.

³³¹Ibid..

³³²See ORS 183.335(11)(a), (1), which indicates that "...a rule is not valid unless adopted in substantial compliance with the provisions of this section...." See also ORS.335(12)(a) indicating that "an agency may correct its failure to substantially comply... by an amended filing, as long as the noncompliance did not substantially prejudice the interests of persons to be affected by the rule."

³³³See ORS 183.530(6).

³³⁴ORS 183.335(2)(b)(E).

square foot detached single family dwelling on that parcel.”³³⁵ The consequences of the failure to prepare such a statement are described in ORS 183.538.³³⁶

If, as in this case, an advisory committee has been appointed to assist with the development of the rule, the APA requires the agency to “seek the committee’s recommendations on whether the rule will have a fiscal impact, what the extent of that impact will be and whether the rule will have a significant adverse impact on small businesses,” as well as to seek the committee’s recommendation in mitigating any such impacts.³³⁷ The APA further requires the agency to “consider” the advisory committee’s recommendations in preparing the fiscal impact statement.³³⁸

Finally, the APA provides that, if the agency did not use an advisory committee in developing the rule and the required fiscal impact statement “and 10 or more persons likely to be affected by the rule object to the agency’s statement of fiscal impact ...or an association with at least 10 members likely to be affected by the rule objects to the statement, the agency shall appoint a fiscal impact advisory committee to provide recommendations on whether the rule will have a fiscal impact and what the extent of that impact will be.”³³⁹ Such an objection must be filed within 14 calendar days of the rulemaking notice being given. In such situations, and “[i]f the agency determines that the statement does not adequately reflect the rule’s fiscal impact, the agency shall extend the period for submission of data or views under ORS 183.335 by at least 20 days” and “shall include any recommendations from the committee in the record maintained by the agency for the rule.”³⁴⁰

Oregon OSHA’s Efforts to Obtain Fiscal Impact Information

Oregon OSHA set out to analyze the fiscal impact of various potential rulemaking alternatives with the assistance and advice of the advisory committee and its members.³⁴¹ In addition to general discussions within the advisory committee meetings themselves, Oregon OSHA sought specific information, particularly from the grower representatives on the group, in relation to the potential fiscal impacts of items under discussion.

At the first of two August 2017 meetings, “Reneé [Stapleton] discussed Oregon OSHA’s time constraints” and stated that [t]he group still needs to provide feedback to Oregon OSHA regarding the fiscal impact of the potential rule.”³⁴² At the second August meeting, prior to which a pre-proposal draft of the rule had been circulated, “Oregon OSHA representatives reminded the group that we need to look at the fiscal impact of these different ideas, as that is something that must be addressed by the agency in rulemaking.”³⁴³ This meeting also resulted in suggested additional ideas beyond those in the preproposal draft, which were raised by one or more of the group’s participants. The meeting minutes discussing the close of that meeting indicate that, “Reneé [Stapleton] implored the group to consider economic impacts of compliance and to give those ideas to Oregon OSHA. She wants the group to consider the costs of a 100 foot AEZ, a 150 foot AEZ and any other differences in cost regarding compliance. Oregon OSHA will incorporate these into their decision making. Health impacts were brought up, which are very hard to determine. Oregon OSHA stated we need this information by September 7th to incorporate into the

³³⁵ORS 183.534.

³³⁶See ORS 183.538(1), which indicates that such a failure “shall not affect the validity or effective date or any rule....” See also ORS 183.538(2), which indicates that judicial review “shall determine only whether a housing cost impact statement was prepared and shall not make any determination as to the sufficiency of the housing cost impact statement.”

³³⁷ORS 183.333(3).

³³⁸ORS 183.333(4).

³³⁹ORS 183.333(5).

³⁴⁰Ibid.

³⁴¹Consistent with Oregon OSHA’s standard practice, the deliberations of the advisory committee – an expanded version of the Small Agricultural Employer Advisory Committee – did not restrict participation to a designated set of members. Rather than taking votes or making other formal decisions as a committee, the advisory committee discussions allowed Oregon OSHA representatives to seek and obtain advice on the rule and related issues from all participants on the committee, considering information and arguments on their merits, rather than based on the number of committee “members” who shared a particular perspective. The same approach was applied to discussions regarding the potential fiscal impacts of the rule.

³⁴²Minutes of Worker Protection Standards Advisory Committee meeting, August 8, 2017.

³⁴³Minutes of Worker Protection Standards Advisory Committee meeting, August 30, 2017.

proposed language. Oregon OSHA at this time plans to file proposed rulemaking on September 15th.³⁴⁴ The meeting minutes also included a related action item, noting that “ODA agreed that if growers could get them a list of commonly used pesticides, they would compile that list and identify the ones that require use of a respirator.”³⁴⁵

On September 6 and 7, Oregon OSHA received three letters from grower associations.

The letter received on September 6 was on behalf of an association whose members were somewhat less effected by the AEZ provisions, at least as those provisions would relate to worker housing.³⁴⁶ The letter reiterated concerns about the underlying EPA rules that had been shared as part of the 2016 Oregon OSHA rulemaking record (a number of which were addressed as part of that rulemaking and fell outside the scope of the AEZ rulemaking). It also addressed the content of the draft rules under discussion. With regard to the economic impact of the rule, the letter stated that it “would be helpful if OR-OSHA would indicate the statement of need and conduct a broader evaluation of the impact of the rules on agricultural operations” and stated, “It will take time for the nursery association to survey our members to obtain an appropriate estimate of the cost to the nursery and greenhouse industry.”³⁴⁷ He continued by writing, “We are pleased that OR-OSHA has acknowledged the fact that this rule will create a fiscal impact on the regulated community. AEZ is only a part of the fiscal impact to the industry and we are working hard with the Oregon Department of Agriculture, Oregon State University and the State Accident & Insurance Fund to seek training modules at a reasonable cost to comply with the WPS rules.”³⁴⁸

In considering this letter Oregon OSHA noted the request for a Statement of Need (required as part of the formal rule proposal, but not normally shared by Oregon OSHA during advisory group discussions), as well as the request for additional time. At the same time, Oregon OSHA noted the letter’s focus on broader WPS issues such as the already adopted training requirements (part of the 2016 rulemaking proposal finalized early in 2017).

The second letter was signed by four association representatives, including the individual who sent the September 6 letter. All four had participated actively in the rulemaking discussions. The letter noted the August 30 request “to provide an estimate of the economic impact of a variety of AEZ proposals,” and stated that “[w]ith such short notice, we regret that we are unable to provide the information requested on the timeframe allotted.”³⁴⁹ The letter also indicated that the associations found it “very difficult to make estimates based on yet to be determined language,” noting that “OR-OSHA has provided a variety of options and each one could have a different economic impact on Oregon growers.”³⁵⁰ Finally, the letter pointed to the diversity of Oregon agriculture, which “further complicates our ability to get meaningful responses from growers in a short timeframe.”³⁵¹ The letter requested “a statement of need and draft rule language to accurately determine the direct and indirect costs of the proposed AEZ rule,” indicating that they could not “provide accurate fiscal impact information” until such material was provided.³⁵²

Another of the group sent a separate letter the same day, in which he provided further information from the perspective of his association. In this letter, he indicated that “[w]hile our growers have responded, we don’t believe information collected in haste satisfactorily addresses the financial consequences this proposed rule would have on the 440 small businesses that comprise our grower membership.”³⁵³ His letter further suggested that had the request occurred earlier in the rule development process, “an

³⁴⁴Ibid.

³⁴⁵Ibid.

³⁴⁶Letter from Jeff Stone, Oregon Association of Nurseries, to Garnet Cooke, Oregon OSHA Pesticide Coordinator, September 6, 2017.

³⁴⁷Ibid, p. 3.

³⁴⁸Ibid, p. 3.

³⁴⁹Letter from Jenny Dresler, Oregon Farm Bureau Federation, Scott Dahlman, Oregonians for Food and Shelter, Mike Doke, Columbia Gorge Fruit Growers, and Jeff Stone, Oregon Association of Nurseries, to Renee Stapleton, September 7, 2017.

³⁵⁰Ibid.

³⁵¹Ibid.

³⁵²Ibid.

