PROPOSED RULE MAKING

CR-102 (December 2017)
(Implements RCW 34.05.320)
Do **NOT** use for expedited rule making

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STATE OF WASHINGTON
FILED

DATE: April 01, 2020
TIME: 8:49 AM

WSR 20-08-130

Agency: Department of Agriculture

☒ **Original Notice**
☐ **Supplemental Notice to WSR _____**
☐ **Continuance of WSR _____**

☒ **Preproposal Statement of Inquiry was filed as WSR** 19-21-173 **; or**
☐ **Expedited Rule Making--Proposed notice was filed as WSR _____; or**
☐ **Proposal is exempt under RCW 34.05.310(4) or 34.05.330(1); or**
☐ **Proposal is exempt under RCW _____.**

Title of rule and other identifying information: (describe subject) Chapter 16-470 WAC, Quarantine--Agricultural Pests. As a result of a petition from the Washington State Tree Fruit Association, the department is proposing to amend the apple maggot quarantine by:

1. Adding soil and growing medium in pots and on root balls of apple maggot host plants originating from the quarantine area, to the list of regulated commodities;
2. Adding soil and growing medium in pots and on root balls of nonhost plants originating from the quarantine area that were grown within the drip line of host plants that have produced fruit, to the list of regulated commodities;
3. Specifying the criteria for how these plants may enter the pest free area if risk is mitigated;
4. Specifying the documentation that must accompany these plants when shipping to or through a pest free area and when receiving these plants from a quarantine area; and,
5. Specifying the fees associated with inspection and certification services.

Hearing location(s):

Date:	**Time:**	**Location:** (be specific)	**Comment:**
May 28, 2020	1:00 PM	**Webex Conference Line** **Join by link:** https://watech.webex.com/watech/j.php?MTID=m4468676e1085b17f399143da67419d95 Meeting password: 12083396 **Join by phone:** +1-415-655-0001 US Toll +1-206-207-1700 United States Toll (Seattle) Attendee access code: 120 833 96	Due to the mandated social distancing requirements in place during the current COVID-19 outbreak, the public hearings for this rule amendment will be held solely over video and teleconference.
June 3, 2020	10:00 AM	**Webex Conference Line** **Join by link:** https://watech.webex.com/watech/j.php?MTID=m26cc4d97ed231b119558e95a987496d5 Meeting password: 12083396 **Join by phone:** +1-415-655-0001 US Toll +1-206-207-1700 United States Toll (Seattle)	

		Attendee access code: 120 833 96	

Date of intended adoption: June 10, 2020 (Note: This is **NOT** the **effective** date)

Submit written comments to:
Name: Gloriann Robinson, Agency Rules Coordinator
Address: PO Box 42560 Olympia, WA 98504-2560
Email: wsdarulescomments@agr.wa.gov
Fax: (360) 902-2092
Other:
By (date) June 3, 2020

Assistance for persons with disabilities:
Contact Deanna Painter
Phone: (360) 902-2061
Fax:
TTY: 800-833-6388 or 711
Email: dpainter@agr.wa.gov
Other:
By (date) May 21, 2020

Purpose of the proposal and its anticipated effects, including any changes in existing rules: Chapter 16-470 WAC establishes the parameters of the apple maggot quarantine and regulated commodities. The Washington State Department of Agriculture (WSDA) is proposing to include soil and growing medium in pots and on root balls of apple maggot host plants (and nonhost plants that were grown within the drip line of host plants that have produced fruit) originating from the quarantine area, to the list of regulated commodities under the apple maggot quarantine rule. The growing media of apple maggot host plants that have previously fruited or have fruit present may be infested with apple maggot. Host plants shipped from the quarantine area that have fruited, or nonhost plants that have been exposed to fruited host plants, could result in apple maggot pupating in the growing media. If these plants move to pest free areas within the state, there is a risk of apple maggot becoming introduced into the pest free area.

Reasons supporting proposal: Apple maggot is a pest that threatens commercial and homegrown fruit, especially apples. Apple maggot is native to the northeastern United States where their primary host was hawthorn fruit until European settlers introduced apples to the region. Now apple maggot has spread throughout much of North America, threatening fruit crops from coast to coast. While several counties in Washington (primarily in western Washington) have been quarantined, not all counties have apple maggot. Most notably, most of central Washington's prime fruit growing region remains pest free.

Apple maggot hosts include apples, crabapples, native and ornamental hawthorns, cherries, prunes, plums, pears, and quinces. Apple maggot adults look like small house flies with striped wings, though they are really fruit flies. In Washington, they fly and lay their eggs primarily in July and August. Apple maggot females puncture the skin of host fruit and lay their eggs under the surface. In only three to seven days, apple maggot eggs hatch and larvae begin to emerge. The larvae eat and tunnel their way through the fruit, leaving brown trails behind. After the larvae mature, they exit the fruit and drop to the ground. They overwinter as pupae in the soil, emerging the next summer as adults, starting the cycle over again. Apple maggot can survive in the soil as pupae for at least two years, if not longer.

There is indication that growing media under fruited host plants has the potential to be contaminated with apple maggot pupae. These pupae could overwinter in the growing media and be transported into pest free areas of the state through the nursery trade, where they could later emerge as adult flies.

Once apple maggot is established, treatment is costly. Apples are the top agricultural commodity in Washington. This makes the threat of apple maggot significant, as fruit from the pest free areas has greater access to international markets.
Based on these factors, it is critical to address this potential pathway of spread for apple maggot into the pest free areas of the state. The proposed rule amendment is aimed at preventing the spread of apple maggot from quarantined areas into pest free areas through the nursery trade.

Statutory authority for adoption: RCW 17.24.011, 17.24.041, 17.24.051

Statute being implemented: Chapter 17.24 RCW

Is rule necessary because of a:

Federal Law?	☐ Yes	☒ No
Federal Court Decision?	☐ Yes	☒ No
State Court Decision?	☐ Yes	☒ No

If yes, CITATION:

Agency comments or recommendations, if any, as to statutory language, implementation, enforcement, and fiscal matters: None

Name of proponent: (person or organization) Washington State Tree Fruit Association

☒ Private
☐ Public
☐ Governmental

Name of agency personnel responsible for:

	Name	Office Location	Phone
Drafting:	Cindy Cooper	1111 Washington Street Olympia, WA 98504	(360) 902-2062
Implementation:	Cindy Cooper	1111 Washington Street Olympia, WA 98504	(360) 902-2062
Enforcement:	Cindy Cooper	1111 Washington Street Olympia, WA 98504	(360) 902-2062

Is a school district fiscal impact statement required under RCW 28A.305.135? ☐ Yes ☒ No

If yes, insert statement here:

The public may obtain a copy of the school district fiscal impact statement by contacting:
Name:
Address:
Phone:
Fax:
TTY:
Email:
Other:

Is a cost-benefit analysis required under RCW 34.05.328?

☐ Yes: A preliminary cost-benefit analysis may be obtained by contacting:
Name:
Address:
Phone:
Fax:
TTY:
Email:
Other:

☒ No: Please explain: The Washington State Dept. of Agriculture is not a listed agency under RCW 34.05.328(5)(a)(i)

Regulatory Fairness Act Cost Considerations for a Small Business Economic Impact Statement:

This rule proposal, or portions of the proposal, **may be exempt** from requirements of the Regulatory Fairness Act (see chapter 19.85 RCW). Please check the box for any applicable exemption(s):

☐ This rule proposal, or portions of the proposal, is exempt under RCW 19.85.061 because this rule making is being adopted solely to conform and/or comply with federal statute or regulations. Please cite the specific federal statute or regulation this rule is being adopted to conform or comply with, and describe the consequences to the state if the rule is not adopted.
Citation and description:

☐ This rule proposal, or portions of the proposal, is exempt because the agency has completed the pilot rule process defined by RCW 34.05.313 before filing the notice of this proposed rule.

☐ This rule proposal, or portions of the proposal, is exempt under the provisions of RCW 15.65.570(2) because it was adopted by a referendum.

☐ This rule proposal, or portions of the proposal, is exempt under RCW 19.85.025(3). Check all that apply:

☐ RCW 34.05.310 (4)(b) (Internal government operations)	☐ RCW 34.05.310 (4)(e) (Dictated by statute)
☐ RCW 34.05.310 (4)(c) (Incorporation by reference)	☐ RCW 34.05.310 (4)(f) (Set or adjust fees)
☐ RCW 34.05.310 (4)(d) (Correct or clarify language)	☐ RCW 34.05.310 (4)(g) ((i) Relating to agency hearings; or (ii) process requirements for applying to an agency for a license or permit)

☐ This rule proposal, or portions of the proposal, is exempt under RCW _____.
Explanation of exemptions, if necessary:

COMPLETE THIS SECTION ONLY IF NO EXEMPTION APPLIES

If the proposed rule is **not exempt**, does it impose more-than-minor costs (as defined by RCW 19.85.020(2)) on businesses?

