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STATE OF WASHINGTON
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No. 96267-7 [1]

SUPREME COURT OF THE STATE OF WASHINGTON

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated,
Plaintiffs-Petitioners,

v.

DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER,
Defendants-Respondents,

and

WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU,
Intervenors-Respondents.

MOTION FOR DISCRETIONARY REVIEW

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[1] According to Columbia Legal Services' call with the Supreme Court clerk's office on September 5, 2018, the Notice of Discretionary Review to the Supreme Court had not been forwarded by the Yakima County Superior Court. In order to meet the deadline in RAP 6.2, Plaintiffs-Petitioners file without a case number.

I. INTRODUCTION

Under RCW 49.46.130(2)(g), farmworkers do not have the right to overtime protections when they work over forty hours in a week. Plaintiff-Petitioner farmworkers ("Workers") challenged the agricultural exemption from overtime protections on the ground that it violates article I, section 12 (the "privileges and immunities clause") of the Washington State Constitution. The trial court issued an order granting in part and denying in part Plaintiffs' Motion for Summary Judgment on this constitutional issue and denying Intervenors' (industry groups) Cross Motion for Summary Judgment. The court then certified that its summary judgment order meets the requirements of RAP 2.3(b) for discretionary review. In the interests of finality and efficient use of judicial resources, the Workers request that this Court accept discretionary review to resolve all aspects of their constitutional claims.

II. IDENTITIES OF PETITIONERS

Jose Martinez-Cuevas and Patricia Aguilar are farmworkers formerly employed as milkers at Defendant DeRuyter Brothers Dairy, Inc. On behalf of the class they represent, the Workers request that this Court accept discretionary and direct review of the trial court's decision involving the constitutionality of the

exemption of agricultural workers from overtime under state law, as outlined below.

III. DECISION BELOW

On March 1, 2018, the Workers filed a motion for summary judgment, arguing that the agricultural exemption from the overtime protections of the Washington Minimum Wage Act, RCW 49.46.130(2)(g), violates article I, section 12 of the state constitution, both by granting an impermissible privilege or immunity to the agricultural industry and also by denying farmworkers equal protection under the law. App. Ex. 10. On May 31, 2018, the Yakima County Superior Court issued a letter ruling. App. Ex. 1 at 12-14. On July 27, 2018, the court entered an order granting in part and denying in part the Workers' motion for summary judgment and incorporating its letter ruling into the order. App. Ex. 1.

The court initially ruled that the agricultural overtime exemption grants a privilege or immunity in contravention of article I, section 12 of the Washington Constitution. But the court then stated, "[t]he second part of the test is to determine whether there is a 'reasonable basis' for granting the identified privilege or immunity." App. Ex. 1 at 14. The court reasoned that "[t]his issue is

simply not amendable [sic] to decision in the context of a CR 56 motion" because the "level of scrutiny must be determined by reference to issues of legislative intent and legislative history and a determination whether a suspect class is implicated." *Id.* The court also stated, "at the very least, this Court must determine whether there is a reasonable ground, actual and not hypothetical, for the distinction drawn by the legislature." *Id.* Based on this statement of the standard for reviewing the Workers' constitutional claims, the court found there are "material facts proffered by both the Plaintiffs and the Defendants which are divergent and that will require the Court to weigh the same. This would not be proper in the context of a summary judgment proceeding." *Id.* On this basis, the court granted in part and denied in part Plaintiffs' Motion for Summary Judgment. The court also denied Intervenors' Cross Motion for Summary Judgment. App. Ex. 1. The court then certified the summary judgment order for discretionary review pursuant to RAP 2.3. App. Ex. 1 at 4. Petitioners seek review of all aspects of the order on summary judgment.

IV. ISSUES PRESENTED FOR REVIEW

1. Is the agricultural exemption from the overtime protections of the Minimum Wage Act, RCW 49.46.130, a "privilege or

immunity" within the meaning of article I, section 12 of the Washington Constitution?

2. Did the trial court err by conflating the test for "reasonable grounds" (the second element of the "privileges and immunities" analysis) with the test for an "equal protection" claim?

3. Did the trial court err in misstating the standard for determining whether the legislature had "reasonable grounds" for granting a privilege or immunity?

4. Did the trial court err in concluding that the "reasonable grounds" test presented an issue of disputed fact for trial?

5. Did the trial court err in concluding that the entire equal protection claim presented issues of fact?

6. Did the trial court err in failing to grant the Workers' motion for summary judgment because the agricultural exemption from overtime violates article I, section 12 of the Washington State Constitution?

V. STATEMENT OF THE CASE

A. <u>Complaint and Early Procedural History</u>

On December 8, 2016, the Workers filed a class action alleging multiple violations of Washington employment law by their employer, DeRuyter Brothers Dairy. App. Ex. 5. The Workers

also sought a declaration from the court that the exemption of agricultural employers from the overtime requirements of RCW 49.46.130 violates the privileges and immunities clause of the Washington State Constitution. The First Amended Complaint, filed on October 10, 2017, contained the same claims. App. Ex. 6.

All claims other than the constitutional claim were resolved through a settlement agreement which the court approved on October 30, 2017. App. Ex. 8. Pursuant to a stipulated motion, the court issued an order on January 26, 2018, certifying a class for the constitutional claims. App. Ex. 9.

B. Summary Judgment Order on Constitutional Claims and Certification for Discretionary Review

On March 1, 2018, the Workers filed a motion for summary judgment on the constitutional claims. App. Ex. 10. Intervenors Washington Farm Bureau and Washington Dairy Federation[2] filed a cross motion for summary judgment and motions to strike parts declarations submitted by the Workers. App. Exs. 25, 26.

The Workers argued that the agricultural exemption from overtime protections violates article I, section 12 of the Washington State Constitution both because it grants an impermissible privilege

[2] Hereinafter, the Workers will refer to the Intervenors and Defendants as "DeRuyter and the Industry Groups."

or immunity to the agricultural industry and because it deprives farm workers of equal protection under the law. App. Ex. 10. The Workers' privileges and immunities argument was predicated on the Washington State Constitution's guarantee of protection for all workers employed in dangerous occupations in article II, section 35. *Id.* at 148-50.

On May 14, 2018, the trial judge heard argument on the cross-motions for summary judgment. On May 31, 2018, the court issued a letter ruling, in which it set out this reasoning:

1) The first part of the test for unconstitutional privileges and immunities was satisfied because the agricultural exemption from overtime constitutes a "privilege or immunity" within the meaning of article I, section 12, because it burdens the Workers' "fundamental right" to "work and earn a wage";

2) "The second part of the test is to determine whether there is a 'reasonable basis' for granting the identified privilege or immunity. This issue is simply not amendable [sic.] to decision in the context of a CR 56 motion. The level of scrutiny must be determined by reference to issues of legislative intent and legislative history and a determination whether a suspect class is implicated. And at the very least, this Court must determine

whether there is a reasonable ground, actual and not hypothetical, for the distinction drawn by the legislature."[3] App. Ex. 1 at 14.

On July 27, 2018, the trial court entered an order on the cross motions for summary judgment. App. Ex. 1. The order attaches and incorporates the May 31, 2018 letter ruling, holds that the agricultural exemption grants a privilege or immunity in contravention of article I, section 12 of the state constitution, and concludes that all other aspects of the Workers' claims are reserved for trial. *Id.* The court also certifies that the order "involves a controlling question of law as to which there is a substantial ground for difference of opinion and that immediate review of the order may materially advance the ultimate termination of the litigation," pursuant to RAP 2.3. *Id.*

C. <u>All Parties Seek Discretionary Review</u>

On August 3, 2018, DeRuyter and the Industry Groups filed notice that they would seek discretionary review by the Court of Appeals, and they filed a joint motion for discretionary review at the Court of Appeals, Division III on August 17, 2018. App. Exs. 3 & 38. The Workers filed a notice that they would seek discretionary

[3] The concepts of "reasonable *basis*," "level of scrutiny," and "suspect class" are not elements of this Court's two-part "privileges and immunities" analysis. *See Schroeder v. Weighall*, 179 Wn.2d 566, 572-74, 316 P.3d 482 (2014).

review by this Court on August 22, 2018, App. Ex. 2, and now present this motion, accompanied by a Statement of Grounds for Direct Review.

VI. ARGUMENT

This Court should accept discretionary review because this case meets the criteria for review under RAP 2.3(b)(2), which provides that review may be accepted if the superior court has certified that "the order involves a controlling question of law as to which there is a substantial ground for a difference of opinion and that immediate review of the order may materially advance the ultimate termination of the litigation." The Yakima County Superior Court so certified in its July 27, 2018 order.

A. The Trial Court's Order Involves Controlling Questions of Law as to which There is a Substantial Ground for Difference of Opinion

This case involves a substantial difference of opinion about two issues. First, there is a substantial difference of opinion as to whether the agricultural exemption constitutes a "privilege or immunity" within the meaning of the Washington Constitution. The recognized two-part test for alleged violations of the privileges and immunities clause requires the court to determine: 1) whether the law in question grants a "privilege or immunity," and 2) whether

the legislature had a "reasonable ground" for granting the privilege or immunity. *Schroeder v. Weighall*, 179 Wn.2d 566, 572-74, 316 P.3d 482 (2014). "Privileges or immunities" are those benefits that implicate "fundamental rights of state citizenship." *Id.* at 573. Only a right that "is, in its very nature, such a fundamental right of a citizen that it may be said to come within the prohibition of the constitution" is protected. *Ockletree v. Franciscan Health Sys.*, 179 Wn.2d 769, 778, 317 P.3d 1009 (2014). (quoting *State v. Vance*, 29 Wash. 435, 458-59, 70 P.3d 34 (1902)).

In their summary judgment briefing, the Workers argued that all workers in dangerous occupations have a fundamental right to the protection of laws for worker health and safety, established in article II, section 35 of the state constitution, which provides: "The legislature shall pass necessary laws for the protection of persons working in mines, factories and other employments dangerous to life or deleterious to health; and fix pains and penalties for the enforcement of the same." App. Ex. 10 at 148-50. DeRuyter and the Industry Groups argued that this constitutional provision created no such fundamental right. *See* App. Exs. 19 & 24. And the trial court based its finding of a "privilege or immunity" on an entirely

different right – "the right to work and earn a wage." App. Ex. 10 at 14.

Second, substantial ground for difference of opinion also exists as to whether the remaining issues are amenable to summary judgment in this case. As to the "privileges and immunities" analysis, the facts in this case are few and undisputed: the workers in the Class worked overtime, their employers did not pay overtime premiums, agriculture is a dangerous industry with a high injury rate, and the injury rate at the Class's workplace was similarly high. The only "facts" in dispute are those relating to the legislative history of RCW 49.46.130(2)(g)—an issue of law. In determining whether a "reasonable ground" exists for a privilege or immunity, a court must "scrutinize the legislative distinction" to determine whether it serves "the legislature's stated goal" and cannot "hypothesize facts to justify a legislative distinction." *Schroeder*, 179 Wn.2d at 574 (emphasis added; internal citations omitted). This analysis requires the court to discern what the legislature *actually* considered when adopting the legislation. *See id.* The review of legislative history is a question appellate courts undertake as a question of law. *See In re Pers. Restraint of Cruz*, 157 Wn.2d 83,

87, 134 P.3d 1166, 1168 (2006) (reviewing legislative history as part of de novo statutory interpretation).[4]

DeRuyter and the Industry Groups appeared to argue that they could create disputes of fact through a declaration questioning the underlying historical scholarship of some of the Workers' scholarly articles as to issues that are not material to the claims.[5] The trial court, in turn, did not identify any specific questions of material fact that required a fact-finder, instead stating that "all other aspects of [the Workers'] claims" were "reserved for trial." App. Ex. 1 at 3.

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[4] Equal Protection analysis is also a question of law. *United States v. Baker*, 63 F.3d 1478, 1490 (9th Cir. 1995) ("Equal protection claims are questions of law which we review de novo.); s*ee LK Operating, LLC v. Collection Grp., LLC*, 181 Wn.2d 48, 66, 331 P.3d 1147, 1154 (2014) ("Constitutional challenges present questions of law reviewed de novo."). "Identifying the applicable level of scrutiny in an equal protection case is a question of law. Likewise, identifying the nature of the challenger's interest and assessing the importance of the governmental interest and the fit between that interest and the means chosen to advance it, present questions of law." *State v. Schmidt*, 323 P.3d 647, 655 (Alaska 2014).

[5] The only issue on which DeRuyter and the Industry Groups alleged specific questions of fact existed was the Workers' summary of the racist history of the overtime exemption from the federal Fair Labor Standards Act. App. Ex. 19 (Defs' Mot. in Opp to Plfs' Mot. for Summary Judgment) at 812-16; *see generally* App. Ex. 24 (Interv-Defs' Opp. Memo to Plfs' Mot. for Summary Judgment (no specific questions of material fact identified)). This is historical background rather than a fact material to the claims presented in the case.

B. **Immediate Review of the Issues Presented Will Materially Advance the Ultimate Termination of Litigation**

This Court should also accept review because the second criterion is met: immediate review of both of the issues outlined above will materially advance the ultimate termination of the litigation in this case. The question of whether the agricultural exemption from overtime is a "privilege or immunity" is a threshold question in this Court's "privileges and immunities" analysis, *see Schroeder*, 179 Wn.2d at 572-74, which has also been identified as a dispositive issue in DeRuyter and the Industry Groups' Motion for Discretionary Review. App. Ex. 38 (Defs' and Intervs' Mot. for Disc. Rev.) at 1212.

Review of whether the legislature had a "reasonable ground" for excluding farm workers from the health and safety protection of overtime compensation will also materially advance the termination of the litigation. This is a legal question that requires an analysis of what the legislature *actually* considered when adopting the legislation. *Schroeder*, 179 Wn.2d at 574. To determine whether a "reasonable ground" exists for the legislature's decision, this Court will need to "scrutinize the legislative distinction" to determine whether it serves "the legislature's stated

goal" and cannot "hypothesize facts to justify a legislative distinction." *Id.* at 574 (internal citations omitted). If this Court denied discretionary review on this issue, the case would return to the trial court, ostensibly for trial on the legislative history of the exemption and whether the legislature took into account the safety and health purpose of the underlying statute.[6] These are legal issues appropriate for resolution by the court.[7] Furthermore, DeRuyter and the Industry Groups note in their motion for discretionary review, and the Workers agree, that a trial in this case would be "complex, time consuming, and costly." App. Ex. 38 (Defs' and Intervs' Mot. for Disc. Rev.) at 1212.

If this Court agrees with the Workers that these issues present legal questions that can be decided by this Court, the Court's ruling will dispose of the case, regardless of which party prevails. This result would avoid the substantial cost to the judicial system of a futile trial on legislative intent in addition to multiple appeals.

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[6] DeRuyter and the Industry Groups presented no evidence at summary judgment to negate Plaintiff's assertion that agriculture is a dangerous industry in which to work. *See generally* App. Exs. 19 & 24 and declarations in support thereof.

[7] The separate equal protection challenge also presents a constitutional question appropriate for de novo review by this Court. *See* n.4, *supra*.

VII. CONCLUSION

For the reasons stated above and in the accompanying statement of grounds for direct review, this Court should accept review of this case on all aspects of the constitutional claims.

DATED this 6th day of September, 2018.

COLUMBIA LEGAL SERVICES

By: _____
Andrea Schmitt, WSBA #39759

FRANK FREED SUBIT & THOMAS LLP

By: _____ for
Marc Cote, WSBA # 39824

Attorneys for Plaintiffs-Petitioners

CERTIFICATE OF SERVICE

I certify under penalty of perjury and in accordance with the laws of the State of Washington that on September 6, 2018, I caused a true and correct copy of the foregoing **Motion for Discretionary Review** to be served on the following persons by electronic mail:

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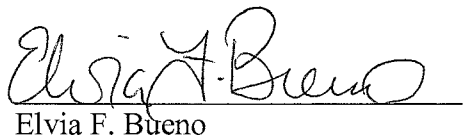
Counsel for Intervenor-Defendants

DATED this 6th day of September, 2018 at Yakima, Washington.



Elvia F. Bueno

COLUMBIA LEGAL SERVICES

September 06, 2018 - 5:15 PM

Transmittal Information

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Appellate Court Case Number:	96267-7
Appellate Court Case Title:	Jose Martinez-Cuevas, et al v. Deruyter Brothers Dairy, Inc., et al
Superior Court Case Number:	16-2-03417-8

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SUPREME COURT OF THE STATE OF WASHINGTON

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated,
Plaintiffs-Petitioners,

v.

DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER,
Defendants-Respondents,

and

WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU,
Intervenors-Respondents.

APPENDIX TO PETITIONERS' MOTION FOR DISCRETIONARY REVIEW

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Document Title	**Exhibit No. (pp. #)**
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CERTIFICATE OF SERVICE

I certify under penalty of perjury and in accordance with the laws of the State of Washington that on September 7, 2018, I caused a true and correct copy of the foregoing **Appendix to Petitioners' Motion for Discretionary Review** to be served on the following persons by electronic mail:

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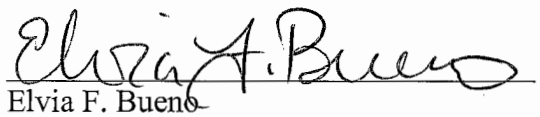
Counsel for Intervenor-Defendants

DATED this 7th day of September, 2018 at Yakima, Washington.



Elvia F. Bueno

EXHIBIT 1

13

FILED
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SUPERIOR COURT
YAKIMA CO. WA

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, v. DERUYTER BROTHERS DAIRY, INC., Defendant. WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU, Intervenor-Defendant-Applicants	No. 16-2-03417-39 **[~~PROPOSED~~] ORDER ON PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT AND INTERVENORS' CROSS MOTION FOR SUMMARY JUDGMENT AND MOTION TO STRIKE**

Plaintiffs' Motion for Summary Judgment and Intervenors' Cross Motion for Summary Judgment came to be heard on May 18, 2018. In addition, the Court heard Defendants' Motions to Strike the Declaration of Paul Apostolidis and to Strike the Declarations of Elvia Bueno and Joachim Morrison, and Intervenors' Motion to Strike Portions of Plaintiffs' Declarations in Support of Summary Judgment on May 18, 2018. The Court having reviewed the documents identified and incorporated fully herein as **Attachment A**, and, having heard the arguments of counsel and being fully apprised in the circumstances, it is hereby ORDERED that:

STOEL RIVES LLP
ATTORNEYS
600 University Street, Suite 3600, Seattle, WA 98101
Telephone 206.624.0900

1. For the reasons identified in the Court's Letter Ruling dated May 31, 2018, attached hereto as **Attachment B**, the Court grants Plaintiffs' Motion for Summary Judgment in part and denies the same in part as follows:

a. The Court determines that RCW 49.46.130(2) grants a privilege or immunity in contravention of Article 1, Section 12 of the Washington Constitution; and

b. All other aspects of Plaintiffs' claims are reserved for trial.

2. For the reasons identified in the Court's Letter Ruling, **Attachment B**, the Court denies Intervenors' Cross Motion for Summary Judgment.

3. Defendants' Motions to Strike the Declaration of Paul Apostolidis and to Strike the Declarations of Joachim Morrison and Elvia Bueno are denied.

4. The Motion by Intervenors to Strike Portions of Plaintiffs' Declarations in Support of Summary Judgment is [~~granted/denied/granted in in part as follows but otherwise denied~~]: Court finds these materials were irrelevant to the issue decided.

///

///

///

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5. Pursuant to RAP 2.3(a), this Court certifies that this Order involves a controlling question of law as to which there is substantial ground for a difference of opinion and that immediate review of the order may materially advance the ultimate termination of the litigation.

DATED: July 27, 2018.

The Honorable Michael G. McCarthy, pre-assigned

Presented by:

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Attorneys for Defendant DeRuyter Brothers Dairy, Inc

CERTIFICATE OF SERVICE

I certify that at all times mentioned herein, I was and am a resident of the state of Washington, over the age of 18 years, not a party to the proceeding or interested therein, and competent to be a witness therein. My business address is that of Stoel Rives LLP, 600 University Street, Suite 3600, Seattle, Washington 98101.

On July 23, 2018, I caused a true and correct copy of the foregoing document to be served upon the following parties in the manner indicated below:

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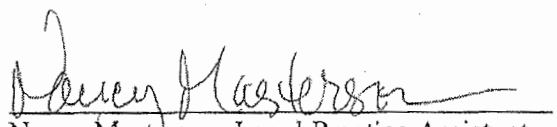
DATED at Seattle, Washington, this 23rd day of July, 2018.



Nancy Masterson, Legal Practice Assistant

ATTACHMENT A

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ATTACHMENT B

Superior Court of the State of Washington
for the County of Yakima

Judge Michael G. McCarthy
Department No. 2

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Re: Martinez-Cuevas et al v. DeRuyter Dairy Inc, et al
Yakima County Cause 16-2-3417-39

May 31, 2018

Dear Counsel:

This matter came before the court on cross motions for summary judgment. The critical issue is whether the exemption of the agricultural industry from overtime pay is violative of the Washington Constitution.

RCW 49.46.130 reads in pertinent part as follow

> (1) Except as otherwise provided in this section, no employer shall employ any of his or her employees for a workweek longer than forty hours unless such employee receives compensation for his or her employment in excess of the hours above specified at a rate not less than one and one-half times the regular rate at which he or she is employed.
> (2) This section does not apply to: ....
> Any individual employed (i) on a farm, in the employ of any person, in connection with the cultivation of the soil, or in connection with raising or harvesting any agricultural or horticultural commodity, including raising, shearing, feeding, caring for, training, and management of livestock, bees, poultry, and furbearing animals and wildlife, or in the employ of the owner or tenant or other operator of a farm in connection with the operation, management, conservation, improvement, or maintenance of such farm and its tools and equipment; or (ii) in packing, packaging, grading, storing or delivering to storage, or to market or to a carrier for transportation to market, any agricultural or horticultural commodity; or (iii) commercial canning, commercial freezing, or any other commercial processing, or with respect to services performed in connection with the cultivation, raising, harvesting, and processing of oysters or in connection with any agricultural or horticultural commodity after its delivery to a terminal market for distribution for consumption;

Plaintiffs argue this exemption from overtime pay for hours worked in excess of 40 per week runs afoul of Article 1 section 12, and of the Washington Constitution which provides as follows;

> No law shall be passed granting to any citizen, class of citizens, or corporations other than municipal, privileges or immunities which upon the same terms shall not equally belong to all citizens or corporations.

The application of this provision to legislation involves a two-part test; (1) a determination whether the legislation grants a privilege or immunity and (2) whether there is reasonable basis for granting the privilege or immunity. Schroeder v. Weighall, 179 Wn 2nd 566, 572-73, 316 P.3d 482 (2014).

In contrast with the Equal Protection Clause of the 14th Amendment to the United States Constitution, which generally prohibits disparate treatment of certain classes, the Privileges and Immunities clause is intended to prohibit the granting of "certain privileges or benefits to the disadvantage of others.... [t]he [drafters'] concern was prevention of favoritism and special treatment for a few, rather than prevention of discrimination against disfavored individuals or groups." State v. Smith, 117 Wn 2d 263, 283, 814 P.2d 652 (1991)

Application of the first part of the test requires a determination whether the law in question burdens a "fundamental right" of state citizenship. Grant County FPD No. 5 v. City of Moses Lake, 150 Wn 2nd 791, 83 P.3d 419 (2004). Whether RCW 49.46.130(2) implicates such a right is ultimately a question of law.

Various circumstances have been identified as representative of "fundamental rights" of state citizenship. A law barring hunting of deer with dogs in certain counties was found not to implicate a "fundamental right". Hays v. Terr. Of Wash., 2 Was Terr. 286, 5 P. 927 (1884). In contrast, an ordinance that prohibited the peddling of fruit, vegetables and dairy products by anybody other than the farmer who produced the same was found to implicate a "fundamental right". Ex Parte Camp, 38 Wash. 393, 80 P. 547 (1905).

In State v. Vance, 29 Wash. 435, 458, 70 P. 34 (1902), the Court provided a list of "fundamental rights of state citizenship" as then recognized: "to the citizens of all states the right to remove to and carry on business therein; the right, by usual modes, to acquire and hold property, and to protect and defendant (sic) the same in the law; the rights to the usual remedies to collect debts, and to enforce other personal right; and the right to be exempt, in property or persons, from taxes or burdens which the property or persons of citizens of some other state are exempt from."

And in the most recent incarnation, a law which limited the pursuit of common law claims against certain defendants was held to be in contravention of Article 1, Section 12, as a grant of an immunity to that class of defendants. Schroeder v. Weighall, supra.

We can discern from these decisions that "fundamental rights of state citizenship" are primarily economic in nature; to conduct business, acquire, own and sell property, access the courts, collect debts, etc... By the same token, the right to work [sell your labor and earn a wage] also must be counted among the other "fundamental rights".

In the instant case, the "fundamental right", which is burdened by RCW 49.46.130(2), is the right to work and earn a wage. This right, although not foreclosed by the statute, is impacted by the statute which treats a class of workers in a significantly different fashion than other wage earners engaged in

the business of selling their labor. So, I find the first part of the Schroeder test has been satisfied: RCW 49.46.130(2) grants a privilege or immunity in contravention of Article 1, Section 12.

The second part of the test is to determine whether there is a "reasonable basis" for granting the identified privilege or immunity. This issue is simply not amendable to decision in the context of a CR 56 motion. The level of scrutiny must be determined by reference to issues of legislative intent and legislative history and a determination whether a suspect class is implicated. And at the very least, this Court must determine whether there is a reasonable ground, actual and not hypothetical, for the distinction drawn by the legislature.

There are material facts proffered by both the Plaintiffs and the Defendants which are divergent and that will require the Court to weigh the same. This would not be proper in the context of a summary judgment proceeding.

In sum, the Court grants the Plaintiffs' Motion for Summary Judgment in part and denies the same in part. The Court also denies the Defendant/Intervenors' Cross Motion for Summary Judgment. Plaintiffs are requested to prepare and note an appropriate order for presentation.

Very truly yours,

Michael G. McCarthy
Judge

EXHIBIT 2

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THE HONORABLE MICHAEL G. McCARTHY

SUPERIOR COURT OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, v. DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER, Defendants, and WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU, Intervenors.	No. 16-2-03417-39 NOTICE OF DISCRETIONARY REVIEW TO THE WASHINGTON SUPREME COURT

Pursuant to Rules of Appellate Procedure 4.2(b) and 5.1, Plaintiffs seek discretionary review by the Washington Supreme Court of the Order on Plaintiffs' Motion for Summary Judgment and Intervenors' Cross Motion for Summary Judgment and Motion to Strike, entered on July 27, 2018.

A copy of this Order is attached herein as Exhibit A.

DATED this 22nd day of August, 2018

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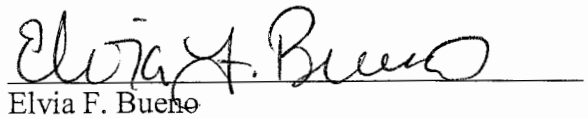
I, Elvia Bueno, declare under penalty of perjury under the laws of the State of Washington:

1. I am over the age of 18 and competent to testify as to the statements made in this declaration. I am making this declaration pursuant to GR 17(a)(2).

2. On August 22, 2018 I received the attached Plaintiffs' Notice of Discretionary Review to the Washington Supreme Court.

3. I have examined the Notice and determined that it consists of 18 pages, including this declaration, and that it is complete and legible.

Signed this 22nd day of August, 2018.



Elvia F. Bueno

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EXHIBIT A

13

FILED
JANELLE RIDDLE/CLERK

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SUPERIOR COURT
YAKIMA CO. WA

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, v. DERUYTER BROTHERS DAIRY, INC., Defendant. WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU, Intervenor-Defendant-Applicants	No. 16-2-03417-39 **[~~PROPOSED~~] ORDER ON PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT AND INTERVENORS' CROSS MOTION FOR SUMMARY JUDGMENT AND MOTION TO STRIKE**

Plaintiffs' Motion for Summary Judgment and Intervenors' Cross Motion for Summary Judgment came to be heard on May 18, 2018. In addition, the Court heard Defendants' Motions to Strike the Declaration of Paul Apostolidis and to Strike the Declarations of Elvia Bueno and Joachim Morrison, and Intervenors' Motion to Strike Portions of Plaintiffs' Declarations in Support of Summary Judgment on May 18, 2018. The Court having reviewed the documents identified and incorporated fully herein as **Attachment A**, and, having heard the arguments of counsel and being fully apprised in the circumstances, it is hereby ORDERED that:

STOEL RIVES LLP
ATTORNEYS
600 University Street, Suite 3600, Seattle, WA 98101
Telephone 206.624.0900

1. For the reasons identified in the Court's Letter Ruling dated May 31, 2018, attached hereto as **Attachment B**, the Court grants Plaintiffs' Motion for Summary Judgment in part and denies the same in part as follows:

a. The Court determines that RCW 49.46.130(2) grants a privilege or immunity in contravention of Article 1, Section 12 of the Washington Constitution; and

b. All other aspects of Plaintiffs' claims are reserved for trial.

2. For the reasons identified in the Court's Letter Ruling, **Attachment B**, the Court denies Intervenors' Cross Motion for Summary Judgment.

3. Defendants' Motions to Strike the Declaration of Paul Apostolidis and to Strike the Declarations of Joachim Morrison and Elvia Bueno are denied.

4. The Motion by Intervenors to Strike Portions of Plaintiffs' Declarations in Support of Summary Judgment is [~~granted/denied/granted in in part as follows but otherwise denied~~]:

Court finds these materials were irrelevant to the issue decided

///

///

///

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ATTORNEYS
600 University Street, Suite 3600, Seattle, WA 98101
Telephone 206.624.0900

5. Pursuant to RAP 2.3(a), this Court certifies that this Order involves a controlling question of law as to which there is substantial ground for a difference of opinion and that immediate review of the order may materially advance the ultimate termination of the litigation.

DATED: July 27, 2018. The Honorable Michael G. McCarthy, pre-assigned

Presented by:

STOEL RIVES LLP

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Ryan R. Jones, WSBA No. 52566
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Attorneys for Intervenor-Defendant-Applicants Washington State Dairy Federation and Washington Farm Bureau

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Attorneys for Defendant DeRuyter Brothers Dairy, Inc.

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DATED at Seattle, Washington, this 23rd day of July, 2018.