³⁵³Letter from Mike Doke, Columbia Gorge Fruit Growers, to Michael Wood, Oregon OSHA Administrator, September 7, 2017.

objective, complete Fiscal Impact Study could have been completed.”³⁵⁴ He asked for a delay in the rulemaking until a Fiscal Impact Study had been completed, suggesting that Oregon OSHA contact Oregon State University’s Department of Agricultural Science “to develop a scope of work that would include all details of the proposed rule’s cost of compliance by small business.”³⁵⁵

In reviewing the letter’s concern about the fact that the request for fiscal impact information had not been made early in the process, Oregon OSHA noted the natural tension between the desire to firmly identify rulemaking provisions early in the rule development process and the need to allow the rule development processes to provide more complete consideration of various potential proposals. Had Oregon OSHA attempted to provide a list of likely proposals early in the process, it would have suggested that the agency was not taking the advisory committee’s discussions seriously. And, in this particular case, such an early list would have been incomplete. The idea to distinguish between pesticides based on the respiratory protection requirement – a provision of the rule as proposed and as adopted that necessarily affected the financial analysis – did not itself arise until relatively late in the rule development process, as various alternatives to distinguish pesticide risks in some fashion were considered and then discarded for one reason or another.

Oregon OSHA also noted the apparent belief that the Fiscal Impact Statement required by the APA somehow necessitates a “study” of the caliber that can only be conducted by university researchers or others with a similar background. Oregon OSHA reads the repeated reference to the use of “available information” in the statute to indicate that the Fiscal Impact Statement, while requiring thoughtful analysis, does not require original research of the sort contemplated by the writer of this letter.

After sharing the concerns about the process to date, the letter then shared the organization’s responses:

First, it indicated that his members “are not willing to share their pesticide information...” because it “may be sensitive to their small business operations, and the chemicals they use are legal and well regulated.”³⁵⁶ The letter also suggested such information would not “address any future products” that might be needed.³⁵⁷ In relation to this decision by the growers, Oregon OSHA noted that it may be true that current use patterns would not absolutely predict future use, but the division believed – and believes that its Fiscal Impact Statement could have been strengthened by more specific information about current pesticide use, rather than the general representations made during the advisory group discussions. However, such information was simply not made available to the agency.

The letter then discussed the cost to move agricultural labor housing occupants to alternate lodging (never suggested by Oregon OSHA or included in any preproposal draft, but discussed by participants in the advisory group meetings, including the August 30 meeting). The letter said, “Evacuation costs are astonishing,” noting that relocating just five families from labor housing to hotel rooms (if such rooms were even available) would cost “from \$1,475 to \$1745 per night for a single small business.”³⁵⁸ In relation to this information, Oregon OSHA notes that it tended to confirm the agency’s initial conclusion that such a requirement would not be viable, and Oregon OSHA did not give the suggested requirement’s inclusion in the rule further serious consideration.

Without providing any other financial information or supporting data, the letter summarized by saying “we believe at a minimum the proposed 150-foot AEZ would cost the average grower \$125,000 each year. That results in \$55 million annually for our grower membership.”³⁵⁹ The letter concluded with the following:

The CGFG study does not satisfy a basic principle of rulemaking – completion of a Fiscal Impact Statement that includes cost of compliance by small businesses. CGFG encourages OR-OSHA to complete a full Fiscal Impact Study that documents the number of housing units involved, the distance from crops,

³⁵⁴Ibid.

³⁵⁵Ibid.

³⁵⁶Ibid.

³⁵⁷Ibid.

³⁵⁸Ibid.

³⁵⁹Ibid.

*notification methods and costs, transportation costs, lost production costs and other details associated with the 150-foot AEZ.*³⁶⁰

With regard to the specific estimate provided by the letter, Oregon OSHA concluded that it was based almost entirely on the suggested requirement for alternate lodging, which would not be part of the proposed rule and did not require further fiscal analysis. The letter therefore did not provide usable information related to the provisions actually under consideration.

After receiving these letters and other feedback about the difficulty of responding on time and without additional information – as well as noting that the focus of much of the feedback was on the suggested requirement for alternate lodging – Oregon OSHA determined that the proposal could be delayed an additional month. On September 15, an e-mail was distributed with the requested draft Statement of Need and the following list of specific items in relation to which costs were being requested because they remained under consideration as potential elements of the soon-to-be-proposed rule:

- *A 50' AEZ for air blast sprayer where the label calls only for the pesticide handler to wear long sleeved shirt, long pants, shoes plus socks – option to stay or evacuate. We'd also like the information for a 100' AEZ in such situations.*
- *A 100' AEZ for aerial or air blast sprayer where the label calls for long sleeved long pants, shoes plus socks, gloves and eye protection; option to stay or evacuate.*
- *A 100' AEZ for aerial or air blast sprayer where the label calls for long sleeved long pants, shoes plus socks, gloves, eye protection and requires the use of respiratory protection; evacuation required. We'd also like the information for a 150' AEZ in such situations.*
- *Informing occupants to shut windows and doors and turn off air intakes prior to evacuating or remaining in an enclosed area.*
- *Providing a method to protect or store household items or work tools.*
- *Providing a method for closeable storage for shoes to prevent tracking pesticides into the structures.*
- *Notifying occupants of start and stop times of the spray, instructions to close windows and doors and to close air intakes, instructions to protect items from contamination, instructions to remain in the enclosed area until after the application equipment passes.*
- *Providing an information station for pending applications for AEZ which contain enclosed spaces.*
- *Providing adult occupants access to information on measures to take to prevent and reduce pesticide exposure.*³⁶¹

The e-mail further requested that any available information be provided by September 30, 2017.

An updated pre-proposal draft was sent by e-mail on September 21, 2017. That e-mail also provided “a gentle reminder to submit your statement of fiscal impact.”³⁶² Within an hour of the e-mail’s distribution, Oregon OSHA received a response from one Hood River grower (and a member of the Columbia Gorge Fruit Growers) indicating that it was not possible to evaluate the costs in the time provided. He further indicated, after describing the steps he believed would be necessary, “For our own operation I believe we could hire someone to do the financial analysis and have it completed sometime in spring of 2018.”³⁶³ He concluded, “It IS necessary to go through these steps to create a meaningful estimate of fiscal impacts of the new AEZ rules.”³⁶⁴

On September 29, 2017, Oregon OSHA received an e-mail that read as follows:

In response to this message two weeks ago, Columbia Gorge Fruit Growers took immediate action and contacted growers to seek the fiscal information you requested. Because of the detail of information identified, we created the attached Fiscal Impact Worksheet to distribute to our 440 members.

³⁶⁰Ibid.

³⁶¹E-mail from Garnet Cooke, Oregon OSHA Pesticide Coordinator, to the Worker Protection Standards Advisory Committee distribution list, September 15, 2017. There were actually two slightly different e-mails, depending on whether the individual had already offered some comment on the economic impact request, but they were identical in all relevant portions.

³⁶²E-mail from Garnet Cooke, Oregon OSHA Pesticide Coordinator, to the Worker Protection Standards Advisory Committee distribution list, September 21, 2017.

³⁶³E-mail from Michael McCarthy to Garnet Cooke and copied to the Worker Protection Standards Advisory Committee distribution list, September 21, 2017.

³⁶⁴Ibid.

However, this momentum ran into two obstacles: 1) Your request occurred in the middle of our growers' busiest time, harvest; and, 2) our growers responded to a similar OR-OSHA request just weeks earlier, with their input included in the attached Sept. 7, 2017 letter.

Both killed any opportunity to provide additional fiscal detail at this late stage in OR-OSHA's rules process.

CGFG affirms the compliance cost for our grower membership is \$55 million annually -- \$125,000 per grower on average – as stated in our Sept. 7 letter, when we asked OR-OSHA to complete a true Fiscal Impact Statement instead of relying on a crude estimate. If OR-OSHA requests it, we are confident an organization like Oregon State University's Department of Agricultural Sciences' applied economics staff/students could complete a proper Fiscal Impact Statement before rules take effect in 2018.³⁶⁵

The document attached to the e-mail that the association had sent to its members allowed itemized estimates of costs for each of the items outlined in Oregon OSHA's e-mail, as well as asking the growers to provide the number of housing units affected, the cost to remove orchards should the grower choose to do that instead of comply, the cost of any needed evacuation, the cost of alternative housing during evacuation, and the cost to provide off-site housing. It also invited growers to list any costs not identified above.