☐ No Briefly summarize the agency's analysis showing how costs were calculated. _____

☒ Yes Calculations show the rule proposal likely imposes more-than-minor cost to businesses, and a small business economic impact statement is required. Insert statement here:

Small Business Economic Impact Statement

Chapter 16-470 WAC
Quarantine – Agricultural Pests
Apple Maggot Quarantine
March 4, 2020

WSDA contracted with Washington State University's (WSU) IMPACT Center for the research, data collection, and analysis that was required for this SBEIS. Portions of the IMPACT Center's report titled, "Technical Memorandum of: Chapter 16-470 WAC Quarantine – Agricultural Pests" were incorporated into this SBEIS.

SECTION 1:
Describe the proposed rule, including: a brief history of the issue; an explanation of why the proposed rule is needed; and a brief description of the probable compliance requirements and the kinds of professional services that a small business is likely to need in order to comply with the proposed rule.

History:

Chapter 17.24 RCW mandates "a strong system" to protect the forest, agricultural, horticultural, floricultural, and apiary industries of the state from the impact of insect pests, plant pathogens, noxious weeds, and bee pests and infestations. The Washington State Department of Agriculture (WSDA) is charged with implementing that mandate by excluding plant and bee pests and diseases from the pest free areas of the state through regulation of agricultural commodity movement and quarantine of infested areas. RCW 17.24.041 authorizes the director of WSDA to adopt quarantine areas by rule and to prohibit the movement of all regulated commodities from quarantined areas.

Chapter 16-470 WAC establishes multiple quarantines, including one for apple maggot. The rule specifies the parameters of the quarantine including the regulated commodities. WSDA periodically updates the parameters of the quarantine, based on the most updated information available regarding the spread of apple maggot, to ensure a strong system is in place to protect the apple industry.

In response to a petition for rule making from the Washington State Tree Fruit Association, WSDA is proposing to expand the apple maggot quarantine to add soil and growing medium on apple maggot host plants from a quarantine area to the list of regulated commodities. The proposed amendment to the quarantine also adds the

soil and growing medium of non-host plants that fall within the drip line[1] of host plants that have produced fruit to the list.

Apple maggot threatens commercial and homegrown fruit, especially apples. The pest is native to the northeastern states where apple maggot's primary host was hawthorn fruit until European settlers introduced apples to the region. Now apple maggot has spread throughout much of North America, threatening fruit crops from coast to coast. While several counties in Washington (primarily in western Washington) have been quarantined, not all counties in Washington have apple maggot. Most notably, most of central Washington's prime fruit growing region remains pest free.

Apple maggot hosts include apples, crabapples, native and ornamental hawthorns, cherries, prunes, plums, pears, and quinces. Apple maggot adults look like small house flies with striped wings, though they are really fruit flies. In Washington State, they fly and lay their eggs primarily in July and August. An apple maggot female makes a tiny puncture in the apple skin and lays eggs just under the skin's surface. While the initial damage is easily overlooked, the damage eventually leads to dimpling of the fruit surface. In just three to seven days, apple maggot eggs hatch and tiny apple maggot larvae emerge. The legless maggots are about one-sixteenth inch long and a creamy white color but grow to about one-quarter inch at maturity. The maggots eat and tunnel their way through the fruit, leaving brown trails behind. When apple maggots are mature, they exit the fruit and drop to the ground. They overwinter as pupae in the soil, emerging the next summer as adults, starting the cycle over again. Apple maggot can survive in the soil as a pupae for at least two years, if not longer (Sansford, Mastro, & Reynolds, 2016).

There is indication that growing media under fruited host plants from a quarantine area may potentially be contaminated with apple maggot pupae. These pupae could overwinter in the growing media and be transported into pest free areas of the state through the nursery trade and later emerge as adult flies. Based on these factors, it is critical to address this potential pathway of spread for apple maggot into the pest free areas of the state.

Apples are Washington State's top commodity, producing around 58 percent of the total apples grown in the United States, with around 30 percent of the crop being exported to international markets (WSU Extension, n.d.). The apple industry contributes an estimated $4.38 billion to $4.58 billion in value-added contributions to the Washington economy (Galinato, Gallardo, Granatstein, & Willett, 2018). Left unchecked, apple maggot could have far reaching impacts on the tree fruit industry and the general economy of Washington State. Lost economic activity would influence virtually every other industry to some degree since the spending habits of individuals, not just the directly affected companies, would adjust. These impacts could include an increased cost of pesticide control in apple orchards, apples requiring additional time in cold storage, and losses due to the effects on export markets (Galinato, Gallardo, Granatstein, & Willett, 2018). If apple maggot spreads into pest free areas of the state, it could cost the apple industry $510 million to $557 million (Galinato, Gallardo, Granatstein, & Willett, 2018).

WSDA conducts annual apple maggot trapping surveys to determine which areas of Washington meet the official "pest free" designation. WSDA also conducts certification monitoring in or around apple orchards and implements a detection response plan, which may include denser trapping to better isolate the infestation and quarantine boundary modifications.

Why the Proposed Rule is Needed:

WSDA has identified soil and growing medium on apple maggot host plants (and non-host plants under certain circumstances) from a quarantine area as a potential pathway for the introduction of apple maggot into the pest free area. Host plants which have fruited and are shipped from a quarantine area, could be infested and result in apple maggot pupating in the growing media. If those plants move to pest free areas within the state, there is a risk that apple maggot will become established there. Additionally, non-host plants grown within the drip line of host plants that have fruited could have pupae in their growing media as well, resulting in the spread of apple maggot to pest free areas of the state.

Expanding the apple maggot quarantine to include soil and growing medium on host plants (and any plants grown within the drip line of fruited host plants) from a quarantine area may better protect the apple industry by slowing the possible movement of apple maggot from infested areas into pest free areas. In turn, this could help secure

[1] A tree's drip line is the outermost circumference of the tree's canopy where water drips onto the ground.

the apple industry's access to domestic and international markets, which have strict regulations around apple maggot. The proposed expansion of chapter 16-470 WAC to include soil and growing medium on host plants (and any plants grown within the drip line of fruited host plants) from a quarantined area as regulated commodities aims to prevent or minimize the movement of apple maggot from infested areas, to pest free areas of Washington. The proposed quarantine amendment is aimed at protecting the state's apple orchards and apple industry from an economically detrimental pest.

Probable Compliance Requirements:

The proposed rule amendment regulates the movement of soil and growing medium in pots or on root balls of both host plants and non-host plants that fall within the drip line of fruiting host plants from the quarantine area.

Under the proposed rule amendment, nurseries located within a quarantine area would be required to obtain a phytosanitary certificate in order to ship host plants (and any plants that fall within the drip line of fruiting host plants) with soil or other growing medium into the pest free area.

In order for host plants to meet phytosanitary certification requirements, nurseries in the quarantine area would need to demonstrate that:

1. The soil or growing medium supports host plants that have not produced fruit and did not fall within the drip line of host plants that have produced fruit;
2. The soil or growing medium supports host plants that were grown in a commercial nursery and the production site is not considered threatened with infestation; or
3. The soil or growing medium of the host plants has been treated with a pesticide treatment approved by the director.