Nancy Masterson, Legal Practice Assistant

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Superior Court of the State of Washington
for the County of Yakima

Judge Michael G. McCarthy
Department No. 2

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Seattle WA 98101

Re: Martinez-Cuevas et al v. DeRuyter Dairy Inc, et al
Yakima County Cause 16-2-3417-39

May 31, 2018

Dear Counsel:

This matter came before the court on cross motions for summary judgment. The critical issue is whether the exemption of the agricultural industry from overtime pay is violative of the Washington Constitution.

RCW 49.46.130 reads in pertinent part as follow

> (1) Except as otherwise provided in this section, no employer shall employ any of his or her employees for a workweek longer than forty hours unless such employee receives compensation for his or her employment in excess of the hours above specified at a rate not less than one and one-half times the regular rate at which he or she is employed.
> (2) This section does not apply to: ....
> Any individual employed (i) on a farm, in the employ of any person, in connection with the cultivation of the soil, or in connection with raising or harvesting any agricultural or horticultural commodity, including raising, shearing, feeding, caring for, training, and management of livestock, bees, poultry, and furbearing animals and wildlife, or in the employ of the owner or tenant or other operator of a farm in connection with the operation, management, conservation, improvement, or maintenance of such farm and its tools and equipment; or (ii) in packing, packaging, grading, storing or delivering to storage, or to market or to a carrier for transportation to market, any agricultural or horticultural commodity; or (iii) commercial canning, commercial freezing, or any other commercial processing, or with respect to services performed in connection with the cultivation, raising, harvesting, and processing of oysters or in connection with any agricultural or horticultural commodity after its delivery to a terminal market for distribution for consumption;

Plaintiffs argue this exemption from overtime pay for hours worked in excess of 40 per week runs afoul of Article 1 section 12, and of the Washington Constitution which provides as follows;

> No law shall be passed granting to any citizen, class of citizens, or corporations other than municipal, privileges or immunities which upon the same terms shall not equally belong to all citizens or corporations.

The application of this provision to legislation involves a two-part test; (1) a determination whether the legislation grants a privilege or immunity and (2) whether there is reasonable basis for granting the privilege or immunity. Schroeder v. Weighall, 179 Wn 2nd 566, 572-73, 316 P.3d 482 (2014).

In contrast with the Equal Protection Clause of the 14th Amendment to the United States Constitution, which generally prohibits disparate treatment of certain classes, the Privileges and Immunities clause is intended to prohibit the granting of "certain privileges or benefits to the disadvantage of others.... [t]he [drafters'] concern was prevention of favoritism and special treatment for a few, rather than prevention of discrimination against disfavored individuals or groups." State v. Smith, 117 Wn 2d 263, 283, 814 P.2d 652 (1991)

Application of the first part of the test requires a determination whether the law in question burdens a "fundamental right" of state citizenship. Grant County FPD No. 5 v. City of Moses Lake, 150 Wn 2nd 791, 83 P.3d 419 (2004). Whether RCW 49.46.130(2) implicates such a right is ultimately a question of law.

Various circumstances have been identified as representative of "fundamental rights" of state citizenship. A law barring hunting of deer with dogs in certain counties was found not to implicate a "fundamental right". Hays v. Terr. Of Wash., 2 Was Terr. 286, 5 P. 927 (1884). In contrast, an ordinance that prohibited the peddling of fruit, vegetables and dairy products by anybody other than the farmer who produced the same was found to implicate a "fundamental right". Ex Parte Camp, 38 Wash. 393, 80 P. 547 (1905).

In State v. Vance, 29 Wash. 435, 458, 70 P. 34 (1902), the Court provided a list of "fundamental rights of state citizenship" as then recognized: "to the citizens of all states the right to remove to and carry on business therein; the right, by usual modes, to acquire and hold property, and to protect and defendant (sic) the same in the law; the rights to the usual remedies to collect debts, and to enforce other personal right; and the right to be exempt, in property or persons, from taxes or burdens which the property or persons of citizens of some other state are exempt from."

And in the most recent incarnation, a law which limited the pursuit of common law claims against certain defendants was held to be in contravention of Article 1, Section 12, as a grant of an immunity to that class of defendants. Schroeder v. Weighall, supra.

We can discern from these decisions that "fundamental rights of state citizenship" are primarily economic in nature; to conduct business, acquire, own and sell property, access the courts, collect debts, etc... By the same token, the right to work [sell your labor and earn a wage] also must be counted among the other "fundamental rights".

In the instant case, the "fundamental right", which is burdened by RCW 49.46.130(2), is the right to work and earn a wage. This right, although not foreclosed by the statute, is impacted by the statute which treats a class of workers in a significantly different fashion than other wage earners engaged in

the business of selling their labor. So, I find the first part of the Schroeder test has been satisfied: RCW 49.46.130(2) grants a privilege or immunity in contravention of Article 1, Section 12.

The second part of the test is to determine whether there is a "reasonable basis" for granting the identified privilege or immunity. This issue is simply not amendable to decision in the context of a CR 56 motion. The level of scrutiny must be determined by reference to issues of legislative intent and legislative history and a determination whether a suspect class is implicated. And at the very least, this Court must determine whether there is a reasonable ground, actual and not hypothetical, for the distinction drawn by the legislature.

There are material facts proffered by both the Plaintiffs and the Defendants which are divergent and that will require the Court to weigh the same. This would not be proper in the context of a summary judgment proceeding.

In sum, the Court grants the Plaintiffs' Motion for Summary Judgment in part and denies the same in part. The Court also denies the Defendant/Intervenors' Cross Motion for Summary Judgment. Plaintiffs are requested to prepare and note an appropriate order for presentation.

Very truly yours,

Michael G. McCarthy
Judge

EXHIBIT 3

John Ray Nelson, WSBA No. 16393
Milton G. Rowland, WSBA No. 15625
FOSTER PEPPER PLLC
618 W. Riverside Ave., Ste. 300
Spokane, WA 99201-5102

Attorneys for DeRuyter Defendants

SUPERIOR COURT OF WASHINGTON
IN AND FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, v. DERUYTER FARM PROPERTIES, INC., f/k/a DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER, Defendants, and WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU, Intervenor-Defendants.	No. 16-2-034173-9 NOTICE OF DISCRETIONARY REVIEW TO COURT OF APPEALS (DIVISION III)

Defendants DeRuyter Brothers Dairy, Inc., Geneva S. DeRuyter, and Jacobus N. DeRuyter ("DeRuyter), and Intervenor-Defendants Washington State Dairy Federation and Washington Farm Bureau, seek review by the Washington State Court of Appeals, Division III,

of the Order on Plaintiff's Motion for Summary Judgment and Intervenors' Cross Motion for Summary Judgment and Motion to Strike, entered on July 27, 2018.

A copy of the decision is attached to this notice.

DATED this 2nd day of August, 2018.

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CERTIFICATE OF SERVICE

I certify that I am a citizen of the United States of America and a resident of the State of Washington. I am over the age of eighteen, and I am competent to be a witness herein.

On this 2nd day of August, 2018, I caused the foregoing document to be served on the parties as indicated below.

Lori Jordan Isley Joachim Morrison Columbia Legal Services 6 South Second Street, Suite 600 Yakima, WA 98901 *Counsel for Plaintiff*	[ ] Via Facsimile [ ] Via Legal Messenger [X] Via E-mail [ ] Via U.S. Mail, postage prepaid
Marc Cote Frank Freed Subit & Thomas LLP 705 Second Avenue, Suite 1200 Seattle, WA 98104-1798 *Counsel for Plaintiff*	[ ] Via Facsimile [ ] Via Legal Messenger [X] Via E-mail [ ] Via U.S. Mail, postage prepaid
Timothy J. O'Connell Stoel Rives LLP 600 University Street, Ste. 3600 Seattle, WA 98101 *Counsel for Intervenors*	[ ] Via Facsimile [ ] Via Legal Messenger [X] Via E-mail [ ] Via U.S. Mail, postage prepaid

I declare under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

Pam McCain

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EXHIBIT A

13

'18 JUN 27

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, v. DERUYTER BROTHERS DAIRY, INC., Defendant WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU, Intervenor-Defendant-Applicants	No. 16-2-03417-39 **[~~PROPOSED~~] ORDER ON PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT AND INTERVENORS' CROSS MOTION FOR SUMMARY JUDGMENT AND MOTION TO STRIKE**

Plaintiffs' Motion for Summary Judgment and Intervenors' Cross Motion for Summary Judgment came to be heard on May 18, 2018. In addition, the Court heard Defendants' Motions to Strike the Declaration of Paul Apostolidis and to Strike the Declarations of Elvia Bueno and Joachim Morrison, and Intervenors' Motion to Strike Portions of Plaintiffs' Declarations in Support of Summary Judgment on May 18, 2018. The Court having reviewed the documents identified and incorporated fully herein as **Attachment** A, and, having heard the arguments of counsel and being fully apprised in the circumstances, it is hereby ORDERED that:

STOEL RIVES LLP
ATTORNEYS
600 University Street, Suite 3600, Seattle, WA 98101
Telephone 206.624.0900

1. For the reasons identified in the Court's Letter Ruling dated May 31, 2018, attached hereto as **Attachment B**, the Court grants Plaintiffs' Motion for Summary Judgment in part and denies the same in part as follows:

a. The Court determines that RCW 49.46.130(2) grants a privilege or immunity in contravention of Article 1, Section 12 of the Washington Constitution; and

b. All other aspects of Plaintiffs' claims are reserved for trial.

2. For the reasons identified in the Court's Letter Ruling, **Attachment B**, the Court denies Intervenors' Cross Motion for Summary Judgment.

3. Defendants' Motions to Strike the Declaration of Paul Apostolidis and to Strike the Declarations of Joachim Morrison and Elvia Bueno are denied.

4. The Motion by Intervenors to Strike Portions of Plaintiffs' Declarations in Support of Summary Judgment is [~~granted~~/denied/~~granted in in part as follows but otherwise denied~~]:

Court finds these matters have irrelevant to the issue decided

///

///

///

STOEL RIVES LLP
ATTORNEYS
600 University Street, Suite 3600, Seattle, WA 98101
Telephone 206.624.0900

5. Pursuant to RAP 2.3(a), this Court certifies that this Order involves a controlling question of law as to which there is substantial ground for a difference of opinion and that immediate review of the order may materially advance the ultimate termination of the litigation.

DATED: July 27, 2018. The Honorable Michael G. McCarthy, pro-assigned

Presented by:

STOEL RIVES LLP

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Tim.oconnell@stoel.com
Ryan R. Jones, WSBA No. 52566
Ryan.jones@stoel.com

Attorneys for Intervenor-Defendant-Applicants Washington State Dairy Federation and Washington Farm Bureau

Approved as to form:

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Jerri K. Katzerman
Diana Lopez Batista
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Email: milton.rowland@foster.com

Attorneys for Defendant DeRuyter Brothers Dairy, Inc

CERTIFICATE OF SERVICE

I certify that at all times mentioned herein, I was and am a resident of the state of Washington, over the age of 18 years, not a party to the proceeding or interested therein, and competent to be a witness therein. My business address is that of Stoel Rives LLP, 600 University Street, Suite 3600, Seattle, Washington 98101.

On July 23, 2018, I caused a true and correct copy of the foregoing document to be served upon the following parties in the manner indicated below:

Lori Jordan Isley Jerri K. Katzerman Diana Lopez Batista Joachim Morrison Columbia Legal Services 6 South Second Street, Suite 600 Yakima, WA 98901 Tel: (509) 575-5593 Fax: (509) 575-4404 Email: lori.isley@columbialegal.org Email: jerri.katzerman@columbialegal.org Email: diana.lopez@columbialegal.org Email: joe.morrison@columbialegal.org *Attorneys for Plaintiffs*	☐ hand delivery ☐ facsimile transmission ☐ overnight delivery ☐ regular US Mail ☒ e-mail delivery - by agreement of parties
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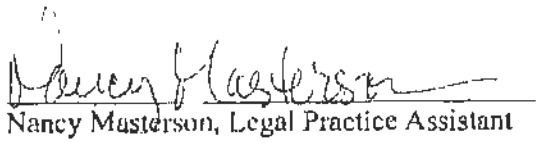
Email: milton.rowland@foster.com

Attorneys for Defendant DeRuyter Brothers Dairy, Inc.

☐ hand delivery
☐ facsimile transmission
☐ overnight delivery
☐ regular US Mail
☒ e-mail delivery - by agreement of parties

DATED at Seattle, Washington, this 23rd day of July, 2018.



Nancy Musterson, Legal Practice Assistant

ATTACHMENT A

1. Declaration of Paul Apostolidis in Support of Plaintiffs' Motion for Summary Judgment *with* Exhibit 1.

2. Plaintiffs' Motion for Summary Judgment and Statement of Points and Authorities.

3. Declaration of Rachael Pashkowski in Support of Motion for Summary Judgment with Exhibits 1 - 29.

4. Declaration of Margaret Leland *with* Exhibit 1.

5. Declaration of Patricia Aguilar in Support of Plaintiffs' Motion for Summary Judgment.

6. Declaration of Jose Martinez-Cuevas in Support of Plaintiffs' Motion for Summary Judgment.

7. Declaration of Joachim Morrison in Support of Plaintiffs' Motion for Summary Judgment *with* Exhibits 1 - 8.
   a. Exhibit 1: Bill Digest for HB 32 and Substitute HB 32.
   b. Exhibit 2: Portion of the House Floor Debate related to HB 32 from February, 19, 1975.
   c. Exhibit 3: Proposed amendment made by Representative Irv Newhouse to Substitute House Bill 32.
   d. Exhibit 4: Journal of the House relating to HB 32.
   e. Exhibit 5: Amendment made by Senator Sid Morrison to Engrossed Substitute Bill No. 32 on May 13, 1975.
   f. Exhibit 6: Additional Attachment made by Senator Sid Morrison to Engross Substitute Bill No. 32.
   g. Exhibit 7: Chapter 289 § 3 passed into law in 1975
   h. Exhibit 8: Letter submitted by the Toppenish Farm Worker Clinic in support of HB 32.

8. Declaration of Jennifer M. Belcher in Support of Plaintiffs' Motion for Summary Judgment *with* Exhibits 1 - 2.
   a. Exhibit 1: Engrossed House Bill 1544, 50th Leg., 1988 Regular Session.
   b. Exhibit 2: Bill Digest, Edition No. 8, Vol. 2, 50th Leg.

9. Declaration of Translation of Declaration of Jose Martinez-Cuevas in Support of Plaintiffs' Motion for Summary Judgment.

10. Motion to Strike Declaration of Paul Apostolidis.

11. Declaration of Dr. Robert C. Donnelly *with* Exhibits 1-2.

12. Declaration of John Ray Nelson *with* Exhibit 1.

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13. Defendants' Opposition to Plaintiffs' Motion for Summary Judgment.

14. Declaration of Claire Strom.

15. Intervenor-Defendants' Motion to Strike Portions of Portions of Plaintiffs' Declarations in Support of Summary Judgment.

16. Intervenor-Defendants' Opposition Memorandum to Plaintiffs' Motion for Summary Judgment and Statement of Points and Authorities and Cross Motion for Summary Judgment.

17. Declaration of Timothy J. O'Connell *with* Exhibits A - C.

18. Second Declaration of John Stuhlmiller.

19. Plaintiffs' Reply Memorandum in Support of Motion for Summary Judgment.

20. Declaration of Elvia F. Bueno in Support of Plaintiffs' Reply in Support of Motion for Summary Judgment *with* Exhibits 30 - 34.

21. Plaintiffs' Response to DeRuyter Defendants' Motion to Strike the Declaration of Paul Apostolidis.

22. Plaintiffs' Response to Intervenors' Motion to Strike.

23. Supplemental Declaration of Joachim Morrison in Support of Plaintiffs' Motion for Summary Judgment.

24. Defendant's Motion to Strike Declarations of Elvia F. Bueno and Joachim Morrison.

25. Reply in Support of Motion to Strike the Declaration of Paul Apostolidis.

26. Motion to Shorten Time.

27. Plaintiffs' Response to Motion to Strike Declarations of Elivia Bueno and Joachim Morrison.

28. Intervenor-Defendants' Reply Memorandum in Support of Cross Motion for Summary Judgment.

29. Intervenor-Defendants' Reply Memorandum in Support Motion to Strike as to Declarations of Morrison and Belcher.

30. Letter Ruling from Judge McCarthy to Counsel, re: Motion for Summary Judgment.

31. Plaintiffs' Motion for Presentation of Order on Summary Judgment.

32. Declaration of Lori Jordan Isley *with* Exhibit A.

33. [Proposed] Order Granting in Part and Denying in Part Plaintiffs' Motion for Summary Judgment and Denying Intervenor Defendants' Cross Motion for Summary Judgment.

34. Intervenor-Defendants' Motion to Continue Presentation of Order on Summary Judgment Hearing Date.

35. Declaration of Timothy J. O'Connell in Support of Intervenor-Defendants' Motion to Continue Presentation of Order on Summary Judgment Hearing Date.

36. Motion to Shorten Time.

37. Defendants' Response to Motion to Continue Presentation of Order on Summary Judgment.

38. Plaintiffs' Response to Intervenor-Defendants' Motion to Continue Presentation of Order on Summary Judgment.

39. Declaration of Lori Jordan Isley *with* Exhibit A.

40. [Amended Proposed] Order Granting in Part and Denying in Part Plaintiffs' Motion for Summary Judgment and Denying Intervenor Defendants' Cross Motion for Summary Judgment.

41. ORDER Granting Intervenor-Defendants' Motion to Shorten Time.

42. ORDER Granting Intervenor-Defendants' Motion to Continue Presentation on Order on Summary Judgment Hearing Date.

ATTACHMENT B

Superior Court of the State of Washington
for the County of Yakima

Judge Michael G. McCarthy
Department No. 2

128 North 2nd Street
Yakima, Washington 98901
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JUN 4 2018

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Re: Martinez-Cuevas et al v. DeRuyter Dairy Inc, et al
Yakima County Cause 16-2-3417-39

May 31, 2018

Dear Counsel:

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Plaintiffs argue this exemption from overtime pay for hours worked in excess of 40 per week runs afoul of Article 1 section 12, and of the Washington Constitution which provides as follows;

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the business of selling their labor. So, I find the first part of the Schroeder test has been satisfied: RCW 49.46.130(2) grants a privilege or immunity in contravention of Article 1, Section 12.

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Very truly yours,

Michael G. McCarthy
Judge

EXHIBIT 4

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Clerk/Administrator

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Division III

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August 24, 2018

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CASE # 362582
Jose Martinez-Cuevas, et al v. DeRuyter Farm Properties, Inc., et al
YAKIMA COUNTY SUPERIOR COURT No. 162034178

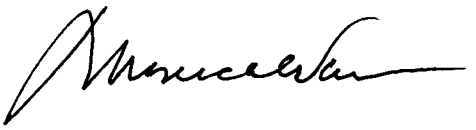
Counsel:

Pursuant to the motion for extension of the deadline to file a response to the motion for discretionary review at the Court of Appeals and the request to stay this matter pending the Supreme Court's determination if they are going to accept review, the following notation ruling is entered:

No. 362582

Granted. The Court of Appeals No. 362582 is stayed pending a determination by the Supreme Court if they will accept discretionary review. The response to the motion for discretionary review before the Court of Appeals will be reset once Supreme Court rules on their motion.

Sincerely,



Monica Wasson
Commissioner

MW:bar

EXHIBIT 5

22

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FILED
DEC 08 2016
YAKIMA COUNTY CLERK

SUPERIOR COURT OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, vs. DERUYTER BROTHERS DAIRY, INC., Defendants.	No. 162034173 9 **CLASS ACTION COMPLAINT FOR DAMAGES AND DECLARATORY RELIEF**

I. INTRODUCTION

1. This action is brought by Plaintiffs Jose Martinez-Cuevas and Patricia Aguilar on behalf of a proposed class of dairy workers who have been employed by DeRuyter Brothers Dairy, Inc. to milk cows at its milking facilities in Outlook, Washington. For years, Plaintiffs and Class members have worked nine to twelve hours a day, six days a week, without the benefit of paid rest breaks, meal breaks, or overtime pay. During this time, DeRuyter also failed to pay Plaintiffs and Class members for all hours worked, including pre-shift and post-shift work.

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2. DeRuyter owns and manages a large dairy operation in Outlook, Washington, with a herd of over 5,000 milking cows. Plaintiffs and Class members extract milk from the cows through milking machines in a factory-like setting. Each day, the dairy factory runs three ostensibly eight-hour shifts on a twenty-four hour cycle. There are two milking facilities. In the larger of the two facilities, four workers hook up milking equipment to about 3,000 cows per shift. Each cow is milked three times a day. A photo of the milking facility is attached as Exhibit A.

3. Dairy workers prepare cows' udders for milking, connect udders to milking machines, clean and scrub floors, disinfect walls using heavy hoses and industrial chemicals, and remove manure from stalls.

4. Each day dairy workers are exposed to dangerous and unhealthy working conditions. They work with large and unpredictable animals, are subjected to a high risk of repetitive motion injuries, and may come into contact with transmittable diseases.

5. Plaintiffs, on behalf of themselves and all others similarly situated, bring this action against DeRuyter for engaging in a systematic scheme of wage and hour violations against dairy workers at DeRuyter's milking operation in Outlook, Washington. These violations include failure to provide paid, ten-minute rest breaks, failure to provide full, uninterrupted meal breaks of no less than thirty minutes, failure to separately pay for rest breaks, failure to pay employees for missed rest and meal breaks, and failure to pay for work performed before and after the workers' assigned shifts.

6. In addition, despite their long hours and work weeks performing physically demanding work in factory-like conditions, Plaintiffs are excluded from the overtime protections in Washington law that mandate that employers pay workers time-and-a-half for all work

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performed in excess of forty hours per week. This exclusion, codified at RCW 49.46.130(2)(g), violates the privileges and immunities clause of the Washington State Constitution, Article I, Section 12. The privileges and immunities clause is intended both to prevent special treatment for a few to the disadvantage of others and to prevent discrimination against particularly vulnerable minority groups. The exclusion of farm workers from overtime unconstitutionally grants special treatment to agricultural employers and results in discrimination against farm workers, who are overwhelmingly Latino. The exemption, which is based on the same exemption in the federal Fair Labor Standards Act (FLSA), incorporates the racially discriminatory motivation of that law and perpetuates the vestiges of Jim Crow laws grafted on to FLSA and other New Deal reforms, imposing them on Washington's farm workers of today. The Plaintiffs seek a declaratory judgment that the exclusion of farm workers from overtime is unconstitutional for all workers excluded by RCW 49.46.130(2)(g).

II. JURISDICTION AND VENUE

7. This Court has jurisdiction over this action pursuant to RCW 2.08.010.

8. Venue is proper in this Court pursuant to RCW 4.12.025(1) and RCW 4.12.025(3).

III. PARTIES

9. Plaintiff Jose Martinez-Cuevas ("Plaintiff Martinez-Cuevas") lives in Sunnyside, Washington. He worked as a milker for DeRuyter from May 2014 until about August 2015.

10. Plaintiff Patricia Aguilar ("Plaintiff Aguilar") lives in Sunnyside, Washington. She worked as a milker for DeRuyter from March 2015 until about May 2016.

11. Defendant DeRuyter is a Washington corporation with its principal place of business in Yakima County, Washington.

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12. DeRuyter is an employer for purposes of the Washington wage and hour laws and rest and meal break regulations under which Plaintiffs bring their claims.

IV. CLASS ACTION ALLEGATIONS

13. Class Definition. Pursuant to Civil Rule 23, Plaintiffs bring this case as a class action against DeRuyter on behalf of a Class defined as follows:

> All current and former DeRuyter employees who have worked as milkers for the company since December 8, 2013.

14. Numerosity. Plaintiffs believe there are more than fifty current or former DeRuyter employees in the Class. The members of the Class are so numerous that joinder of all members is impracticable. Moreover, disposition of the claims of the Class in a single action will provide substantial benefits to all parties and the Court.

15. Commonality. There are numerous questions of law and fact common to the Plaintiffs and members of the Class. These questions include, but are not limited to, the following:

a. Whether DeRuyter engaged in a common practice of failing to properly compensate Class members for all hours worked;

b. Whether DeRuyter engaged in a common practice of failing to provide Class members with paid, ten-minute rests break for every four hours of work;

c. Whether DeRuyter engaged in a common practice of failing to pay Class members an additional ten minutes of compensation for each rest break the members miss;

d. Whether DeRuyter engaged in a common practice of failing to provide Class members with an uninterrupted meal period of at least thirty minutes for every five hours of work;

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e. Whether DeRuyter engaged in a common practice of failing to pay Class members an additional thirty minutes of compensation for each meal period the members miss;

f. Whether DeRuyter engaged in a common practice of failing to pay Class Members overtime compensation of one and one-half times their regular rate for all hours over forty in a week;

g. Whether DeRuyter violated RCW 49.46.090 by failing to pay at least minimum wage for all hours worked;

h. Whether DeRuyter violated WAC 296-131-020 by failing to provide paid, ten-minute rest breaks for every four hours worked;

i. Whether DeRuyter violated RCW 49.52.050 by willfully failing to pay at least minimum wage for all hours worked, by failing to provide required rest and meal breaks, and by failing to pay Class members for missed rest and meal breaks;

j. Whether RCW 49.46.130(2)(g)'s exemption of farm workers from overtime compensation violates the privileges and immunities clause of the Washington State Constitution, Article I, Section 12; and

k. The nature and extent of class-wide injury and the measure of compensation for such injury.

16. Typicality. Plaintiffs' claims are typical of the claims of the Class. Plaintiffs are former employees of DeRuyter who worked as milkers at the Outlook facility. Plaintiffs' claims, like the claims of the Class, arise out of the same common course of conduct by DeRuyter and are based on the same legal theories.

17. Adequacy. Plaintiffs will fairly and adequately protect the interests of the Class. Plaintiffs have retained competent and capable attorneys who have significant experience in

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complex class action employment litigation. Plaintiffs and their counsel are committed to prosecuting this action vigorously on behalf of the Class and have financial resources to do so. Neither Plaintiffs nor their counsel have interests that are contrary to or that conflict with those of the Class.

18. Predominance. DeRuyter engaged in a common course of wage and hour abuse toward Plaintiffs and members of the Class. The common issues arising from this conduct that affect Plaintiffs and members of the Class predominate over any individual issues. Adjudication of these common issues in a single action has important and desirable advantages of judicial economy.

19. Superiority. Plaintiffs and Class members have suffered and will continue to suffer harm and damages as a result of DeRuyter's unlawful and wrongful conduct. Absent a class action, most Class members likely would find the cost of litigating their claims prohibitive. Class treatment is superior to multiple individual suits or piecemeal litigation because it conserves judicial resources, promotes consistency and efficiency of adjudication, provides a forum for small claimants, and deters illegal activities. There will be no significant difficulty in the management of this case as a class action. The Class members are readily identifiable from DeRuyter's records.

V. FACTUAL ALLEGATIONS

Dairy Operations in Washington State

20. Washington ranks tenth in total milk production in the nation, with dairy constituting the second largest agricultural commodity produced in the state.

21. In Washington, the number of cows per dairy is on the rise. As of 2012, operations with more than 1,000 cows comprised over two thirds of the Washington industry.

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The Yakima Valley region of central Washington is one of the largest dairy-producing areas in the nation and leads the State in milk production.

22. An operation with over 700 dairy cows is considered a large Concentrated Animal Feeding Operation ("CAFO") by the Washington State Department of Ecology.

23. A CAFO is a production process that concentrates large numbers of animals in relatively small and confined spaces.

24. The expansion and increased mechanization of the industry has resulted in dairy operations being staffed by relatively few workers in more dangerous conditions.

25. National studies reveal that certain injuries, non-fatal fall-related injuries, are far higher for all farmworkers, including dairy workers, than those for workers in transportation, mining, or manufacturing.

26. Dairy workers have a higher risk than other agricultural workers for developing osteoarthritis due to repetitive, forceful, or prolonged exertion in awkward positions.

27. In 2014, there were 11.3 injuries per 100 workers in Washington dairies. This rate is 118% higher than the rate for all state industries combined. There were also eleven (11) dairy-related fatalities in Washington from 2000 until April 2015.

28. The nature of the work in large CAFOs and the manner in which they as employers structure the work and workplace culture are the main causes of these injuries.

29. CAFOs in Washington are staffed by milkers who are predominantly Latino.

Nature of DeRuyter Dairy Operation

30. DeRuyter is a very large CAFO, with over 5,000 dairy cows.

31. DeRuyter operates two milking facilities in Outlook 24 hours per day, 365 days per year milking all of its cows three times a day.

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32. There are three daily shifts, which commence at 7:30 a.m., 3:30 p.m., and 11:30 p.m.

33. DeRuyter pays the workers a fixed amount for each eight-hour shift to handle a specific number of milking lines and cows.

34. Although each shift for which the workers are paid is supposed to be limited to eight hours, DeRuyter regularly requires workers to work longer than the eight-hour shift.

35. DeRuyter operates two milking facilities at its Outlook dairy. The larger of the two facilities is staffed by four milkers who are assigned to milk 17 corrals of cows each eight-hour shift. Each corral has 5 lines with 39 cows each. Four workers are therefore required to milk over 3,000 cows each shift.

36. During their shift, Plaintiffs milked the assigned cows by attaching mechanical equipment to the cows' udders to extract the milk.

37. Plaintiffs were also required to clean the commercial milking floor, spray down stalls, corral unruly cows, and clear and move manure.

38. Plaintiffs are Latino. On information and belief almost all Class members are Latino, and many speak Spanish as their primary language.

Common Course of Conduct: Failure to Provide Proper Rest Breaks

39. DeRuyter failed to provide Plaintiffs and Class members with a ten-minute rest break for every four hours of work until the end of March 2016.

40. During the same time period, DeRuyter failed to compensate Plaintiffs and Class members for each missed rest break.

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41. During the same time period, DeRuyter profited at the expense of its workforce as it received the benefit of ten minutes of additional work without paying for the additional hours worked.

42. DeRuyter had actual and constructive knowledge of the fact that Plaintiffs and Class members were not provided with a ten-minute rest break for every four hours worked and were not provided pay for each rest break the workers missed.

Common Course of Conduct: Failure to Provide Proper Meal Periods

43. DeRuyter failed to provide Plaintiffs and Class members with a thirty-minute meal period for every five hours of work.

44. Although Plaintiffs and Class members sometimes took some time to eat, they were repeatedly interrupted, and DeRuyter required its employees to remain on duty.

45. As a result of this pattern or practice, Plaintiffs and Class members were regularly denied full, uninterrupted thirty-minute meal periods and often had to eat while "on-the-go."

46. DeRuyter failed to provide an additional thirty minutes of pay for each meal period Plaintiffs and Class members missed.