Had Oregon OSHA received a sample of such data, at least some of it would have been usable in developing the required Fiscal Impact Statement. But if any of the association's 440 growers actually made such estimates, those estimates were not available to Oregon OSHA. The e-mail again made reference to the financial estimate in the September 7 letter – which Oregon OSHA had already disregarded as resulting from elements that were not part of the rule about to be proposed, specifically the requirement to provide alternate lodging for the night when housing had to be evacuated.

Based on the information it had received to that point, and recognizing that at least some of the information in which it would have been interested was unlikely to be provided at any point in the near future, Oregon OSHA developed its analysis of the potential fiscal impact of the rule being proposed.

Oregon OSHA's Original Fiscal Impact Statement

As part of its filing of the proposed rule in October of 2017,³⁶⁶ Oregon OSHA included the required Fiscal Impact Statement. The statement was developed using a variety of available sources and relying upon the guidance of the members of the Worker Protection Standard Advisory Committee, to the degree that such information was available. Oregon OSHA considered, but did not use, the estimate provided by the Columbia Gorge Fruit Growers, because the estimate was clearly based on provisions that had been discussed but were not included in the proposed rule.

As is the norm with Oregon OSHA rule proposals, the Fiscal Impact Statement determined that state agencies, units of local government and the public as a whole are affected only to the extent that they are employers and employees. Oregon OSHA concurred with the EPA's assessment as part of its earlier rulemaking that "the majority of the costs of the modified rules will be borne by farms, nurseries, and greenhouses that hire labor and use pesticides."³⁶⁷ Oregon OSHA used data from the Census Bureau to estimate that the total number of "small agricultural employers in Oregon that are potentially subject to the scope of the pesticide Worker Protection Standard rules" as 80 percent of all farms that hired farm labor, which would include "approximately 8,500 places of business."³⁶⁸ Although "[t]he EPA's economic analysis predicted no significant impact on most 'small business entities' and a negligible effect on jobs and employment,"³⁶⁹ Oregon OSHA went further to analyze the particular costs of the proposed rule related to the AEZ: "Oregon OSHA estimates that the revised rules will affect both small and large

³⁶⁵E-mail from Mike Doke, Columbia Gorge Fruit Growers, to Garnet Cooke, September 29, 2017.

³⁶⁶<http://osha.oregon.gov/OSHArules/proposed/2017/ltr-wps-pt2.pdf>

³⁶⁷Statement of Need and Fiscal Impact, "Oregon OSHA's Application Exclusion Zone for the Worker Protection Standard Rules," p. 2.

³⁶⁸Ibid., p. 2.

³⁶⁹Ibid., p. 2.

farms, nurseries and greenhouses that have employees and use agricultural pesticides in crop production; and also, commercial pesticide applicators contracted to apply agricultural pesticides.”³⁷⁰

The FIS went on to identify estimated costs of various provisions of the rule, specifically in relation to the notification requirements and the training requirements to implement the AEZ, and primarily in relation to agriculture labor housing (ALH). The estimate also addressed the costs of the required information station, as well as storage provisions.

The FIS also concluded that there would be no housing cost impact, as defined by the statute.

Objection to the FIS and Appointment of a Fiscal Impact Advisory Committee (FIAC)

On November 3, the Columbia Gorge Fruit Growers (CGFG) filed an objection to the Fiscal Impact Statement and requested the appointment of a Fiscal Impact Advisory Committee (FIAC). The notice was timely, and the association represents a sufficient number of the affected growers. Therefore, Oregon OSHA received and evaluated the request.

The objection argued that “the Statement of Need and Fiscal Impact inadequately addresses the cost of compliance that will be borne by our members.”³⁷¹ The objection then referenced an estimate provided in 2016 regarding the cost of removing productive trees:

*We submitted details from 30 association members outlining a variety of costs that showed average lost annual production costs of \$1,707,914 per 100 acres. These costs would be the result of tree fruit removal within the Application Exclusion Zone. Although OR-OSHA requested this information, and had access to the information for close to a year, the agency did not include these figures in its Statement of Need and Fiscal Impact.*³⁷²

The substance of this concern will be addressed presently. However, it is worth making note of two items at present: First, the 2016 estimates in question had not been mentioned by the CGFG in their own estimate of the cost of discussion draft in their September 7, 2017 letter, twice provided to Oregon OSHA as the CGFG estimate of costs. Second, Oregon OSHA notes with interest that the CGFG was able to provide data in 2016 based on a very limited sample of their entire membership.

The letter included a second specific objection to the Fiscal Impact Statement:

*We submitted a letter Sept. 7, 2017 to OR-OSHA Administrator Michael Wood detailing costs associated with farm structure evacuations that included providing alternative housing. This letter was a response to an OR-OSHA staff request at an August 2017 SAEAC meeting. It stated the proposed 150-foot Application Exclusion Zone would cost the average grower \$125,000 each year -- \$55 million annually for our grower membership. This estimate does not include tree removal or lost production costs. Again, OR-OSHA did not include these recently identified costs in its Statement of Need and Fiscal Impact.*³⁷³

Oregon OSHA concluded that the CGFG’s objection was not well-founded, for reasons that will be described more fully below. In addition, Oregon OSHA noted that it had developed the estimate in consultation with the advisory group that assisted in the rule’s development (although in some cases that consultation had been less than fully effective). Oregon OSHA therefore concluded that the existing FIS was legally compliant and that the appointment of a FIAC was not required. Nonetheless, the agency recognized the value of having a FIAC review the statement – particularly in light of some of the challenges in obtaining data. Therefore, a committee was appointed and charged with reviewing the Fiscal Impact Statement and recommending any changes that should be made to it. The committee included seven members. Three members represented growers³⁷⁴ (one of them had sent the letter objecting to the Fiscal Impact Statement and all three of them were signatories of the September 7 letter regarding the difficulty of providing fiscal impact data). Three others were worker advocates who had participated in

³⁷⁰Ibid., p. 2.

³⁷¹Letter from Mike Doke, Columbia Gorge Fruit Growers, November 3, 2017.

³⁷²Ibid.

³⁷³Ibid.

³⁷⁴Scott Dahlman, Oregonians for Food & Shelter, Mike Doke, Columbia Gorge Fruit Growers, and Jenny Dresler, Oregon Farm Bureau Federation.

the rule development.³⁷⁵ Oregon OSHA selected a chair known for his expertise in facilitation and organizational development to lead the discussions.³⁷⁶ Oregon OSHA provided staff support and participated in the FIAC discussions but did not have a vote on the committee.

Although Oregon OSHA had hoped to move quickly enough that the rulemaking process would not be significantly delayed by the FIAC activity, it became clear that the comment period would need to be extended to allow the committee to complete its work. Oregon OSHA published a notice on December 7, 2017, extending the comment period to January 31, 2018. And Oregon OSHA published a further notice on January 26, 2018, extending the comment period until February 28, 2018.

The FIAC held its first of what were expected to be two meetings on January 4, 2018. All the members of the committee but one were able to attend. Although there was a meeting tentatively scheduled for January 12, that second meeting was delayed until January 29 so that all of the committee's members could attend.

The meeting minutes clearly reflect the seriousness with which the members of the FIAC took their responsibility.

At the first meeting, the group's scope and purpose were discussed:

*The FIAC should be discussing the cost of compliance with the rule as it is written in Oregon OSHA's formal proposal, the housing cost impact (which was described as the increase in cost, if any, this rule might have on the construction of a three bedroom residential dwelling), and the cost of compliance with the rule as proposed on small businesses in particular.*³⁷⁷

In relation to the objections raised in the November 3 letter (which was shared with the FIAC, as was the September 7 letter), Oregon OSHA shared a memo that explained why the division did not consider the letter's objections to the Fiscal Impact Statement to be well-founded. As the minutes summarized the memo, "Essentially, Oregon OSHA's response to CGFG was that the basis of the costs outlined by CGFG was not based on the text of the rule as proposed."³⁷⁸

Specifically, the memo acknowledged that the cost estimates provided by the CGFG were not used in the Fiscal Impact Statement developed by Oregon OSHA:

*The letter outlines CGFG's disagreement with Oregon OSHA's fiscal impact statement because it does not reflect the cost of lost production that would result from the removal of trees, which the letter indicates was provided to Oregon OSHA in 2016. It is true that Oregon OSHA was provided information that concludes that the average lost annual production costs are \$1,707,914 per 100 acres, and it is true that these costs were not reflected in the Fiscal Impact Statement.*³⁷⁹

The memo explained that tree removal was not required by the rule and therefore was not appropriate to include in the Fiscal Impact Statement:

*Oregon OSHA did not include the cost of removing trees from production in its estimate of the cost of compliance with the proposed rule because the proposed rule would not require the removal of any trees from production. In addition, we could not identify any situations where tree removal would be the lowest cost alternative. Therefore, the cost of removing trees from production would not be a cost of complying with the proposed rule and cannot accurately be reflected as such.*³⁸⁰

The memo further explained why the costs described in the September 7 letter also were not included in the Fiscal Impact Statement:

³⁷⁵Ramon Ramirez, PCUN, Nargess Shadbeh, Oregon Law Center, and Kate Suisman, Northwest Workers' Justice Project.