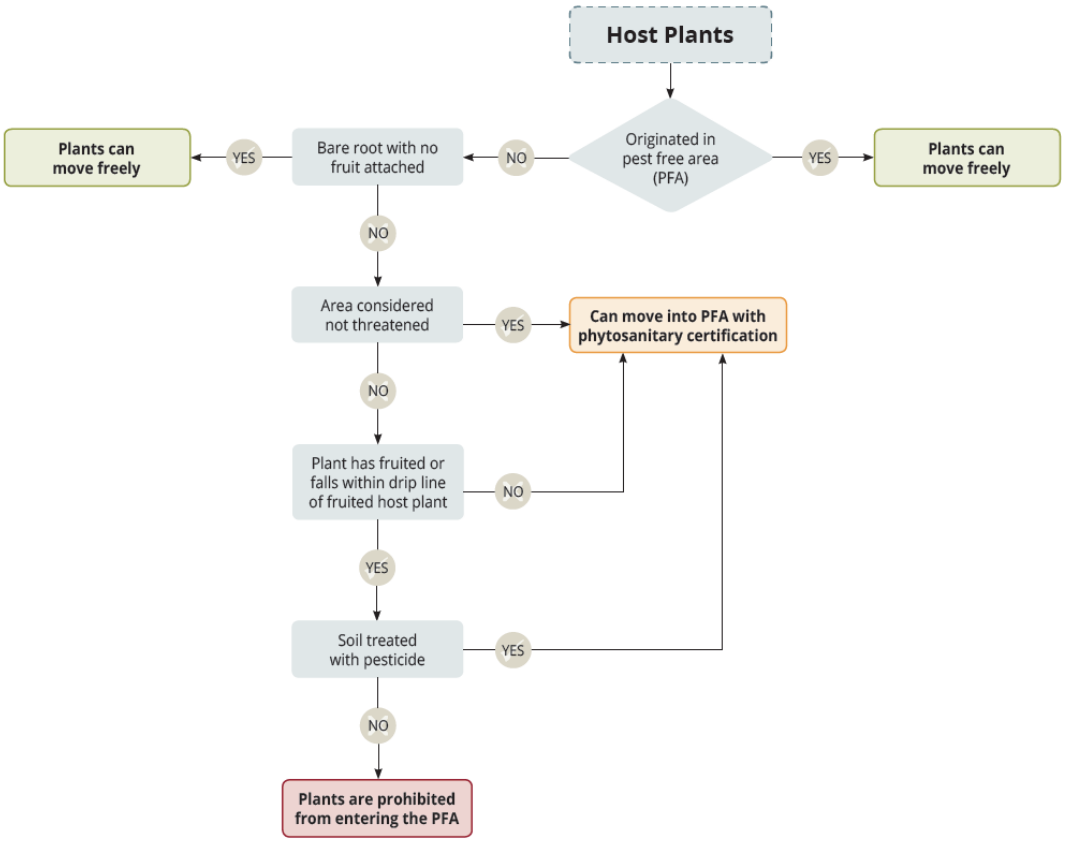
In order for non-host plants grown within the drip line of host plants that have produced fruit, to meet phytosanitary certification requirements, nurseries in the quarantine area would need to demonstrate that:

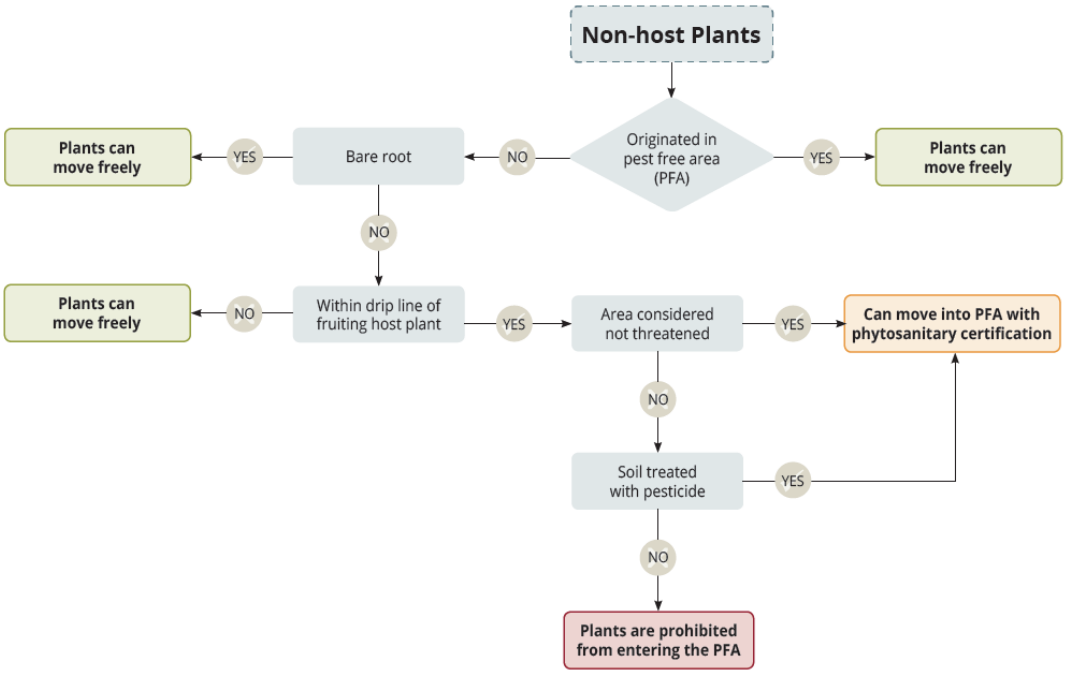
1. The soil or growing medium supports non-host plants that were grown in a commercial nursery and the production site is not considered threatened with infestation; or
2. The soil or growing medium of the non-host plants has been treated with a pesticide treatment approved by the director.

The following remain unregulated under the proposed rule amendment:

- Bare root plants (host and non-host) – it's important to note that host plants cannot have fruit attached (the movement of fruit attached to host plants is already prohibited under WAC 16-470-111);
- Plants (host and non-host) originating from a pest free area;
- Plants (host and non-host) moving within the quarantine area; and
- Non-host plants that were not grown in the drip line of fruiting host plants.

The flow charts below illustrate the requirements for businesses transporting host or non-host plants into a pest free area.





In order to comply with the proposed rule amendment, affected businesses that transport soil or growing medium on host plants and some non-host plants from the quarantine area, to or through the pest free area, would need to have that shipment certified. This process involves WSDA inspecting the plants prior to shipment. Nurseries have two options – obtain an annual compliance agreement or be subject to individual shipment inspections from WSDA. The compliance agreement would address all steps necessary for the nursery to comply with quarantine regulations and specify how plants may be shipped.

To demonstrate compliance with phytosanitary certification requirements, affected businesses may need to do one or more of the following.

Segregate Plants to Prevent Exposure:
To prevent exposure to the drip line of host plants that have fruited, businesses can implement a plant inventory system that tracks whether host plants have fruited, and segregates host plants that have fruited from all other plants.

Obtain 'Not Threatened With Infestation' Status:
Businesses may choose to obtain 'not threatened with infestation' status. This involves WSDA placing and monitoring apple maggot traps during the apple maggot trapping season and conducting associated lab work to identify any potential apple maggot insects caught. The standard for meeting the 'not threatened with infestation' definition requires that no life stage of apple maggot be found within one-half mile of the production site. If one apple maggot is identified in a trap, the nursey is not eligible for this option, and all trapping is discontinued. The 'not threatened with infestation' status must be reestablished annually by conducting trapping.

Conduct Soil Treatments:
Businesses may choose to treat the soil or growing medium of the host plants (or regulated non-host plants) with a pesticide treatment approved by the director to control apple maggot pupae. Currently, this is not a viable option, as no pesticide soil drenches have been approved to control apple maggot pupae.

Remove Soil (Ship Bare Root):
Businesses may choose to remove all soil (ship bare root) from host plants prior to shipment, exempting them from requirements under this quarantine. If a business chooses to move to a bare root production system in order to comply with the quarantine requirements, it may need to purchase equipment.

Ship Smaller Caliper Plants That Have Not Fruited:
Businesses may choose to ship host plants while they are a smaller caliper size prior to fruiting. Although the nursery will still incur certification costs to meet the proposed rule amendment, it will be able to demonstrate that the plant is too young to fruit.

Prevent Host Plants From Fruiting:
Businesses may choose to apply chemical treatments to prevent fruiting. This will allow host plants to be grown to a larger caliper size. An alternative method to applying chemicals to prevent fruiting would be to remove flowers by hand prior to fruit formation.

Ensure Imported Plants Meet Quarantine Requirements:
Any business located in a pest free area that imports soil or growing medium on host plants (and non-host plants under certain circumstances) from a designated apple maggot quarantine area (this may include out-of-state or country), must ensure the plants meet quarantine requirements prior to entry in the pest free area. The business must also request that a phytosanitary certificate from the place of origin accompany the plants. In addition to nurseries, this may affect landscaping companies and orchardists who bring plants in from other areas.

Professional Services Needed:

Nurseries that want to prevent fruiting of host plants so that host plants can be grown to a larger caliper and sold as ball & burlap (B&B) or potted[2], may choose to apply chemical treatments to prevent fruiting. Most nurseries already have staff that are licensed to conduct spraying. However, a few nurseries may have to obtain professional spray services. Custom spraying and chemical treatment is the only potential professional service associated with compliance with the proposed rule amendment.

SECTION 2:
Identify which businesses are required to comply with the proposed rule using the North American Industry Classification System (NAICS) codes and what the minor cost thresholds are.

Table 2.1: Minor Cost Thresholds

[2] B&B and potted plants both include growing medium on the root system of the plant.