Common Course of Conduct: Failure to Compensate for Pre-Shift and Post-Shift Duties

47. In addition to work duties outlined above, DeRuyter required Plaintiffs and Class members to perform certain extra duties before and after each shift, without pay.

48. These pre and post-shift duties included: putting on and taking off personal protective equipment, including waterproof arm sleeves and gloves, a waterproof apron, and goggles/safety glasses, helping workers on prior shifts finish their assigned duties, cleaning the commercial milking floor, spraying down stalls, corralling unruly cows, and clearing or moving manure.

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49. DeRuyter failed to pay Plaintiffs and Class members for all work performed beyond their assigned eight-hour shifts.

50. Each time an employee is not compensated for these extra duties, DeRuyter unfairly profits at the expense of its workforce.

Common Course of Conduct: Failure to Pay Overtime

51. DeRuyter also benefits from the privilege of not paying overtime wages to Plaintiffs and Class members who work more than forty hours per week.

52. Unlike other Washington employers, the agricultural industry obtained an exemption from the overtime requirement in the Minimum Wage Act ("MWA").

53. The MWA is based on the federal Fair Labor Standards Act ("FLSA").

54. The agricultural exemption of farm workers from the MWA's overtime protections is based on an FLSA exemption crafted during the Jim Crow era, when most farm workers were Black, Southern, and had no political power.

55. The FLSA provided minimum wage and overtime protections for workers across the nation.

56. To pass the FLSA in 1938, Congress needed the votes of Southern Democrats who often voted as a bloc to maintain the economic and social subordination of Black farm workers and Southern racial inequality.

57. This compromise directly resulted in the exemption of farm workers from both the minimum wage and overtime protections of the FLSA. Thus, and by design, most Black workers in the South were excluded from the protective reach of the original FLSA.

58. Following federal law, Washington's MWA was first passed in 1959 and established minimum wage and overtime protections.

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59. As enacted, Washington's original MWA excluded farm workers from the definition of "employee," and thus from minimum wage and overtime protections.

60. As a direct result, the racially motivated exclusion of farm workers from the FLSA was therefore incorporated into state law.

61. In 1960, the year after the MWA was enacted, CBS broadcast Edward R. Murrow's documentary "Harvest of Shame," which depicted the plight of migrant farm workers throughout the United States.

62. An interview in the film with then United States Secretary of Labor, James Mitchell, demonstrated the lobbying power of the agricultural industry nationally and in Washington State.

63. Secretary Mitchell stated that farm workers were the "great mass of excluded Americans" who had no voice in Congress, while agricultural employers were highly organized to "make their wants and terms and conditions known to our legislators.

64. Secretary Mitchell stated, "I know of no greater pressure lobbies in Washington than the farm group. The pressures of the farm groups are tremendous."

65. Secretary Mitchell stated he had "been frustrated to a greater extent than in any other sphere of activity as Secretary of Labor in my inability to make any impact at all in terms of either regulations or law that would help the farm workers."

66. Over the next decade, various changes were made to the FLSA and in 1975, the Washington Legislature amended the MWA to reflect those changes in Washington law.

67. In line with the FLSA, the 1975 amendments required agricultural employers to pay the minimum wage (except to those workers covered by the hand-harvest and family-

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member exemptions), but they explicitly excluded farm workers from the right to overtime compensation.

68. The influence of the agricultural industry continues to be a significant political and economic force in Washington that has resulted in perpetuating laws to its benefit and to the detriment of farm workers.

69. Currently, agriculture represents approximately twelve percent (12%) of Washington's economy.

70. While the racial demographics of the agricultural industry have changed since the Jim Crow era, farm workers are still predominantly people of color. Washington's agricultural labor force today is comprised primarily of Latino workers, living in rural and poor communities.

71. Yakima County, where Defendant operates, is the number one county in agricultural market value in the entire state.

72. Yakima County also has one of the state's highest rates of poverty, with about a fifth (1/5) of the population and a third (1/3) of the children living in poverty.

VI. FIRST CLAIM FOR RELIEF

Violation of RCW 49.46.020 and .090 – Failure to Pay Minimum Wage

73. RCW 49.46.020 requires that employers pay employees no less than the minimum hourly wage for each hour worked.

74. As described above, DeRuyter failed to pay Plaintiffs and Class members for each hour worked.

75. By the actions alleged above, DeRuyter violated the provisions of RCW 49.46.020 and RCW 49.46.090.

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76. As a result of these unlawful acts, Plaintiffs and the Class have been deprived of compensation in amounts to be determined at trial.

VII. SECOND CLAIM FOR RELIEF

Violation WAC 296-131-020 – Failure to Provide Rest Breaks

77. DeRuyter's wage and hour violations include routinely failing to provide Plaintiffs and Class Members with paid rest breaks as required by law.

78. WAC 296-131-020 provides that employees shall be provided a paid rest period of not less than ten minutes, on the employer's time, for each four hours of working time.

79. DeRuyter violated WAC 296-131-020 by failing to provide Plaintiffs and Class members with paid rest breaks.

80. As a result of these unlawful acts, Plaintiffs and the Class have been deprived of compensation in an amount to be determined at trial.

VII. THIRD CLAIM FOR RELIEF

Violation of WAC 296-131-020 – Failure to Provide Meal Periods

81. WAC 296-131-020 provides that employees shall be provided a meal period of at least thirty minutes for every five hours of work.

82. By the actions alleged above, including the failure to provide Plaintiffs and Class members with proper meal periods, DeRuyter violated WAC 296-131-020.

83. As a result of these unlawful acts, Plaintiffs and the Class have been deprived of compensation in amount to be determined at trial.

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VIII. FOURTH CLAIM FOR RELIEF

Violation of RCW 49.52.050 – Willful Refusal to Pay Wages

84. DeRuyter's violations of RCW 49.46.020, RCW 49.46.090, RCW 49.46.130, and WAC 296-131-020 were willful and constitute violations of RCW 49.52.050.

85. RCW 49.52.070 provides that any employer who violates the provisions of RCW 49.52.050 shall be liable in a civil action for twice the amount of wages withheld, attorneys' fees, and costs.

86. As a result of the willful, unlawful acts of DeRuyter, Plaintiffs and the Class have been deprived of compensation in amounts to be determined at trial.

IX. FIFTH CLAIM FOR RELIEF

Violation of RCW 49.46.130 – Failure to Pay Overtime Compensation Based on the Unconstitutional Exclusion of Agricultural Workers in RCW 49.46.130(2)(g)

87. DeRuyter failed to pay Plaintiffs and Class members for all hours worked above forty hours in a week at a rate of not less than one and one-half times their regular rate of pay.

88. The basis for DeRuyter's failure to pay Plaintiffs and Class members overtime compensation for all hours worked above forty in a week is RCW 49.46.130(2)(g), which exempts agricultural employers from paying overtime compensation.

89. The MWA's exemption of agricultural employers from the requirement to pay overtime compensation violates the privileges and immunities clause of the Washington State Constitution, Article I, Section 12.

90. Article I, Section 12 of the Washington State Constitution provides: "No law shall be passed granting to any citizen, class of citizens, or corporation other than municipal, privileges or immunities which upon the same terms shall not equally belong to all citizens, or corporations."

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91. The privileges and immunities clause ensures the right to protection by the government, the freedom from discrimination, the enjoyment of life and liberty, the rights to acquire and possess property of every kind, and the rights to pursue and obtain happiness, health, and safety.

92. The purpose of the privileges and immunities clause is both to prevent and limit favoritism and special treatment for a few to the disadvantage of others and to prevent discrimination against particularly vulnerable minority groups.

93. The MWA agricultural exemption violates both of these purposes.

The Overtime Exemption Grants Agricultural Employers an Unconstitutional Privilege or Immunity from a Requirement Necessary for Protection of Workers' Health and Safety and Results in Discrimination Against Latino Workers.

94. The MWA was enacted "for the purpose of protecting the immediate and future health, safety and welfare of the people of this state." RCW 49.46.005.

95. The MWA's overtime law is necessary for protecting workers' health and safety.

96. Agricultural workers are generally engaged in employment dangerous to life and deleterious to their health, and therefore Article II, Section 35 of the Washington State Constitution provides them a constitutional right to laws necessary to protect them.

97. The MWA's overtime exemption for agricultural employers grants to agricultural employers a privilege against or immunity from common law and constitutional protections to health and safety, including the constitutional protection afforded to persons working in mines, factories, and other employments dangerous to life or deleterious to health under Article II, Section 35 of the Washington State Constitution.

98. There is no reasonable ground for distinguishing between (1) entities that employ workers in factories or in other dangerous industries that must pay overtime compensation to

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protect the health, safety, and welfare of their workers and (2) those entities, like DeRuyter, that are exempt from the overtime requirement as agricultural employers.

99. Freedom from discrimination is also protected by the privileges and immunities clause of the Washington State Constitution, Article I, Section 12.

100. Agricultural work was performed predominantly by Black workers when Congress enacted the FLSA and by Latino workers at the time the Washington legislature enacted RCW 49.46.130. Agricultural work is still predominantly performed by Latinos.

101. RCW 49.46.130(2)(g)'s exemption of agricultural workers was based on the same exemption in the FLSA.

102. The FLSA exemption of agricultural workers was racially motivated to exclude racial minorities from FLSA overtime protection.

103. RCW 49.46.130's exclusion of agricultural workers from overtime compensation protection results in discrimination against the predominantly Latino workforce that performs agricultural work in Washington state.

104. The exclusion grants agricultural employers a privilege against or immunity from the generally applicable requirement to pay overtime wages to employees who work over forty hours in a week in a manner that discriminates against a predominantly Latino workforce.

105. There is no reasonable ground for granting agricultural employers a privilege against or immunity from the requirement to pay overtime compensation to their employees, which results in discrimination against a predominantly Latino workforce.

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The Exemption Also Violates the Equal Protection Guarantee of the Privileges and Immunities Clause.

106. The privileges and immunities clause of the Washington State Constitution also guarantees equal protection of the laws and applies to statutes that have the potential to burden a particularly vulnerable minority.

107. RCW 49.46.130 creates a class of employees entitled to the protection of overtime compensation but excludes agricultural employees from that protection.

108. Agricultural employees who are excluded are similarly situated to other employees who are entitled to protection under the MWA. There is no unique characteristic that distinguishes agricultural employees from other employees, and the exemption is contrary to the MWA's overall purpose.

109. The overtime exemption for agricultural employers burdens a particularly vulnerable minority—Latino employees.

110. Latino farm workers have suffered a history of discrimination based on immutable traits—their race and national origin—that bear no relation to their ability to perform or contribute to society.

111. Under any level of scrutiny, the exclusion of agricultural workers from the MWA's overtime provision violates the equal protection guarantee of the privileges and immunities clause of the Washington State Constitution by discriminating against Latino workers. Therefore, the exclusion is unconstitutional.

112. As a result of DeRuyter's failure to pay overtime compensation based on an unconstitutional exemption of agricultural employers, Plaintiffs and the Class have been deprived of compensation in amounts to be determined at trial.

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XI. SIXTH CLAIM FOR RELIEF

Uniform Declaratory Judgments Act, RCW 7.24.010-.190 – Declaration that RCW 49.46.130(2)(g) Violates Privileges and Immunities Clause of Washington State Constitution, Article I, Section 12

113. An actual dispute exists between (1) Plaintiffs and the proposed Class and (2) DeRuyter. The parties have genuine and opposing interests, which are direct and substantial, and a judicial determination of those opposing interests will be final and conclusive.

114. The constitutionality of the agricultural employer exemption under RCW 49.46.130(2)(g) presents an issue of major public importance.

115. Plaintiffs and the Class have been denied the overtime compensation protections that other similarly situated Washington workers receive.

116. Plaintiffs and the Class are, therefore, entitled to a declaratory judgment that the agricultural employer exemption under RCW 49.46.130(2)(g) violates the privileges and immunities clause of the Washington State Constitution, Article I, Section 12.

XII. REQUEST FOR RELIEF

Plaintiffs, on their behalf and on behalf of the members of the Class, request for judgment against DeRuyter, as follows:

A. Certify the proposed Plaintiff Class for the claims against DeRuyter;

B. Declare that DeRuyter is financially responsible for notifying all Class members of its wage and hour violations;

C. Appoint Plaintiffs as representatives for the Class;

D. Appoint the undersigned counsel for the Class;

E. Declare that DeRuyter's actions complained of herein violate RCW 49.46.020, RCW 49.46.090, RCW 49.46.130, WAC 296-131-020, and RCW 49.52.050;

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F. Declare that RCW 49.46.130(2)(g)'s exemption of agricultural employers from the requirement to pay overtime compensation violates the privileges and immunities clause of the Washington State Constitution, Article I, Section 12;

G. Enjoin DeRuyter and their officers, agents, successors, employees, representatives, and any and all person acting in concert with DeRuyter, as provided by law, from engaging in the unlawful and wrongful conduct set forth herein;

H. Award to Plaintiffs and the Class compensatory and exemplary damages, as allowed by law;

I. Award to Plaintiffs and the Class attorneys' fees and costs, as allowed by law, including under RCW 49.48.030, RCW 49.46.090, and RCW 49.52.070 and other applicable law;

J. Award to Plaintiffs and the Class prejudgment and post-judgment interest, as provided by law;

K. Grant Plaintiffs leave to amend their claims to reflect the evidence presented at trial; and

L. Provide such other and further relief as the Court deems necessary, just, and proper.

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RESPECTFULLY SUBMITTED AND DATED this 8th day of December, 2016

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EXHIBIT

A

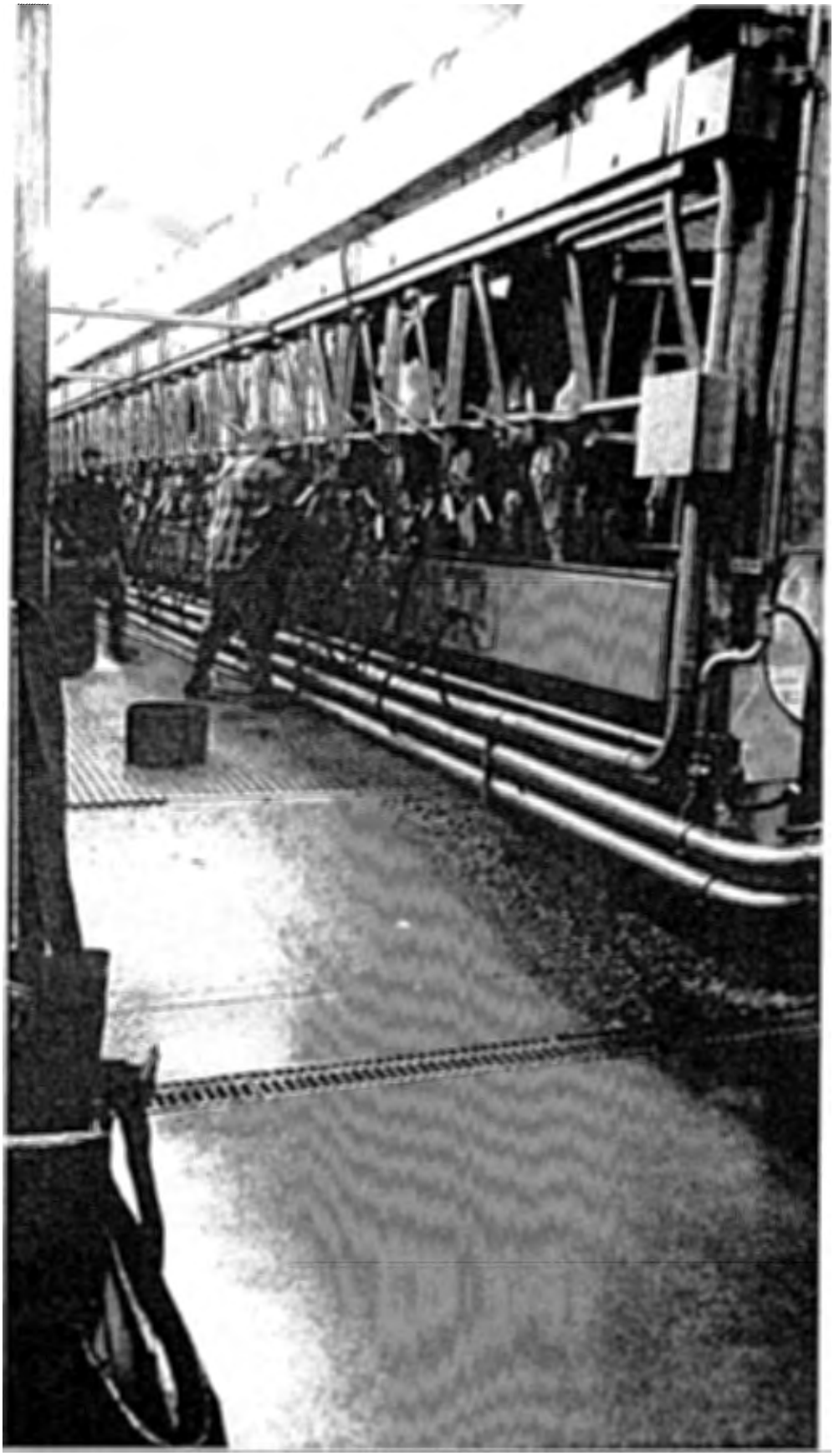

EXHIBIT 6

20 pages

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SUPERIOR COURT OF WASHINGTON
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JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, vs. DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER. Defendants.	No. 16-2-034173 **FIRST AMENDED CLASS ACTION COMPLAINT FOR DAMAGES AND DECLARATORY RELIEF**

I. INTRODUCTION

1. This action is brought by Plaintiffs Jose Martinez-Cuevas and Patricia Aguilar on behalf of a proposed class of dairy workers who have been employed by DeRuyter Brothers Dairy, Inc. to milk cows at its milking facilities in Outlook, Washington. For years, Plaintiffs and Class members have worked nine to twelve hours a day, six days a week, without the benefit of paid rest breaks, meal breaks, or overtime pay. During this time, DeRuyter[1] also failed to pay Plaintiffs and Class members for all hours worked, including pre-shift and post-shift work.

[1] Throughout this First Amended Complaint, DeRuyter refers to all Defendants.

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2. DeRuyter owns and manages a large dairy operation in Outlook, Washington, with a herd of over 5,000 milking cows. Plaintiffs and Class members extract milk from the cows through milking machines in a factory-like setting. Each day, the dairy factory runs three ostensibly eight-hour shifts on a twenty-four hour cycle. There are two milking facilities. In the larger of the two facilities, four workers hook up milking equipment to about 3,000 cows per shift. Each cow is milked three times a day. A photo of the milking facility is attached as Exhibit A.

3. Dairy workers prepare cows' udders for milking, connect udders to milking machines, clean and scrub floors, disinfect walls using heavy hoses and industrial chemicals, and remove manure from stalls.

4. Each day dairy workers are exposed to dangerous and unhealthy working conditions. They work with large and unpredictable animals, are subjected to a high risk of repetitive motion injuries, and may come into contact with transmittable diseases.

5. Plaintiffs, on behalf of themselves and all others similarly situated, bring this action against DeRuyter for engaging in a systematic scheme of wage and hour violations against dairy workers at DeRuyter's milking operation in Outlook, Washington. These violations include failure to provide paid, ten-minute rest breaks, failure to provide full, uninterrupted meal breaks of no less than thirty minutes, failure to separately pay for rest breaks, failure to pay employees for missed rest and meal breaks, and failure to pay for work performed before and after the workers' assigned shifts.

6. In addition, despite their long hours and work weeks performing physically demanding work in factory-like conditions, Plaintiffs are excluded from the overtime protections in Washington law that mandate that employers pay workers time-and-a-half for all work

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performed in excess of forty hours per week. This exclusion, codified at RCW 49.46.130(2)(g), violates the privileges and immunities clause of the Washington State Constitution, Article I, Section 12. The privileges and immunities clause is intended both to prevent special treatment for a few to the disadvantage of others and to prevent discrimination against particularly vulnerable minority groups. The exclusion of farm workers from overtime unconstitutionally grants special treatment to agricultural employers and results in discrimination against farm workers, who are overwhelmingly Latino. The exemption, which is based on the same exemption in the federal Fair Labor Standards Act (FLSA), incorporates the racially discriminatory motivation of that law and perpetuates the vestiges of Jim Crow laws grafted on to FLSA and other New Deal reforms, imposing them on Washington's farm workers of today. The Plaintiffs seek a declaratory judgment that the exclusion of farm workers from overtime is unconstitutional for all workers excluded by RCW 49.46.130(2)(g).

II. JURISDICTION AND VENUE

7. This Court has jurisdiction over this action pursuant to RCW 2.08.010.

8. Venue is proper in this Court pursuant to RCW 4.12.025(1) and RCW 4.12.025(3).

III. PARTIES

9. Plaintiff Jose Martinez-Cuevas ("Plaintiff Martinez-Cuevas") lives in Sunnyside, Washington. He worked as a milker for DeRuyter from May 2014 until about August 2015.

10. Plaintiff Patricia Aguilar ("Plaintiff Aguilar") lives in Sunnyside, Washington. She worked as a milker for DeRuyter from March 2015 until about May 2016.

11. Defendant DeRuyter is a Washington corporation with its principal place of business in Yakima County, Washington.

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12. Defendants Geneva S. DeRuyter and Jacobus N. DeRuyter were officers and principals of Defendant DeRuyter, are husband and wife and reside in Yakima County.

13. Defendants Geneva S. DeRuyter and Jacobus N. DeRuyter have acted directly or indirectly in the interest of an employer in relation to DeRuyter Brothers Dairy, Inc. employees. They have been engaged in running the company's business, managing the company's finances, and maintaining the company's employment records. They have been authorized to determine the company's employment practices and to exercise control over how the company's employees are paid.

14. DeRuyter Brothers Dairy, Inc., Geneva S. DeRuyter and Jacobus N. DeRuyter are employers for purposes of the Washington wage and hour laws and rest and meal break regulations under which Plaintiffs bring their claims.

IV. CLASS ACTION ALLEGATIONS

15. Class Definition. Pursuant to Civil Rule 23, Plaintiffs bring this case as a class action against DeRuyter on behalf of a Class defined as follows:

> All current and former DeRuyter employees who have worked as milkers for the company since December 8, 2013.

16. Numerosity. Plaintiffs believe there are more than fifty current or former DeRuyter employees in the Class. The members of the Class are so numerous that joinder of all members is impracticable. Moreover, disposition of the claims of the Class in a single action will provide substantial benefits to all parties and the Court.

17. Commonality. There are numerous questions of law and fact common to the Plaintiffs and members of the Class. These questions include, but are not limited to, the following:

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a. Whether DeRuyter engaged in a common practice of failing to properly compensate Class members for all hours worked;

b. Whether DeRuyter engaged in a common practice of failing to provide Class members with paid, ten-minute rests break for every four hours of work;

c. Whether DeRuyter engaged in a common practice of failing to pay Class members an additional ten minutes of compensation for each rest break the members miss;

d. Whether DeRuyter engaged in a common practice of failing to provide Class members with an uninterrupted meal period of at least thirty minutes for every five hours of work;

e. Whether DeRuyter engaged in a common practice of failing to pay Class members an additional thirty minutes of compensation for each meal period the members miss;

f. Whether DeRuyter engaged in a common practice of failing to pay Class Members overtime compensation of one and one-half times their regular rate for all hours over forty in a week;

g. Whether DeRuyter violated RCW 49.46.090 by failing to pay at least minimum wage for all hours worked;

h. Whether DeRuyter violated WAC 296-131-020 by failing to provide paid, ten-minute rest breaks for every four hours worked;

i. Whether DeRuyter violated RCW 49.52.050 by willfully failing to pay at least minimum wage for all hours worked, by failing to provide required rest and meal breaks, and by failing to pay Class members for missed rest and meal breaks;

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j. Whether RCW 49.46.130(2)(g)'s exemption of farm workers from overtime compensation violates the privileges and immunities clause of the Washington State Constitution, Article I, Section 12; and

k. The nature and extent of class-wide injury and the measure of compensation for such injury.

18. Typicality. Plaintiffs' claims are typical of the claims of the Class. Plaintiffs are former employees of DeRuyter who worked as milkers at the Outlook facility. Plaintiffs' claims, like the claims of the Class, arise out of the same common course of conduct by DeRuyter and are based on the same legal theories.

19. Adequacy. Plaintiffs will fairly and adequately protect the interests of the Class. Plaintiffs have retained competent and capable attorneys who have significant experience in complex class action employment litigation. Plaintiffs and their counsel are committed to prosecuting this action vigorously on behalf of the Class and have financial resources to do so. Neither Plaintiffs nor their counsel have interests that are contrary to or that conflict with those of the Class.

20. Predominance. DeRuyter engaged in a common course of wage and hour abuse toward Plaintiffs and members of the Class. The common issues arising from this conduct that affect Plaintiffs and members of the Class predominate over any individual issues. Adjudication of these common issues in a single action has important and desirable advantages of judicial economy.

21. Superiority. Plaintiffs and Class members have suffered and will continue to suffer harm and damages as a result of DeRuyter's unlawful and wrongful conduct. Absent a class action, most Class members likely would find the cost of litigating their claims prohibitive.

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Class treatment is superior to multiple individual suits or piecemeal litigation because it conserves judicial resources, promotes consistency and efficiency of adjudication, provides a forum for small claimants, and deters illegal activities. There will be no significant difficulty in the management of this case as a class action. The Class members are readily identifiable from DeRuyter's records.

V. FACTUAL ALLEGATIONS

Dairy Operations in Washington State

22. Washington ranks tenth in total milk production in the nation, with dairy constituting the second largest agricultural commodity produced in the state.

23. In Washington, the number of cows per dairy is on the rise. As of 2012, operations with more than 1,000 cows comprised over two thirds of the Washington industry. The Yakima Valley region of central Washington is one of the largest dairy-producing areas in the nation and leads the State in milk production.

24. An operation with over 700 dairy cows is considered a large Concentrated Animal Feeding Operation ("CAFO") by the Washington State Department of Ecology.

25. A CAFO is a production process that concentrates large numbers of animals in relatively small and confined spaces.

26. The expansion and increased mechanization of the industry has resulted in dairy operations being staffed by relatively few workers in more dangerous conditions.

27. National studies reveal that certain injuries, non-fatal fall-related injuries, are far higher for all farmworkers, including dairy workers, than those for workers in transportation, mining, or manufacturing.

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28. Dairy workers have a higher risk than other agricultural workers for developing osteoarthritis due to repetitive, forceful, or prolonged exertion in awkward positions.

29. In 2014, there were 11.3 injuries per 100 workers in Washington dairies. This rate is 118% higher than the rate for all state industries combined. There were also eleven (11) dairy-related fatalities in Washington from 2000 until April 2015.

30. The nature of the work in large CAFOs and the manner in which they as employers structure the work and workplace culture are the main causes of these injuries.

31. CAFOs in Washington are staffed by milkers who are predominantly Latino.

Nature of DeRuyter Dairy Operation

32. DeRuyter is a very large CAFO, with over 5,000 dairy cows.

33. DeRuyter operates two milking facilities in Outlook 24 hours per day, 365 days per year milking all of its cows three times a day.

34. There are three daily shifts, which commence at 7:30 a.m., 3:30 p.m., and 11:30 p.m.

35. DeRuyter pays the workers a fixed amount for each eight-hour shift to handle a specific number of milking lines and cows.

36. Although each shift for which the workers are paid is supposed to be limited to eight hours, DeRuyter regularly requires workers to work longer than the eight-hour shift.

37. DeRuyter operates two milking facilities at its Outlook dairy. The larger of the two facilities is staffed by four milkers who are assigned to milk 17 corrals of cows each eight-hour shift. Each corral has 5 lines with 39 cows each. Four workers are therefore required to milk over 3,000 cows each shift.

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38. During their shift, Plaintiffs milked the assigned cows by attaching mechanical equipment to the cows' udders to extract the milk.

39. Plaintiffs were also required to clean the commercial milking floor, spray down stalls, corral unruly cows, and clear and move manure.

40. Plaintiffs are Latino. On information and belief almost all Class members are Latino, and many speak Spanish as their primary language.

Common Course of Conduct: Failure to Provide Proper Rest Breaks

41. DeRuyter failed to provide Plaintiffs and Class members with a ten-minute rest break for every four hours of work until the end of March 2016.

42. During the same time period, DeRuyter failed to compensate Plaintiffs and Class members for each missed rest break.

43. During the same time period, DeRuyter profited at the expense of its workforce as it received the benefit of ten minutes of additional work without paying for the additional hours worked.

44. DeRuyter had actual and constructive knowledge of the fact that Plaintiffs and Class members were not provided with a ten-minute rest break for every four hours worked and were not provided pay for each rest break the workers missed.

Common Course of Conduct: Failure to Provide Proper Meal Periods

45. DeRuyter failed to provide Plaintiffs and Class members with a thirty-minute meal period for every five hours of work.

46. Although Plaintiffs and Class members sometimes took some time to eat, they were repeatedly interrupted, and DeRuyter required its employees to remain on duty.

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47. As a result of this pattern or practice, Plaintiffs and Class members were regularly denied full, uninterrupted thirty-minute meal periods and often had to eat while "on-the-go."

48. DeRuyter failed to provide an additional thirty minutes of pay for each meal period Plaintiffs and Class members missed.

Common Course of Conduct: Failure to Compensate for Pre-Shift and Post-Shift Duties

49. In addition to work duties outlined above, DeRuyter required Plaintiffs and Class members to perform certain extra duties before and after each shift, without pay.

50. These pre and post-shift duties included: putting on and taking off personal protective equipment, including waterproof arm sleeves and gloves, a waterproof apron, and goggles/safety glasses, helping workers on prior shifts finish their assigned duties, cleaning the commercial milking floor, spraying down stalls, corralling unruly cows, and clearing or moving manure.

51. DeRuyter failed to pay Plaintiffs and Class members for all work performed beyond their assigned eight-hour shifts.

52. Each time an employee is not compensated for these extra duties, DeRuyter unfairly profits at the expense of its workforce.

Common Course of Conduct: Failure to Pay Overtime

53. DeRuyter also benefits from the privilege of not paying overtime wages to Plaintiffs and Class members who work more than forty hours per week.

54. Unlike other Washington employers, the agricultural industry obtained an exemption from the overtime requirement in the Minimum Wage Act ("MWA").

55. The MWA is based on the federal Fair Labor Standards Act ("FLSA").

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56. The agricultural exemption of farm workers from the MWA's overtime protections is based on an FLSA exemption crafted during the Jim Crow era, when most farm workers were Black, Southern, and had no political power.