³⁷⁶John Morgan, Morgan CPS Group.

³⁷⁷Oregon OSHA Fiscal Advisory Committee, January 4, 2018, Meeting Minutes, p. 1. This information reinforced the written description of the committee's purpose, which had been included in each of the letters appointing members to the committee. In addition to describing the statutory requirements for an FIS, the letter stated: "The FIAC is to consider Oregon OSHA's Fiscal Impact Statement (FIS) for the above referenced rulemaking and make recommendations to me as the Administrator for Oregon OSHA on whether the proposed rules will have a fiscal impact, what the extent of that impact will be, and whether based on that impact the FIS should be amended."

³⁷⁸Oregon OSHA Fiscal Advisory Committee, January 4, 2018, Meeting Minutes, p. 1.

³⁷⁹Memorandum from Renée Stapleton, Oregon OSHA Policy Manager, to Fiscal Impact Advisory Committee, January 4, 2018.

³⁸⁰Ibid.

*The September 7 letter does not provide sufficient detail to separate the other costs from the alternative housing costs, but it is clear that the overwhelming bulk of the estimated costs summarized in the September 7 letter relate to alternate housing. The proposed rule does not require alternate housing. Therefore the cost of providing such housing would not be a cost of complying with the proposed rule and cannot accurately be reflected as such.*³⁸¹

As the meeting minutes indicate, “CGFG, through their representative, responded to Oregon OSHA’s response to their objection to the fiscal impact statement. CGFG believes that the connection between the costs they cited in their communications with Oregon OSHA are not too tenuous/speculative to be considered, and are a very real possibility for their growers.”³⁸²

In addition to the issues raised by the CGFG, the committee discussed a range of issues and information that they wanted to consider further. For example, one extended discussion concerned the lack of sufficient information about when respirators would be required:

The group discussed at length the lack of information regarding when and what pesticides were applied that required a respirator. Some group members felt that this would better inform an estimate of the cost of compliance with this rule. Others in the group disagreed, and stated that growers would not release that information. Also, this information can change frequently per season.

....

*Nargess commented that she felt information regarding pesticide types and frequency of application was readily available to the growers, and that gathering this information based on practices of at least a couple of years would give some guidelines as to how frequently respirator required pesticides were applied.*³⁸³

The committee also made it clear that at least some of the members were prepared to give serious consideration to “unintended consequences” as costs of the rule:

The group discussed the scope of the rule as they saw it and unintended consequences for both workers and growers. Then the group moved to trying to identify what unintended consequences are realistically a cost of compliance with the rule. At this time the current Statement of Need and Fiscal Impact was distributed to the group.

*The group posed the question wondering what kind of evidence the group could receive from the growers that the outcomes CGFG identified (removing trees, etc.) are more tangible than speculative. It was stated that the growers are unwilling at this time to provide that information and it would be hard for each grower to substantiate if they were to try to.*³⁸⁴

The group ended the meeting with several “action items” for the next meeting – the minutes of the first meeting already reflected the challenges involved in scheduling the second meeting: “The next meeting time and date to be determined due to scheduling issues with members. The group is planning to meet one more time before the end of January.”³⁸⁵

The FIAC met a second time on January 29, with all of its members present. Among other things, the committee approved the minutes of the January 4 meeting.³⁸⁶ The Oregon OSHA administrator provided guidance “framing the mission of the committee” and noted “that although the committee is an advisory committee, in this case they are being asked to make a recommendation that Oregon OSHA will then adopt.”³⁸⁷ In discussing the extension of the comment period, it was noted that the committee’s work would be shared and an opportunity provided for the public to comment on it.³⁸⁸

³⁸¹Ibid.

³⁸²Oregon OSHA Fiscal Advisory Committee, January 4, 2018, Meeting Minutes, p. 2.

³⁸³Ibid., p. 2.

³⁸⁴Ibid., p. 3.

³⁸⁵Ibid., p. 4.

³⁸⁶Oregon OSHA Fiscal Advisory Committee, January 29, 2018, Meeting Minutes, p. 1.

³⁸⁷Ibid., p. 1.

³⁸⁸Ibid., pp. 1-2. Although the minutes reflect Oregon OSHA’s expectation that this will not require an additional extension of the comment period, the need to provide at least 20 calendar days to comment on the revised Fiscal Impact Statement resulted in a further extension of the comment period, to March 15, 2018.

In addition, “Nargess Shadbeh on the committee wanted to confirm that they were not precluded from doing more work if new information necessitated another meeting or more time, and the committee agreed.”³⁸⁹

At the January 29 meeting, several formal decisions were made by the committee:

- First, the chair asked if there was a motion to approve the FIS as written. There was no such motion,³⁹⁰ indicating that an apparently unanimous desire by the committee to recommend revisions to the FIS.
- The committee agreed by consensus that the 10-minute average for notification of pesticide applications in the original FIS was not enough and it should be increased to 15 minutes.³⁹¹
- The committee noted a need to clarify language about the costs of notification, which did not make it clear that the estimate was intended to reflect a single trip rather than multiple trips to disseminate each piece of information.³⁹²
- The committee noted a need to clarify language about the costs of notification, which did not make it clear that the estimate was intended to reflect a single trip rather than multiple trips to disseminate each piece of information.³⁹³
- The committee asked Oregon OSHA to assist with training materials to help employers in fulfilling the training requirements, particularly in relation to the initial training on protecting personal items. Oregon OSHA agreed to provide such materials, using pictograms when possible.³⁹⁴
- The committee agreed, without dissent, to add the following language to the fiscal impact statement:

There will be a fiscal impact to some growers who have processing facilities, or other buildings where workers would normally be working during pesticide applications. Because of lack of data, and variability between operations, the cost is indeterminate. Some of the factors that make this assessment challenging include: work and break schedules at facility, facility and farm configuration, diversity of cropping systems, spraying frequency, and type of pesticides used. Range \$0 - \$1,000.

*In addition, improved productivity may occur due to increased employee morale from timely and effective communication of hazards. This may result in a reduction in workers compensation claims and absenteeism, and improve employee retention and active participation in the safety and health management system.*³⁹⁵

- The committee discussed the identified fiscal impact associated with 437-004-6406(1) and concluded that the requirement has been in place for years and therefore this is not an additional cost of compliance and the identified costs should be removed.³⁹⁶

After adopting the prior recommended changes to the Fiscal Impact Statement, the committee considered a motion to approve the amended Fiscal Impact Statement. The motion passed with 6 of the 7 members voting in favor of the amended Fiscal Impact Statement.³⁹⁷

The minutes include the following description of the remaining discussion:

Mike Doke, the only members that did not vote in favor, stated that he cannot vote for it because it does not take into account the loss of trees. John Morgan made several requests for Mike to make a statement that could be proposed as an amendment. Mike stated that it could not be quantified, and he cannot stand behind an impact statement that did not include the loss of trees. Mike stated several times that he did not have an amendment to be offered because the removal of trees would not be the lowest cost alternative.

³⁸⁹Ibid., p. 2.

³⁹⁰Ibid., p. 2.

³⁹¹Ibid., p. 2. When Oregon OSHA recalculated the times at the committee’s recommendation, it was realized that the aggregate time estimate in the original Fiscal Impact Statement had been rounded up to an hour. The result of the change from 10 minutes to 15 minutes was still to round up the aggregate time estimate to an hour. The FIAC was advised of this and concurred before the changes to the Fiscal Impact Statement were finalized.

³⁹²Ibid., p. 2.

³⁹³Ibid., p. 2.

³⁹⁴Ibid., p. 2.

³⁹⁵Ibid., pp. 2-3.

³⁹⁶Ibid., p. 3.

³⁹⁷Ibid., p. 3.