NAICS Code (4, 5 or 6 digit)	NAICS Business Description	Number of Businesses in Washington	±Minor Cost Threshold = 1% of Average Annual Payroll	*Minor Cost Threshold = 0.3% of Average Annual Revenue
111331	Apple orchards	780	$8,511.33	Data not available
111421	Nursery and tree production	200	$4,836.69	Data not available
424930	Flower, nursery stock, and florists' supplies merchant wholesalers	94	$3,966.59	$7,743.17
444220	Nursery, garden center, and farm supply stores	409	$3,173.49	$5,238.89
561730	Landscaping services	3,210	$1,952.12	$1,242.18

±Data source: 2018 Quarterly Census of Employment and Wages (Bureau of Labor Statistics)
*Data source: 2012 Economic Census of the United States

SECTION 3:
Analyze the probable cost of compliance. Identify the probable costs to comply with the proposed rule, including: cost of equipment, supplies, labor, professional services and increased administrative costs; and whether compliance with the proposed rule will cause businesses to lose sales or revenue.

In order to collect information on probable costs of compliance, WSU facilitated a focus group meeting and distributed surveys to over 2,000 businesses. WSU determined that only 13 businesses would likely be impacted by the proposed rule amendment based on their responses. However, because of the low response rate of the online surveys, WSU directly contacted by phone an additional 50 businesses, described in Table 3.3, to obtain more data. More details on the engagement efforts are provided in Section 7.

As described in Section 1, in order to comply with the proposed rule amendment, affected businesses that transport soil or growing medium on host plants and some non-host plants from the quarantine area, to or through the pest free area, will need to have those plants certified. This process involves WSDA inspecting the plants prior to shipment. Nurseries have two options – either obtaining an annual compliance agreement or individual shipment inspections from WSDA.

Compliance Agreement:
State law (chapter 15.13 RCW) requires businesses that sell horticultural plants; or grow, plant, receive, or handle horticultural plants for the purpose of selling or planting for another person, to be licensed by WSDA. Licensed nurseries may enter into written compliance agreements with WSDA agreeing to comply with stipulated requirements. The compliance agreement addresses all steps necessary for the nursery to comply with quarantine regulations and specifies how plants may be shipped. To ensure that a licensed nursery is able to comply with provisions of a compliance agreement, WSDA will conduct a growing season inspection. If WSDA is able to verify that the nursery can manage its host and non-host plants in such a way as to avoid infestation, both parties can enter into a compliance agreement.

Individual Shipment Inspections:
Nurseries have the option of getting phytosanitary certification for each shipment of plants that fall under the proposed rule amendment. This will involve WSDA travel to/from the nursery or production site, conducting the inspection, and issuing certification documents.

Table 3.1 compares the costs for individual inspections and costs associated with an annual compliance agreement.

Table 3.1: Costs for Certification

Under Annual Compliance Agreement	No Compliance Agreement (Each Shipment Inspected For Quarantine Compliance)

Cost of compliance agreement = $50 per year	$ 50.00	Cost of plant health certificate for each load (included in price of inspection, if issued at the same time)	$ 0.00
Cost of WSDA inspection = 2 hours at $50 per hour once a year	$100.00	Cost of inspection = 1 hour minimum per load at $50 per hour	$ 50.00
Inspector travel time to nursery = assume an average of 100 miles which averages 1.5 hours	$ 75.00	Inspector travel time to nursery = assume an average of 100 miles which averages 1.5 hours	$ 75.00
Inspector travel time from nursery = assume an average of 100 miles which averages 1.5 hours	$ 75.00	Inspector travel time from nursery = assume an average of 100 miles which averages 1.5 hours	$ 75.00
Mileage to nursery = $0.58 per mile at 100 miles	$ 58.00	Mileage to nursery = $0.58 per mile at 100 miles	$ 58.00
Mileage from nursery = $0.58 per mile at 100 miles	$ 58.00	Mileage from nursery = $0.58 per mile at 100 miles	$ 58.00
Cost of compliance stickers/stamp = $50 per year for first year, $10 per year after that	$ 50.00	Cost of plant health documents, if not issued at time of inspection = $24.50 each	
TOTAL	**$466.00 per year**		**$316.00 per shipment**

<u>'Not Threatened With Infestation' Status:</u>
If a business chooses to obtain 'not threatened with infestation' status, the nursery will need to pay each season for WSDA to place and monitor apple maggot traps during the apple maggot trapping season (June – September) and conduct associated lab work to identify any potential apple maggot insects caught. The standard for meeting the 'not threatened with infestation' definition requires that no life stage of apple maggot be found within one-half mile of the production site. If one apple maggot is identified in a trap, the nursey is not eligible for this option, and trapping is discontinued immediately.

It typically takes 30 minutes to place or check traps at a site. Traps must be checked between four to eight times during the trapping season. A minimum of four trap locations must be used in order to certify an area as non-threatened. Trapping must be done annually for a nursery to maintain its non-threatened status. Table 3.2 identifies the annual costs associated with 'not threatened with infestation' certification.

Table 3.2: Costs for 'Not Threatened with Infestation' Certification

Trap Placement		
Staff costs to travel to/from nursery – assume an average of 100 miles each direction	3 hours @ $50.00 per hour = $150.00	$ 150.00
Mileage to/from nursery – assume an average of 100 miles each direction	200 miles @ $0.58 per miles = $116.00	$ 116.00

Staff costs to place traps – assume an average of 30 minutes	0.5 hours @ $50.00 per hour = $25.00	$ 25.00
Trap Monitoring		Average of 6 times per year
Staff costs to travel to/from nursery – assume an average of 100 miles each direction	3 hours @ $50.00 per hour = $150.00	$900.00
Mileage to/from nursery – assume an average of 100 miles each direction	200 miles @ $0.58 per miles = $116.00	$ 696.00
Staff costs to check traps – assume an average of 30 minutes	0.5 hours @ $50.00 per hour = $25.00	$ 150.00
Insect Identification*		
Staff costs to identify insects – assume an average of 1 hour	1 hour @ $50.00 per hour = $50.00	$ 50.00
TOTAL		**$2,087.00**

*If one apple maggot fly is detected, a 'not threatened with infestation' certification is no longer an option.

Cost Impacts to Meet Phytosanitary Certification Requirements:

Segregate Plants to Prevent Exposure:
To prevent exposure to the drip line of host plants that have fruited, businesses can implement a plant inventory system that tracks which host plants have fruited or not and segregates host plants from non-host plants. To do this, a nursery would establish a location-tracking procedure so that host plants are kept separate from non-hosts and fruiting hosts. Based on survey responses, those nurseries that operate orchards or have fruited plants within their operations already practice inventory management techniques and keep the nursery and orchard operations on different sites. They ensure that plants for sale are not within the drip line of mature host plants. The proposed rule amendment may slightly increase recordkeeping requirements for those businesses in the quarantine area that grow apple maggot host plants. Nurseries would have to demonstrate during the certification process that plants were kept separated. Inspectors will ask nurseries to identify those plants that have fruited or have had fruit removed, to verify the lot to be shipped meets quarantine requirements. Inspectors may require documentation, such as a site map, inventory records, or soil treatment records. WSDA expects there will be minimal costs incurred from such a procedural change in the production practices of a nursery.

Conduct Soil Treatments:
Businesses may choose to treat the soil or growing medium of the host plants (or regulated non-host plants) with a pesticide treatment approved by the director to control apple maggot pupae. Businesses would incur the cost of the chemical soil drench and application equipment. The proposed rule amendment may slightly increase recordkeeping requirements for those businesses in the quarantine area that grow apple maggot host plants. Nurseries will need to demonstrate during the certification process that a chemical approved to control apple maggot pupae in soil was properly applied. Businesses must already maintain pesticide treatment records under state law. This is not currently a viable option, as no pesticide soil drenches have been approved to control apple maggot pupae at this time.

Remove Soil (Ship Bare Root):
Businesses may choose to remove all soil (ship bare root) from host plants prior to shipment. If a business chooses to move to a bare root system in order to comply with the quarantine requirements, they may need to acquire tree diggers with U-blades and oscillating shaker arms. They may also need to establish healing beds. Equipment costs to convert a business to bare root exceed the minor cost thresholds identified in Section 2. None of the businesses that responded to the survey expressed an interest in converting from a potted or B&B operation to a bare root system. The discussions always centered on the least burdensome certification process, given current production practices.

Ship Smaller Caliper Plants That Have Not Fruited:

Nurseries located in the quarantine area may choose to ship plants while they are a smaller caliper size prior to fruiting. Although, the nursery will still incur certification costs to meet the proposed rule amendment, they will be able to demonstrate that the plant is too young to fruit.
Based on survey responses, potential losses in revenue for nurseries that must move from selling larger to smaller caliper trees (i.e., to trees that have not fruited) was reported as “minimal.” Those nurseries operating in the quarantine area stated that they already sell plants prior to fruiting and their plants are not in the drip line of fruited host plants. However, email responses from five nurseries reported that the average revenue might fall by roughly $10.00 per plant for those typically sold as large caliper or potentially fruited plants.