57. The FLSA provided minimum wage and overtime protections for workers across the nation.

58. To pass the FLSA in 1938, Congress needed the votes of Southern Democrats who often voted as a bloc to maintain the economic and social subordination of Black farm workers and Southern racial inequality.

59. This compromise directly resulted in the exemption of farm workers from both the minimum wage and overtime protections of the FLSA. Thus, and by design, most Black workers in the South were excluded from the protective reach of the original FLSA.

60. Following federal law, Washington's MWA was first passed in 1959 and established minimum wage and overtime protections.

61. As enacted, Washington's original MWA excluded farm workers from the definition of "employee," and thus from minimum wage and overtime protections.

62. As a direct result, the racially motivated exclusion of farm workers from the FLSA was therefore incorporated into state law.

63. In 1960, the year after the MWA was enacted, CBS broadcast Edward R. Murrow's documentary "Harvest of Shame," which depicted the plight of migrant farm workers throughout the United States.

64. An interview in the film with then United States Secretary of Labor, James Mitchell, demonstrated the lobbying power of the agricultural industry nationally and in Washington State.

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65. Secretary Mitchell stated that farm workers were the "great mass of excluded Americans" who had no voice in Congress, while agricultural employers were highly organized to "make their wants and terms and conditions known to our legislators.

66. Secretary Mitchell stated, "I know of no greater pressure lobbies in Washington than the farm group. The pressures of the farm groups are tremendous."

67. Secretary Mitchell stated he had "been frustrated to a greater extent than in any other sphere of activity as Secretary of Labor in my inability to make any impact at all in terms of either regulations or law that would help the farm workers."

68. Over the next decade, various changes were made to the FLSA and in 1989, the MWA was amended by initiative to remove the agricultural exemption from the minimum hourly wage protection existing in Washington law.

69. The 1989 amendments required agricultural employers to pay the minimum wage (except to those workers covered by the hand-harvest and family-member exemptions), but the exemption of farm workers from the right to overtime compensation remained enshrined in the MWA.

70. The influence of the agricultural industry continues to be a significant political and economic force in Washington that has resulted in perpetuating laws to its benefit and to the detriment of farm workers.

71. Currently, agriculture represents approximately twelve percent (12%) of Washington's economy.

72. While the racial demographics of the agricultural industry have changed since the Jim Crow era, farm workers are still predominantly people of color. Washington's agricultural labor force today is comprised primarily of Latino workers, living in rural and poor communities.

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73. Yakima County, where Defendant operates, is the number one county in agricultural market value in the entire state.

74. Yakima County also has one of the state's highest rates of poverty, with about a fifth (1/5) of the population and a third (1/3) of the children living in poverty.

VI. FIRST CLAIM FOR RELIEF

Violation of RCW 49.46.020 and .090 – Failure to Pay Minimum Wage

75. RCW 49.46.020 requires that employers pay employees no less than the minimum hourly wage for each hour worked.

76. As described above, DeRuyter failed to pay Plaintiffs and Class members for each hour worked.

77. By the actions alleged above, DeRuyter violated the provisions of RCW 49.46.020 and RCW 49.46.090.

78. As a result of these unlawful acts, Plaintiffs and the Class have been deprived of compensation in amounts to be determined at trial.

VII. SECOND CLAIM FOR RELIEF

Violation WAC 296-131-020 – Failure to Provide Rest Breaks

79. DeRuyter's wage and hour violations include routinely failing to provide Plaintiffs and Class Members with paid rest breaks as required by law.

80. WAC 296-131-020 provides that employees shall be provided a paid rest period of not less than ten minutes, on the employer's time, for each four hours of working time.

81. DeRuyter violated WAC 296-131-020 by failing to provide Plaintiffs and Class members with paid rest breaks.

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82. As a result of these unlawful acts, Plaintiffs and the Class have been deprived of compensation in an amount to be determined at trial.

VII. THIRD CLAIM FOR RELIEF

Violation of WAC 296-131-020 – Failure to Provide Meal Periods

83. WAC 296-131-020 provides that employees shall be provided a meal period of at least thirty minutes for every five hours of work.

84. By the actions alleged above, including the failure to provide Plaintiffs and Class members with proper meal periods, DeRuyter violated WAC 296-131-020.

85. As a result of these unlawful acts, Plaintiffs and the Class have been deprived of compensation in amount to be determined at trial.

VIII. FOURTH CLAIM FOR RELIEF

Violation of RCW 49.52.050 – Willful Refusal to Pay Wages

86. DeRuyter's violations of RCW 49.46.020, RCW 49.46.090, RCW 49.46.130, and WAC 296-131-020 were willful and constitute violations of RCW 49.52.050.

87. RCW 49.52.070 provides that any employer who violates the provisions of RCW 49.52.050 shall be liable in a civil action for twice the amount of wages withheld, attorneys' fees, and costs.

88. As a result of the willful, unlawful acts of DeRuyter, Plaintiffs and the Class have been deprived of compensation in amounts to be determined at trial.

IX. FIFTH CLAIM FOR RELIEF

Violation of RCW 49.46.130 – Failure to Pay Overtime Compensation Based on the Unconstitutional Exclusion of Agricultural Workers in RCW 49.46.130(2)(g)

89. DeRuyter failed to pay Plaintiffs and Class members for all hours worked above

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forty hours in a week at a rate of not less than one and one-half times their regular rate of pay.

90. The basis for DeRuyter's failure to pay Plaintiffs and Class members overtime compensation for all hours worked above forty in a week is RCW 49.46.130(2)(g), which exempts agricultural employers from paying overtime compensation.

91. The MWA's exemption of agricultural employers from the requirement to pay overtime compensation violates the privileges and immunities clause of the Washington State Constitution, Article I, Section 12.

92. Article I, Section 12 of the Washington State Constitution provides: "No law shall be passed granting to any citizen, class of citizens, or corporation other than municipal, privileges or immunities which upon the same terms shall not equally belong to all citizens, or corporations."

93. The privileges and immunities clause ensures the right to protection by the government, the freedom from discrimination, the enjoyment of life and liberty, the rights to acquire and possess property of every kind, and the rights to pursue and obtain happiness, health, and safety.

94. The purpose of the privileges and immunities clause is both to prevent and limit favoritism and special treatment for a few to the disadvantage of others and to prevent discrimination against particularly vulnerable minority groups.

95. The MWA agricultural exemption violates both of these purposes.

The Overtime Exemption Grants Agricultural Employers an Unconstitutional Privilege or Immunity from a Requirement Necessary for Protection of Workers' Health and Safety and Results in Discrimination Against Latino Workers.

96. The MWA was enacted "for the purpose of protecting the immediate and future health, safety and welfare of the people of this state." RCW 49.46.005.

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97. The MWA's overtime law is necessary for protecting workers' health and safety.

98. Agricultural workers are generally engaged in employment dangerous to life and deleterious to their health, and therefore Article II, Section 35 of the Washington State Constitution provides them a constitutional right to laws necessary to protect them.

99. The MWA's overtime exemption for agricultural employers grants to agricultural employers a privilege against or immunity from common law and constitutional protections to health and safety, including the constitutional protection afforded to persons working in mines, factories, and other employments dangerous to life or deleterious to health under Article II, Section 35 of the Washington State Constitution.

100. There is no reasonable ground for distinguishing between (1) entities that employ workers in factories or in other dangerous industries that must pay overtime compensation to protect the health, safety, and welfare of their workers and (2) those entities, like DeRuyter, that are exempt from the overtime requirement as agricultural employers.

101. Freedom from discrimination is also protected by the privileges and immunities clause of the Washington State Constitution, Article I, Section 12.

102. Agricultural work was performed predominantly by Black workers when Congress enacted the FLSA and by Latino workers at the time the Washington legislature enacted RCW 49.46.130. Agricultural work is still predominantly performed by Latinos.

103. RCW 49.46.130(2)(g)'s exemption of agricultural workers was based on the same exemption in the FLSA.

104. The FLSA exemption of agricultural workers was racially motivated to exclude racial minorities from FLSA overtime protection.

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105. RCW 49.46.130's exclusion of agricultural workers from overtime compensation protection results in discrimination against the predominantly Latino workforce that performs agricultural work in Washington state.

106. The exclusion grants agricultural employers a privilege against or immunity from the generally applicable requirement to pay overtime wages to employees who work over forty hours in a week in a manner that discriminates against a predominantly Latino workforce.

107. There is no reasonable ground for granting agricultural employers a privilege against or immunity from the requirement to pay overtime compensation to their employees, which results in discrimination against a predominantly Latino workforce.

The Exemption Also Violates the Equal Protection Guarantee of the Privileges and Immunities Clause.

108. The privileges and immunities clause of the Washington State Constitution also guarantees equal protection of the laws and applies to statutes that have the potential to burden a particularly vulnerable minority.

109. RCW 49.46.130 creates a class of employees entitled to the protection of overtime compensation but excludes agricultural employees from that protection.

110. Agricultural employees who are excluded are similarly situated to other employees who are entitled to protection under the MWA. There is no unique characteristic that distinguishes agricultural employees from other employees, and the exemption is contrary to the MWA's overall purpose.

111. The overtime exemption for agricultural employers burdens a particularly vulnerable minority—Latino employees.

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112. Latino farm workers have suffered a history of discrimination based on immutable traits—their race and national origin—that bear no relation to their ability to perform or contribute to society.

113. Under any level of scrutiny, the exclusion of agricultural workers from the MWA's overtime provision violates the equal protection guarantee of the privileges and immunities clause of the Washington State Constitution by discriminating against Latino workers. Therefore, the exclusion is unconstitutional.

114. As a result of DeRuyter's failure to pay overtime compensation based on an unconstitutional exemption of agricultural employers, Plaintiffs and the Class have been deprived of compensation in amounts to be determined at trial.

XI. SIXTH CLAIM FOR RELIEF

Uniform Declaratory Judgments Act, RCW 7.24.010-.190 – Declaration that RCW 49.46.130(2)(g) Violates Privileges and Immunities Clause of Washington State Constitution, Article I, Section 12

115. An actual dispute exists between (1) Plaintiffs and the proposed Class and (2) DeRuyter. The parties have genuine and opposing interests, which are direct and substantial, and a judicial determination of those opposing interests will be final and conclusive.

116. The constitutionality of the agricultural employer exemption under RCW 49.46.130(2)(g) presents an issue of major public importance.

117. Plaintiffs and the Class have been denied the overtime compensation protections that other similarly situated Washington workers receive.

118. Plaintiffs and the Class are, therefore, entitled to a declaratory judgment that the agricultural employer exemption under RCW 49.46.130(2)(g) violates the privileges and immunities clause of the Washington State Constitution, Article I, Section 12.

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XII. REQUEST FOR RELIEF

Plaintiffs, on their behalf and on behalf of the members of the Class, request for judgment against DeRuyter, as follows:

A. Certify the proposed Plaintiff Class for the claims against DeRuyter;

B. Declare that DeRuyter is financially responsible for notifying all Class members of its wage and hour violations;

C. Appoint Plaintiffs as representatives for the Class;

D. Appoint the undersigned counsel for the Class;

E. Declare that DeRuyter's actions complained of herein violate RCW 49.46.020, RCW 49.46.090, RCW 49.46.130, WAC 296-131-020, and RCW 49.52.050;

F. Declare that RCW 49.46.130(2)(g)'s exemption of agricultural employers from the requirement to pay overtime compensation violates the privileges and immunities clause of the Washington State Constitution, Article I, Section 12;

G. Enjoin DeRuyter and their officers, agents, successors, employees, representatives, and any and all person acting in concert with DeRuyter, as provided by law, from engaging in the unlawful and wrongful conduct set forth herein;

H. Award to Plaintiffs and the Class compensatory and exemplary damages, as allowed by law;

I. Award to Plaintiffs and the Class attorneys' fees and costs, as allowed by law, including under RCW 49.48.030, RCW 49.46.090, and RCW 49.52.070 and other applicable law;

J. Award to Plaintiffs and the Class prejudgment and post-judgment interest, as provided by law;

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K. Grant Plaintiffs leave to amend their claims to reflect the evidence presented at trial; and

L. Provide such other and further relief as the Court deems necessary, just, and proper.

RESPECTFULLY SUBMITTED AND DATED this 10th day of October, 2017

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Attorneys for Defendant

SUPERIOR COURT OF WASHINGTON
IN AND FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, v. DERUYTER FARM PROPERTIES, INC., f/k/a DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER, Defendants.	No. 16-2-034173-9 **DEFENDANTS' ANSWER TO FIRST AMENDED COMPLAINT**

DeRuyter Farm Properties, Inc., formerly known as DeRuyter Brother Dairy, Inc. ("DeRuyter"), answers Plaintiffs' First Amended Complaint as follows:

1. This paragraph contains conclusory assertions and characterizations of the named Plaintiffs' action rather than averments of fact to which a response is required. Defendant admits that the named Plaintiffs were once employed by DeRuyter Brother Dairy, Inc. ("DeRuyter") to milk cows at its milking facilities in Outlook, Washington. To the extent this paragraph requires any further response, it is denied.

2. DeRuyter no longer owns or operates a dairy. DeRuyter previously owned and operated a dairy in Outlook, Washington, and milked its herd in accordance with best practices three times a day through two milk barns. The remaining allegations of this paragraph, express or implied, are denied.

3. DeRuyter admits that dairy workers employed as milkers prepare cows for milking, milk the cows, and clean the milk barn. The remaining allegations of this paragraph, express or implied, are denied.

4. The averments of fact contained in this paragraph are denied.

5. The averments of fact contained in this paragraph are denied.

6. The averments of fact contained in this paragraph are denied.

7. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required. To the extent this paragraph requires any further response, it is denied.

8. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required. To the extent this paragraph requires any further response, it is denied.

9. DeRuyter admits that Plaintiff Martinez-Cuevas was employed as a milker from May 5, 2014 to August 17, 2015. DeRuyter lacks information sufficient to determine the truth or falsity of the remaining averments in this paragraph, and therefore denies the same.

10. DeRuyter admits that Plaintiff Aguilar was employed as a milker from May 12, 2015 to May 2, 2016. DeRuyter lacks information sufficient to determine the truth or falsity of the remaining averments in this paragraph, and therefore denies the same.

11. Admitted.

12. Admitted.

13. Admitted.

14. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required. To the extent this paragraph requires any further response, it is denied.

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15. This paragraph asserts Plaintiffs' asserted definition of a putative class for which they bring this action, rather than an averment of fact to which a response is required. DeRutyer denies any implied assertion that class representation is necessary or appropriate.

16. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required. To the extent this paragraph requires any further response, it is denied.

17. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required. To the extent this paragraph requires any further response, it is denied.

18. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required. To the extent this paragraph requires any further response, it is denied.

19. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required. To the extent this paragraph requires any further response, it is denied.

20. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required. To the extent this paragraph requires any further response, it is denied.

21. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required. To the extent this paragraph requires any further response, it is denied.

22. DeRuyter lacks information sufficient to determine the truth or falsity of the averments in this paragraph, and therefore denies the same.

23. DeRuyter lacks information sufficient to determine the truth or falsity of the averments in this paragraph, and therefore denies the same.

24. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required.

25. Denied.

26. Denied.

27. DeRuyter lacks information sufficient to determine the truth or falsity of the averments in this paragraph, and therefore denies the same.

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28. DeRuyter lacks information sufficient to determine the truth or falsity of the averments in this paragraph, and therefore denies the same.

29. DeRuyter lacks information sufficient to determine the truth or falsity of the averments in this paragraph, and therefore denies the same.

30. The averments of fact contained in this paragraph are denied.

31. DeRuyter lacks information sufficient to determine the truth or falsity of the averments in this paragraph, and therefore denies the same.

32. DeRuyter admits that its dairy was classified as a CAFO, and denies the remaining averments of this paragraph.

33. DeRuyter denies that it currently operates a dairy; DeRuyter admits that it previously operated one milking facility, comprised of two barns, that milked cows three times a day.

34. Admitted.

35. The averments of fact contained in this paragraph are denied.

36. The averments of fact contained in this paragraph are denied.

37. DeRuyter admits that, previously, approximately 3,000 cows were milked during a regular shift in its larger barn, and denies the remaining averments of this paragraph.

38. DeRuyter admits that, previously, its employees milked cows with mechanized milking machines standard in the dairy industry.

39. DeRuyter admits that, previously, its employees who worked in the milking barns were expected to assist in managing the cows and keeping the barn clean.

40. DeRuyter lacks information sufficient to determine the truth or falsity of the averments in this paragraph, and therefore denies the same.

41. Denied.

42. Denied.

43. Denied.

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44. Denied.

45. Denied.

46. Denied. At all times, DeRuyter employed other workers who were required to relieve each of the four milkers on a given shift for their full 30 minute meal period, "off duty" and without interruption. All milkers were paid during their meal period.

47. Denied.

48. Denied. Milkers were paid for their meal period.

49. Denied.

50. Denied.

51. Denied.

52. Denied.

53. Denied.

54. Denied.

55. This paragraph contains a legal conclusion to which no response is required, and/or avers facts about which DeRuyter lacks information sufficient to form a belief as to the truth or falsity, and which are therefor denied.

56. Denied.

57. This paragraph contains a legal conclusion to which no response is required, and/or avers facts about which DeRuyter lacks information sufficient to form a belief as to the truth or falsity, and which are therefor denied.

58. Denied.

59. Denied.

60. This paragraph contains a legal conclusion to which no response is required, and/or avers facts about which DeRuyter lacks information sufficient to form a belief as to the truth or falsity, and which are therefor denied.

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61. This paragraph contains a legal conclusion to which no response is required, and/or avers facts about which DeRuyter lacks information sufficient to form a belief as to the truth or falsity, and which are therefor denied.

62. Denied.

63. DeRuyter lacks information sufficient to form a belief as to the truth or falsity of the averments in this paragraph, and which are therefor denied.

64. This paragraph contains a legal conclusion to which no response is required, and/or avers facts about which DeRuyter lacks information sufficient to form a belief as to the truth or falsity, and which are therefor denied.

65. This paragraph contains a legal conclusion to which no response is required, and/or avers facts about which DeRuyter lacks information sufficient to form a belief as to the truth or falsity, and which are therefor denied.

66. This paragraph contains a legal conclusion to which no response is required, and/or avers facts about which DeRuyter lacks information sufficient to form a belief as to the truth or falsity, and which are therefor denied.

67. This paragraph contains a legal conclusion to which no response is required, and/or avers facts about which DeRuyter lacks information sufficient to form a belief as to the truth or falsity, and which are therefor denied.

68. This paragraph contains a legal conclusion to which no response is required, and/or avers facts about which DeRuyter lacks information sufficient to form a belief as to the truth or falsity, and which are therefor denied.

69. This paragraph contains a legal conclusion to which no response is required, and/or avers facts about which DeRuyter lacks information sufficient to form a belief as to the truth or falsity, and which are therefor denied.

70. Denied.

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71. DeRuyter lacks information sufficient to form a belief as to the truth or falsity of the avermcnts in this paragraph, which are therefor denied

72. Denied.

73. This paragraph contains a legal conclusion to which no rcsponse is required, and/or avcrs facts about which DeRuytcr lacks information sufficicnt to form a bclief as to the truth or falsity, and which are therefor dcnied.

74. This paragraph contains a legal conclusion to which no responsc is required, and/or avers facts about which DeRuyter lacks information sufficient to form a bclief as to the truth or falsity, and which are thercfor denied.

75. This paragraph asscrts a legal conclusion, rather than an avcrment of fact to which a response is required.

76. Denied.

77. Denied.

78. Denied.

79. Denied.

80. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required.

81. Denied

82. Denied.

83. This paragraph asserts a lcgal conclusion, rathcr than an averment of fact to which a rcsponse is required.

84. Denied.

85. Denied.

86. Denied.

87. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required.

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88. Denied

89. Admitted.

90. Admitted.

91. Denied.

92. This paragraph purports to quote the Washington State Constitution, which speaks for itself.

93. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required.

94. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required.

95. Denied.

96. This paragraph purports to quote a Washington Statute, which speaks for itself.

97. Denied.

98. Denied.

99. Denied.

100. Denied.

101. This paragraph asserts a legal conclusion, rather than an averment of fact to which a response is required.

102. Denied.

103. This paragraph contains a legal conclusion to which no response is required, and/or avers facts about which DeRuyter lacks information sufficient to form a belief as to the truth or falsity, and which are therefor denied.

104. Denied.

105. Denied.

106. Denied.

107. Denied.

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108. This paragraph contains a legal conclusion to which no response is required, and/or avers facts about which DeRuyter lacks information sufficient to form a belief as to the truth or falsity, and which are therefor denied.

109. Denied.

110. Denied.

111. Denied.

112. Denied.

113. Denied.

114. Denied.

115. Denied.

116. Denied.

117. Denied.

118. Denied.

AFFIRMATIVE DEFENSES

1. Plaintiffs First Amended Complaint fails to state a claim upon which relief may be granted.

Wherefore, Defendants pray for judgment for Defendants against Plaintiffs' Complaint and all claims therein, and for an award of their costs and fees as permitted by law, and for such other and further relief as the Court deems just, at law and in equity.

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DATED this 31st day of October, 2017.

FOSTER PEPPER PLLC

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Attorneys for Defendant
DeRuyter Brothers Dairy, Inc

CERTIFICATE OF SERVICE

I certify that I am a citizen of the United States of America and a resident of the State of Washington. I am over the age of eighteen, and I am competent to be a witness herein.

On this 31st day of October, 2017, I caused the foregoing document to be served on the parties as indicated below.

Lori Jordan Isley Joachim Morrison Columbia Legal Services 6 South Second Street, Suite 600 Yakima, WA 98901 *Counsel for Plaintiff*	[ ] Via Facsimile [ ] Via Legal Messenger [X] Via E-mail [ ] Via U.S. Mail, postage prepaid
Marc Cote Frank Freed Subit & Thomas LLP 705 Second Avenue, Suite 1200 Seattle, WA 98104-1798 *Counsel for Plaintiff*	[ ] Via Facsimile [ ] Via Legal Messenger [X] Via E-mail [ ] Via U.S. Mail, postage prepaid

I declare under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

Pam McCain

Pam McCain

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EXHIBIT 8

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FILED
OCT 30 2017
YAKIMA COUNTY CLERK

9 Pages

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
COUNTY OF YAKIMA

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, vs. DERUYTER BROTHERS DAIRY, INC., Defendants.	No. 16-2-03417-39 **~~[PROPOSED]~~ ORDER GRANTING FINAL APPROVAL OF CLASS ACTION SETTLEMENT**

On August 25, 2017, this Court entered the Order Granting Preliminary Approval of Class Action Settlement (the "Preliminary Approval Order"); and

Individual notice complying with Civil Rule 23 was sent to the last-known address of each member of the Settlement Class; and

A fairness hearing on final approval of the settlement was held before the Court on October 30, 2017; and

No objections to the settlement were made by any member of the Settlement Class; and

The Court, being advised, finds that good cause exists for entry of the below Order; now, therefore,

IT IS HEREBY FOUND, ORDERED, ADJUDGED AND DECREED THAT:

1. Unless otherwise provided herein, all capitalized terms in this Order shall have the same meaning as set forth in the Settlement Agreement attached as Exhibit A to the Declaration of Marc C. Cote in Support of Plaintiffs' Motion for Preliminary Approval of Class Action Settlement.

2. The Court finds that notice to the Settlement Class has been completed in conformity with the Preliminary Approval Order. The Court finds that this notice was the best notice practicable under the circumstances, that it provided due and adequate notice of the proceedings and of the matters set forth therein, and that it fully satisfied all applicable requirements of law and due process.

3. The Court finds it has personal and subject matter jurisdiction over all claims asserted in this litigation with respect to all members of the Settlement Class.

4. Pursuant to Civil Rule 23, the Court has certified the following Settlement Class for settlement purposes: All individuals who worked as milkers for DeRuyter Brothers Dairy, Inc. between December 8, 2013 and December 31, 2016.

5. In connection with this certification, the Court has made the following findings:

a. The Settlement Class are so numerous that joinder of all members is impracticable;

b. There are questions of law or fact common to the Settlement Class;

c. Plaintiffs' claims are typical of the Settlement Class;

d. Plaintiffs are capable of fairly and adequately protecting the interests of the Settlement Class Members;

e. Common questions of law and fact predominate over questions affecting only individual Settlement Class Members. Accordingly, the Settlement Class is sufficiently cohesive to warrant settlement by representation; and

f. Certification of the Settlement Class is superior to other available methods for the fair and efficient adjudication of the claims of the Settlement Class Members.

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6. The Court has appointed Plaintiffs Jose Martinez-Cuevas and Patricia Aguilar as representatives of the Settlement Class.

7. The Court has appointed Marc Cote of Frank Freed Subit & Thomas LLP and Lori Isley and Joe Morrison of Columbia Legal Services as Class Counsel for the Settlement Class.

8. No objections to the settlement have been lodged.

9. The terms set forth in the settlement, including the total settlement payment of $600,000, are approved as being fair, adequate, and reasonable in light of the degree of recovery obtained in relation to the risks faced by the Settlement Class. The relief provided to the Settlement Class under the Settlement Agreement for the non-overtime wage, rest break, and meal break claims is appropriate as to the individual members of the Settlement Class and as a whole.

10. In *Bowles v. Department of Retirement Systems*, 121 Wn.2d 52, 72, 847 P.2d 440 (1993), the Washington Supreme Court held that the "percentage of recovery approach is used in calculating fees" for common fund class action settlements like this one. The benchmark in Washington for an attorney fee award in a common fund settlement is 25 percent of the fund. *Id.* at 72–73. In accordance with *Bowles*, Class Counsel seek a benchmark fee of 25 percent of the common fund for the non-overtime claims. The Court finds no "special circumstances" to depart from the benchmark award of 25 percent for this settlement. *See id.* at 73. The Court therefore approves the payment of $150,000 in attorneys' fees to Class Counsel as fair and reasonable based on the "percentage of recovery" approach. The approved attorney fee award of $150,000 is 25 percent of the $600,000 common fund. The 25 percent fee is within the range of reasonableness set forth in *Bowles* and is consistent with fee awards in similar wage and hour class actions. The Court reaches the conclusion that the 25 percent fee award to Class Counsel is reasonable for the non-overtime claims after analyzing (1) the substantial financial recovery for Settlement Class Members for the non-overtime claims; (2)

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the diligent effort utilized by Class Counsel in litigating the non-overtime claims; (3) Class Counsel's substantial experience in complex litigation and the skill utilized to achieve the settlement; (4) the hurdles to obtaining certification of the Settlement Class for the non-overtime claims, establishing Defendant's liability, and proving damages at trial; (5) the substantial risks Class Counsel took in litigating this case on a contingency basis and paying all costs; (6) the high-quality work Class Counsel performed; and (7) the duration and complexity of the litigation and scope of discovery.

11. For common fund settlements, reasonable litigation costs incurred by attorneys for a class are awarded in addition to percentage fee awards. *See Bowles*, 121 Wn.2d at 70. The settlement notices issued to Settlement Class Members in this case indicated that litigation costs were estimated to be $5,000. Class Counsel seek reimbursement of less than the estimated amount. The Court approves payment of $3,965 in litigation costs to Class Counsel as fair and reasonable to compensate Class Counsel for the relevant and necessary costs incurred on the non-overtime claims.

12. Pursuant to the Settlement Agreement, the Court approves payment up to $9,500 from the common fund to the Settlement Administrator, CPT Group, Inc. The payment of up to $9,500 in settlement administration expenses from the common fund is fair and reasonable to compensate the Settlement Administrator for its work and costs incurred in administering the settlement. If less than $9,500 is paid for settlement administration expenses, any remaining amount shall be included in the Net Settlement Fund distributed to Settlement Class Members.

13. The Court approves service awards of $7,500 each for Plaintiffs Jose Martinez-Cuevas and Patricia Aguilar. These awards reasonably compensate Mr. Martinez-Cuevas and Ms. Aguilar for their time and effort in stepping forward to serve as class representatives, assisting in the investigation, participating actively in the litigation, and reviewing and approving the proposed settlement terms after consulting with Class Counsel.

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14. Each Qualified Class Member shall be entitled to receive a proportional share of the remaining settlement funds as described in Section III.F.5 of the Settlement Agreement after deduction of the amounts awarded for attorneys' fees and costs, the service awards, and the settlement administration expenses.

15. No later than the three business days following the entry of this Order, Defendant shall pay the sum of $600,000, plus the applicable employer's share of payroll taxes (as calculated by the Settlement Administrator), to the Settlement Administrator to establish a Qualified Settlement Fund.

16. No later than seven calendar days after the settlement's Effective Date, the Settlement Administrator shall pay to Class Counsel $150,000 in attorneys' fees and $3,965 in costs and shall pay the service awards to Plaintiffs as detailed above.

17. No later than seven calendar days after the settlement's Effective Date, the Settlement Administrator shall also deliver the Settlement Award checks to Class Counsel in mailing envelopes listing the Settlement Administrator's return address. Class Counsel shall distribute the Settlement Award Checks as described in Section III.J.10 of the Settlement Agreement.

18. If a Settlement Award check remains uncashed 90 days after the First Distribution, the Qualified Class Member who has not cashed that check will no longer have any interest in the Settlement Award, and the Settlement Administrator shall promptly request the placement of a stop payment on the check. If the aggregate amount of uncashed checks after the First Distribution (the "residual funds") exceeds $50,000, those residual funds shall be distributed to Qualified Class Members who cashed their original checks in accordance with the procedures outlined in Section III.J.12 of the Settlement Agreement. The proceeds of any uncashed checks after thirty days following the Second Distribution, or if there is no Second Distribution, shall be distributed as *cy pres*, with 25% to the Legal Foundation of Washington, 50% to Columbia Legal Services, and 25% to the Laurel Rubin Farmworker Justice Project.

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19. Any Qualified Class Member who fails to cash or deposit a Settlement Award check within 90 days of the First Distribution will not receive a share of the Net Settlement Fund but will be bound nevertheless by the terms of the Settlement Agreement.

20. All Settlement Class Members, except any who have submitted a timely and valid request for exclusion, are bound by the terms of the Settlement Agreement, including the Release in Section III.B of the Agreement. As of the Effective Date, the Settlement constitutes a full and final settlement and release of all "Qualified Class Member Released Claims" as defined in Section III.B of the Settlement Agreement.

21. Under the Settlement Agreement, Plaintiffs and Settlement Class Members do not release any claims for overtime compensation nor any claims challenging the exemption of agricultural workers from overtime protections on constitutional grounds, including claims for costs or attorneys' fees incurred in prosecuting the overtime exemption challenge. Specifically, Plaintiffs and Class Members do not release the Fifth and Sixth Claims for Relief stated in the December 8, 2016 Class Action Complaint. Those claims remain for adjudication in this Court.