John reminded Mike that the Department's position did not bind the committee and amendments could be proposed. No vote on his concern was conducted because Mike did not put forth a proposed amendment for consideration.³⁹⁸

The minutes further indicate that “no other revisions were proposed relating to small employers or other aspects of the Fiscal Impact Statement.”³⁹⁹

Following the committee's electronic review of the minutes and of the revisions to the FIS, Oregon OSHA filed the revised Fiscal Impact Statement – reflecting all of the FIAC's recommendations – on February 16, 2018, extending the comment period for a final time, to March 15, 2018.

Discussion of the Fiscal Impact in the Record

A number of comments in the rule discussed the financial impacts of the rule. Some, including the following, suggested that the rule – or their preferred regulation, which exceeded the requirements of the Oregon OSHA rule – would not present a significant financial burden on the industry or individual employers, particularly in contrast to what the commenters see of the benefit of additional regulation:

I did some basic math about that [suggestion of a 100-foot no-spray buffer zone], and each pear tree produces like, 300 pears – so I base it on 50 pears, between 250 and 300 pears – and per pound, there's about two and a half, like, two to three pears a pound. And so – and I don't know if this is an accurate estimation, I think they may sell wholesale for around \$.69 a pound.

So in some of the orchards, I saw there's some overhead shots, that if there were 12 trees that were eliminated, that the grower would meet that hundred foot limit or hundred foot buffer. And a lot of areas in the state already have that buffer available to their – for their housing.

So basically, it would end up being like \$69 a tree that they would lose for profit – so like \$69 a tree for profit. And even if you have 20 trees, you are, like, \$1,400.

But just one medical appointment for a farm worker who has been exposed to these chemicals, who may be diagnosed with cancer – I'm sorry – the fiscal impact on him or her and on their family is much greater than the values of 20 pear trees.⁴⁰⁰

In one other – and this will be the last and then I'll finish – one other study published out of New York University involving nine authors from nine institutions throughout the United States, including Harvard, Yale, New York University, and so on, found that the costs, the medical costs and days lost of work due specifically to pesticide exposures – nothing else – pesticide exposures in the United States, cost \$42 billion a year. And if you work through the arithmetic, my fellow state employees on economics, it comes out to \$485 million among the farm workers and others in Oregon -- \$485 million a year, medical and lost work.⁴⁰¹

In contrast, many growers talked not only about the costs of the rule, but also about the cumulative costs of a variety of changes in state, federal and marketplace rules and guidelines.

...this is not a question or a rule that should be considered in isolation as much as considered collectively as an overall burden of compliance and regulation. This is one more rule to follow. This is one more law to track, one more action that we have to take that is not our core business, farming. This is one more place a law abiding farmer can be fined, cited, and shut down; and we just want to produce beautiful fruit for our communities and for our country.⁴⁰²

My business operates in a competitive global marketplace, and it has and will continue to experience significant increases in costs over a five-year period as a result of the following policy changes: Third-party food safety certification, first voluntary but made mandatory by my apple and pear packer in 2017; Federal Fruit Safety and Modernization Act just currently going into place over a series of years; the use

³⁹⁸Ibid., p. 3.

³⁹⁹Ibid., p. 3.

⁴⁰⁰Comments by Kathy Keese in the public hearing at 6 pm, December 5, 2017 in Medford, transcript pp. 28-29.

⁴⁰¹Comments by Ray Siedler, a microbiologist and former EPA research scientist, in the public hearing at 6 pm, December 5, 2017 in Medford, transcript pp. 45-46.

⁴⁰²Comments by David Wood, in the public hearing at 10 am, November 29, 2017 in Hood River, transcript p. 59.

of H-2A guest worker program; Oregon minimum wage increases beginning in 2017; Oregon mandatory paid sick time that began in 2016; Oregon mandatory employer retirement program that goes into effect in 2018 and 2019; Oregon OSHA new housing requirements that took effect – will go into effect January 1st of 2018; and the now Oregon OSHA WPA AEZ requirements that are proposed for 2018.

....

Oregon law and policy makers have to take at least some of the responsibility for these small family farms going out of business. Oregon OSHA – the 2018 changes to Oregon OSHA housing, in this room alone millions of dollars have been spent to bring that housing up to the 2018 standard.⁴⁰³

And my last comment is – and this is kind of a little joke. Sometimes I think that the people that make these decisions about these rules and regulations ought to register as foreign agents because our competitors in other parts of the world don't have to follow these rules and regulations that you come up with. We do, and it's quite costly for us. We are in a very competitive environment out there, a world wide competitive environment, and it's quite costly to us and puts us American growers at a disadvantage.⁴⁰⁴

This is a direct threat to the small family farm. If OSHA's goal is to have foreign country's supply the United States with food then they are well on their way to helping achieve that goal.⁴⁰⁵

I'm a fourth generation farmer. We've been farming for over a hundred years in this valley, and I'm very proud of that. And, quite honestly, I don't know if I'm going to encourage my kids to continue this because it's getting very deep in regulations. So on our farm, myself in particular, I don't have a PERS pension,; so making a living doing what I'm doing is – is my retirement. So I just wanted you guys to keep that in mind.⁴⁰⁶

As noted in a previous section, Oregon OSHA takes the effect of its rulemaking on the viability of the businesses it regulates seriously. And many of the provisions suggested at various points in the rulemaking process, as well as during the public comment periods, were rejected by Oregon OSHA as being untenable on that grounds, among others. However, Oregon OSHA does believe that the Fiscal Impact Statement – particularly after the changes resulting from the work of the FIAC – reflects a fair assessment of this particular rule's financial impacts, within the limitations of the available data.

Several individuals commented about the cost of removing trees, at least some of them viewing that as an unintended but likely outcome, even though they recognized that the absence of a no-spray buffer zone means that tree removal is not required by the rule.

And I know that you're not telling us that we have to cut down the trees, but when I consider what I consider to be the harm of making people leave their housing especially early in the morning or in the middle of the night, when I consider what I believe that will – the bad impacts, the negative impacts that will have on their lives, I probably would cut down my trees. And that would be the expense of this because it's not better for them to be moving in and out of their housing.⁴⁰⁷
And, again, the cost associated with this 150 foot clearance around our housing, that's an acre or so of ground. That can be quite costly to a lot of us orchardists if we have to clear that many trees from all of our labor housing.⁴⁰⁸

You know, these are existing structures that were built before these regulations were proposed. And I think that, you know, it makes it really untenable for people. You're going to either have to abandon these structures or abandon some orchards and – or, you know, a portion of that. And if you're not taking that into account in your economic analysis, that's you know, not accurate at all.⁴⁰⁹

⁴⁰³Comments by Jennifer Euwer, in the public hearing at 10 am, November 29, 2017 in Hood River, transcript p. 23.

⁴⁰⁴Comments by Don Brocklesby in the public hearing at 10 am, November 29, 2017, in Hood River, transcript pp. 13-14.

⁴⁰⁵Email from John Stehlik, December 15, 2017. See similar comments in a letter from Dayle Harris, January 20, 2018.

⁴⁰⁶Letter from Adam McCarthy, March 14, 2018.

⁴⁰⁷Comments by Jennifer Euwer in the public hearing at 10 am, November 29, 2017, in Hood River, transcript p. 22.

⁴⁰⁸Comments by Don Brocklesby in the public hearing at 10 am, November 29, 2017, in Hood River, transcript p. 13.

⁴⁰⁹Comments by Gary Wade in the public hearing at 10 am, November 29, 2017, in Hood River, transcript p. 52.

Some comments focused specifically on the economic analysis represented by the Fiscal Impact Statement, both in its original and revised form. This perspective was consistently shared by those commenting on behalf of the association that had objected to the Fiscal Impact Statement:

Also, our estimate of the cost to growers to comply were not taken seriously nor were the complexities of compliance considered. Both the Statement of Need and Fiscal Impact and Housing Cost Impact Statement completed by Oregon OSHA are deficient and underestimate or fail to include the fiscal impacts at all. Please see the comments submitted into the record by the Columbia Gorge Fruit Growers Association.⁴¹⁰

....