Orchardists may prefer a larger caliper tree that fits their existing production system. Thus, nurseries in the quarantine area may lose sales to nurseries in the pest free area that can more easily ship larger trees to orchardists in the pest free area. Nurseries may lose revenue because smaller plants sell for less. There may also be extra production costs for orchardists to purchase a smaller/younger tree, as a younger tree would take an extra year to grow to normal size and produce its first fruit.

Apply Chemicals to Prevent Fruiting:
According to the WSU survey, shipping a smaller caliper tree was preferred to chemical treatments because the expected $10.00 loss per plant was preferable to the additional costs for chemical treatments to prevent fruiting. Most businesses are not expected to choose the option of applying chemicals to prevent fruiting because it could inhibit the plants from setting fruit buds in the next season. Some businesses may have to obtain professional spray services if they do not already have staff licensed to apply pesticides.

Impact to Orchardists:
The four orchardists interviewed buy their stock bare root, and claim they will not be affected by the regulation. Often fruit tree orchardists order specific varieties of trees on specific rootstocks. This is usually done on contract two years ahead of the sale to guarantee they get the combinations they want. If their normal contract supplier decides not to ship into the pest free area any longer, an orchardist may encounter problems obtaining the planting stock they need.

Impact to Landscapers:
Only three landscapers returned calls and emails, but none of them felt the proposed rule amendment would impact their revenues or total costs, unless regulatory costs on the nursery would be passed through to the landscapers. Even then, they thought those costs could be passed through to the final consumers. Some landscapers said they did not see sourcing supplies to be problematic since they only operated within the quarantine area, so no matter where they sourced stock from, it would be permissible within their market area.

Impact to Home and Garden Center Businesses:
Operations at home and garden center type nurseries are more varied and less consistent on plant placement and control of fruited trees. The central office of a large home improvement store that operates live plant nurseries stated that some host plants may fruit within their lots but that the stock they buy always comes to their center without fruit. Many large home improvement stores offering nursery stock purchase mostly bare root fruit trees for early spring sale. WSDA has observed fruit on trees in the pest free area in past years and has ordered fruited trees removed from sale. Many of the wholesale nurseries interviewed no longer supply fruit trees to home and garden centers, and most home and garden center stock comes from out of state or from one particular Washington wholesaler that operates within the pest free area.

All wholesale nurseries that responded to the survey did not anticipate any direct changes to their practices. Primary businesses affected in the pest free area were lawn and garden centers. These operations indicated that their potted or B&B stock always comes from out-of-state (quarantined area), or from the pest free area and has not fruited. Orchardists appear to only buy bare root trees and/or grow their own stock in some cases. Landscapers that were surveyed indicated that they already comply with nursery stock quarantines.

Table 3.3: Business Individually Contacted by Industry and Size

NAICS	Industry Type	Small	Large
111331	Orchards	2	3
111421	Nursery and tree production	26	0

424930	Flower, nursery stock, and florists' supplies merchant wholesalers	2	2
444220	Nursery, garden center, and farm supply stores	0	6
561730	Landscaping services	7	2
Total		**37**	**13**

Not all businesses contacted provided input, though some did request additional information. Of the 50 businesses contacted by phone only 16 (4 orchards, 5 nurseries, 2 wholesale nurseries, 2 garden centers, and 3 landscapers) were willing to discuss their operations. Those businesses were then sent follow-up emails requesting specific data. Tables 3.4 and 3.5, along with the following information, are reflective of the phone interviews and email responses received by Washington State University.

Estimated Costs of Compliance

Table 3.4 outlines the average cost by type of organization and size. These figures include both expected reductions in revenue as well as increases in operating and ownership costs. The orchards, wholesale nurseries, and landscapers spoken with, do not foresee any additional costs to their businesses associated with the proposed rule amendment. The small nursery and tree production businesses thought lost revenues and other costs of compliance would exceed $1,000 in some cases and be as low as $466 (only incurring the compliance agreement costs with WSDA). No large nurseries provided cost figures. The nursery and garden centers interviewed were all large and universally said the only costs expected would be the $466 compliance agreement costs with WSDA. Table 3.5 shows the range of expected costs associated with the average costs in Table 3.4.[3] Lower-bound costs are capped at zero but are typically captured as one standard deviation below the mean. Upper-bound expected costs are assumed to be one standard deviation above the mean. Though some businesses expect their costs to exceed our upper-bound range. Such measures cannot be reasonably assumed to apply to all businesses in the industry. Making such an assumption would cause sector wide impacts to be greatly overstated.

Table 3.4: Average Expected Costs of Sales and Revenue Reduction by Industry and Size

NAICS	Industry Type	Small	Large
111331	Orchards	$ 0	$ 0
111421	Nursery and tree production	$700	$ 0
424930	Flower, nursery stock, and florists' supplies merchant wholesalers	$ 0	$ 0
444220	Nursery, garden center, and farm supply stores	$ 0	$466
561730	Landscaping services	$ 0	$ 0

Table 3.5: Range of Expected Costs of Compliance and Revenue Reduction by Industry

NAICS	Industry Type	Lower Bound	Average	Upper Bound
111331	Orchards	$ 0	$ 0	$ 0
111421	Nursery and tree production	$480	$700	$920
424930	Flower, nursery stock, and florists' supplies merchant wholesalers	$ 0	$ 0	$ 0
444220	Nursery, garden center, and farm supply stores	$466	$466	$466

561730	Landscaping services	$ 0	$ 0	$ 0

Potential Economic Impacts to the Apple Industry if Apple Maggot Continues to Spread

In October of 2018, Gallardo et. al. published a paper in the journal HortTechnology wherein they expanded upon the work of a Pest Risk Analysis (PRA) in Washington State. While the PRA focused on the biological containment methods and recommended heat treatment of green waste that was to be shipped into pest free areas; Gallardo et al. focused on the economic impacts likely to occur if apple maggot becomes established in the pest free area. The article looks at the *additional* production costs from spraying, cold storage, etc., associated with apple maggot control. Costs incurred regardless of apple maggot presence, such as the cold storage required for shipment to Mexico, are not included. Mexico requires all Washington sourced apples to be held in cold storage.

Because the treatment of codling moth and apple maggot are similar, a high presence of codling moth effectively reduces the treatment costs for dealing with apple maggot. Impacts from a complete quarantine of the entire state were then calculated under low, moderate, and high levels of codling moth pressure. Impacts were calculated to be losses of $546.9 million, $557.2 million, and $509.78 million per year respectively. Reported impact losses were inclusive of the indirect and induced effects, meaning that the total impacts would not be felt by the apple production and processing sector alone, but would ultimately harm chemical and fertilizer companies, equipment and capital investments, nurseries, and a host of other suppliers that are backwards linked in the apple industry supply chain. Direct effects included the losses to the apple production and processing sectors. Indirect effects would have captured the impacts on the nurseries and other suppliers of the apple growing segment of the market. And, induced effects would capture the reduction in spending stemming from the lower incomes received by employees.

Statewide Impacts from Classifying Growing Media as a Regulated Commodity

In order to calculate the impacts statewide, the average costs of compliance (see Table 3.4) must be multiplied by the number of businesses that will be affected (see Table 4.1). Multiplying the $700 per business impact by the 212 businesses yields the $148,400 in direct costs for the entire nursery and tree production industry. Multiplying the $466 per business impact by the 367 nursery and garden center and farm supply stores yields the $171,022 in direct costs for the entire industry. Thus, direct impacts totaled $319,422 for both of these industries combined. Table 3.6 shows the sales impacts by NAICS code and effect.

Table 3.6: Sales Impacts by Industry and Effect

	Direct	Indirect	Induced	Total
Nursery and tree production	$148,400	$ 4,967	$ 72	$153,439
Nursery, garden center, and farm supply stores	$171,022	$ 116	$ 2,039	$173,177
Other industries	$ 0	$94,854	$249,375	$344,230
Total	**$319,422**	**$99,937**	**$251,486**	**$670,845**

Total direct impacts to the whole nursery industry from classifying host plant growing media as a regulated commodity is estimated to be $319,422. Direct employment impacts an estimated total of three jobs. Conversely, according to Gallardo et al. (2018), total direct losses in overall statewide economic activity, if the apple maggot infestation were to spread to all areas of the state, may be as high as $260 million with total losses in transactions reaching $557.2 million. Gallardo et al. (2018) did not report impacts by employment. However, if employment to sales ratios were held constant, total job losses would approach 5,400 jobs.

Total direct impacts under the lower bound scenario amount to $272,782. Under the upper bound scenario direct impacts sum to $366,062. Even under the upper bound scenario, total reductions in economic activity are smaller than the expected costs associated with the spread of apple maggot.