22. The Parties and their counsel shall implement and consummate the Settlement Agreement according to its terms and provision, including all payments to be made by Defendant and the Settlement Administrator under the Agreement.

23. No Settlement Class Members have excluded themselves from the Settlement Class.

24. This Court hereby dismisses with prejudice all "Qualified Class Member Released Claims" as defined by the Settlement Agreement. This dismissal shall be without costs or attorneys' fees, except as otherwise ordered here, to any Party.

25. The dismissal of the Qualified Class Member Released Claims against Defendant is without prejudice to the rights of the Parties to enforce the terms of the Settlement

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Agreement and the rights of Class Counsel to seek the payment of fees and costs as provided for in this Order.

26. The Court retains jurisdiction over the Parties, the Qualified Class Members, and the Settlement with respect to the future performance of the terms of the Settlement Agreement, including the administration and enforcement of the Agreement, to ensure that all payments and other actions required by the Settlement are properly carried out. The Court also retains jurisdiction over the Parties for purposes of addressing Plaintiffs' and Class Members' Fifth and Sixth Claims for Relief stated in the December 8, 2016 Class Action Complaint. This Court retains jurisdiction over Plaintiffs' claims for overtime compensation and claims challenging the exemption of agricultural workers from overtime protections on constitutional grounds. The Settlement and this Final Approval Order do not resolve, and Plaintiffs and Class Members do not release, such claims, which remain for adjudication in this Court.

Entered this 30th day of October, 2017.

Michael G. McCarthy

Judge

YAKIMA COUNTY SUPERIOR COURT JUDGE

Presented by:

COLUMBIA LEGAL SERVICES

By: _____

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Attorneys for Plaintiffs and Class

EXHIBIT 9

6 pages

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THE HONORABLE MICHAEL G. McCARTHY

FILED
JAN 26 2018
YAKIMA COUNTY CLERK

SUPERIOR COURT OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, vs. DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER, Defendants.	No. 16-2-03417-39 **AMENDED ~~[PROPOSED]~~ ORDER GRANTING STIPULATED MOTION FOR CLASS CERTIFICATION**

The parties have stipulated to and applied for an order granting class certification of the remaining claims not resolved by the settlement previously approved by this Court. The Court has considered the briefing and declarations submitted in this Court, including the pleadings and declarations in support of approval of the class settlement, and is fully advised. For the reasons stated below, the Court grants the Motion for Class Certification and finds as follows.

1. The parties reached a settlement which resolved all of the class claims except the following which are set forth in the Plaintiffs' First Amended Complaint and subject to this order:

a. Fifth Claim for Relief – Violation of RCW 49.46.130 – Failure to Pay Overtime Compensation;

b. Sixth Claim for Relief – Uniform Declaratory Judgments Act, RCW 7.24.

2. The parties have stipulated that the Plaintiffs' Fourth Claim for Relief - Violation of RCW 49.52.050 – Willful Refusal to Pay Wages as it relates to overtime wages – shall be dismissed, without prejudice and without attorneys' fees and costs to any party.

3. The Court finds that the four prerequisites to class certification—numerosity, commonality, typicality, and adequacy of representation—are met as required by CR 23(a) & (b) and that common questions predominate as required by 23(b)(3). The Court also finds that a class action is superior to other available methods for the fair and efficient adjudication of the controversy.

4. The numerosity requirement of CR 23(a) is satisfied because the Class consists of approximately 300 farm workers. *See* CR 23(a)(1); *Miller v. Farmer Bros. Co.*, 115 Wn. App. 815, 821, 64 P.3d 49 (2003); *Rodriguez v. Carlson*, 166 F.R.D. 465, 471 (E.D. Wash. 1996).[1]

5. The commonality requirement is satisfied because there are common questions of law and fact concerning DeRuyter's uniform employment practice of failing to pay overtime to class members. *See* CR 23(a)(2); *Smith v. Behr Process Corp.*, 113 Wn. App. 306, 320, 54 P.3d 665 (2002). All of the remaining claims flow from this uniform practice.

6. The typicality requirement is satisfied because Plaintiffs' claims arise from the same course of conduct, the Defendants' failure to pay overtime, that gives rise to other Class Members' claims. *See* CR 23(a)(3); *Pellino v. Brink's Inc.*, 164 Wn. App. 668, 684, 267 P.3d 383 (2011).

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[1] Because CR 23 is based on its federal counterpart, interpretations of analogous provisions by federal courts are persuasive to the extent they do not contradict the decisions of Washington's courts. *Pickett v. Holland Am. Line-Westours, Inc.*, 145 Wn.2d 178, 188, 35 P.3d 351 (2001).

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7. Finally, the adequacy of representation requirement is satisfied because the named Plaintiffs will "fairly and adequately protect the interest of the class." CR 23(a)(4). This test is satisfied if the named Plaintiffs are able to prosecute the action vigorously through qualified counsel, and the Plaintiffs do not have interests antagonistic to those of absent class members. *See Hansen v. Ticket Track, Inc.*, 213 F.R.D. 412, 415 (W.D. Wash. 2003). Plaintiffs' attorneys have extensive experience in class actions as set forth in their declarations in support of preliminary approval of class settlement. Plaintiffs' interests are also coextensive with, and not antagonistic to, the interests of the Class, and they were previously approved as representatives in connection with the settlement of class claims.

8. The predominance requirement of CR 23(b)(3) is satisfied because common questions present a significant aspect of the case and can be resolved for all class members in a single proceeding. *See* CR 23(b)(3); *Sitton v. State Farm Mut. Auto. Ins. Co.*, 116 Wn. App. 245, 254, 63 P.3d 198 (2003) (quoting 1 Alba Conte & Herbert Newberg, *Newberg on Class Actions* § 4:25 (3d ed. 1992)) (holding predominance "is not a rigid test, but rather contemplates a review of many factors, the central question being whether 'adjudication of the common issues in the particular suit has important and desirable advantages of judicial economy compared to all other issues, or when viewed by themselves'"). Here the central question for all class members involves the Defendants' failure to pay overtime.

9. There are no manageability issues. Resolution of approximately 300 farm workers' claims in one action is far superior to individual lawsuits and promotes consistent and efficient adjudication. *See* CR 23(b)(3); *Connor v. Automated Accounts, Inc.*, 202 F.R.D. 265, 271-72 (E.D. Wash. 2001); *Lerwill v. Inflight Motion Pictures Inc.*, 582 F.2d 507, 512–13 (9th Cir. 1978) ("Numerous individual actions would be expensive and time-consuming and would create the danger of conflicting decisions as to persons similarly situated."). Trial courts have a

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variety of tools available to deal with the management of any individual issues, including individual damages issues. *See Sitton*, 116 Wn. App. at 255, 259-60.

10. To protect absent class member rights, the Court must provide class members with the best notice practicable. CR 23(c)(2); *see also Eisen v. Carlisle & Jacquelin*, 417 U.S. 156, 174-175, 94 S. Ct. 2140, 40 L. Ed. 2d 732 (1974). Here, Defendants have already produced a preliminary list of class members in connection with the settlement, which includes each person's last known mailing address. In the course of the settlement administration, those addresses have been updated. *Decl. of Lori Isley* at 2 ¶¶ 3-4. Notice can be sent directly via First Class mail to class members. This will provide the best practicable notice to the Class members.

For the reasons set forth above, NOW, THEREFORE, IT IS HEREBY ORDERED:

1. This Court certifies the remaining claims in this case, as set forth in the findings above paragraphs 1(a) & (b), as a class action under Civil Rule 23.

2. The Court certifies the following Class: All individuals who worked as milkers for DeRuyter Brothers Dairy, Inc. between December 8, 2013 and May 25, 2017.

3. The Class satisfies the elements of Civil Rule 23(a) and Civil Rule 23(b)(3) and thus a class action is appropriate.

4. The Court appoints Plaintiffs Jose Martinez-Cuevas and Patricia Aguilar as class representatives for the Class. The claims of Plaintiff Martinez-Cuevas and Plaintiff Aguilar are typical of the claims of the Class under Civil Rule 23(a)(3), and Plaintiff Martinez-Cuevas and Plaintiff Aguilar satisfy the adequacy of representation requirement of Civil Rule 23(a)(4).

5. The Court approves Lori Isley and Joe Morrison of Columbia Legal Services and Marc Cote of Frank Freed Subit & Thomas LLP as Class Counsel.

6. The Court approves, as to form and content, the Notice to be sent to the Class Members, attached to the Declaration of Lori Isley in Support of Stipulated Motion for Class

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Certification as Exhibit 1. In addition, the Court finds that distribution of the Notice substantially in the manner set forth in Paragraph 7 of this Order will meet the requirements of due process and applicable law, will provide the best notice practicable under the circumstances, and will constitute due and sufficient notice to all individuals entitled thereto.

7. The procedure for distributing the Notice shall be as follows:

(a) Defendants shall produce an updated list of all class members (including their last known address and phone numbers) through May 25, 2017 no later than 30 days from the date of this order.

(b) The Notice mailed to Class Members shall advise Class Members of their right to exclude themselves from this lawsuit and explain the exclusion process. The Notice shall be sent in English and Spanish.

(c) Should any Notice be returned as undeliverable, Columbia Legal Services shall attempt one trace to locate a good address and, if located, shall make a second attempt at mailing the Notice. If such Notice is again returned as undeliverable, no further attempts at delivery of the Notice are required to be made.

8. A Class Member who wishes to exclude himself or herself from this lawsuit must submit a timely and valid written request for exclusion to Class Counsel as described in the Notice.

9. This Order Granting Stipulated Motion for Class Certification is entered without prejudice to Defendants' position that: (1) RCW 49.46.130(2)(g) (exempting agricultural employees from the overtime pay requirement of RCW 49.46.130(1)) is not unconstitutional; and (2) if RCW 49.46.130(2)(g) were to be found unconstitutional or invalid in any way, any application of RCW 49.46.130(1) to agricultural employers should be prospective only.

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Entered this 26th day of January, 2018.

Michael G. McCarthy

THE HONORABLE MICHAEL G. McCARTHY
Judge

Presented by:

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SUPERIOR COURT OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, vs. DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER, Defendants, and WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU, Intervenors.	No. 16-2-03417-39 PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT AND STATEMENT OF POINTS AND AUTHORITIES

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I. INTRODUCTION

Washington has a long and proud history of being a pioneer in the protection of employment rights. Since 1889, our state Constitution has mandated that all workers employed in dangerous occupations be protected by health and safety laws, stating: "The legislature *shall* pass necessary laws for the protection of persons working in mines, factories *and other employments dangerous to life or deleterious to health*." Const. art. II, § 35 (emphasis added). Our legislature passed such a law, the Minimum Wage Act ("MWA")—a statute our Supreme Court has ruled is necessary to protect workers from long hours of work injurious to health. But our legislature has failed to provide the MWA's health and safety protection of overtime coverage to farm workers who labor in one of our state's most dangerous industries: agriculture. Instead, the legislature has ignored its constitutional mandate and granted the state's powerful agricultural industry immunity from complying with the MWA's overtime protections. This special grant of immunity was based on an exclusion in the federal Fair Labor Standards Act ("FLSA")—an exclusion motivated by bias against racial minorities who worked in agriculture in the Jim Crow South of the 1930s.

Jose Martinez-Cuevas, Patricia Aguilar, and the class members are among the farm workers that the Washington legislature excluded from the MWA's overtime protections. This exclusion violates the privileges and immunities clause of the Washington State Constitution, Article I, Section 12, because it grants a privilege or immunity to the agricultural industry from a law that implicates a fundamental right of state citizenship—the right of all workers in dangerous industries to receive the protections of workplace health and safety laws. Given the undisputed reality that agricultural work is dangerous and the racial motivations underlying the original

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exemption, there is no "reasonable ground" for granting this privilege or immunity to the agricultural industry.

In addition, the agricultural exemption contained within RCW 49.46.130(2)(g) violates the equal protection guarantee of Article I, Section 12. It burdens a fundamental right and is not narrowly tailored to further a compelling state interest. There is simply no state interest or proper basis served by excluding Washington farm workers—who are largely Latina/o—from overtime protections.

For the reasons stated below, this Court should therefore declare the agricultural exemption within RCW 49.46.130(2)(g) unconstitutional as a matter of law.

II. BACKGROUND

A. Procedural History

Mr. Martinez-Cuevas and Ms. Aguilar filed this class action on behalf of approximately 300 milkers employed by Defendants at their dairy facilities in Outlook. The milkers worked around the clock in four-person crews with each crew milking approximately 3,000 cows per shift in addition to cleaning the facility, and managing the cows in the milking corrals and lines. *See* Answer to First Amended Complaint ¶¶ 3, 9, 10, 37, 39 (Oct. 31, 2017). The parties reached a class settlement of the non-overtime wage claims, which this Court approved. Order Granting Final Approval of Class Action Settlement ¶¶ 9, 21, 26 (Oct. 30, 2017). These claims addressed Defendants' failure to provide proper rest and meal periods and their failure to pay for work performed before and after the workers' scheduled shifts. *See* Plaintiffs' First Amended Complaint ¶ 1 (Oct. 10, 2017). The parties have stipulated to class treatment of the workers' remaining overtime claims. *See* Amended Order Granting Stipulated Motion for Class Certification (Jan. 26, 2018).

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B. Factual Background

1. Plaintiffs and Class members regularly worked over forty hours per week.

Defendants' milking facilities ran twenty-four hours a day, seven days a week, with three daily shifts commencing at 7:30 a.m., 3:30 p.m., and 11:30 p.m. Declaration of Marc C. Cote in Support of Motion for Summary Judgment, Ex. 1. Because each of the approximately 3,000 cows must be milked three times per day, each four-person crew must service all 3,000 cows each shift. *See id.* Indeed, Defendants' internal policies state: "All milkers must stay until all cows are milked and help clean the barn, unless the parlor manager excuses them early." *Id.* As a result, the workers usually worked well over eight hours per day. *Id.*, Exs. 2-4. Timekeeping data produced by Defendants confirms that Class members regularly worked over forty hours per week and sometimes worked over sixty hours per week. *Id.* Mr. Martinez-Cuevas worked over forty hours approximately 88% of the weeks he worked for Defendants, and Ms. Aguilar worked over forty hours over 84% of the weeks she worked for Defendants. *Id.*, Ex. 3. As a whole, Class members worked over forty hours per week almost 85% of all weeks during the class period. *Id.*, Ex. 4.

2. The agricultural work that Plaintiffs, the Class, and other farm workers do is highly dangerous.

Not only are the hours long, the work of Plaintiffs, class members, and other farm workers is extremely dangerous. Agriculture consistently ranks among the most hazardous industries. Declaration of Rachael Pashkowski in Support of Motion for Summary Judgment, Exs. 2-4 at 23, 25-28 & 40. Among industry groupings by the United States Department of Labor, agricultural industries have the *highest* fatal work injury rate of all industries, more than *double* the rate for mining and related industries. *Id.*, Exs. 5 & 6 at 50 & 59. While fatal injuries

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for other dangerous occupations have fallen, fatalities among agricultural workers have increased. *Id.,* Ex. 5 at 48-49. In all industries, violence and injuries by persons or animals became the second most common fatal event in 2016 and had the greatest increase. *Id.*, Exs. 6 & 7 at 57 & 60-61. In 2015, the fatality rate for Hispanic or Latina/o workers was the highest of any ethnic group. *Id.*, Ex. 7 at 47 & 52. In fact, fatalities among foreign-born workers were the highest in 2016 since 2007, with almost 40% of the victims from Mexico. *Id.*, Exs. 6 & 7 at 58 & 62. The injury rate for agricultural workers also well exceeds the rate for all other workers, and the fall-related injury rate is far higher than the rate for mining and manufacturing industries. *Id.*, Ex. 8 at 71 & 75. Similarly, in Washington, agricultural occupations and transportation-related occupations have the highest number of workplace fatalities, with no deaths attributed to mining. *Id.*, Ex. 9 at 84 & 87.

Farm workers "face an exceptionally wide range of acute and chronic health exposures at work . . . [as the work] involves long hours under difficult conditions and repetitive exposure to musculoskeletal strains and sprains, respiratory hazards, toxic chemicals, psychological stresses, and a variety of zoonotic diseases." *Id.*, Ex. 10 at 111; *see id.* Exs. 3, 8 & 11 at 28-31, 75-78 & 132-33. Farm workers are subject to high exposures to respiratory toxicants—often orders of magnitude higher than in other occupational settings. *Id.*, Ex. 10 at 112; *see id.* Ex. 11 at 132-33. Changes in farming mechanisms, mainly due to the increased density in animal confinement, have increased exposure to respiratory hazards. *Id.*, Ex. 8 at 78; *see id.* Ex. 11 at 132. Acute and chronic exposures to pesticides also have deleterious health effects, including associations with certain cancers, respiratory disease, and neurological conditions. *Id.*, Exs. 3, 8 & 10 at 29, 77-78 & 113. Working conditions, including lack of access to water and bathrooms and exposure to unsafe chemicals and organisms, also have disproportionate negative health effects for farm

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workers ranging from heat stroke to urinary tract infections and exposure to communicable diseases. *Id.*, Exs. 3, 8, 11 & 12 at 28-30, 75-78, 132 & 136.

Recent farm worker deaths on dairy farms have garnered national attention. *Id.*, Ex. 13. In Washington, the number and rate of injuries in the dairy industry are consistently high. Declaration of Margaret Leland, Ex. 1 at 4. In 2015, the injury rate in dairies was 121% higher than the rate for all state industries combined and 19% higher than the agricultural sector as a whole. *Id.* Over 70% of compensable workers' compensation injury claims in dairies are due to traumatic injuries. *Id.* at 6. By far, the most common accidents causing injury are attributed to violence by cattle, and being struck by or caught in an object. *Id.* at 5. Both Plaintiffs in this case sustained injuries while working for Defendants, including being kicked by cows. Declaration of Patricia Aguilar in Support of Motion for Summary Judgment, ¶¶ 3-7; Declaration of Jose Martinez-Cuevas in Support of Motion for Summary Judgment, ¶ 3. Injury data from Defendants show that approximately three-fourths of all its OSHA-reported injuries were animal-related. Pashkowski Decl., ¶¶ 2 & 3, Ex. 1. In addition, consistent with state injury data, the injury rate at the DeRuyter dairy facility was approximately 11%, well exceeding the injury rate for all industries in Washington. *Id.* ¶ 5.

Finally, studies have associated overtime work with increased injury rates, illness and mortality. *Id.*, Exs. 14-16. "A growing body of evidence suggests that long working hours adversely affect the health and wellbeing of workers." *Id.*, Ex.14 at 146. Working in a job with overtime is associated with a 61% higher injury hazard rate. *Id.* at 150. Overwork is also recognized to cause psychological stress, which when combined with fatigue from working long hours and days, results in farm workers being less able to attend to the hazardous conditions in their work environments. *Id.*, Ex. 10 at 115. The injury rate at DeRuyter is therefore unsurprising

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when considering the excessive amounts of overtime Class members have consistently worked. *See supra* Section II.B.1.

3. Washington's agricultural industry is powerful and prosperous.

The agricultural industry in Washington makes up approximately 13% of the state's economy; estimated at approximately $51 billion a year. *Id.*, Exs. 17 & 18 at 220 & 228. The state is a major agricultural commodity producer and is the top producer of apples and hops in the United States. *Id.*, Exs. 17 & 19 at 220 & 230. Yakima and Grant Counties combined play the largest role in the state's agricultural economy, producing $3.41 billion in yearly economic output. *Id.*, Ex. 17 at 220. By virtue of consolidation, larger operations increasingly dominate the industry. *See id.*, Ex. 20 at 231-32; *see also id.*, Exs. 11, 21 & 22 at 132, 233-34 & 246 (documenting local and national dairy industry trend of decline in smaller operations, while larger operations have increased). Washington ranks tenth in total United States milk production and fourth in milk production per cow. *Id.*, Exs. 17 & 23 at 222 & 247. In 2015, milk was the second largest commodity in the state at $1.1 billion. *Id.*, Ex. 19 at 229. The total economic impact of the milk industry in Washington is valued at over $3.2 billion per year. *Id.*, Ex. 23.

4. Washington's farm workers are largely poor and Latina/o.

While the overall poverty level in Washington is below national levels, poverty in Yakima and Grant Counties exceeds national levels. *Id.*, Ex. 24 at 248 & 250. Yakima has one of the highest poverty levels in the state and over 25% of the county's population under eighteen live in poverty. *Id.* at 248-50 & 253. The last comprehensive survey of farm worker wages in Washington concluded the average farm worker household earnings were 88% of the poverty

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level.[1] *Id.*, Ex. 25 at 271. This is consistent with national data, which estimate that approximately 30% of farm worker families have incomes below federal poverty levels. *Id.*, Ex. 28 at 397; *see id.*, Ex. 4 at 38. Nationally, an estimated 73% of farm workers are immigrants, with 80% identifying as Latino/Hispanic and 74% reporting Spanish as the language in which they are most comfortable conversing. *Id.*, Ex. 28 at 395-96. The most recent comprehensive Washington farm worker survey reveals that 99.80% of workers identify as Mexican/Mexican American, Mexican (Indigenous), or Central American. *Id.*, Ex. 25 at 281.[2] Farm workers' average educational attainment is the eighth grade. *Id.*, Ex. 28 at 396 *see also* Aguilar Decl., ¶ 11 & Martinez Decl., ¶ 5 (Plaintiffs have approximately 8th and 5th grade education respectively).

5. The farm worker exemption from overtime protections is rooted in racial bias.

The Washington Legislature's grant of an exemption to the agricultural industry from MWA's overtime law has its roots in the FLSA. The FLSA was crafted during the Jim Crow era when most farm workers were black, Southern, and had no political power. Marc Linder, *Migrant Workers and Minimum Wages: Regulating the Exploitation of Agricultural Labor in the United States* 128-32, 174 (1992). To pass the FLSA in 1938, President Roosevelt needed the votes of Southern Democrats who voted as a bloc to maintain the economic and social

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[1] The Bureau of Labor Statistics reports the 2016 annual mean wage for farmworkers in Washington State as $31,200; Yakima at $30,940; and eastern Washington at $24,430. Pashkowski Decl., Ex. 26 at 381-82. However, economists analyzing the same source data for California concluded that the reported annual wages of $30,000 when appropriately adjusted was actually $17,500 due to two main factors: 1) failing to adjust for the seasonality of the work and 2) gross undercounting of workers resulting in overstatement of pay per worker. *Id.,* Ex. 27.

[2] Nearly all of the milkers employed by Defendants are Latina/o. *See* Aguilar Decl., ¶ 10 & Martinez Decl., ¶ 4 (recalling only one or two non-Latino workers during their employment); *see also* Pashkowski Decl., Ex. 29 (dairy industry representative estimates 90 to 99% of the people employed in the industry are Hispanic).

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subordination of black farm workers and Southern racial inequality. *See id*; Juan F. Perea, *The Echoes of Slavery: Recognizing the Racist Origin of the Agricultural and Domestic Worker Exclusion from the National Labor Relations Act*, 72 Ohio State L.J. 95, 114-17 (2011). This compromise resulted in the exemption of farm workers from both the minimum wage and overtime protections of the FLSA. Perea, *supra*, at 117. Thus, by design, most black workers in the South were excluded from the protective reach of the original FLSA. Linder, *supra*, 159-65; Perea, *supra*, at 96 & n.1.

While Washington had enacted wage and hour laws to protect women and children twenty-five years before the passage of the FLSA,[3] it was not until 1959 that Washington adopted the "Washington Minimum Wage and Hour Act," which initially provided overtime protections for all non-exempt workers employed more than eight hours per day[4] or forty hours per week. Laws of 1959, chapter 294, § 3. Based on the same racially-motivated exclusion in the FLSA, the MWA excluded agricultural workers from the definition of "employee," and thus from both the minimum wage and overtime protections.[5]

In 1975, sixteen years after the MWA was enacted, members of the House of Representatives, led by Representative Mike Parker, attempted to remove the minimum wage and overtime exemptions granted to the agricultural industry through House Bill 32. The House

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[3] *See Parrish v. West Coast Hotel Co.*, 185 Wn. 581, 581-82, 55 P.2d 1083 (1936) (citing "chapter 174, Laws 1913 (page 602)").

[4] This additional protection was struck down on equal protection grounds because the legislation "immunized employers covered by the [FLSA] from state regulation and thus denied to small employers the equal protection of the laws." *Peterson v. Hagan*, 56 Wn.2d 48, 58, 351 P.2d 127 (1960).

[5] *Compare* Laws of 1959, ch. 294, § 1(5)(a) *with* 29 U.S.C. §§ 203(f) and 213(a)(6) (1958); *see also Anfinson v. FedEx Ground Package Sys., Inc.*, 174 Wn.2d 851, 867-70, 281 P.3d 289 (2012) (recognizing MWA definition of "employee" was based on FLSA); *Peterson*, 56 Wn.2d at 56 ("The 1959 act . . . follows the pattern of the Federal Fair Labor Standards Act.").

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Bill Digest stated the new bill: "Makes all farm workers . . . subject to minimum wage law. Establishes scheduled minimum wage rates for . . . farm workers. Limits the work week to forty hours and the work day to eight and requires payment of time and one half for overtime." Declaration of Joachim Morrison in Support of Summary Judgment, Ex. 1 at 4.

By the time of the House Floor vote, the bill had been stripped of overtime protections for agricultural workers, and all agricultural workers, except those employed year-round, were exempted from the minimum wage. *Id.*, Ex. 2. Those changes were made after Representative Parker "negotiated with . . . those that represent farm areas [and] talked to the food processors." *Id.* Representative Irv Newhouse, a hops farmer[6] from Mabton, Washington, sought to amend HB 32 by reinserting the agricultural employer exemption in the definition section of "Employee," but his amendment was voted down. *Id.*, Ex. 3 & Ex. 4 at 19.

The bill passed out of the House and went to the Senate where Senator Sid Morrison,[7] a resident of Zillah, Washington, who was also a partner in his family-owned Morrison Fruit Company, Inc.,[8] re-inserted the agricultural exemption Representative Newhouse was unable to obtain in the House. *Id.*, Ex. 5. Members of the Senate and House then met in conference to resolve differences in the competing bills. Senator Morrison participated and submitted an *additional* amendment to exempt the agricultural industry from overtime coverage based on the

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[6] *Longtime state legislator Irv Newhouse dies at age 80*, Seattle Times (Mar. 31, 2001), http://community.seattletimes.nwsource.com/archive/?date=20010331&slug=newhouse31m (last visited Feb. 21, 2018).

[7] *Sid Morrison*, Wikipedia.org, https://en.wikipedia.org/wiki/Sid_Morrison (last visited Feb. 21, 2018).

[8] Washington State University College of Agricultural, Human, and Natural Resource Sciences, CAHNRS Alumni & Development, *WSC Horticulture Alumnus Said Congress Was "Side-Trip,"*, http://cahnrs.wsu.edu/alumni/profile/sid-morrison/ (last visited Feb. 21, 2018).

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definition of "industry" contained in the FLSA. *Id.*, Ex. 6 at 27. The exact language proposed by Senator Morrison ended up in the final legislation. *Id.*, Ex. 7 at 32.

In 1988, the House of Representatives attempted again to pass legislation removing the agricultural industry's exemption from minimum wage coverage, but the efforts were unsuccessful. Representative Jennifer Belcher introduced House Bill 1544 to increase the Washington state minimum wage and ensure coverage for agricultural workers. Declaration of Jennifer Belcher, ¶¶ 4-5. The bill passed the House but died in the Senate due to the efforts of Senator Irv Newhouse, who had recently left the House to take Sid Morrison's seat in the Senate. *Id.* During that time period, the Senate was controlled by eastern Washington Senators with deep ties to the agricultural industry. *Id.* at ¶ 9.

When Representative Belcher attempted to discuss the bill with Senator Newhouse, Newhouse was willing to discuss an increase in the minimum wage only if the agricultural exemption was preserved. *Id.* ¶ 10. In light of the legislative roadblock, Representative Belcher and Representative Art Wang filed Initiative 588 to achieve through the initiative process what could not be achieved through the legislative process. *Id.* ¶¶ 12-13. Initiative 588 stated: "Shall the state minimum wage increase from $2.30 to $3.85 (January 1, 1989) and then to $4.25 (January 1, 1990) and include agricultural workers?" *Id.* at 3 ¶ 14. The initiative passed and became law in 1989. *Id.* ¶¶ 15-16. However, the exemption of farm workers from the right to overtime protection remains.

III. AUTHORITY AND ARGUMENT

The Washington State Constitution mandates that the legislature pass laws to protect workers in "employments dangerous to life or deleterious to health." Const. art. II, § 35. However, despite widespread recognition that agriculture is one of the most dangerous

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occupations in our State, the legislature exempted the agricultural industry from complying with the health and safety protections of our overtime laws, while requiring employers in other dangerous occupations to comply.

Under the recognized two-part test for alleged violations of the Washington State Constitution's privileges and immunities clause, this exemption is unconstitutional because: 1) it is a grant of positive favoritism to the agricultural industry that deprives farm workers of the fundamental right to be protected by necessary health and safety laws for persons engaged in dangerous work guaranteed by Article II, Section 35; and 2) there is no reasonable ground to grant this exemption from the overtime protections of the MWA to a dangerous industry. *See Schroeder v. Weighall*, 179 Wn.2d 566, 572-74, 316 P.3d 482 (2014).

In addition, applying an equal protection analysis, depriving farm workers of the fundamental right to be protected by health and safety laws, including overtime protection, fails under any level of scrutiny. *See id.* at 577-579. RCW 49.46.130(2)(g) violates the equal protection guarantee of Article I, Section 12 of the state Constitution because it burdens farm workers' fundamental right to be protected by health and safety laws and is not narrowly tailored to serve a compelling state interest. There is no state interest served by excluding farm workers in our state—who are largely Latina/o—from overtime protections. This Court should therefore declare on summary judgment that RCW 49.46.130(2)(g) violates Article I, Section 12 of the Washington State Constitution as a matter of law.

A. Standard of Review

"A challenge to the constitutionality of a statute may be raised by a motion for summary judgment." *Hontz v. State*, 105 Wn.2d 302, 305, 714 P.2d 1176 (1986). Summary judgment is appropriate when there are no genuine issues of material fact and the plaintiff brings "questions

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of law concerning the constitutionality" of a statute. *Myles v. Clark Cnty.*, 170 Wn. App. 521, 527, 289 P.3d 650 (2012); *see also* CR 56. Furthermore, Washington's Uniform Declaratory Judgments Act allows a party to ask the court to determine the constitutionality of a statute, and that determination can be made on summary judgment. *See Lee v. State*, 185 Wn.2d 608, 614-19, 629-30, 374 P.3d 157 (2016) (affirming trial judge's summary judgment decision declaring I-1366 unconstitutional); RCW 7.24.020.