And these impacts are underestimated mostly by the fact that they failed to realize the number of notifications that would be required based on the fact that in many cases we intend to spray but we are not allowed to spray by drift conditions, wind conditions, rain conditions, freezing conditions which require us to renotify and do it at another time.⁴¹¹

Even after the Fiscal Impact Statement was revised to reflect the work of the FIAC, representatives of the association criticized the statement as insufficient. The association's legal representative provided a critique of the agency's compliance with the requirements of the Administrative Procedures Act, arguing, "The Statement of Need and Fiscal Impact analysis done by OR-OSHA inadequately addresses the cost of compliance borne by CGFG members."⁴¹²

The letter elaborates on the association's concern, first in relation to the requirement in the rule related to a 100-foot AEZ:

For example, Oregon OSHA estimates compliance costs associated with a 100 foot AEZ to include application costs of only \$24.07 to \$96.28 and mileage costs of approximately \$16.50. However, CGFG members provided details outlining a variety of costs that showed an average loss in annual production of \$1,707,914 per 100 acres.⁴¹³

Setting aside the fact that the Fiscal Impact Statement before the commenter is the statement as revised and approved by the FIAC, the letter goes even farther than the association's November 3, 2017 letter that referenced the same 2016 estimate by claiming that it would apply to the 100-foot AEZ. However, the 100-foot AEZ expressly allows for use of the same "'shelter in place' alternative" that the commenter endorses later in his letter. It is not clear why the 100-foot AEZ in the rule would involve *any* loss of trees, even if one were to accept the flawed CGFG analysis.

The letter also indicates, "There is nothing in the explanation of the proposed rules to indicate that this information was even considered by Oregon OSHA."⁴¹⁴ Oregon OSHA specifically explained to the FIAC, of which a representative of the same association was a member, why the information was not included (even in relation to the evacuation requirement). The explanation was provided both orally in and in memorandum form, and it is reflected in the January 4 minutes of the FIAC. Both the January 4 and the January 29 minutes of the FIAC indicate clearly that the issue was discussed and given consideration, although no motion to include the language was voted upon because no such motion was made by any member of the committee.

The same letter includes a similar discussion of the material from the September 7 letter, which "provided information that the average cost per grower of this 150 AEZ zone to be \$125,000 each year per member up to \$55 million annually for its total membership. Again, OR-OSHA did not include these identified costs in its statement of Need and Fiscal Impact and it appears that here too OR-OSHA did not even consider these costs when it promulgated these rules."⁴¹⁵ This is essentially the same as the second

⁴¹⁰Given the content and timing, this comment clearly references the letter from Mike Doke, Columbia Gorge Fruit Growers, objecting to the Fiscal Impact Statement and dated November 3, 2017. It was in response to this letter that Oregon OSHA appointed a Fiscal Impact Advisory Committee.

⁴¹¹Comments by Michael McCarthy in the public hearing at 10 am, November 29, 2017 in Hood River, transcript p. 10.

⁴¹²Letter from Timothy J. Bernasek, Dunn Carney Allen Higgins & Tongue LLP, on behalf of the Columbia Gorge Fruit Growers, March 13, 2018, p. 2.

⁴¹³Ibid., p. 2.

⁴¹⁴Ibid., p. 2.

⁴¹⁵Ibid., p. 2.

objection made by the association in its November 3 letter, which resulted in the appointment of the FIAC, which in turn ultimately resulted in changes to the Fiscal Impact Statement. It is true that neither Oregon OSHA nor the FIAC found it necessary to adjust the Fiscal Impact Statement to include these estimates based on a non-existent requirement to provide alternate lodging. But it is not because the information was not before them.

The March 13 letter goes on to acknowledge the appointment of the FIAC and to describe its deliberations as failing to satisfy the committee’s mandate.⁴¹⁶ Oregon OSHA disagrees. Interestingly, in discussing the January 29 meeting, the letter writer appears to confuse the work of the FIAC with Oregon OSHA: “Once again OR-OSHA failed to address the specific costs identified by CFCG in an economically quantifiable manner. Instead, OR-OSHA simply concluded that any additional cost to ‘some growers who have processing facilities, or other buildings’ would range from \$0- \$1,000.”⁴¹⁷ As the minutes referenced by the letter themselves clearly indicate, the referenced language was discussed and recommended by the FIAC. It is true that Oregon OSHA subsequently included the statement recommended by the FIAC in the amended Fiscal Impact Statement, as the division had indicated it would. But the action taken on January 29 was the action of the FIAC. Oregon OSHA not only did not take such an action; the division had no vote and no ability to make a motion. CGFG, on the other hand, had both.

The letter writer reaches the conclusion that “it is clear Oregon OSHA has failed to meet its obligation regarding the proposed rules” in relation to cost of compliance for small businesses.⁴¹⁸ Again, Oregon OSHA disagrees. The division completed a legally sufficient Fiscal Impact Statement as part of the original rule filing. In spite of having done so, Oregon OSHA chose to appoint a FIAC and to adopt any recommendations it made to change the Fiscal Impact Statement (in spite of the fact that the APA requires only that agency consider the advice and include the FIAC’s work product in the rulemaking file). The final Fiscal Impact Statement is unquestionably the product of exactly the sort of consultation contemplated by the APA, and Oregon OSHA has more than complied with its requirements to produce a reasonable Fiscal Impact Statement as part of the proposed rulemaking.

The final observation the letter makes with regard to the fiscal impact includes the suggestion that Oregon OSHA did not “appropriately follow the process for appointing and conducting a fiscal impact advisory committee.” Given that the letter contains no analysis in support or explanation of this contention, Oregon OSHA can respond only by saying that the division disagrees and considers the process used to be fully compliant with the applicable requirements of the APA.⁴¹⁹

In addition to the letter from the association’s legal counsel, the board chair provided a somewhat more detailed critique of the amended Fiscal Impact Statement in a letter submitted to the record a day later.⁴²⁰

Several of the criticisms in that letter relate to what he sees as omissions from the document.

*A specific section of this cost analysis document should consider the potential costs on employees and their families.*⁴²¹

*Under section 2-b compliance and training costs were estimated but no attempt was made to summarize or aggregate these costs to get an actual measure of how they might impact an individual business or the larger effect on Oregon’s agricultural industry. I would consider this omission a sizeable error when completing a thorough Fiscal Impact Statement and should be corrected.*⁴²²

Oregon OSHA believes that the statement – particularly with the changes made as a result of the work of the FIAC – provides the required information in the most readily usable format for the reader. In

⁴¹⁶Ibid., pp. 2-3.

⁴¹⁷Ibid., p. 3.

⁴¹⁸Ibid., pp. 2-3.

⁴¹⁹Ibid., p. 3.

⁴²⁰Letter from Adam McCarthy, Columbia Gorge Fruit Growers, March 14, 2018.

⁴²¹Ibid., p. 1.

⁴²²Ibid., p. 1.

addition, certain data that might have allowed a more comprehensive estimate of costs – such as data regarding the frequency of the application of pesticides requiring the use of a respirator – was not available to either the agency or the FIAC as a whole.

In general, Oregon OSHA did not find the writer’s specific criticisms of the amended Fiscal Impact Statement to be sufficiently well-founded to bring the document as a whole into question. For example, the writer questions the general passage adopted at the FIAC’s recommendation about the potential for positive benefits due to increased employee morale:

*This is a heavily biased statement to appear in a document of this type without any data to support such a statement. It should be removed, or the counter argument should be included. It is just as likely productivity could decline due to disruption of workers’ routines when required to evacuate, or due to an increased level of fear of pesticides that isn’t supported scientifically.*⁴²³

Given the balanced make-up of the committee, the fact that the particular recommendation was adopted by the FIAC without dissent, and that the complete set of amendments to the Fiscal Impact Statement were adopted with only one dissenting vote, Oregon OSHA disagrees with the conclusion that the statement can be considered “heavily biased.” It may be true that there would be negative impacts as suggested by the letter writer. However, such a motion was not presented to or adopted by the FIAC. In any case, the presence or absence of a particular statement of entirely indeterminate impacts hardly represents a reason to reject the Fiscal Impact Statement – even if the language in question were not the specific product of an advisory group.

The writer uses the Fiscal Impact Statement to provide an estimate of the potential aggregate costs of the rule within Hood River and Wasco counties:

*Based on the numbers above which were taken directly from the Statement of Need and Fiscal Impact it’s possible the proposed rules on the AEZ could cost Hood River and Wasco County growers over **\$1M in the first five years!** This is not a small or insignificant cost that can be overlooked in this process.*⁴²⁴

It is not precisely clear where the \$1 million figure comes from, but it appears to be within the range suggested by the Fiscal Impact Statement. It also may be worth “deconstructing” that figure. A figure of \$1 million in five years would represent, obviously, an average of \$200,000 per year (presumably somewhat more in the first year, given the modest construction costs involved). As of the time the data used in the Fiscal Impact Statement was pulled from Oregon OSHA records, Wasco and Hood River counties included 202 registered camps, which would translate to \$990 per camp.