[3] The range is calculated as one standard deviation in each direction from the mean reported in Table 3.3.

SECTION 4:
Analyze whether the proposed rule may impose more than minor costs on businesses in the industry.

No large retail nurseries of the type categorized by NAICS 111421 have been identified through the Census Bureau's County Business Pattern (CBP) data, nor through the several surveys and interviews conducted by WSU. That is not to say these businesses don't exist, but they have not been captured by the data set. The minimum cost thresholds reported in Section 2 of this SBEIS are used for the small retail nurseries. The retail home and garden centers are identified in the CBP data by employment size. CBP data was used to identify the minimum cost thresholds by size for industry 444220. Table 4.1 shows the minimum cost thresholds for small retail nurseries, small home and garden nurseries, and large home and garden nurseries. Table 4.1 also includes the expected average costs and revenue reductions for the associated industries by size. In each case the expected costs and revenue reductions are less than the minor cost thresholds when calculated as 1% of reported average annual payroll for the associated industries by size. Since the orchards, landscaping companies, and wholesale nurseries have reported no expected changes in costs or revenues these figures have been left off the table.

Table 4.1: Average Expected Cost Increases and Revenue Reductions by Industry Type Relative to Average Annual Payroll

NAICS	Industry Type	Business Scale	Number of Firms	Average Annual Payroll	Minor Cost Threshold*	Average Expected Cost and Revenue Reduction
111421	Nursery and tree production	Small	212	$483,669	$4,837	$700
111421	Nursery and tree production	Large**	0	$0	$0	$0
444220	Nursery, garden center, and farm supply stores	Small	350	$237,054	$2,371	$466
444220	Nursery, garden center, and farm supply stores	Large	17	$1,564,000	$15,640	$466

Sources: BLS QCEW, Census Bureau CBP
*Minor cost thresholds calculated as 1% of average annual payroll
**No large businesses of this type have been identified through the CBP data, nor through surveys and interviews conducted by WSU.

If a nursery and tree production business decided to obtain 'not threatened with infestation' certification, the expected cost is approximately $2,553.00 ($2,087 to obtain 'not threatened with infestation' status plus $466 for a compliance agreement) per year. This is below the minor cost threshold identified above.

Although none of the nursery and tree production businesses surveyed expressed an interest in converting to bare root, if a business decided to convert to bare root in order to comply with the proposed rule amendment, the costs are expected to exceed the minor cost threshold identified above.

SECTION 5:
Determine whether the proposed rule may have a disproportionate impact on small businesses as compared to the 10 percent of businesses that are the largest businesses required to comply with the proposed rule.

RCW 19.85.040(1) requires the department to compare the cost of compliance for small businesses with the cost of compliance for the ten percent of businesses that are the largest businesses required to comply with the proposed rules using one or more of the following as a basis for comparing costs: (a) cost per employee; (b) cost

per hour of labor; or (c) cost per one hundred dollars of sales. Though several businesses were willing to discuss the proposed rule amendment and how they anticipate it would affect them, few were willing to provide data on their operations and associated costs. Due to this and the low response rate from the surveys, there is not sufficient data to calculate this comparison using the criteria from RCW 19.85.040(1).

Analyzing the information collected from large and small businesses, there is indication that both will see similar cost increases as a result of the proposed rule. This is mainly due to costs associated with WSDA's certification fee. The large and small orchards and landscaping businesses which were surveyed and interviewed, reported that they were already in compliance with the proposed rule (e.g. only bare root sales) and therefore would not be impacted cost wise. This was also the case for large wholesale nurseries, although they may incur additional certification costs. Many small nurseries also reported they were already in compliance with the proposed rule, however like the large nurseries, they would likely incur additional certification costs. It is estimated that a handful of small nurseries will likely have expenses beyond the certification costs.

Costs to businesses may vary by industry, as shown in Table 4.1. Rows one and two of this table show costs for businesses in the industry of "Nursery and Tree Production." Only small businesses were identified under this industry type, as no large businesses were found under the CBP data, nor in the surveys and interviews conducted by WSU. Small businesses under this industry type are expected to experience an average cost and revenue reduction of $700. Since no large businesses are listed under this industry type, it is concluded that small businesses will be disproportionately impacted by the proposed rule. Additionally, rows three and four in Table 4.1 show the average expected cost and revenue reduction for businesses under the industry type of "Nursery, garden center, and farm supply stores." Under this industry type, small and large businesses will experience an equal cost increase of $466. Since small and large businesses will see the same cost increase, the impact to small businesses is considered to be disproportionate. However, costs associated with the proposed rule will not exceed the minor cost threshold for either of these industries.

SECTION 6:
If the proposed rule has a disproportionate impact on small businesses, identify the steps taken to reduce the costs of the rule on small businesses. If the costs cannot be reduced provide a clear explanation of why.

RCW 19.85.030(2) requires consideration of the following methods of reducing the impact of the proposed amendment on small businesses:

(a) *Reducing, modifying, or eliminating substantive regulatory requirements –*

Any reduction, modification, or elimination of the regulatory requirements of the proposed rule amendment could increase the risk of the entry of apple maggot into the pest free area, according to the findings of the PRA. Businesses still have the option of selling and importing bare root host plants without fruit attached, with no restrictions under the apple maggot quarantine.

(b) *Simplifying, reducing, or eliminating recordkeeping and reporting requirements –*

The proposed rule amendment does not specify any reporting requirements for small businesses beyond what requirements are already in place. The proposed rule amendment may slightly increase recordkeeping requirements for those businesses in the quarantine area that grow apple maggot host plants. Nurseries may choose to implement tracking procedures to keep host plants that have fruited separate from other plants. Nurseries will need to demonstrate during the certification process that plants were kept separated. Inspectors will ask nurseries to identify those plants that have fruited or have had fruit removed, to verify the lot to be shipped meets quarantine requirements. They may require documentation, such as a site map, inventory records, or soil treatment records. Businesses must already maintain pesticide treatment records under state law. Eliminating this requirement would undermine the effectiveness of the quarantine.

(c) *Reducing the frequency of inspections –*

Businesses that transport soil or growing medium on host plants (and non-host plants under certain circumstances) from the quarantine area, to or through the pest free area will need to have those plants certified. This process involves WSDA inspecting and certifying the plants prior to shipment.

In order to reduce costs to impacted businesses, WSDA will offer, under certain circumstances, the option of applying for a compliance agreement. A business approved under a compliance agreement ensures and attests that soil or growing medium from host plants that have fruited, and from host or non-host plants grown within the drip line of host plants that have fruited, will not be shipped into or through the pest free area. Under this agreement, WSDA will conduct an inspection each growing season to verify the business is complying with the requirements of the compliance agreement and quarantine. The cost of the compliance agreement is $50.00 annually for licensed nurseries. Table 3.1 provides an example of the savings under a compliance agreement versus individual inspections which would otherwise be required for each shipment.

Under WAC 16-401-027, licensed nurseries within the state are provided up to four hours of free inspection annually depending on license type. This will usually be sufficient to conduct an annual growing season inspection. In order to further decrease costs to impacted businesses, WSDA often combines audits and inspections of nearby businesses so that mileage and drive time costs are prorated between businesses. Often nurseries already have compliance agreements in place for other regulatory plant health concerns. When this is the case, WSDA hopes to combine an inspection with those required for other compliance agreements. This would further mitigate costs for affected nurseries.

(d) Delaying compliance timetables –

Delaying compliance timetables is not a viable mitigation measure. Any delay will result in a higher risk for the entry of apple maggot into the pest free area. By delaying compliance timetables, apple maggot will have greater opportunity to spread into the pest free area.

(e) Reducing or modifying fine schedules for noncompliance –

RCW 17.24.141 specifies the penalty for violating a quarantine order. Chapter 16-470 WAC does not address penalties for violations of the apple maggot quarantine. Reducing or modifying fine schedules would involve a legislative change and is not part of this rule making.

(f) Any other mitigation techniques including those suggested by small businesses or small business advocates –

No other mitigation techniques were presented to us by small businesses or small business advocates during the focus group meeting or surveys and meetings with stakeholders.

SECTION 7:
Describe how small businesses were involved in the development of the proposed rule.

On July 17, 2017, the Washington State Tree Fruit Association (WSTFA) petitioned WSDA to add potted trees to the list of regulated commodities under the apple maggot quarantine. WSTFA represents both small and large businesses that grow fruit susceptible to the apple maggot. After receiving the petition for rule making, WSDA met with our advisory committee, the Apple Maggot Working Group (AMWG), multiple times to discuss the petition. The AMWG agreed that it was critical to protect the apple industry by adding soil on apple maggot host plants (and non-host plants under certain circumstances) to the list of regulated commodities. The AMWG includes members from the tree fruit industry, researchers, federal regulators, county extension, and WSDA. These members represent and speak for memberships that include small businesses.