B. Granting the Agricultural Industry the Privilege or Immunity from Providing Overtime Protections to Its Workers Is Unconstitutional.

Article I, Section 12 of the Washington State Constitution provides: "No law shall be passed granting to any citizen, class of citizens, or corporation other than municipal, privileges or immunities which upon the same terms shall not equally belong to all citizens, or corporations." Const. art. I, § 12. The purpose and intent of the privileges or immunities clause is to secure equality of treatment by prohibiting undue favoritism. *Ockletree v. Franciscan Health Sys.*, 179 Wn.2d 769, 776, 317 P.3d 1009 (2014). "[W]hen the State's police power is manipulated to serve private interests at the expense of the common good, such legislation must be condemned as unreasonable and unlawful." *Am. Legion Post No. 149 v. Dep't of Health*, 164 Wn.2d 570, 608, 192 P.3d 306 (2008) (citing *Ralph v. City of Wenatchee,* 34 Wn.2d 638, 644, 209 P.2d 270 (1949)).

In interpreting the privileges and immunities clause, Washington courts have created a two-step inquiry. *Schroeder*, 179 Wn.2d at 572-73. The first question is whether the law in question involves a "privilege or immunity." *Id.* If the answer is yes, the second question is whether the legislature had a "reasonable ground" for granting the privilege or immunity. *Id.* Plaintiffs satisfy both requirements because: (1) the agricultural exemption from overtime is a

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privilege or immunity: it grants favoritism to the agricultural industry and deprives farm workers of the fundamental right to be protected by necessary laws for persons engaged in dangerous or unhealthy work guaranteed by Article II, Section 35 of the Washington State Constitution; and 2) there is no reasonable ground to grant this privilege or immunity to the dangerous industry of agriculture.

1. The agriculture exemption from RCW 49.46.130 is a privilege or immunity from the constitutional protection granted to all workers engaged in dangerous occupations by Article II, Section 35 of Washington's Constitution.

"Privileges or immunities" are those benefits that implicate "fundamental rights of state citizenship." *Schroeder*, 179 Wn.2d at 573. Not every legislative classification constitutes a privilege or immunity. *Id.* Instead, only a right that "is, in its very nature, such a fundamental right of a citizen that it may be said to come within the prohibition of the constitution" is protected. *Ockletree*, 179 Wn.2d at 778 (quoting *State v. Vance*, 29 Wn. 435, 458-59, 70 P.3d 34 (1902)).

The right to protection for workers in dangerous and unhealthy occupations falls within the category of "fundamental rights" because the Washington State Constitution provides an explicit guarantee of laws for the protection of workers in dangerous and unhealthy occupations:

> The legislature shall pass necessary laws for the protection of persons working in mines, factories and other employments dangerous to life or deleterious to health; and fix pains and penalties for the enforcement of the same.

Const. art. II, § 35. As a corollary to constitutional restrictions on corporations, like those embodied in the privileges or immunities clause itself, the drafters of the Washington State Constitution intended this provision to provide for the protection of labor and to require the legislature to enact health and safety laws. Robert F. Utter & Hugh D. Spitzer, *The Washington State Constitution: A Reference Guide* 8, 38-39 & 82 (2d ed. 2013). Thus, Article II, Section 35

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grants to each Washington citizen the fundamental right to be protected by health and safety laws when working in dangerous or unhealthy industries.

RCW 49.46.130 is a law designed for the protection of worker health and safety, and thus falls within the constitutional ambit of Article II, Section 35. The stated purpose of the MWA is to protect "the immediate and future health, safety and general welfare of the people of this state." RCW 49.46.005(1). As the Washington Supreme Court has recognized, premium compensation for hours over forty in a week serves as a disincentive to "long hours of work injurious to health." *Anfinson v. FedEx Ground Package Sys., Inc.*, 174 Wn.2d 851, 870, 281 P.3d 289 (2012) (internal citation omitted). Indeed, the right to overtime compensation is so central to the state's comprehensive worker health, safety, and welfare scheme that the requirement cannot be waived by an individual or by a collective bargaining agreement. *See Hisle v. Todd Pac. Shipyards Corp.*, 151 Wn.2d 853, 861, 864, 93 P.3d 108 (2004) (recognizing employees cannot waive or agree to alter their MWA rights because such rights are nonnegotiable); RCW 49.46.090(1) ("Any agreement between such employee and the employer allowing the employee to receive less than what is due under this chapter shall be no defense to such action").

The recognition that working overtime directly affects health and safety is supported by national data that work schedules involving long hours, and particularly those involving overtime, substantially increase the risk of injuries on the job and precipitate workplace accidents. *See supra* Section II.B.2. As noted above, working a job with overtime is associated with a 61% higher injury hazard rate. *Id.* Here, the dairy workers worked over forty hours per week well over 80% of the time. *Supra* Section II.B.1. Like farm workers in Washington generally, they also experienced a much higher rate of injury on the job. *Supra* Section II.B.2.

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Since 1983, the Washington Supreme Court has recognized that farm workers "are engaged in an extremely dangerous occupation." *Macias v. Dep't of Labor & Indus.*, 100 Wn.2d 263, 274, 668 P.2d 1278 (1983) (holding the legislative exclusion of certain farm workers from workers' compensation coverage was unconstitutional). In *Macias*, the Court also found traditional agricultural employment had changed, stating the "trends toward larger farms, specialization of crops, and the mechanization of agriculture place the modern farmworker in much the same situation as the industrial worker." *Id.* at 266 (quoting Recent Developments, *Workmen's Compensation—Washington's Recent Amendments: Universal Mandatory Coverage, Liberalized Benefits, and a Controversial Two-Way Plan—Ch. 289, Washington Laws of 1971; Ch. 43, Washington Laws of 1972*, 47 Wash. L. Rev. 717, 722 (1972)). The *Macias* Court's finding that agricultural employment is a dangerous occupation is well supported by national and state data, which reveal that: farm workers have the highest fatality rate of all occupations, the injury rate wells exceed the rate for all other workers, and dairy workers in particular face increased risk of death and injury on the job. *Supra* Section II.B.2. While the fatality rate for other workers has fallen, the rate has increased for farm workers. *Id.* Farm workers also face disproportional exposure to certain workplace hazards including heat-related illness and death, pesticides, and respiratory and skin diseases. *Id.* Such workers are unquestionably the type of workers Article II, Section 35 of the State Constitution was designed to protect.

2. The Legislature had no reasonable ground for granting the overtime exemption to the agricultural industry.

In determining whether a "reasonable ground" exists for a privilege or immunity, a court cannot hypothesize facts and must "scrutinize the legislative distinction to determine *whether the distinction in fact serves the legislature's stated goal*." *Schroeder*, 179 Wn.2d at 574 (emphasis

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added). Thus, to meet the "reasonable ground" requirement, legislative distinctions must rest on "real and substantial differences bearing a natural, reasonable, and just relation to the subject matter of the act." *Ockletree*, 179 Wn.2d at 783. The constitutional provision underlying Washington's overtime requirement, Article II, Section 35, outlines the grounds for the law: health and safety protection. Furthermore, the Washington Supreme Court has emphasized that overtime compensation for hours over forty in a week is intended to protect against the "dangers resulting from . . . long hours of work injurious to health." *Anfinson*, 174 Wn.2d at 870 (internal citation omitted). But Washington's overtime law excludes agricultural employees from the protection of overtime restrictions—while extending that protection to employees in other industries. There is no reasonable ground for this distinction when it comes to providing constitutionally mandated protections for workers' health and safety.

Neither the statute nor the legislative history explicitly state any purpose or reason for granting agricultural employers an exemption from the overtime protections of the MWA. The MWA does, however, state that its purpose is "protecting the immediate and future health, safety and welfare of the people of this state." RCW 49.46.005(1). Unlike the agricultural exemption from workers' compensation coverage, which was justified on the ground that farming was not considered a hazardous activity, *see Macias*, 100 Wn.2d at 266, no such grounds were ever asserted related to the exemption from overtime restrictions. Even if these grounds were hypothesized, by the time the exemption was revisited in 1975 and 1988, it was well accepted that agricultural work was dangerous. *See id.* at 266, 274. In fact, in 1975 the only legislative history related to farm worker health and the MWA is a letter from Dr. David Spencer from the Toppenish Farm Worker Family Health Center urging the House Labor Committee to vote against amendments that would exclude farm workers from coverage because the exclusion "has

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its impact on [a farm worker's] entire life, *including his health*." Morrison Decl., Ex. 8 (emphasis added). Furthermore, attempts to remove agricultural exemptions have been consistently thwarted by legislators with ties to the agriculture industry. *Supra* Section II.B.5. This is the exact type of influence that the privileges and immunities clause sought to prevent. *See Ockletree*, 179 Wn.2d at 775; Utter & Spitzer, *supra* at 8, 39.

There is no real and substantial difference justifying the legislature's exemption of the agricultural industry from overtime restrictions that bears a "natural, reasonable and just relation" to the MWA's purpose of protecting the health and safety of workers. Indeed, agriculture is one of the most dangerous industries in our state, if not the most dangerous. *See supra* Section II.B.2.

Moreover, the historical grounds of the agricultural exemption of farm workers from overtime compensation in the FLSA are based on race. *See supra* Section II.B.5. As described above, the Legislature adopted the agricultural exemption from the FLSA. In doing so, the Legislature incorporated the racist motivations at the root of that exemption. *See id.* This racist basis for the exemption is inherently unreasonable and unjust and is completely unrelated to protecting the health and safety of workers. *See Miguel v. Guess*, 112 Wn. App. 536, 553, 51 P.3d 89 (2002) ("A discriminatory classification that is based on prejudice or bias is not rational as a matter of law."). The exemption therefore may not stand as having a "natural, reasonable, and just relation" to the purpose of the Act. *See Schroeder,* 179 Wn.2d at 574; *Miguel*, 112 Wn. App. at 553.[9]

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[9] In a concurring opinion in a case involving the constitutionality of peremptory challenges, Justice Gonzalez recently emphasized the dangers resulting from laws that were rooted in the context of racial discrimination. *See State v. Saintcalle,* 178 Wn.2d 34, 75, 309 P.3d 326 (2013) (Gonzalez, J.,

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The legislature's decision to carve out an exemption for agricultural employers while ignoring the dangerous nature of agricultural work directly contravenes the constitutional mandate to protect workers in "employments dangerous to life or deleterious to health." Instead of protecting farm workers, the legislature adopted the FLSA's racist origins when it adopted the FLSA's exemption into Washington law. There was no reasonable ground for granting this privilege and immunity to the agricultural industry. Thus, the exemption in RCW 49.46.130(2)(g) is an invalid "privilege or immunity" under Article I, Section 12 of the Washington State Constitution.

C. Excluding Farm Workers from Overtime Protections Also Violates the Equal Protection Guarantee of the Washington State Constitution.

Article I, Section 12 of the Washington State Constitution also guarantees equal protection of the law. *Schroeder,* 179 Wn.2d at 577. The equal protection component of Article I, Section 12 addresses "laws that burden vulnerable groups." *Id.* Courts must "apply different levels of scrutiny depending on whether the challenged law burdened a suspect class, a fundamental right, an important right or semisuspect class, or none of the above." *Id.* Under any level of scrutiny, by excluding farm workers from overtime protection, the MWA fails to provide equal protection of the law and therefore violates Article I, Section 12 of the Washington State Constitution. *See id*; *Macias*, 100 Wn.2d. at 275; *Peterson,* 56 Wn.2d at 58.

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concurring) ("The peremptory challenge was first created in England to serve purposes that are now irrelevant and outdated, and it was adopted in the Washington Territory without substantial debate, at a time when racial minorities and women were completely ineligible for jury service.").

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1. **Because farm workers, like all workers in dangerous occupations, have a fundamental right to protection by workplace health and safety laws, strict scrutiny applies.**

Laws burdening a fundamental right are "presumptively invidious" and subject to strict scrutiny. *Plyler v. Doe*, 457 U.S. 202, 216 (1982); *State v. Hirschfelder*, 170 Wn.2d 536, 550, 242 P.3d (2010). Such laws "will be sustained only if they are suitably tailored to serve a compelling state interest." *City of Cleburne v. Cleburne Living Ctr.*, 473 U.S. 432, 440 (1985); *Nielsen v. State Dept. of Licensing*, 177 Wn. App. 45, 53 (2013) (noting that when strict scrutiny applies, a law must be "narrowly tailored to serve a compelling state interest"). "Few laws survive [strict] scrutiny." *Witt v. Dep't of Air Force*, 527 F.3d 806, 817 (9th Cir. 2008). In *Macias*, the Washington Supreme Court applied strict scrutiny when examining the constitutionality of a statute excluding certain farm workers from workers' compensation coverage. 100 Wn.2d at 269. The Court found that the statute infringed on the workers' fundamental right to travel, that there was no compelling state interest sufficient to justify the infringement of that right, and that accordingly the provision denied farm workers equal protection of the law. *Id.* at 274-75.

The heavy burden for laws subject to strict scrutiny is justified by the importance of the right at issue. As the United States Supreme Court recently observed in recognizing the fundamental right to marry:

> The dynamic of our constitutional system is that individuals need not await legislative action before asserting a fundamental right. An individual can invoke a right to constitutional protection when he or she is harmed, even if the broader public disagrees and even if the legislature refuses to act. The idea of the Constitution was to withdraw certain subjects from the vicissitudes of political controversy, to place them beyond the reach of majorities and officials and to establish them as legal principles to be applied by the courts. This is why fundamental rights may not be submitted to a vote; they depend on the outcome of no elections.

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Obergefell v. Hodges, 135 S. Ct. 2584, 2605-06 (2015) (internal quotations omitted). Farm workers require redress by this Court to vindicate their fundamental right to be protected, like all other workers in dangerous occupations, by workplace health and safety laws.

Washington's Constitution establishes the fundamental right for those employed in dangerous occupations to workplace health and safety enactments by the legislature. The overtime protections of the MWA are a workplace health and safety enactment, and Washington farm workers are engaged in dangerous work. Excluding farm workers from the MWA's overtime protection therefore burdens their fundamental right to be protected by necessary health and safety legislation. Thus, strict scrutiny applies.[10]

Because there is no compelling state interest for excluding farm workers, who are engaged in dangerous work, from MWA's overtime restriction, RCW 49.46.130(2)(g) fails strict scrutiny.

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[10] Strict scrutiny also applies to laws that have a racially discriminatory purpose, even if the laws are facially neutral: "A facially neutral law . . . warrants strict scrutiny" if "it can be proved that the law was motivated by a racial purpose or object, or if it is unexplainable on grounds other than race." *Hunt v. Cromartie*, 526 U.S. 541, 546 (1999) (internal quotations omitted); *see also McCreary Cnty. v. Am. Civil Liberties Union of Ky.*, 545 U.S. 844, 862, 866 (2005) (stating courts may not "turn a blind eye to the context in which [a] policy arose" and "historical context of the statute" and "the specific sequence of events leading up to [its] passage" are relevant considerations (internal quotations omitted)); *Village of Arlington Heights v. Metro. Hous. Dev. Corp.*, 429 U.S. 252, 266-68 (1977) (explaining that circumstantial evidence of intent, including the historical background of the decision, may be considered in evaluating whether a governmental action was motivated by a discriminatory purpose). Here, the FLSA exemption of farm workers from overtime compensation was based on racial bias. *See supra* Section II.B.5. Rather than rejecting this racial bias, the Washington Legislature chose to perpetuate it in the MWA by excluding farm workers, most of whom are now Latina/o, from overtime protections. This historical context reveals that RCW 49.46.130(2)(g) was rooted in a racially discriminatory purpose.

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2. In the alternative, the Court should apply intermediate scrutiny because protection by health and safety laws is an important right, and farm workers are a vulnerable group.

Intermediate scrutiny applies if the statute implicates "both an important right and a semi-suspect class not accountable for its status." *Schroeder*, 179 Wn.2d at 578. A semi-suspect class for equal protection purposes includes discrete and insular minorities who are politically powerless and vulnerable to mistreatment. *See id.* at 578-79. "Certain racial and ethnic groups have frequently been recognized as 'discrete and insular minorities' who are relatively powerless to protect their interests in the political process." *San Antonio Indep. Sch. Dist. v. Rodriguez*, 411 U.S. 1, 105 (1973). The poor are a semi-suspect class. *State v. Schaaf*, 109 Wn.2d 1, 18, 743 P.2d 240 (1987). To withstand intermediate scrutiny, a semi-suspect classification must be seen as furthering a substantial interest of the state. *Id.* at 17.

Here, should the Court fail to recognize as "fundamental" the right of those employed in dangerous occupations to legislative protections for their health and safety, it is undeniably an "important" right for purposes of state equal protection analysis. *See Schroeder*, 179 Wn.2d at 578 (finding right of minors to pursue common law claims is important); *Parrish*, 185 Wn. at 584 (recognizing importance of minimum wage statutes in protecting the public interest). The statute also implicates a semi-suspect class not accountable for its status. As the Washington Supreme Court recognized over three decades ago, farm workers in Washington are, and continue to be, poor and overwhelmingly Latina/o. *Macias*, 100 Wn.2d at 271, 274 (recognizing that 73% of farm workers were Hispanic and earning mean wages of less than $3,834 before 1978). More recently, 99.80% of farm workers surveyed in Washington identified as Mexican/Mexican American, Mexican (Indigenous), or Central American. *See supra* Section

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II.B.4. In the last comprehensive survey of farm worker wages in Washington, the average farmworker household earnings were 88% of the poverty level. *Id.*

Farm workers have also been unable to obtain overtime protection through the legislature, continue to be excluded from basic worker protections afforded other workers, and have gained protections largely through court intervention rather than the legislative process. *See, e.g., Lopez Demetrio v. Sakuma*, 183 Wn.2d 649, 659, 355 P.3d 258 (2015) (holding that farm workers performing piece-rate work are entitled to a wage separate from the piece rate for time spent on rest breaks); *Bravo v. Dolsen Cos.*, 125 Wn.2d 745, 748, 888 P.2d 147 (1995) (holding that non-union dairy workers from Granger have the right to concerted activities under state law); *Macias*, 100 Wn.2d at 274-75 (holding that the exclusion of certain farm workers from workers' compensation coverage was unconstitutional). Latinas and Latinos face dramatic under-representation in political office and race-based barriers to political participation and civic engagement. Declaration of Paul Apostolidis in Support of Plaintiffs' Motion for Summary Judgment, ¶¶ 6-8.

The exclusion of farm workers from overtime restrictions does not further any substantial state interest. As explained, the legislative history reveals no purpose for the agricultural exemption beyond the racist underpinnings of the FLSA.[11] This is not a "substantial state interest." Because the exclusion involves an important right for workers in dangerous occupations to be protected by health and safety laws, and because the exclusion implicates a

[11] In effect, the original intended nefarious impact on one minority, African Americans, has been traded for a similar impact on the current generation of mostly Latina/o farm workers. This is not surprising given that low-paid agricultural work is typically done by such discrete and insular groups.

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semi-suspect class not accountable for its status, the MWA's exclusion of farm workers from overtime protections fails to satisfy the intermediate scrutiny test.

3. Even under rational basis review, the exclusion of farm workers is unconstitutional.

If heightened scrutiny does not apply, courts apply rational basis review. Social and economic legislation is presumed to be rational, but the "presumption may be overcome by a clear showing that the law is arbitrary and irrational." *Hirschfelder*, 170 Wn.2d at 551. To withstand rational basis scrutiny, a legislative distinction must meet a three-part test: (1) all members of the class must be treated alike; (2) there must be a rational basis for treating differently those within and outside the class; and (3) the classification must be rationally related to the purpose of the legislation. *DeYoung v. Providence Med. Ctr.*, 136 Wn.2d 136, 144, 960 P.2d 919 (1998). A classification will not be upheld if "it rests on grounds wholly irrelevant to the achievement of legitimate state objectives." *Miguel*, 112 Wn. App. at 553 (quoting *Gossett v. Farmers Ins. Co.*, 133 Wn.2d 954, 979, 948 P.2d 1264 (1997)). "A discriminatory classification that is based on prejudice or bias is not rational as a matter of law." *Id.*

The exclusion of farm workers from overtime protection fails all three parts of the test articulated in *DeYoung*. First, the MWA provides overtime protections for some workers, but not all. Not all members of the class are treated alike. Second, there is no rational basis for treating farm workers differently from other workers in dangerous occupations. Workers employed in dangerous occupations like construction and factories receive overtime, while agricultural workers, though working in equally or even more dangerous occupations, do not. Finally, the exclusion of farm workers from overtime protection has no rational relationship to the MWA

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purpose of protecting worker health and safety including the "dangers resulting from . . . long hours of work injurious to health." *Anfinson*, 174 Wn.2d at 870.

Even under the rational basis test, "the relationship of a classification to its goal must not be so attenuated as to render the distinction arbitrary or irrational." *DeYoung*, 136 Wn.2d at 149 (finding eight-year statute of response too attenuated to goals to survive rational basis review); *see also Rodriguez v. Brand West Dairy*, 378 P.3d 13, 27-32 (N.M. 2016) (applying New Mexico's rational basis review and finding five separate rationales not sufficient to justify the exclusion of farm and ranch workers from workers' compensation). Courts are also called upon to consider underlying bias and prejudice at the root of such classifications, as discriminatory effects are by their nature fundamentally irrational. *See City of Cleburne*, 473 U.S. at 446-50 (applying rational basis review to zoning ordinance requiring special permits for homes for persons with disabilities and invalidating the ordinance based on underlying irrational prejudice against persons with mental disabilities). "[I]n interpreting the Equal Protection Clause, the Court has recognized that new insights and societal understandings can reveal unjustified inequality within our most fundamental institutions that once passed unnoticed and unchallenged." *Obergefell*, 135 S. Ct. at 2603. In Washington, classifications based on "prejudice or bias" are "not rational as a matter of law." *Miguel*, 112 Wn. App. at 553.

Here, the Washington Legislature incorporated and carried on the racist motivations of FLSA when it allowed farm workers to be excluded from the MWA's basic health and safety provision of overtime compensation. The Legislature's adoption of the prejudicial exclusion of farm workers in the FLSA is not rational as a matter of law. Thus, the exclusion of farm workers from overtime protections fails the rational basis test.

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IV. CONCLUSION

The overtime protection of RCW 49.46.130 is a necessary health and safety law, yet the legislature provided the agriculture industry a privilege or immunity from the overtime protection for all farm workers. There is no reasonable ground for this privilege and immunity. Furthermore, under any level of scrutiny, RCW 49.46.130(2)(g) fails to provide equal protection of the law to Latina/o farm workers who labor for long hours to produce the food we eat. For these reasons, RCW 49.46.130(2)(g) violates Article I, Section 12 of the Washington State Constitution. Mr. Martinez-Cuevas, Ms. Aguilar, and the Class respectfully request that this Court declare on summary judgment that RCW 49.46.130(2)(g) is unconstitutional as a matter of law.

RESPECTFULLY SUBMITTED AND DATED this 1st day of March, 2018.

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ATTACHMENT A

The Washington State Constitution

Second Edition

Robert F. Utter
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Section 1. Special Revenue Financing 273

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When the delegates to the Washington Constitutional Convention met in Olympia in 1889, their single overriding purpose was to pave the way for the creation and admission into the Union of a new and independent state, with all the attributes of sovereignty enjoyed by American states in the late nineteenth century. Among those attributes were an independent constitution and an independent judiciary to interpret it. Although the Civil War had proven that states were not sovereign in the ultimate sense, the phrase "state sovereignty" did not have the hollow and anachronistic sound that many attribute to it today. In 1889, the U.S. Bill of Rights did not apply to the states, and federal law was not nearly so predominant in the minds of lawyers and the general population. It is extremely unlikely that the Washington framers, in light of their central purpose in drafting our state constitution and the then current view of states' rights, intended that the Federal Constitution and courts should have any significant role in interpreting or setting limits on the interpretation of Washington's constitution.

To say that the framer's single overriding purpose was to pave the way for the admission of Washington into the Union is not to deny that they had other purposes as well. One such purpose was clearly to protect the rights of Washingtonians and to secure for our people the same fundamental rights as were enjoyed by the other citizens of the Union. But does this common general intent mean that the provisions of the Washington Declaration were meant to mirror the corresponding provisions of the U.S. Bill of Rights? There were vast differences in culture, politics, experience, education, and economic status between the Pacific Northwest framers of 1889 and the East Coast framers of the U.S. Bill of Rights in 1789. Indeed, few of the upper-class drafters of the U.S. Constitution would have shared the populist outlook that characterized the Washington drafters a century later. Even in the relatively few instances where the two documents used identical language, the intent could be quite different. Although it is difficult to say precisely what phrases like "cruel punishment," "freedom of conscience," or "due process" meant to a Northwestern pioneer in 1889, it is safe to say that they did not mean exactly the same thing that they meant to an aristocratic Virginia plantation owner and slaveholder of 1789.

■ PROTECTING A SELF-SUFFICIENT WAY OF LIFE

Washington's 1889 constitution confirmed and entrenched an individualistic mentality and a suspicion of established interests. Other than the Native Americans who had survived disease and relocation, the 300,000 Washingtonians in 1889 were composed almost entirely of residents who had purposefully cut their family and economic ties, immigrating by ship, wagon train, or (since 1883) rail, to homestead or otherwise seek their fortunes in the Pacific Northwest (Airey, 1945; Johansen & Gates, 1967). Professor David Alan Johnson has emphasized the importance, in evaluating neighboring Oregon's constitution, of

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early settlers' conscious decisions to leave their former homes and seek independent lives far away from the East's growing commercial economy. Johnson's description of a "growing commitment of nineteenth-century men to a natural-rights liberalism defined in terms of individual self-seeking for economic advantage" can be fairly applied to Washington homesteaders (D. A. Johnson, 1992). The Washington Constitution was drafted three decades after Oregon's, when "natural-rights liberalism" was reaching a fever pitch in the American West.

Of the seventy-five delegates to the constitutional convention, all but one had been born outside Washington Territory—most were from states that were predominantly agricultural and whose constitutions had in many cases already undergone agrarian reforms or rewrites (Airey, 1945). Despite the fact that twenty-two of the convention's members were lawyers and nine were businessmen, they nevertheless reflected the strong populist focus of their mainly farming constituents: protection of a self-sufficient way of life in the face of powerful commercial forces that threatened to manipulate or control the common people (Fitts, 1951).

Agriculturists were concerned about falling prices for farm produce, an insufficient money supply, a huge debt burden, and dependence on monopoly railroads to get their goods to market (Ridgeway, 1948). Banks were accurately blamed for the federal government's tight monetary policy and adherence to gold currency (Goodwyn, 1976). Railroads were viewed as avoiding their fair share of taxes while gouging farmers through high transport charges (Ridgeway, 1948). Farmers' concerns in the late nineteenth century are evidenced, for example, by pronouncements from the Grange—never a particularly radical organization (Ridgeway, 1948). In complaining of a corporate takeover of Columbia River shipping, the 1878 Oregon State Grange declared that this critical waterway had "fallen under the control of a grinding and oppressive monopoly." The 1895 Washington State Grange adopted a resolution urging that the federal government seize the Union Pacific and Central Pacific railroads "and own and control said roads and run them in the interest of the people" (Crawford, 1939).

Throughout the South and the West, these concerns had led to a chain of related political movements involving both farmers and laborers: the Greenback Party in the 1870s, the Union Labor Party and the Farmers Alliance in the 1880s, and finally the People's Party in 1892 (Goodwyn, 1978). The platforms of the Washington's People's Party in the 1890s reflected what had been the key objectives for the agricultural and labor communities for two decades: liberal monetary policy, mortgage relief, higher taxes on business, a ban on union-busting private detectives, railroad rate controls, public employment offices, workplace safety laws, free education, and a ban on monopolies (Peters, 1967). Just seven years after Washington's constitution was adopted, the Populists elected a governor and took control of the state legislature through a fusion with the Democrats and "Silver Republicans."

Many of the concerns of this broad populist movement found their way into the text of Washington's constitution. The convention delegates started work

on July 4, 1889, with a draft conveniently provided by W. Lair Hill, a lawyer-judge-newspaperman who had previously lived and worked in both California and Oregon. Six weeks later they finished with a version that still bore the marks of his handiwork (Fitts, 1951). That document reflected the aspiration for independence and self-sufficiency shared by most Washingtonians—people whose willingness to engage in collective action was focused mainly on organizing cooperatives and pushing both major political parties to use government against the business corporations that common people feared would control their lives (Ridgeway, 1948). Article I, Section 1 began with a forthright Lockean declaration: "All political power is inherent in the people, and governments... are established to protect and maintain individual rights." That commitment to individual liberties was supplemented by Article I, Section 30, which intoned that the "enumeration... of certain rights shall not be construed to deny others retained by the people."

Many provisions (some tracing their lineage to the Jacksonian period or earlier) were inserted to prevent elected leaders from granting privileges to special interests. Article I, Section 8's ban on any "law granting irrevocably any privilege, franchise or immunity" is directed at favoritism toward railroads and other corporate concentrations. Similarly, Article I, Section 12 provides that "[n]o law shall be passed granting to any citizen, class of citizens or corporations... privileges or immunities which upon the same terms shall not equally belong to all citizens, or corporations." Article I, Section 28 bars hereditary privileges or powers. Article XII, Section 7 provides that local corporations must be permitted to transact business on the same terms as out-of-state entities, and Article XII, Section 15 requires that railroad rates be equal for the same classes of freight or passengers.

Article XII contains twenty-two separate sections designed to oversee private business corporations and regulate business: requiring that corporations be formed under general laws rather than special acts, permitting the legislature to alter statutes governing corporations at any time, prohibiting stock fraud and other manipulative activity, enabling condemnation of corporate property, and combating monopolies and exploitative rates for moving agricultural products and other goods. Article II, Section 35 charged the legislature with adopting "necessary laws for the protection of persons working in mines, factories, and other employments dangerous to life or deleterious to health." These were all designed to prevent business elites from maintaining a stranglehold over the state's farmers and laborers. One striking example of the Washington Constitution's simultaneously individualistic and anti-corporate spirit is Article I, Section 24, which provides that the "right of the individual citizen to bear arms in defense of himself, or the state, shall not be impaired, but nothing in this section shall be construed as authorizing individuals or corporations to organize, maintain, or employ an armed body of men." That last clause was aimed at the notorious business practice of hiring armed "Pinkertons" to break up labor unions (Hicks, 1923).