When the aggregate figure of \$1 million is described as just under \$1,000 per camp per year, it is less daunting. Oregon OSHA agrees that it is “not a small or insignificant cost that can be overlooked,”⁴²⁵ but it is also not prohibitive. It would not be prohibitive even if the letter writer were correct that the numbers reflected in the Fiscal Impact Statement “could be under representing the costs to Oregon small businesses by more than 50%”⁴²⁶ (a conclusion Oregon OSHA does not share). These are costs that can reasonably be balanced against the purposes of the rule itself as part of the decision-making process.

⁴²³Ibid., p. 3.

⁴²⁴Ibid., p. 3.

⁴²⁵Ibid., p. 3.

⁴²⁶Ibid., p. 4.

XII. The Rule Adopted is Credible and Superior to the Status Quo

The evidence at this time is sufficient to justify the application of the precautionary principle to protect people from the deleterious effects of living near environmental hazards. Even in the absence of complete scientific proof, enough evidence of potential harm being done exists to justify taking steps to rectify the problem and to protect the public from potentially harmful exposures when all available evidence points to plausible risk.... For example, prohibiting the siting of schools near highways and being cognizant of pesticide drift when planning residential locations or other sensitive land uses, fall into the category of commonsense guidelines and constitute approaches that would be difficult to argue against.⁴²⁷

....social, economic, and political factors interact in a way that ensures that farmworkers continue to lack participation in decision-making in pesticide regulation, that disproportionate impacts are perpetuated, and that changing the status quo is difficult. Farmworkers have had little success in addressing harmful occupational pesticide exposure using methods that some environmental justice communities have employed, i.e., lobbying for effective regulation, engaging in public demonstration, or pursuing traditional litigation. In order to find appropriately tailored remedies for this particular environmental injustice, it is important to recognize that disproportionate pesticide exposure has less to do with a particular framework of regulation and more to do with underlying social and economic forces.⁴²⁸

The Decision to Be Made

Ultimately, Oregon OSHA must make a decision on whether to adopt the rule as proposed, to adopt a modified version of the rule, or to withdraw the proposed rule. These same options exist in relation to each specific provision of the rule as well. One commenter expressed frustration over the Oregon OSHA Administrator's statement at the Hood River public hearing that he would make a decision "after considering all testimony." The commenter suggested that such decision-making indicates that the administrator "is accountable to no one."⁴²⁹ Oregon OSHA disagrees.

While it is true that the rule is an administrative rule under the Oregon Safe Employment Act (OSEA) and that the authority to adopt such rules is vested in Oregon OSHA in the person of the administrator, Oregon OSHA does not consider that authority to reflect the absence of accountability. Rather, the agency is accountable to use the authority granted it under the OSEA prudently and to balance the various interests reflected in the rulemaking record in an effort to best achieve the purposes of the Act. And, as previously noted, Oregon OSHA accepts an obligation not found in the law itself to explain the decisions it has made as part of the rulemaking.

Within that context, Oregon OSHA has made its decision on this rule and the individual provisions of it by considering the record and determining whether each provision is warranted by the circumstances reflected in the record, whether it is designed to appropriately serve that purpose, and whether the workers and employers of Oregon will be better served by the rule provision or by its absence.

In evaluating the record, however, Oregon OSHA faces a large number of comments that are, for various reasons, outside the scope of this rulemaking. Oregon OSHA acknowledges those comments and has, in many cases, addressed them to a certain degree. However, the agency's determination in the context of *this* rulemaking must be whether the public interest is best served if the proposal and each of its individual provisions are adopted, improved through minor adjustments, or discarded.

For this reason, the agency does not intend to resolve questions that cannot be addressed within the context of this rulemaking. If a particular proposal is outside Oregon OSHA's rulemaking authority *or* outside the ability of the agency to address it as part of this rulemaking, Oregon OSHA will not fully address it as part of this record.

Oregon OSHA is conscious of the wide range of opinions expressed in relation to this rule. As noted previously, in some cases the difference of opinion is the result of misinformation or misunderstanding of

⁴²⁷Jean D. Brender, Juliana A. Maantay, and Jayajit Chakraborty, "Residential Proximity to Environmental Hazards and Adverse Health Outcomes," *American Journal of Public Health*, Vol 101, Number S1, September 1, 2001, p. S50..

⁴²⁸Joan D. Flocks, "The Environmental and Social Injustice of Farmworker Pesticide Exposure," *Georgetown Journal on Poverty Law Policy*, Vol XIX, Number 2, Spring 2012, p. 256.

⁴²⁹E-mail from Gary Tamura, Hood River, December 19, 2017.

what the rule would do or how it relates to other requirements. However, in other cases the difference of opinion is reflected even in the comments of those with a more thorough understanding of the underlying issues. A number of the comments directed at Oregon OSHA and sometimes at individual Oregon OSHA representatives were harsh, whether generally in opposition to or generally in support of stronger regulation. The nature of the public comments received – both the large number of written comments and the nature of the individual hearings – frequently meant that many of those who offered their opinion did not hear many comments from those who disagreed with them. One commenter made that very observation at the hearing in Hood River:

I appreciate that Oregon OSHA is trying to find a compromise. I wish many of the growers here today could have heard the workers who came out in full force in Woodburn at the evening hearing. It's almost like we're talking about two different worlds here.

....

We all – the advocate side of things, we think it should be a much bigger AEZ, but we understand in the spirit of compromise what Oregon OSHA is trying to do here.⁴³⁰

Criticisms of the Process of Public Participation

Those “two different worlds” are also reflected in comments about the public processes used to develop the proposed rule and to accept public comments on it:

Comments about the Rule Development Process

Several commenters criticized the rule development process as part of the record. For example, one commenter noted (correctly) that the rule “was not a consensus from the stakeholder group that came up with these rules.” She then went on to discuss her concerns about the work of the stakeholder group in greater detail.

And we were not listened to. And we brought up many of the issues you brought up but we weren't allowed to talk about it, we weren't allowed to talk about the condition of housing on the stakeholder committee.

When we got into science, when some OSHA employees tried to bring in labels for us to study and look at the science, that was shut off.

We were not allowed to talk about what other states are doing. Arizona has a quarter-mile buffer zone, as has been mentioned. If Arizona can do it, Oregon can do it. A quarter mile for schools and vulnerable people, like farm workers are vulnerable.

.....

I also want to point out that on the stakeholder committee, terminology changed, and we need to know that. At first, we talked about a compliance alternative. Now we are not allowed to say that anymore. We also were told people were sheltering in place. That term has been taken away because we don't like that term. But that's still what's being required.

There was – at first we thought it was a buffer zone.... And we were – we all thought it was going to be a buffer, and then we were told it was not a buffer, it was a shelter in place with an application exclusion zone. And I cried at the stakeholder meeting. I was so shocked that our agency would do that.⁴³¹

In contrast, several growers who participated in the advisory group meetings as the rule was developed also criticized the rule development process – in at least some cases, because they believed Oregon OSHA exerted too little control on the discussion and was too receptive to issues raised by individuals such as the previous commenter:

To be honest, after attending one of the work sessions I was appalled by the lack of leadership that was shown to keep things on track and on topic. I heard mudslinging at farmers, I heard a conversation that went far beyond what we were there to discuss at that time. I, personally, sitting there as one of the very few producers in the room was embarrassed that I had to sit through such a ridiculous soap box anti-

⁴³⁰Comments by Kate Suisman, Northwest Workers Justice Project, in the public hearing at 10 am, November 29, 2017 in Hood River, transcript pp. 53 & 55.

⁴³¹Comments by Lisa Arkin, Beyond Toxics, in the public hearing at 6 pm, December 5, 2017, in Medford, transcript pp. 61-64.

farmer session. It was clear that my voice, even while sitting in the room was not going to be heard by OSHA, by the labor lobbyists, or by anyone else beyond who I already knew was on my side.

So now we have a document that is so far in favor of all the soap box speeches and rants that we all had to sit through it seems like my thought of taking the high road, doing what I thought was best for our industry and standing up for that, has landed on completely deaf ears.

....