In order to obtain the information needed to determine the probable costs of compliance, WSU conducted a focus group meeting, emailed surveys, and conducted interviews. In November 2018, WSU contacted and invited several nursery representatives to participate in a focus group meeting. The goal of the focus group meeting was to seek input about the major cost categories required to operate a tree nursery as well as participant perspectives on how the proposed rule amendment will affect their normal flow of operations, including costs.

WSU conducted the meeting at the Washington State Tree Fruit Association Annual Meeting in Yakima on December 4, 2018; with two nursery representatives (out of four who initially confirmed) and received minimal feedback from the participants.

Since minimal feedback was received, WSU developed a survey that was sent out to the 218 members of the Washington State Nursery & Landscape Association (WSNLA). WSNLA distributed the survey through their email listserv. WSNLA also assisted in following up with their members weekly, to give a reminder or encourage participation in the survey. As of April 1, 2019 the survey was completed but, again, with minimal response.

WSU sent out a revised survey, this time broadening the sample to include as many nursery operations in Washington as possible. WSDA provided a list of licensed wholesale and retail nursery businesses. In addition, WSDA revised the wording used in the survey. From the list that WSDA provided, WSU sent the survey to 2,087 businesses that had provided email addresses with their nursery license application using Qualtrics™. In an attempt to obtain a reasonable response rate, WSU sent the survey three times: (1) May 23-30; (2) May 31-June 6; and (3) June 7-13. WSU kept the survey open for a few extra days and the last survey was received on June 16, 2019. Of the 2,087 businesses contacted, 444 responses were submitted but only 13 surveys were submitted by nurseries who would be impacted by the rule and fully completed.

Because of the lack of data provided by the online surveys, WSU made a final attempt and directly contacted an additional 50 businesses to collect data regarding increasing costs and potential losses in sales and revenue due to the proposed rule amendment regarding Washington's apple maggot quarantine and the regulation of host plant growing media. Table 3.3 shows the businesses surveyed by type and size. Response rates continued to be low. Though several nurseries, landscapers, and orchardists were willing to discuss the proposed rule amendment and how they anticipate it would affect their businesses, few were willing to provide data on their operations. Many of the large wholesale nurseries felt the regulation would not apply to them because they were in the pest free area and/or were already bare rooting their stock. Several of the smaller nurseries, whether in the pest free or quarantine area, felt their primary cost of compliance would be WSDA certification because they already sold their trees prior to fruiting. Table 3.1 shows the WSDA certification costs.

None of the business sizes were known prior to the phone interviews and so there was no difference in how small or large businesses were handled from a data collection standpoint. Because the Impact Model is based on industries, all businesses within a given industry are assumed to have the same production technology and thus similar assumptions were made regarding multiplier effects.

Representatives of the WSNLA were included in all of the communication and notifications that were distributed regarding the proposed rule amendments. Small businesses were involved in the rule-making process through several industry meetings that took place over the past year and a half. Nursery stakeholders attended the following meetings:
On June 29, 2017, the addition of soil to the apple maggot quarantine was discussed with nursery owners from Washington, Oregon, and California.

On September 26, 2017, WSDA presented on the possibility of adding soil to the apple maggot quarantine rule in a meeting with the WSDA Fruit Tree Advisory Committee.

On October 19, 2017, WSDA presented at a WSDA Nursery Advisory Committee meeting about the possible addition of soil to the apple maggot quarantine.

On October 26, 2017, the addition of soil to the apple maggot quarantine was discussed during the Western State and Canada Standardization Meeting regarding Plants and Nurseries.

On November 15, 2017, WSDA distributed the CR-101 regarding the amendments to the rule to a group of known stakeholders who would be interested in providing feedback on the development of the rule and any other measures that would mitigate the transport of apple maggot pupae in soil.

On December 19, 2017, the Capital Press published an article regarding the proposed expansion of the quarantine to include soil.

On June 5, 2018, WSDA sent a draft of the proposed rule language to stakeholders, seeking review and feedback.

The June 26, 2017, Fruit Tree Advisory Committee meeting and the June 29, 2019, and October 19, 2018, Nursery Advisory Committee meetings included discussions of the proposed rule amendments.

SECTION 8:
Identify the estimated number of jobs that will be created or lost as the result of compliance with the proposed rule.

In order to convert dollar impacts into jobs, a conversion in the Input-Output model is made by taking each industry's employment and dividing it by their total sales. This jobs-to-sales ratio, by industry, is then multiplied by the associated sales impacts. Because the impacts from Table 3.6 represent such a small component of the economy it is not surprising that the employment impacts are similarly small. Table 8.1 shows the employment impacts by industry and effect. Direct employment is only expected to decline by three full time equivalent jobs.

Table 8.1: Employment Impacts by Industry and Effect

	Direct	Indirect	Induced	Total
Nursery and tree production	2	0	0	2
Nursery, garden center, and farm supply stores	1	0	0	1
Other Industries	0	1	2	2
Total	**3**	**1**	**2**	**5**

References

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WSU Extension. (n.d.). *Apples in Washington State*. Retrieved from Washington State University Extension: https://extension.wsu.edu/chelan-douglas/agriculture/treefruit/horticulture/apples_in_washington_state/

WSU IMPACT Center. (2019). *Technical Memorandum of: Chapter 16-470 WAC Quarantine - Agricultural Pests*. Pullman: Washington State University's IMPACT Center.

The public may obtain a copy of the small business economic impact statement or the detailed cost calculations by contacting:

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Other:

Date: April 1, 2020	**Signature:**
Name: Brad White	
Title: Assistant Director	

AMENDATORY SECTION (Amending WSR 16-24-028, filed 11/30/16, effective 1/1/17)

WAC 16-470-101 Establishing quarantines for apple maggot and plum curculio. Apple maggot (*Rhagoletis pomonella*) and plum curculio (*Conotrachelus nenuphar*) are insects with a larval (worm) stage that develops within fruit. These insects are capable of attacking many fruit crops grown in Washington. Apple maggot is not established in significant portions of the major fruit production areas east of the Cascade Mountains, and plum curculio is not established anywhere in the state. An increased range for either insect would cause decreased environmental quality and economic loss to the agricultural industries of the state by increasing production inputs and jeopardizing foreign and domestic markets.

(1) The director, pursuant to chapter 17.24 RCW, has determined that the regulation and/or exclusion of fresh fruits grown or originating from areas infested with apple maggot or plum curculio is necessary to protect the environment and agricultural crops of the state.

(2) The director, pursuant to chapter 17.24 RCW, has determined that municipal solid waste originating from areas infested with apple maggot is a host medium for apple maggot and is a "regulated commodity" as provided in WAC 16-470-111. The exclusion of such municipal solid waste from the pest free area is necessary to protect the environment and agricultural crops of the state. The transport into and disposition of such municipal solid waste in the pest free area may be allowed by a special permit as provided in WAC 16-470-124(1).

(3) The director, pursuant to chapter 17.24 RCW, has determined that yard debris, organic feedstocks, organic materials, and agricultural wastes as defined in WAC 173-350-100 originating from areas infested with apple maggot is a host medium for apple maggot and is a "regulated commodity" as provided in WAC 16-470-111. The exclusion of such waste from the pest free area is necessary to protect the environment and agricultural crops of the state. The transport into and disposition of yard debris, organic feedstocks, organic materials, and agricultural wastes in the pest free area may be allowed by a special permit as provided in WAC 16-470-124(2).

(4) The director, pursuant to chapter 17.24 RCW, has determined that soil and growing medium in pots or on root balls of host plants or any plants (host or nonhost) that were within the drip line of host plants that have produced fruit, originating from areas infested with apple maggot are a host medium for apple maggot and are "regulated commodities" as provided in WAC 16-470-111. The exclusion of such soil or growing medium from the pest free area is necessary to protect the environment and agricultural crops of the state. The transport of such soil or growing medium into the pest free area may be allowed if accompanied by an official inspection certificate issued by the plant protection organization of the state of origin as provided in WAC 16-470-113 and 16-470-115.

AMENDATORY SECTION (Amending WSR 05-09-005, filed 4/7/05, effective 8/15/05)

WAC 16-470-103 Definitions. The following definitions shall apply to WAC 16-470-101 through 16-470-130:

(1) "Established" means present in a country, state, county or other area, multiplying and expected to continue.

(2) "Host plant" means all species in the genera of Malus, Crataegus, Prunus, Pyrus and Cydonia (including, but not limited to, apples, crab apples, hawthorn, cherries, plums, prunes, pears, and quince).

(3) "Soil" and "growing medium" as regulated commodities means only that soil or growing medium in pots or on root balls of plants originating from a quarantined area being shipped under this quarantine.