Another anti-corporate provision—one with lasting effects—was the ban on state or local government loans, gifts, or credit support to the private sector. This was included in the constitution principally to bar public subsidies to railroads, subsidies that were described by delegates variously as "ill-advised," "vicious," and "entangling people in disastrous schemes" (Airey, 1945; Rosenow, 1962). The language has resulted in strict limits on the ability of governments to engage in cooperative ventures with business or to promote economic development.

Hence, the 1889 Washington Constitution set forth the aspirations of the bulk of the population to pursue individual opportunities. At the same time, the delegates' work reflected a popular desire to harness the power of the state to promote opportunity for the "common man" and to reduce the opportunity for special interests to manipulate government for their own ends.

Apart from protecting individual liberties and shielding their way of life from rapacious businesses, the other key instance in which Washingtonians entrusted an activist role to the state was in guaranteeing educational opportunity. Article IX, Section 1 states:

> It is the paramount duty of the state to make ample provision for the education of all children residing within its borders, without distinction or preference on account of race, color, caste or sex.

This language repeats the nineteenth-century common school movement's doctrine that a democratic republic requires a broad-based and general educational experience, and the idea that each and every child must be provided an equal opportunity to succeed by being provided with a good educational experience (Beale, 1997). A related but less powerful mandate required the state government to provide institutions for physically disabled youth, mentally and developmentally disabled persons of all ages, and reformatories (*Id.*).

■ POWER DIVIDED AMONG POLITICAL INSTITUTIONS

Reflecting the Populists' distrust of concentrated power, Washington's 1889 constitution scattered political authority among multiple institutions and offices. There was the customary division between three branches, with legislative power exercised by separately elected houses and further shared with the governor through the veto. But the executive was further divided among eight separately elected officials: the governor, lieutenant governor, secretary of state, treasurer, auditor, attorney general, superintendent of public instruction, and a commissioner of public lands. An independent insurance commissioner was established by statute in 1907. Both the executive and the legislature are constrained by judicial review of statutes and the constitution, and the State Supreme Court has jealously guarded its authority as the sole arbiter of constitutional disputes and statutory interpretation (Wash. State Highway Comm'n v. Pac. Northwest Bell

Tel. Co., 1961). The elective (rather than appointive) process of choosing judges was seen as a mechanism for protecting their independence from the governor, the legislature, and special interests (Knapp, 1913).

Another example of the constitution's principle of keeping power close to the people is the requirement that municipalities be created by voters pursuant to general laws, rather than being chartered directly by the legislature. In his proposal to the 1889 convention, W. Lair Hill observed that in many states, municipal charters were "the footballs of...lobbyists, who are sure to besiege the legislature when there is opportunity for plunder" (Hill, 1889). Counties are the only type of political subdivision required by the constitution, and the legislature effectively controls their formation (Freedom County ex rel. Guadalupe v. Snohomish County, 1999). But Article XI provides that all local governments (including counties) must be granted powers by general laws rather than through special legislation, and counties and cities have substantial flexibility in organizing their local governments on a "home rule" basis. The state's penchant for diffusing political authority is further reflected in the substantial reliance upon separate special purpose districts (at least 60 varieties) and the sheer number of separate municipal and quasi-municipal corporations—more than 1700 (Lundin, 2007).

The single most important mechanism for the dispersion of political power under Washington's constitution was adoption of the initiative and referendum, under which, since 1912, "the people [have reserved] to themselves the power to propose bills, laws, and to enact or reject the same at the polls, independent of the legislature." These tools of popular control had been pushed through earlier by the Populists in Oregon, and were enacted in Washington after years of pressure from the Grange, labor unions, and progressive organizations (Johnson, 1944). Although the use of these devices has been cyclical, they have had a significant impact on the political process. However, Washington rejected the Oregon and California practice of amending constitutions by initiative, with changes to its basic document still requiring the approval of two-thirds of each house of the legislature and the majority vote of the statewide electorate (C. Johnson, 1944).

Washington's constitution contains a number of provisions that had been placed in other state constitutions after the Jacksonian revolution to "safeguard [the] new constitutional order by limiting the power of the state legislatures" (Henretta, 1991). These include requirements for open legislative meetings, written records of proceedings, a requirement that each bill be limited to a single subject reflected in the bill's title, a ban on legislators' salary increases during their terms, a waiting period before the enactment of bills, a bar to amendatory legislation without setting forth the changed section in full, and a prohibition against most special legislation. The ban on special legislation is related to other provisions requiring government actions based on general rules so that there is less opportunity for lawmaker whims or corruption.

Washington's constitution shares many structure-of-government provisions common to American governments, including a governor, a bicameral legislature, and an independent judiciary. The document includes limits on the legislature that have their roots in the Jacksonian era. But half of the constitution's articles—and virtually all of the important ones—exhibit the direct influence of the late nineteenth century's populist movement. It is impossible to properly understand or interpret the document without recognizing the founders' aspirations for an independent lifestyle, their dislike of special privilege, and their profound distrust of large business interests. The populist ethos continues today, both in the state's daily political life and in court decisions construing the state's constitution.

The state's 1889 constitution has seen only modest changes during the past century. Only 106 amendments have been approved in Washington—an average of less than one per year. Perhaps the only amendment that can be said to have had a profound impact on the structure of government was Amendment 7, which introduced the initiative and referendum in 1912. While state constitutions tend to be easier to amend than their federal counterpart, Article 33 of Washington's does require two-thirds approval in each house, plus a majority vote of the electors. Nevertheless, major political movements have led to some important changes in the state's basic document, including the adoption of the initiative, referendum, and recall during the progressive era, the imposition of substantial new constraints on property taxes during the Great Depression of the 1930s, and the Equal Rights Amendment for women that was passed in 1972.

Despite the shift of population from farm to city during the twentieth century, the document's populist character continue to echo the attitude of many Washingtonians today. Washington's constitution reflects little of the social and economic programs of the New Deal, and a component of the state's modern self-image that is absent from the document is a provision entrenching the state's strong outdoor recreation and environmentalist spirit. Still, individualism and suspicion of big business (as well as big government) remain strong in Washington State, and in that respect its constitution continues to reflect populist attitudes.

APPLYING HISTORY AND DEVELOPING A PRINCIPLED METHODOLOGY FOR INDEPENDENT INTERPRETATION OF WASHINGTON'S CONSTITUTION

How have modern Washington courts approached this history and the distinct characteristics of the Washington State Constitution? How has Washington's Supreme Court relied on the political history of the state and its constitution in renewing an independent approach to Washington's constitutional law?

Reflecting the prevailing approach nationwide, up until the 1940s Washington courts actively interpreted and applied the state's constitution, including its

declaration of rights (Wells v. Dykeman, 1912; State ex rel. Dearle v. Frazier, 1918; State ex rel. Coella v. Fennimore, 1891; State ex rel. Carraher v. Graves, 1896). Obviously, a key factor was the limited reach of the national Bill of Rights until its provisions began to be "incorporated" against the states in the second half of the twentieth century. Then, as noted above, the focus shifted to the Bill of Rights and the pronouncements of the U.S. Supreme Court. Present systematic thinking about the Washington State Constitution began with a seminar at the Washington State Judicial Conference in 1983. Chief Justice William Williams requested that a panel presentation be given discussing the origins and methodology of presenting state constitutional law arguments. This led to symposia on the Washington State Constitution that included articles by both authors of this volume (Utter, 1984; Utter, 1985a; Spitzer, 1985). But in the early 1980s the influence of forty years of federally dominated rights jurisprudence was still overwhelming.

Nevertheless, in the 1980s state courts were more frequently diverging from the U.S. Supreme Court, primarily in response to the Burger Court's backtracking from a number of the Fourth Amendment rulings by the predecessor Warren Court. A notable example in Washington was *State v. Ringer,* involving a warrantless car search based on the odor of marijuana from the vehicle (State v. Ringer, 1983). The Washington court rejected Supreme Court decisions that had permitted similar searches under the Fourth Amendment, and instead based its decision on Article 1, Section7 of Washington's constitution. The 7–2 decision took a historical approach, relying on the law of search and seizure as it existed when Washington's 1889 constitution was adopted. Justice Carolyn Dimmick's dissent in *Ringer* asserted that the majority was "picking and choosing between state and federal constitutions" to reach a desired result in an unprincipled fashion. This critique echoed a common 1980s attack on independent state constitutional decisions on the grounds that reliance on state charters was result-oriented (Dukmejan & Thompson, 1979; Maltz, 1985). A few months after *Ringer,* the Washington Supreme Court in *State v. Coe* decided a free speech case based on the Washington State Constitution rather than the First Amendment. In the majority opinion, Justice Robert Utter wrote that the prior restraint case "should be treated first under our state constitution" because of "the vast differences between the federal and state constitutions and courts" and in order to "grant the proper respect to our own legal foundations and fulfill our sovereign duties." Justice Utter emphasized the need to "develop a body of independent jurisprudence that will assist this court and the bar of our state in understanding how that constitution will be applied" (State v. Coe, 1984).

The two years following *Ringer* and *Coe* brought four new elected members to Washington's Supreme Court. Three were former prosecutors and all four had run as conservatives on criminal justice issues (Sheldon, 1992). After the election, it was unclear whether Washington's court would continue to rely on the state's declaration of rights or would give more deference to U.S. Supreme Court

opinions. However, in the 1986 *Gunwall* case the new Washington Supreme Court reaffirmed that it would continue independently to rely on Washington constitutional sections similar to provisions in the U.S. Constitution. But the *Gunwall* opinion, written by new Justice James Andersen, cautioned that "[m]any of the courts now resorting to state constitutions rather than analogous provisions of the United States Constitution simply announce that their decision is based on the state constitution but do not further explain it" (State v. Gunwall, 1986). Justice Andersen proposed six "nonexclusive neutral criteria... relevant to determining whether, in a given situation, the constitution of the State of Washington should be considered as extending broader rights to its citizens than does the United States Constitution." The *Gunwall* criteria were based on the factors proposed in New Jersey Justice Alan Handler's 1982 concurring opinion in *State v. Hunt*, but the *Gunwall* standards reflected some adjustments. Andersen's *Gunwall* factors are:

1. textual language of the state constitution;
2. significant differences in the texts of parallel provisions of the federal and state constitutions;
3. state constitutional and common law history;
4. preexisting state law;
5. differences in structure between the federal and state constitutions; and
6. matters of particular state interest or local concern.

The differences between Handler's and Andersen's criteria are not as important as their similarities and the fact that each urged states to approach their constitutions cautiously so that, in Justice Andersen's words, state court decisions "will be made for well founded legal reasons and not by merely substituting our notion of justice for that of duly elected legislative bodies or the United States Supreme Court."

During the first decade after the *Gunwall* decision, Washington State justices often claimed to have a strong commitment to applying Washington's own constitution before turning to the Federal Constitution. But in fact they rarely diverged from the U.S. Supreme Court (Spitzer, 1998). One study has suggested that the *Gunwall* criteria were applied differently by different justices, depending on the text of the constitutional provision involved but also based on each judge's theory on when and how the state constitution should be used. The criteria method was criticized for a tendency to raise the bar for application of state constitutions, with the danger that courts using the *Hunt* or *Gunwall* criteria approach would remain overly dependent on the Federal Constitution and turn the state constitution into a mere shadow (Williams, 1997). Further, it was observed that the criteria "are a curious mix of interpretive and comparative factors" that have distinct purposes: comparative factors (such as differences in text and differences in constitutional structure) to help determine *whether* to apply a state provision differently than the U.S. Supreme Court has applied an

analogous federal provision; and interpretive factors (textual language, history, preexisting law and matters of local concern) to help determine *how* to apply any constitutional provision, state or federal (Talbot, 1991). This is probably because in the mid-1980s and early 1990s, state courts, including Washington's, were unsure about the propriety of applying their constitutions independently of the U.S. Constitution. Further, for many state constitutional provisions, the courts had not actively contributed to their own independent jurisprudence for decades. Thus, judges needed comparative factors to justify independent analysis. Since then, Washington State's supreme court has become increasingly comfortable with its own constitution and its growing body of jurisprudence. During the 1990s and the first ten years of the twenty-first century, what had been comparative factors for deciding *whether* to interpret a state provision independently, transformed into factors to guide briefing and to aid the court in determining *how much weight* to accord U.S. Supreme Court decisions. Accordingly, the use of the *Gunwall* criteria has changed (Spitzer, 2006).

The *Gunwall* opinion was itself internally inconsistent about the court's purpose in adopting the criteria approach. Justice Andersen wrote that the court sought a basis for determining when "to resort to independent state constitutional grounds to decide a case, rather than *deferring* to comparable provisions of the United States Constitution as interpreted by the United States Supreme Court." He asserted that many courts were, without adequate explanation, relying on state constitutions rather than analogous provisions of the U.S. Constitution, adding that "[t]he difficulty with such decisions is that they establish no principled basis for *repudiating federal precedent* and thus furnish little or no rational basis for counsel to predict the future course of state decisional law." Those statements suggest Justice Andersen felt that federal court decisions had precedential value with respect to a state constitution, or at least that state high courts should "defer" to federal courts absent a particularly strong reason to rely on their state charters. But later in *Gunwall*, where Justice Andersen formally stated the purposes of the criteria approach, he emphasized their value to lawyers and judges in the development of state constitutional jurisprudence and their value as interpretive tools:

> Thus, the foregoing six criteria are aimed at: (1) suggesting to counsel *where briefing might appropriately be directed* in cases wherein they are urging independent state constitutional grounds; and (2) helping to insure that if this court does use independent state constitutional grounds in a given situation, it will consider these criteria *to the end that our decision will be made for well founded legal reasons* and not by merely substituting our notion of justice for that of duly elected legislative bodies or the United States Supreme Court.

In subsequent opinions, different Washington State justices characterized the purpose of the *Gunwall* criteria in markedly different ways, depending on whether they viewed the factors as a high bar over which lawyers and judges

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must leap to gain access to the state constitution or, alternatively, as a set of useful interpretive devices to better discern the meaning of a state constitution that was to be readily applied. Justice Utter came to support what is known as a "dual sovereignty" approach, that is, the state constitution should be analyzed first, but federal constitutional issues should also be addressed (Utter, 1989). In *State v. Wethered,* he underscored in 1988 what he viewed as *Gunwall's* principal function: to provide interpretive guidelines. The *Wethered* court declined to consider a state constitutional claim raised by a criminal defendant because his attorney had not briefed the state constitutional issues using the *Gunwall* criteria. The opinion stated that the court "would normally *first* consider *Wethered's* claimed violation of his individual rights under the provisions of the Washington Constitution" (State v. Wethered, 1988). As "a further aid to developing a sound basis for our state constitutional law, in *State v. Gunwall*... we developed nonexclusive criteria to use *as interpretive principles* of our state constitution." But *Wethered* was repeatedly used as the basis to *block* access to state constitutional arguments where lawyers had not adequately briefed the issues using the *Gunwall* factors. During the eleven years following *Gunwall,* in thirty-nine cases where state constitutional issues were fully briefed, the Washington court reached a different result from federal constitutional analysis only eight times (Spitzer, 1998).

In a 1995 double jeopardy case, *State v. Gocken,* the debate over the meaning and application of *Gunwall* broke out in dueling opinions. The lead opinion was authored by Justice Richard Guy, never an enthusiast for independent application of the state constitution. Justice Guy asserted that Washington State courts had "consistently held the double jeopardy clause of the Fifth Amendment and the double jeopardy clause in Const. art. I, § 9 are virtually identical" (State v. Gocken, 1995). In his analytical approach, Justice Guy was worlds away from Justice Utter's assumption that state constitutional analysis takes precedence. Instead, Justice Guy said that *whether* the state constitution provides broader protection than the U.S. Constitution is determined by the six *Gunwall* factors. He assumed that the federal courts' rulings under the U.S. Constitution were the starting point, and that a heavy burden was placed on the party raising a state constitutional argument and applying the *Gunwall* factors to gain access to that argument. In a lively concurring opinion, Justice Barbara Madsen took issue with Justice Guy's analytical method, charging that he had not only ignored Washington State's preexisting, independent analysis of double jeopardy, but that he treated "*Gunwall* as a talisman, to be invoked simply because the parties raise an issue under the state constitution." Mimicking Justice Andersen's words in *Gunwall,* Justice Madsen declared: "The fact that the parties present a *Gunwall* analysis... should not be an open invitation to substitute our current notion of justice, or the notion currently embraced by the United States Supreme Court, for that of our predecessors." She then emphasized that the "two-pronged aim of *Gunwall*" was (1) to assure adequate briefing of state constitutional issues, and

(2) to assure that when independent state grounds were appropriate, the resulting decision would be "for well founded legal reasons." She wrote, "independent state constitutional analysis is lost somewhere in the ever-shifting shadow of the federal courts which are no less political and perhaps more so than our own state courts," concluding that the Washington court should "preference independent resolution of state constitutional questions under a longstanding body of state law." Dissenting Justice Charles Johnson added a warning against the "shifting sands of federal jurisprudence" and faulting the majority's "notion... that our constitution should be interpreted no differently from the federal constitution."

Although the state constitutional skeptics won the battle in the 1995 *Gocken* case, the advocates of the Washington Constitution won the war during the following decade. This was caused, in part, by changes in court personnel. Two of the judges who sided with Justice Guy in *Gocken* had already retired and were serving *pro tempore* in that case. Justices Durham and Guy, the strongest proponents of following the federal courts lead when interpreting the state constitution, retired in 1999 and 2001, respectively (Chronological History). By the end of 2002, the entire *Gocken* majority, as well as Justice Utter, had left the court. They were replaced by new members who, based on the results of subsequent decisions, have the strong state constitutional orientation subscribed to by Justices Madsen and Charles Johnson (the only two remaining members of the *Gocken* bench). This change was reflected in an evolving view of how the *Gunwall* criteria were to be applied.

In 1996 and again in 1998, the Washington court held that because it had thoroughly analyzed Article I, Section 7 of the state constitution in the context of search cases, only two of the *Gunwall* factors needed to be used to address factors that are "unique to the context in which the interpretation question arises" (State v. Ferrier, 1998). In *State v. Hendrickson*, the Washington court in 1996 analyzed a search case solely under the Washington State Constitution and did not even mention *Gunwall* except in a footnote regarding procedure (State v. Hendrickson, 1996). In the 1998 case of *State v. White*, Justice Charles Johnson proclaimed that the Washington State Supreme Court had "often diverged from the United States Supreme Court's Fourth Amendment jurisdiction" in search warrant cases, adding that "in this case we have an analytical advantage because we know Article I, § 7 provides more protection to individuals from searches and seizures than the Fourth Amendment" (State v. White, 1998). Importantly, Justice Johnson wrote: "Once we agree that our prior cases direct the analysis to be employed in resolved the legal issue, a Gunwall analysis is no longer helpful or necessary." In a footnote, Justice Charles Johnson stated that a *Gunwall* analysis was required "in cases where the legal principles are not firmly established, and certainly a *Gunwall* analysis is helpful in determining *the scope of the broader protections* provided in other contexts." This approach was reemphasized by Justice Jim Johnson in more recent decision, *City of Woodinville v. Northshore United Church of Christ*, which implicitly rejected the *Wethered*

doctrine that failure to brief state constitutional issues would result in the court applying the U.S. Constitution. Justice Jim Johnson wrote: "A strict rule that courts will not consider state constitutional claims without a complete *Gunwall* analysis could return briefing into an antiquated writ system where parties may lose their constitutional rights by failing to incant correctly. *Gunwall* is better understood to prescribe appropriate arguments...." (City of Woodinville v. Northshore United Church of Christ, 2009).

Thus, in a few short years after *Gocken*, a changed Washington court adjusted course and accepted Justice Madsen's view that *Gunwall* was not meant to be a "talisman" or a key to the magic kingdom of the state constitution. Instead, the jurists moved to her position, initially spearheaded by Justice Utter, that *Gunwall* was to serve as an interpretive tool to assure better briefing by lawyers and the more thoughtful development of state constitutional jurisprudence.

■ STUDYING HISTORY AND DISCERNING INTENT

Some judges, on both the federal and state benches, assert in court opinions, confirmation hearings, or on the campaign trail that they apply a single philosophy of constitutional interpretation. But the fact is that appellate courts, as well as individual judges, routinely draw upon a variety of approaches to constitutional argument and interpretation (Bobbitt, 1991). Judges commonly move back and forth between interpretive approaches, consciously or unconsciously, depending on the facts of each case and the context and nature of the issues presented (Wolcher, 2005). We can easily identify all of these approaches being used by the Washington State Supreme Court, although history and "original intent" are quite important to the justices. In one example, *Washington Water Jet Workers v. Yarbrough*, members of that court used at least five interpretive techniques in their opinions, relying most heavily on the history of a late-nineteenth-century prison reform movement and its effect on the prisoner labor provision of Washington's 1889 constitution (Washington Water Jet Workers v. Yarbrough, 2004). Cases like *Washington Water Jet Workers* illustrate how important original intent has become in interpreting state constitutions and highlight why an understanding of the specific history of each constitutional provision is so important.

History and intent is not easy to state with clarity, and our understanding of these issues changes from generation to generation. Furthermore, whose intent is important? Those who drafted the state's constitution, or those who selected the framers and those who later ratified the document and its subsequent amendments?

Our constitution begins: "We the people of the State of Washington... do ordain this constitution." One commentator has observed that "the object of construction, as applied to a written constitution, is *to give effect to the intent of the people adopting it*" (Cooley, 1883, 68). The Washington Supreme Court has itself

provisions, the court has accorded great weight to the contemporary facts and circumstances surrounding the adoption of the constitution (Yelle v. Bishop, 1959; State v. Ringer, 1983). The court has committed to examining the state constitution first to determine if it will resolve the issues presented and only if not, to then turn to the Federal Constitution (State v. Coe, 1984).

The main sources for the Committee on the Preamble and the Bill of Rights were Washington's proposed but unsuccessful 1878 constitution, Hill's proposed constitution to the 1889 Washington delegates, the 1857 Oregon Constitution, and the 1851 Indiana Constitution on which it was based (Beardsley, 1939). A proposal for the Declaration of Rights was presented to the convention on July 25, 1889. Five days later, it was accepted with little debate, except for minor changes in wording and the provisions regarding weapons, armed detectives, and eminent domain (Rosenow, 1962, 491).

Section 1

Political power. All political power is inherent in the people, and governments derive their just powers from the consent of the governed, and are established to protect and maintain individual rights.

Echoing John Locke, the English Declaration of Rights of 1689, the Declaration of Independence, several early state constitutions, and the 1857 Oregon Constitution, this provision states the basic democratic idea that the people are the source of all governmental power. This principle, applicable to the formation of both federal and state governments, recognizes that people make constitutions, creating agencies through which their political will can be exercised (Martin v. Tollefson, 1945).

To preserve individual rights, governmental power is limited. In contrast to the Federal Constitution, which is a grant of specified powers, state constitutions generally provide limitations on the otherwise plenary power of elected legislatures (Tarr, 1998, 6–8). When an act of the legislature is challenged, the courts look to the Washington Constitution to ascertain whether any express or implied limitations have been imposed on the elected lawmakers' power by the constitution (Union High Sch. Dist. No. 1 v. Taxpayers, 1946). For example, in 1902 an inheritance tax was challenged as unconstitutional. The statute was upheld because taxation is an inherent power of the state, which the legislature can impose without express constitutional authorization (Love v. King Co., 1935; State v. Clark, 1902). The basis for broadly interpreting state constitutional rights is to check the otherwise unlimited power of state government.

Section 1 retains in the people a right to alter or reform their government through proper means. However, the inherent power of the people to control their state government does not mean that there is inherent popular control of local government

schools, many Catholics formed parochial schools. Those schools sought public assistance, and conflict was not surprising (Utter & Larson, 1988).

In 1876, Congress required that all new states admitted to the Union include a provision for the establishment and maintenance of public schools that were "free from sectarian control." This provision was included in Section 4 of Washington's Enabling Act.

Article I, Section 11 is usually interpreted in tandem with Article IX, Section 4, which specifically requires that schools supported wholly or in part by public funds be free from sectarian control or influence. The Washington court held that an off-campus "release-time" religious education program violated the constitution if school facilities were used for the distribution of enrollment cards and making announcements relative to the program (Perry v. School Dist. No. 81, 1959). However, the court allowed the University of Washington to offer a "Bible as Literature" class because it was nondevotional in nature and was not designed to induce faith and belief in the students (Calvary Bible Presbyterian Church v. Board of Regents, 1967).

However, in a case involving "equal access" for students seeking to use high school premises for Bible studies, the Ninth Circuit held that the Federal Equal Access Law mandated that the schools accommodate the Bible study groups (Garnett v. Renton Sch. Dist. No. 403, 1993). The Washington Supreme Court has permitted a chaplain program to operate in a jail where no material public funds were used to support that program (Malyon v. Pierce County, 1997). But in 2004, the U.S. Supreme Court upheld Washington's ban on the use of state funds to assist a student seeking to enroll in a private college's ministry program, holding that the "play in the joints" in the federal system permits the state to control how its public money is spent (Locke v. Davey, 2004).

This provision carries with it the same test as the First Amendment for overriding a person's religious actions: compelling state interest using the least restrictive alternative. The Washington Supreme Court has held that the state did not have a sufficiently compelling interest to declare a certain church a historic landmark, thus restricting the church's ability to alter the structure's exterior (First Covenant Church v. Seattle, 1990; First United Methodist Church v. Seattle, 1996; Munns v. Martin, 1997). However, land use regulations may apply to a church when those regulations serve a compelling state interest, are the least restrictive means to achieve the end sought, and do not burden the free exercise of religion (Open Door Baptist Church v. Clark County, 2000).

Section 12

Special privileges and immunities prohibited. No law shall be passed granting to

Borrowing from the 1857 Oregon and 1851 Indiana constitutions as well as from the Hill draft, the convention accepted this provision and rejected a similar proposal that did not refer to corporations (Rosenow, 1962, 500–1). The distrust of corporations, particularly railroads, led to this language. The railroads often lobbied lawmakers, offering free passes to legislators (Knapp, 1913). The delegates passed this section, along with Article XXII, Section 20 that prohibits the railroad companies from giving a legislator free or discounted passes.

Despite the distinct difference between Section 12's language and Section 1 of the Fourteenth Amendment, in Washington this privileges and immunities provision was for many years treated analytically the same as the Equal Protection Clause (American Network, Inc. v. Washington Util. & Transp. Comm'n, 1989). Despite striking differences in the language (Thompson, 1996), Washington courts until recently treated the state privileges and immunities and federal equal protection clauses as being substantially identical, prohibiting invidious discrimination by the state in the enactment and enforcement of laws (State v. Eakins, 1994). But in 2002, the Washington Supreme Court recognized the differences between the Fourteenth Amendment and Article I, Section 12, unanimously reversing its earlier approach and holding that the privileges and immunities language should be analyzed and applied separately (Grant County Fire Protection District No. 5 v. City of Moses Lake, 2002). In a later challenge to a statutory ban on same-sex marriage, a three-member plurality of the court asserted that independent application of the provision should be used only in a challenge to privileges enjoyed by a minority, but that federally based equal protection jurisprudence should be applied when analyzing discrimination against a minority (Anderson v. King County, 2006).

Equal protection requires that persons similarly situated receive like treatment. Unlike the tiered federal analysis for the Fourteenth Amendment (strict scrutiny, midlevel, rational basis), Washington courts have traditionally used only the strict-scrutiny and rational-basis tests when analyzing Article I, Section 12 (DeYoung v. Providence Medical Center, 1998; State v. Smith, 1980). However, when the challenged classification implicated the physical liberty of a class member, the Washington Supreme Court applied intermediate scrutiny (the law is "substantially related to an important government interest") (In re Knapp, 1984).

Under strict scrutiny, when a governmental action either burdens a fundamental right (i.e., free speech or voting) or relies on a suspect classification (i.e., race, national origin, alienage), the governmental interest must be compelling and the means used to accomplish that end must be the least restrictive possible (Paulson v. Pierce County, 1983).

While the U.S. Supreme Court has applied a middle level of scrutiny for gender discrimination (Craig v. Boren, 1976), the Washington Supreme Court has subjected gender discrimination to strict scrutiny under Article I, Section 12 (Maxwell v. Dept. of Social & Health Servs., 1981). This is due largely to Washington's Equal Rights Amendment, Article 31. For economic, nonsuspect

class cases (i.e., tax laws, distinctions between professions, university education), the courts use a rational basis test, in which the challenged law must be rationally related to a legitimate government interest (O'Hartigan v. Dept. of Personnel, 1991). This deferential test generally validates the classification.

Section 13

Habeas corpus. The privilege of the writ of habeas corpus shall not be suspended, unless in case of rebellion or invasion the public safety requires it.

This provision is identical to the 1857 Oregon Constitution and the Hill proposed constitution, and nearly identical to Article I, Section 9 of the U.S. Constitution.

A writ of habeas corpus is a civil action designed to inquire into the legality of a particular restraint being imposed on an individual (Bailey v. Gallagher, 1969). The writ of habeas corpus is not intended to be a substitute for an appeal to correct alleged errors at trial (State v. Eichman, 1966). The purpose of such a writ is to ascertain whether the individual is restrained of his liberty by due process of law, not to determine his guilt or innocence (Palmer v. Cranor, 1954). Generally, the reviewing court will look to see whether jurisdiction—personal or subject matter—was valid (In re Personal Restraint of Runyan, 1993).

The court has looked to the scope of the common law habeas corpus privilege at the time of the constitutional convention to determine its parameters. Habeas corpus protections can be expanded by the legislature, but this does not affect the traditionally narrow protections afforded by this constitutional provision (In re Personal Restraint of Runyan, 1993).

Two events in the colorful history of the Washington Territory provide an example of the suspension of the writ of habeas corpus. In 1856, the governor declared martial law solely to suspend the right of habeas corpus for a handful of suspected Indian sympathizers who were being held by the military. The friction between the governor and the judicial branch resulted in the territorial chief justice's unsuccessfully attempting to arrest the governor and the governor's successfully arresting the chief justice (Airey, 1945, 322–30).

In 1886, martial law was again declared during anti-Chinese riots in Seattle. Officially, the purpose of declaring martial law was to protect hundreds of Chinese workers whom lawless bands were attempting to expel from Washington. The underlying reason, however, may have been to suspend the writ of habeas corpus so that civil authorities could not arrest and try five state militia members accused of gunning down several members of an anti-Chinese mob (Airey, 1945, 350–86; Utter, 1984).