Activism has taken over this entire process and those who employ and currently strongly protect our employees and workers were silenced.⁴³²

Oregon OSHA recognizes that the various stakeholder meetings were often difficult and contentious, and it is certainly possible to recognize opportunities to make them run more smoothly. However, it will always be challenging to strike an appropriate balance between moving forward and providing participants the freedom to explore the issues that are important to them. Oregon OSHA does not intend to respond to the various complaints in detail, beyond noting that at least some representatives of both perspectives felt that the other side was dominating the conversations and that their own perspective was not being given sufficient consideration.

Criticisms of the Public Comment Process and the Development of the Record

Similarly, individuals with varying perspectives criticized the public comment process.

Some commenters expressed concern about the presence or absence of particular Oregon OSHA staff at one or more of the hearings.⁴³³ Two particular Oregon OSHA staff attended every one of the hearings. In addition at least one senior Oregon OSHA manager (the administrator, deputy administrator, or policy manager) was present at each of the hearings. In any case, the record was evaluated in its totality, not based on attendance at hearings and the individual recollections of Oregon OSHA staff, but based on the written transcript of each hearing *and* the written comments received throughout the public comment process. Regardless of who was or was not at a particular hearing, Oregon OSHA is confident that the entire record and all comments and perspectives were considered.

Although most commenters criticized the rule as providing either inadequate protection or an example of regulatory overreach, a number of other comments in the record expressed at least qualified support for the rule as proposed:

I guess the only thing I would say is whatever we can do to reduce the risk to workers, as you are considering doing, is a good thing, and even though this may not be adequate protection, at least we are not going in the opposite direction, which apparently, is what some people would like to do.⁴³⁴

Based on my experience serving farmworkers, I come before you confidently that based on conversations with workers, these proposed regulations are a step in the right direction to protect workers and their family members from pesticide exposure. I say a step in the right direction because many issues are still unanswered and unaddressed in these proposed rules to help improve working and living conditions of farmworkers and their family members.⁴³⁵

We definitely appreciate Oregon OSHA's efforts to create this clear standard and safe standards around pesticide applications. We do, however, have some concerns that several of the standards in the proposed

⁴³²Letter from Brenda Frketich, Kirsch Family Farms, January 23, 2018.

⁴³³For example, Lisa Arkin of Beyond Toxics commented in the public hearing in Medford at 6 pm, December 5, 2017, transcript pp. 89-90: "I'll comment that in Woodburn, where farm workers came to speak, and here in Medford, where farm workers came to speak, Michael Wood didn't come, and he hasn't heard these voices. Michael Wood is the administrator of OSHA.... And I think that should be acknowledged that he hasn't heard these beautiful voices, neither in Woodburn nor in Medford. Was he in Hood River?" Although Oregon OSHA does not share the commenter's perspective regarding the need for personal attendance by all those involved in evaluating the rulemaking record, it notes for the record that Mr. Wood attended two of the five hearings, one in Woodburn at 11 am, November 16, 2017, and one in Hood River at 10 am, November 29, 2017.

⁴³⁴Comments by Gary Lisman in the public hearing at 11:15 am, December 5, 2017, in Medford, transcript pp. 28-29.

⁴³⁵Comments by Valentin Sanchez, Oregon Law Center, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript p. 15.

rule will not adequately protect the safety of farmworkers and their families, who really are forced to endure long – prolonged exposures to dangerous pesticides.

...

So again, in closing, I do just want to say thank you for these proposed rules. I do think they are very good steps in the right direction in creating some clear standards around protecting farmworkers.⁴³⁶

I'm here today to express my support for the adoption of the AEZ, the Application Exclusion Zone, for the Worker Protection Standard Rules because this is a positive step in the right direction between balancing the health of farmworkers and their families, farm owners' operational needs, and ultimately the impact on all of us consumers to enjoy the pears, cherries, and berries that we as Oregonians are so proud of.... Our clients look forward to Oregon OSHA fulfilling its mission to ensure safe and healthy working conditions for every working man and woman in Oregon.....⁴³⁷

Our farmworker clients understand that Oregon agricultural employers face a challenge in staying competitive in the world market. We have worked diligently over the past two years on behalf of our clients to come to an acceptable solution on the AEZ issues. There is little doubt that the solution of shelter in housing for pesticides that do not require a respirator and evacuation of only 15 minutes for those pesticides that require a respirator are at best only a small step in the right direction. This compromise allows the industry to keep the trees in place despite the cries to the contrary and requires minimal investment of resources to comply with these newly proposed provisions.⁴³⁸

In evaluating the rule, Oregon OSHA is aware that any regulatory intervention carries with it a burden for those who must implement it. Determining how best to balance that burden against the benefits that Oregon OSHA believes the rule will accrue is the challenge whenever a regulation is developed, in any industry, and in relation to any issue.

The division has considered the distinct approaches recommended by those who commented. For example, one grower offered the following suggestion:

First of all, hazards exist in all industries. We are not immune to that. And I believe OSHA and OED⁴³⁹ should consider an acceptable risk standard. Firefighters will experience burns in their work. Doctors are exposed to disease. Police will risk life and limb. Construction workers will risk falls and other hazards on the job. Each of these industries are not expected to immunize every single one of their workers from each of the hazards in the industry. And each of these industries are aware of those hazards when they go into it.⁴⁴⁰

A comment from a different perspective suggests that one's career may not be as freely chosen as the prior comment would assume, however:

If they had more choices, more opportunities, perhaps this would not be their first choice, second choice, or even last choice. But the facts remain that we as citizens of this country, property owners, consumers have a responsibility to protect workers. That's what we have set OSHA up to do.⁴⁴¹

Oregon OSHA recognizes an element of truth in both comments. As noted previously, some acceptance of risk is part of existence. But the second comment better reflects the perspective from which Oregon OSHA must operate. Careers are often not freely chosen, and even when they are the level of risk that might seem inherent in the job is actually one that the employer must manage. That reality is true of firefighters, and of police, and construction workers. Those listed industries – and employers in all

⁴³⁶Comments by Kate Newhall, Family Forward, in the public hearing at 11 am, November 16, 2017, in Woodburn, transcript pp. 23-24 and 29.

⁴³⁷Comments by Isela Ramos Gonzalez, Oregon Law Center, in the public hearing at 6 pm, November 15, 2017 in Woodburn, transcript p. 45.

⁴³⁸Letter from Nargess Shadbeh, Oregon Law Center, March 15, 2018, p. 6.

⁴³⁹In context, Oregon OSHA believes that the abbreviation rendered in the transcript as "OED" most likely reference to the Oregon Department of Agriculture.

⁴⁴⁰Comments by David Wood in the public hearing at 10 am, November 29, 2017 in Hood River, transcript p. 57.

⁴⁴¹Comments by Nannette Carter-Jafri in the public hearing at 10 am, November 29, 2017, in Hood River, transcript p. 63.

industries – are, in fact, expected to protect their employees from “the hazards in the industry,” at least to the degree that they can feasibly do so.

Whatever else this rule may represent, it has never represented an effort “to immunize every single one” of the workers affected by it from all the risks of pesticides. At best, it provides an added measure of protection from a very real hazard to the health of workers, and of their families. Considering the record in its totality, and having evaluated the arguments made by all the commenters in the extensive rule-making record, Oregon OSHA is ultimately persuaded that the rule is both reasonable and practical.

In relation to those who believe adoption of the rule falls so far short that doing so “will be a clear indication to Oregon voters whether you are an industry-captured corrupt agency, or one that truly stands for the health and welfare of all Oregonians,”⁴⁴² and for those who said, “What OSHA is considering is unthinkable,”⁴⁴³ Oregon OSHA is convinced of three things:

- The rule is superior the federal rule adopted by the EPA, *both* in providing a greater measure of protection and in providing greater flexibility to employers (and to workers) in some circumstances.
- The rule will provide greater and more meaningful protections than would the rule Oregon OSHA proposed in 2016.
- The rule will provide greater and more meaningful protection than are being provided in the absence of the rule.

Put simply, Oregon OSHA believes that the rule is, indeed, a step forward. Therefore, Oregon OSHA has adopted the rule, with the modifications discussed previously.

⁴⁴²E-mail from David Tvedt, January 26, 2018.

⁴⁴³Comments by Anna Livia Palazzo-Angulo, Salem/Keizer Coalition for Equity, read by Jan Montes in the public hearing at 6 pm, November 15, 2017, in Woodburn, transcript pp. 32-33.