(4) "Threatened with infestation" means that any life stage of apple maggot or plum curculio has been found within one-half mile of an orchard or other production site, including any portion of an orchard outside or beyond the one-half mile area. Orchards or production sites in a quarantined area, which are not surveyed by a plant protection organization, are considered to be threatened with infestation. An orchard or other production site will be removed from threatened with infestation status, if control measures are performed at the detection site, and survey by the department shows no further detection(s) within the one-half mile area around the orchard or other production site throughout the subsequent full growing season.

AMENDATORY SECTION (Amending WSR 16-24-028, filed 11/30/16, effective 1/1/17)

WAC 16-470-111 Commodities regulated for apple maggot. (1) All fresh fruit of apple (including crab apple), cherry (except cherries that are commercial fruit), hawthorn (haw), pear (except pears that are commercial fruit from California, Idaho, Oregon, Utah, and Washington), plum, prune, and quince are regulated under quarantine for apple maggot. Fresh fruit also includes fruit attached to host plants.

(2) Municipal solid waste as defined in WAC 173-350-100 is regulated under quarantine for apple maggot. Municipal solid waste from the quarantine area is a host medium for apple maggot containing or likely to contain those fruits listed under subsection (1) of this section.

(3) Yard debris, organic feedstocks, organic materials, and agricultural wastes as defined in WAC 173-350-100 are regulated under quarantine for apple maggot. Yard debris, organic feedstocks, organic materials, and agricultural wastes from quarantine areas are host mediums for apple maggot containing or likely to contain those fruits listed under subsection (1) of this section.

(4) Soil or growing medium in pots or on root balls of host plants originating from a quarantined area are regulated commodities under quarantine for apple maggot.

(5) Soil or growing medium in pots or on root balls of nonhost plants that fall within the drip line of host plants that have pro-

duced fruit originating from a quarantined area are regulated commodities under quarantine for apple maggot.

(6) Any host plants shipped bare root and without fruit attached are not regulated commodities under quarantine for apple maggot.

(7) Soil or growing medium in pots or on root balls of plants originating in the pest free area, as specified in WAC 16-470-105(1), are not regulated commodities under quarantine for apple maggot.

AMENDATORY SECTION (Amending WSR 16-24-028, filed 11/30/16, effective 1/1/17)

WAC 16-470-113 Requirements to ship commodities regulated for apple maggot from a state under quarantine into the pest free area for apple maggot. (1) Shipment of fresh fruit, as specified in WAC 16-470-111(1), from an area under quarantine, as specified in WAC 16-470-105(3), into the pest free area for apple maggot, as specified in WAC 16-470-105(1), is prohibited, unless at least one of the following conditions is met:

((~~(1)~~)) (a) The shipment is accompanied by an official certificate issued by the plant protection organization of the state of origin ((~~evidencing~~)) stating at least one of the following:

((~~(a)~~)) (i) The shipment is composed of apples, which has undergone cold treatment for a continuous period of at least ninety days. During this ninety days, the temperature within the storage room must be maintained at thirty-seven and nine-tenths degrees Fahrenheit or less.

((~~(b)~~)) (ii) The shipment is composed of fresh fruit specified in WAC 16-470-111(1) other than apples, which has undergone cold treatment for a continuous period of forty days or more. During this forty days, the temperature within the storage room must be maintained at thirty-two degrees Fahrenheit or less.

((~~(c)~~)) (iii) The shipment is composed of fresh fruit specified in WAC 16-470-111(1) from Oregon, Idaho, or Utah, meeting the requirements under WAC 16-470-122.

((~~(d)~~)) (iv) Each lot or shipment consists of repacked fruit, which was grown outside the area under quarantine and has been identified and maintained separately from any fruit specified in WAC 16-470-111(1) grown within the area under quarantine. For repacked fruit, the certificate must show the following information:

((~~(i)~~)) (A) The state in which the fruit was grown;

((~~(ii)~~)) (B) The point of repacking and reshipment;

((~~(iii)~~)) (C) The amount and kind of commodities comprising the lot or shipment; and

((~~(iv)~~)) (D) The names and addresses of the shipper and consignee.

((~~(2)~~)) (b) The fruit originated outside the area under quarantine for apple maggot and is a reshipment in original, unopened containers. The containers must each bear labels or other identifying marks ((~~evidencing~~)) stating origin outside the area under quarantine.

((~~(3)~~)) (c) The fruit is frozen solid.

(2) The shipment of soil or growing medium in pots or on root balls of host plants from the area under quarantine, as specified in WAC 16-470-105(3), into the pest free area for apple maggot, as specified in WAC 16-470-105(1), is prohibited unless accompanied by a cer-

tificate issued by the plant protection organization of the state of origin stating the following:

(a) The soil or growing medium supports host plants that have not produced fruit, and did not fall within the drip line of host plants that have produced fruit; or

(b) The host plants originated in an area where apple maggot is not considered established, based on official survey and were grown in a commercial nursery; or

(c) The soil or growing medium of the plants has been treated with a pesticide treatment approved by the director just prior to shipment and was safeguarded from reinfestation.

(3) The shipment of soil or growing medium in pots and on root balls of nonhost plants that were grown within the drip line of host plants that have produced fruit, may only be shipped from the area under quarantine, as specified in WAC 16-470-105(3), to the pest free area for apple maggot, as specified in WAC 16-470-105(1), if accompanied by a certificate issued by the plant protection organization of the state of origin stating the following:

(a) The nonhost plants originated in an area where apple maggot is not considered established, based on official survey, and were grown in a commercial nursery; or

(b) The soil or growing medium of the plants has been treated with a pesticide treatment approved by the director just prior to shipment and was safeguarded from reinfestation.

AMENDATORY SECTION (Amending WSR 16-24-028, filed 11/30/16, effective 1/1/17)

WAC 16-470-115 Requirements for shipment of regulated commodities from the quarantine area for apple maggot into the pest free area within Washington state. Shipment of regulated commodities, as specified in WAC 16-470-111, from an area under quarantine, as specified in WAC 16-470-105(2), into the pest free area for apple maggot, as specified in WAC 16-470-105(1), is prohibited, unless one of the following applicable conditions is met:

(1) The shipment of fresh fruit is accompanied by a permit for movement of fruit issued by the department verifying one of the following:

(a) The fresh fruit came from orchards and production sites that are not threatened with infestation; or

(b) The fresh fruit has completed treatment as specified in WAC 16-470-118(3). If records of treatment verifying compliance with conditions specified in WAC 16-470-118(3) are made available to the department, no reinspection is required by the department.

(2) The shipment of fresh fruit is in compliance with the applicable conditions under WAC 16-470-118 (2) and (3).

(3) The shipment of municipal solid waste from the quarantine area to the pest free area for purposes of disposal in a municipal solid waste landfill or appropriate disposal or treatment facility is accompanied by a special permit issued by the department as provided in WAC 16-470-124(1).

(4) The shipment of yard debris, organic feedstocks, organic materials, or agricultural wastes from the quarantine area to the pest free area for purposes of disposal in a municipal solid waste landfill

or appropriate treatment or composting facility is accompanied by a special permit issued by the department as provided in WAC 16-470-124(2).

(5) The shipment of soil or growing medium in pots or on root balls of host plants is accompanied by either an official phytosanitary certificate or inspection tag associated with a compliance agreement issued by the department stating the following:

(a) The soil or growing medium supports host plants that have not produced fruit and did not fall within the drip line of host plants that have produced fruit; or

(b) The soil or growing medium supports host plants that were grown in a commercial nursery and the production site is not considered threatened with infestation as defined in WAC 16-470-103(4); or

(c) The soil or growing medium of the host plants has been treated with a pesticide treatment approved by the director just prior to shipment and safeguarded from reinfestation.

(6) The shipment of soil or growing medium in pots or on root balls of nonhost plants that were grown within the drip line of host plants that have produced fruit is accompanied by either an official phytosanitary certificate or inspection tag associated with a compliance agreement issued by the department stating the following:

(a) The soil or growing medium supports nonhost plants that were grown in a commercial nursery and the production site is not considered threatened with infestation as defined in WAC 16-470-103(4); or

(b) The soil or growing medium of the nonhost plants has been treated with a pesticide treatment approved by the director just prior to shipment and safeguarded from reinfestation.

(7) Phytosanitary certificates and inspection tags associated with a compliance agreement described in subsections (5) and (6) of this section shall be issued by the department in accordance with chapters 16-401 WAC and 15.13 RCW.

(8) Fees for inspection services related to the issuance of phytosanitary certificates, inspection tags associated with a compliance agreement, and requests to remove threatened with infestation status, shall be charged in accordance with WAC 16-401-027.