Section 14

Excessive bail, fines and punishments. Excessive bail shall not be required, excessive fines imposed, nor cruel punishment inflicted.

Section 16

Privileges from arrest. Members of the legislature shall be privileged from arrest in all cases except treason, felony and breach of the peace; they shall not be subject to any civil process during the session of the legislature, nor for fifteen days next before the commencement of each session.

Article II, Section 16 mirrors the Wisconsin Constitution. It grants legislators broad protection from civil suit but weak protection from criminal arrest. In 1973 the plaintiff argued that at the time the constitution was adopted, a civil action could lead to arrest and bail for civil process under Washington law, and that Section 16 was therefore meant to protect legislators only from serious interruption such as the threat of physical removal. The plaintiff argued that the need to protect legislators no longer existed because the law threatening arrest had been repealed. The court rejected the narrow reading, adopting instead a broad policy of "protect[ing] legislators from the trouble, worry and inconvenience of court proceedings during the session" (Seamans v. Walgren, 1973).

Legislators receive no protection from criminal arrest during legislative sessions. The Washington State Attorney General has provided some guidance in memoranda and opinions. Originally, the phrase "treason, felony, or breach of the peace" was interpreted to not include "arrest for minor infraction of the law such as traffic violation," but the attorney general later suggested that Article II, Section 16 does not prevent arrests for traffic offenses (1979 Op. Wash. Att'y Gen., No. 1).

Historically, the phrase "treason, felony and breach of the peace" denied members of the British Parliament privilege from arrest for any criminal action, and the U.S. Supreme Court has held that drafters of the U.S. Constitution intended the same meaning when they used the phrase in Article I, Section 6 of the U.S. Constitution (Williamson v. United States, 1908).

Section 17

Freedom of debate. No member of the legislature shall be liable in any civil action or criminal prosecution whatever, for words spoken in debate.

The foundations of Article II, Section 17 relate back to an attempt by the British Parliament to claim independence from the Crown. The Washington version, taken from Wisconsin, was adopted without controversy (Rosenow, 1962, 534).

Section 18

Style of laws. The style of the laws of the state shall be: "Be it enacted by the Legislature of the State of Washington." And no laws shall be enacted except by bill.

Article II, Section 18, drawn from Wisconsin, Oregon, and California, is the beginning of a series of technical requirements in Article II that define and therefore limit how the legislature may enact laws. A measure cannot become

and passed the section without significant comment (*The Daily Ledger*, August 10, 1889).

Except as provided by Article III (the Executive) and by Article IV (the Judiciary), the legislature has the general power to create state departments and offices and to prescribe their duties. Here, the convention expressly required that certain agencies be created. The legislature appears to have fulfilled this obligation, in part, by establishing the Department of Agriculture under Chap. 43.23 RCW.

Section 35

Protection of employees. The legislature shall pass necessary laws for the protection of persons working in mines, factories, and other employments dangerous to life or deleterious to health; and fix pains and penalties for the enforcement of the same.

This section was taken from the constitutions of Colorado and Illinois. As a corollary to restrictions on corporations, particularly in Article XII, the convention sought to provide for the protection of labor (Hicks, 1923, 110). During the time preceding the convention there had been violent disturbances at mining camps in Roslyn and Newcastle when mining companies hired armed guards to attack striking miners (Johansen & Gates, 1967, 348–50). The working conditions at some industrial concerns in the territory were notoriously dangerous, and organized labor lobbied for a constitutional provision requiring the legislature to enact health and safety laws.

The legislature, in enacting laws under this provision, first began by specifying certain types of protections, requiring that workplaces comply with specific criteria relating to safety and prohibiting certain work practices. Later, the legislature created an administrative agency, the State Safety Board, which had authority to adopt and enact safety and health standards. Currently, this area is controlled under the Washington Industrial Safety and Health Act, adopted in response to Congress's enacting the Occupational Safety and Health Act of 1970 (OSHA), which required states to submit a plan for approval by the secretary of labor that delineates how the state will adopt and enforce occupational health and safety standards that are at least as effective as OSHA (Dick, 1974).

Section 36

When bills must be introduced. No bill shall be considered in either house unless the time of its introduction shall have been at least ten days before the final adjournment of the legislature, unless the legislature shall otherwise direct by a vote of two-thirds of all the members elected to each house, said vote to be taken by yeas and nays and entered upon the journal, or unless the same be at a special session.

The constitutional convention's committee report did not originally include this section. It was proposed on the convention floor (*Tacoma Morning Globe*,

EXHIBIT 11

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SUPERIOR COURT OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, vs. DERUYTER BROTHERS DAIRY, INC., Defendants, WASHINGTON STATE DAIRY FEDERATION AND WASHINGTON FARM BUREAU, Intervenors.	No. 16-2-03417-39 **DECLARATION OF JENNIFER M. BELCHER IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT**

I, Jennifer M. Belcher, declare under penalty of perjury under the laws of the state of Washington and the United States that the foregoing is true and correct:

1. I am over the age of 18 and competent to testify in this matter.

2. From 1983 through 1992, I served as a member of the House of Representatives for the State of Washington for Legislative District 22, comprising most of Thurston County.

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3. I served five terms, was chair of the House Natural Resources and Park Committee from 1988-1992 and was a member of Appropriations, Judiciary, and Revenue.

4. In 1988, I was the prime sponsor of House Bill 1544 to amend Washington's Minimum Wage Act.

5. The bill had two primary goals: 1) to raise the minimum wage in Washington, and, 2) to remove the minimum wage exemption for agricultural workers, and others, to ensure they were guaranteed the minimum wage for all hours worked.[1]

6. At that time, the House was controlled by the Democrats and the Senate was controlled by the Republicans.

7. The bill was sent to committee on Commerce and Labor in the House of Representatives passed out of that committee and was approved by the House by a vote of 52-45.[1]

8. The bill ultimately died in the Senate as it never received a hearing.

9. At that time, the Senate was controlled by eastern Washington leadership tied to the agricultural industry. Senator Irv Newhouse, who had deep ties to the agricultural industry, lead the opposition to the bill.

10. I discussed the bill with Senator Newhouse and recall him stating that the Senate would be willing to discuss a minimum wage increase, but only if minimum wage coverage for farm workers was removed from the bill.

11. I, along with others in favor of the bill, refused to compromise and continue to exclude farm workers from minimum wage coverage so the bill died in the legislature.

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[1] *See* attached copy of Engrossed House Bill 1544 with agricultural exemption, Section 1 (5)(a), lined out.

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12. In light of the legislative roadblocks, I decided to spearhead an initiative to obtain the primary goals of the legislation.

13. In 1988, myself and Representative Art Wang, filed Initiative 588 which gained enough signatures to go to the voters of Washington in the fall of 1988.

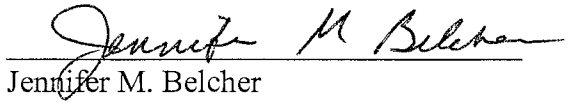
14. Initiative 588 stated: "Shall the state minimum wage increase from $2.30 to $3.85 (January 1, 1989) and then to $4.25 (January 1, 1990) and include agricultural workers?"[2]

15. Voters overwhelmingly approved Initiative 588 with over 76% voting in favor of the proposal.

16. After the passage of Initiative 588, Washington's Minimum Wage Act was amended to include minimum wage coverage for agricultural workers.

17. Given the political power of agricultural interests in Olympia, I saw no way to overcome their opposition to minimum wage coverage for agricultural workers within the legislative process.

Executed and dated this 28th day of February, 2018.



Jennifer M. Belcher

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[1] *See* attached Bill Digest.
[2] Secretary of State website:
https://www.sos.wa.gov/elections/results_report.aspx?e=25&c=&c2=&t=&t2=5&p=&p2=&y=

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EXHIBIT 1

ENGROSSED HOUSE BILL NO. 1544

State of Washington 50th Legislature 1988 Regular Session

by Representatives Belcher, Allen, Wang, Ebersole, Appelwick, Cole, Unsoeld, Fisher, Locke, Jacobsen, K. Wilson, Lux, Anderson, Scott, Vekich, Grimm, Brekke, Rust, Basich, Wineberry, Sayan, Braddock, Leonard, H. Sommers, R. King, Nelson, Jones, Heavey and Nutley

Read first time 1/20/88 and referred to Committee on Commerce & Labor.

1 AN ACT Relating to the state minimum wage; amending RCW
2 49.46.010, 49.46.020, and 49.12.121; and providing an effective date.

3 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

4 Sec. 1. Section 1, chapter 294, Laws of 1959 as last amended by
5 section 364, chapter 7, Laws of 1984 and RCW 49.46.010 are each
6 amended to read as follows:
7 As used in this chapter:
8 (1) "Director" means the director of labor and industries;
9 (2) "Wage" means compensation due to an employee by reason of
10 employment, payable in legal tender of the United States or checks on
11 banks convertible into cash on demand at full face value, subject to
12 such deductions, charges, or allowances as may be permitted by
13 regulations of the director;
14 (3) "Employ" includes to permit to work;
15 (4) "Employer" includes any individual, partnership, association,
16 corporation, business trust, or any person or group of persons acting
17 directly or indirectly in the interest of an employer in relation to
18 an employee;
19 (5) "Employee" includes any individual employed by an employer
20 but shall not include:
21 (a) ((Any-individual-employed-(i)-on-a-farm,-in-the-employ-of-any
22 person,--in--connection--with--the--cultivation--of--the--soil,-or-in
23 connection--with--raising---or---harvesting---any---agricultural---or
24 horticultural-commodity,-including-raising,-shearing,-feeding,-caring
25 for,--training,--and--management--of--livestock,--bees,--poultry,-and
26 furbearing-animals-and-wildlife,-or-in-the-employ--of--the--owner--or
27 tenant--or-other-operator-of-a-farm-in-connection-with-the-operation,
28 management,-conservation,-improvement,-or-maintenance--of--such--farm
29 and--its-tools-and-equipment;-or-(ii)-in-packing,-packaging,-grading,

~~storing or delivering to storage, or to market or to a carrier for transportation to market, any agricultural or horticultural commodity; and the exclusions from the term "employee" provided in this item shall not be deemed applicable with respect to commercial canning, commercial freezing, or any other commercial processing, or with respect to services performed in connection with the cultivation, raising, harvesting, and processing of oysters or in connection with any agricultural or horticultural commodity after its delivery to a terminal market for distribution for consumption;~~

~~(b) Any individual employed in domestic service in or about a private home;~~

~~(c)))~~ Any individual employed in casual labor in or about a private home, unless performed in the course of the employer's trade, business, or profession;

(b) Any individual employed in a bona fide executive, administrative, or professional capacity or in the capacity of outside salesman as those terms are defined and delimited by regulations of the director. However, those terms shall be defined and delimited by the state personnel board pursuant to chapter 41.06 RCW and the higher education personnel board pursuant to chapter 28B.16 RCW for employees employed under their respective jurisdictions;

(((~~d~~))) (c) Any individual engaged in the activities of an educational, charitable, religious, state or local governmental body or agency, or nonprofit organization where the employer-employee relationship does not in fact exist or where the services are rendered to such organizations gratuitously. If the individual receives reimbursement in lieu of compensation for normally incurred out-of-pocket expenses or receives a nominal amount of compensation per unit of voluntary service rendered, an employer-employee relationship is deemed not to exist for the purpose of this section or for purposes of membership or qualification in any state, local government or publicly supported retirement system other than that provided under chapter 41.24 RCW;

(((~~e~~))) (d) Any individual employed full time by any state or local governmental body or agency who provides voluntary services but

only with regard to the provision of the voluntary services. The voluntary services and any compensation therefor shall not affect or add to qualification, entitlement or benefit rights under any state, local government, or publicly supported retirement system other than that provided under chapter 41.24 RCW;

((~~(f)~~)) (e) Any newspaper vendor or carrier;

((~~(g)~~)) (f) Any carrier subject to regulation by Part 1 of the Interstate Commerce Act;

((~~(h)~~)) (g) Any individual engaged in forest protection and fire prevention activities;

((~~(i)~~)) (h) Any individual employed by any charitable institution charged with child care responsibilities engaged primarily in the development of character or citizenship or promoting health or physical fitness or providing or sponsoring recreational opportunities or facilities for young people or members of the armed forces of the United States;

((~~(j)~~)) (i) Any individual whose duties require that he or she reside or sleep at the place of his or her employment or who otherwise spends a substantial portion of his or her work time subject to call, and not engaged in the performance of active duties;

((~~(k)~~)) (j) Any resident, inmate, or patient of a state, county, or municipal correctional, detention, treatment or rehabilitative institution;

((~~(l)~~)) (k) Any individual who holds a public elective or appointive office of the state, any county, city, town, municipal corporation or quasi municipal corporation, political subdivision, or any instrumentality thereof, or any employee of the state legislature;

((~~(m)~~)) (l) All vessel operating crews of the Washington state ferries operated by the department of transportation;

((~~(n)~~)) (m) Any individual employed as a seaman on a vessel other than an American vessel.

(6) "Occupation" means any occupation, service, trade, business, industry, or branch or group of industries or employment or class of employment in which employees are gainfully employed.

Sec. 2. Section 2, chapter 294, Laws of 1959 as last amended by

section 2, chapter 289, Laws of 1975 1st ex. sess. and RCW 49.46.020 are each amended to read as follows:

(1) Every employer shall pay to each of his or her employees who ((have)) has reached the age of eighteen years wages at a rate of not less than ((one-dollar)) two dollars and ((sixty)) thirty cents per hour except as may be otherwise provided under ((subsections (2) through (7) of this section or as otherwise provided under this chapter: PROVIDED, That beginning the calendar year 1974, the applicable rate under this section shall be one dollar and eighty cents per hour, and beginning with September 1, 1975 the applicable rate under this section shall be two dollars and ten cents an hour, and beginning the calendar year 1976 the applicable rate under this section shall be two dollars and thirty cents an hour)) this section. The minimum wage for employees under the age of eighteen years shall be seventy-five percent of the minimum wage payable under this section to persons eighteen years of age and older.

(2) ((Any individual eighteen years of age or older, unless exempt under the provisions of section 1(5)(k)(8) of this 1975 amendatory act, employed by the state, any county, city, town, municipal corporation or quasi municipal corporation, political subdivision, or any instrumentality thereof shall be paid wages beginning with September 1, 1975, at a rate of not less than two dollars an hour, and beginning the calendar year 1976 at a rate of not less than two dollars and twenty cents an hour, and beginning the calendar year 1977 at a rate of not less than two dollars and thirty cents an hour.

(3) Any individual eighteen years of age or older engaged in performing services in a nursing home licensed pursuant to chapter 18.51 RCW, shall be paid wages beginning with September 1, 1975, at a rate of not less than two dollars and ten cents an hour, and beginning the calendar year 1976, at a rate of not less than two dollars and twenty cents an hour, and beginning the calendar year 1977, at a rate of not less than two dollars and thirty cents an hour.

(4) Any individual eighteen years of age or older engaged in performing services in a hospital licensed pursuant to chapter 70.41

~~RCW, or chapter 71.12 RCW, shall be paid wages beginning with September 1, 1975, at a rate of not less than two dollars and ten cents an hour, and beginning the calendar year 1976, at a rate of not less than two dollars and twenty cents an hour, and beginning the calendar year 1977 at a rate of not less than two dollars and thirty cents an hour.~~

~~(5) Any individual eighteen years of age or older employed in a retail or service establishment and who is so employed primarily in connection with the preparation or offering of food or beverages for human consumption, either on the premises, or by such services as catering, banquet, box lunch, or curb or counter service, to the public, to employees, or to members or guests of members of clubs shall be paid wages beginning with September 1, 1975, at a rate of not less than two dollars an hour, and beginning the calendar year 1976, at a rate of not less than two dollars and twenty cents an hour, and beginning the calendar year 1977, at a rate of not less than two dollars and thirty cents an hour)).~~ Beginning January 1, 1989, the state minimum wage shall be the amount calculated by the department of labor and industries as follows:

(a) Until January 1, 1990, the state minimum wage shall be the annual dollar figure for the poverty income guideline for a family of three persons as issued by the United States department of health and human services in 1987, as nine thousand three hundred dollars, divided by 2080 hours, and multiplied by ninety-five percent;

(b) Beginning January 1, 1990, through December 31, 1990, the state minimum wage shall be the annual dollar figure for the poverty income guideline for a family of three persons as issued by the United States department of health and human services in 1987, as nine thousand three hundred dollars, adjusted by the change in the consumer price index published by the bureau of labor statistics, United States department of labor, for the period beginning October 1, 1988, and ending on September 30, 1989, and divided by 2080 hours, and multiplied by one hundred five percent;

(c) Beginning January 1, 1991, through December 31, 1991, the state minimum wage shall be the amount calculated by the department under (b) of this subsection, adjusted by the change in the consumer

1 price index published by the bureau of labor statistics, United
2 States department of labor, for the period beginning October 1, 1989,
3 and ending on September 30, 1990;
4 (d) Beginning January 1, 1992, the state minimum wage shall
5 become on January 1st of every calendar year the amount calculated by
6 the department under this section for the immediately preceding year,
7 adjusted by the change in the consumer price index for the period
8 beginning October 1 of the second calendar year preceding the new
9 effective date and ending on September 30 of the previous calendar
10 year.
11 (3) In addition to any other penalty provided by law, the
12 director may assess a civil penalty against any employer who pays or
13 agrees to pay wages at a rate less than the minimum rate required
14 under this section or RCW 49.46.060. The civil penalty shall be the
15 greater of: (a) One thousand dollars, or (b) the full amount of the
16 applicable wage rate for employees paid less than the applicable
17 rate, plus the full amount of the applicable wage rate for such
18 employees less the amount actually paid to such employees. The
19 director shall assess penalties under this subsection after a hearing
20 in accordance with chapter 34.04 RCW and all penalties paid shall be
21 deposited in the general fund and used solely for the administration
22 of this chapter.

23 Sec. 3. Section 15, chapter 16, Laws of 1973 2nd ex. sess. and
24 RCW 49.12.121 are each amended to read as follows:
25 The committee, or the director, may at any time inquire into
26 wages, hours, and conditions of labor of minors employed in any
27 trade, business or occupation in the state of Washington and may
28 adopt special rules for the protection of the safety, health and
29 welfare of minor employees((,-such-minimum-wages-not-to-exceed-the
30 state-minimum--wage--as--prescribed--in--RCW--49.46.020,--as--now--or
31 hereafter--amended)). The minimum wage for minors shall be as
32 prescribed in RCW 49.46.020. The committee shall issue work permits
33 to employers for the employment of minors, after being assured that
34 proposed employment of a minor meets the standards set forth
35 concerning the health, safety and welfare of minors as set forth in
36 the rules and regulations promulgated by the committee. No minor

EXHIBIT 1

DECLARATION OF JENNIFER M.
BELCHER IN SUPPORT OF PLAINTIFFS'
MOTION FOR SUMMARY JUDGMENT - 10

1 person shall be employed in any occupation, trade or industry subject
2 to this 1973 amendatory act, unless a work permit has been properly
3 issued, with the consent of the parent, guardian or other person
4 having legal custody of the minor and with the approval of the school
5 which such minor may then be attending.

6 NEW SECTION. Sec. 4. This act shall take effect January 1,
7 1989.

HOUSE BILL NO. 1544

State of Washington 50th Legislature 1988 Regular Session

by Representatives Belcher, Allen, Wang, Ebersole, Appelwick, Cole, Unsoeld, Fisher, Locke, Jacobsen, K. Wilson, Lux, Anderson, Scott, Vekich, Grimm, Brekke, Rust, Basich, Wineberry, Sayan, Braddock, Leonard, H. Sommers, R. King, Nelson, Jones, Heavey and Nutley

Read first time 1/20/88 and referred to Committee on Commerce & Labor.

1 AN ACT Relating to the state minimum wage; amending RCW
2 49.46.010, 49.46.020, and 49.12.121; and providing an effective date.

3 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

4 Sec. 1. Section 1, chapter 294, Laws of 1959 as last amended by
5 section 364, chapter 7, Laws of 1984 and RCW 49.46.010 are each
6 amended to read as follows:
7 As used in this chapter:
8 (1) "Director" means the director of labor and industries;
9 (2) "Wage" means compensation due to an employee by reason of
10 employment, payable in legal tender of the United States or checks on
11 banks convertible into cash on demand at full face value, subject to
12 such deductions, charges, or allowances as may be permitted by
13 regulations of the director;
14 (3) "Employ" includes to permit to work;
15 (4) "Employer" includes any individual, partnership, association,
16 corporation, business trust, or any person or group of persons acting
17 directly or indirectly in the interest of an employer in relation to
18 an employee;
19 (5) "Employee" includes any individual employed by an employer
20 but shall not include:
21 (a) ((Any-individual-employed-(i)-on-a-farm,-in-the-employ-of-any
22 person,-in-connection--with--the--cultivation--of--the--soil,--or--in
23 connection---with---raising---or---harvesting---any--agricultural--or
24 horticultural-commodity,-including-raising,-shearing,-feeding,-caring
25 for,-training,--and--management--of--livestock,--bees,--poultry,--and
26 furbearing--animals--and--wildlife,--or-in-the-employ-of-the-owner-or
27 tenant-or-other-operator-of-a-farm-in-connection-with-the--operation,
28 management,--conservation,--improvement,--or-maintenance-of-such-farm
29 and-its-tools-and-equipment;-or-(ii)-in-packing,-packaging,--grading,

~~storing--or--delivering--to-storage,-or-to-market-or-to-a-carrier-for transportation--to--market,---any---agricultural---or---horticultural commodity;--and--the--exclusions-from-the-term-"employee"-provided-in this-item-shall-not-be-deemed-applicable-with-respect--to--commercial canning,--commercial-freezing,-or-any-other-commercial-processing,-or with--respect--to--services--performed---in---connection---with---the cultivation,--raising,--harvesting,--and--processing-of-oysters-or-in connection-with-any-agricultural-or-horticultural-commodity-after-its delivery-to-a-terminal-market-for-distribution-for-consumption;~~

~~(b)-Any-individual-employed-in-domestic-service--in--or--about--a private-home;~~

~~(c)))~~ Any individual employed in casual labor in or about a private home, unless performed in the course of the employer's trade, business, or profession;

(b) Any individual employed in a bona fide executive, administrative, or professional capacity or in the capacity of outside salesman as those terms are defined and delimited by regulations of the director. However, those terms shall be defined and delimited by the state personnel board pursuant to chapter 41.06 RCW and the higher education personnel board pursuant to chapter 28B.16 RCW for employees employed under their respective jurisdictions;

(((~~d~~))) (c) Any individual engaged in the activities of an educational, charitable, religious, state or local governmental body or agency, or nonprofit organization where the employer-employee relationship does not in fact exist or where the services are rendered to such organizations gratuitously. If the individual receives reimbursement in lieu of compensation for normally incurred out-of-pocket expenses or receives a nominal amount of compensation per unit of voluntary service rendered, an employer-employee relationship is deemed not to exist for the purpose of this section or for purposes of membership or qualification in any state, local government or publicly supported retirement system other than that provided under chapter 41.24 RCW;

(((~~e~~))) (d) Any individual employed full time by any state or local governmental body or agency who provides voluntary services but

EXHIBIT 1

only with regard to the provision of the voluntary services. The voluntary services and any compensation therefor shall not affect or add to qualification, entitlement or benefit rights under any state, local government, or publicly supported retirement system other than that provided under chapter 41.24 RCW;

((f)) (e) Any newspaper vendor or carrier;

((g)) (f) Any carrier subject to regulation by Part 1 of the Interstate Commerce Act;

((h)) (g) Any individual engaged in forest protection and fire prevention activities;

((i)) (h) Any individual employed by any charitable institution charged with child care responsibilities engaged primarily in the development of character or citizenship or promoting health or physical fitness or providing or sponsoring recreational opportunities or facilities for young people or members of the armed forces of the United States;

((j)) (i) Any individual whose duties require that he or she reside or sleep at the place of his or her employment or who otherwise spends a substantial portion of his or her work time subject to call, and not engaged in the performance of active duties;

((k)) (j) Any resident, inmate, or patient of a state, county, or municipal correctional, detention, treatment or rehabilitative institution;

((l)) (k) Any individual who holds a public elective or appointive office of the state, any county, city, town, municipal corporation or quasi municipal corporation, political subdivision, or any instrumentality thereof, or any employee of the state legislature;

((m)) (l) All vessel operating crews of the Washington state ferries operated by the department of transportation;

((n)) (m) Any individual employed as a seaman on a vessel other than an American vessel.

(6) "Occupation" means any occupation, service, trade, business, industry, or branch or group of industries or employment or class of employment in which employees are gainfully employed.

Sec. 2. Section 2, chapter 294, Laws of 1959 as last amended by

1 section 2, chapter 289, Laws of 1975 1st ex. sess. and RCW 49.46.020
2 are each amended to read as follows:
3 (1) Every employer shall pay to each of his or her employees who
4 ((have)) has reached the age of ((eighteen)) sixteen years wages at a
5 rate of not less than ((one-dollar)) two dollars and ((sixty)) thirty
6 cents per hour except as may be otherwise provided under
7 ((subsections-(2)--through--(7)--of--this--section--or--as--otherwise
8 provided--under--this-chapter;--PROVIDED,-That-beginning-the-calendar
9 year-1974,-the-applicable-rate-under-this-section-shall-be-one-dollar
10 and-eighty-cents-per-hour,-and-beginning-with-September-1,--1975--the
11 applicable-rate-under-this-section-shall-be-two-dollars-and-ten-cents
12 an--hour,--and--beginning--the-calendar-year-1976-the-applicable-rate
13 under-this-section-shall-be-two-dollars-and-thirty--cents--an--hour))
14 this section. The minimum wage for employees under the age of
15 sixteen years shall be seventy-five percent of the minimum wage
16 payable under this section to persons sixteen years of age and older.
17 (2) ((Any--individual--eighteen--years--of--age-or-older,-unless
18 exempt-under-the--provisions--of--section--1(5)(k)(8)--of--this--1975
19 amendatory--act,--employed--by--the--state,--any--county,-city,-town,
20 municipal--corporation--or--quasi--municipal--corporation,--political
21 subdivision,--or--any--instrumentality--thereof--shall--be-paid-wages
22 beginning-with-September-1,-1975,-at-a-rate--of--not--less--than--two
23 dollars--an--hour,--and-beginning-the-calendar-year-1976-at-a-rate-of
24 not-less-than-two-dollars-and-twenty-cents-an-hour,-and-beginning-the
25 calendar-year-1977-at-a-rate-of-not-less-than-two-dollars-and--thirty
26 cents-an-hour.
27 (3)--Any--individual--eighteen--years--of-age-or-older-engaged-in
28 performing-services-in-a-nursing-home-licensed--pursuant--to--chapter
29 18.51-RCW,-shall-be-paid-wages-beginning-with-September-1,-1975,-at-a
30 rate--of--not--less--than--two--dollars--and--ten--cents-an-hour,-and
31 beginning-the-calendar-year-1976,-at-a-rate--of--not--less--than--two
32 dollars--and--twenty--cents--an-hour,-and-beginning-the-calendar-year
33 1977,-at-a-rate-of-not-less-than-two--dollars--and--thirty--cents--an
34 hour.
35 (4)--Any--individual--eighteen--years--of-age-or-older-engaged-in
36 performing-services-in-a-hospital-licensed-pursuant-to-chapter--70.41

~~RCW, or chapter 71.12 RCW, shall be paid wages beginning with September 1, 1975, at a rate of not less than two dollars and ten cents an hour, and beginning the calendar year 1976, at a rate of not less than two dollars and twenty cents an hour, and beginning the calendar year 1977 at a rate of not less than two dollars and thirty cents an hour.~~

~~(5) Any individual eighteen years of age or older employed in a retail or service establishment and who is so employed primarily in connection with the preparation or offering of food or beverages for human consumption, either on the premises, or by such services as catering, banquet, box lunch, or curb or counter service, to the public, to employees, or to members or guests of members of clubs shall be paid wages beginning with September 1, 1975, at a rate of not less than two dollars an hour, and beginning the calendar year 1976, at a rate of not less than two dollars and twenty cents an hour, and beginning the calendar year 1977, at a rate of not less than two dollars and thirty cents an hour)) Beginning January 1, 1989, the state minimum wage shall be the amount calculated by the department of labor and industries as follows:

(a) Until January 1, 1990, the state minimum wage shall be the annual dollar figure for the poverty income guideline for a family of three persons as issued by the United States department of health and human services in 1987, as nine thousand three hundred dollars, divided by 2080 hours, and multiplied by one hundred five percent;

(b) Beginning January 1, 1990, through December 31, 1990, the state minimum wage shall be the annual dollar figure for the poverty income guideline for a family of three persons as issued by the United States department of health and human services in 1987, as nine thousand three hundred dollars, adjusted by the change in the consumer price index published by the bureau of labor statistics, United States department of labor, for the period beginning October 1, 1988, and ending on September 30, 1989, and divided by 2080 hours, and multiplied by one hundred ten percent;

(c) Beginning January 1, 1991, through December 31, 1991, the state minimum wage shall be the amount calculated by the department under (b) of this subsection, adjusted by the change in the consumer

1 price index published by the bureau of labor statistics, United
2 States department of labor, for the period beginning October 1, 1988
3 and ending on September 30, 1990;
4 (d) Beginning January 1, 1992, the state minimum wage shall
5 become on January 1st of every calendar year the amount calculated by
6 the department under this section for the immediately preceding year,
7 adjusted by the change in the consumer price index for the period
8 beginning October 1 of the second calendar year preceding the new
9 effective date and ending on September 30 of the previous calendar
10 year.
11 (3) In addition to any other penalty provided by law, the
12 director may assess a civil penalty against any employer who pays or
13 agrees to pay wages at a rate less than the minimum rate required
14 under this section or RCW 49.46.060. The civil penalty shall be the
15 greater of: (a) One thousand dollars, or (b) the full amount of the
16 applicable wage rate for employees paid less than the applicable
17 rate, plus the full amount of the applicable wage rate for such
18 employees less the amount actually paid to such employees. The
19 director shall assess penalties under this subsection after a hearing
20 in accordance with chapter 34.04 RCW and all penalties paid shall be
21 deposited in the general fund and used solely for the administration
22 of this chapter.

23 Sec. 3. Section 15, chapter 16, Laws of 1973 2nd ex. sess. and
24 RCW 49.12.121 are each amended to read as follows:
25 The committee, or the director, may at any time inquire into
26 wages, hours, and conditions of labor of minors employed in any
27 trade, business or occupation in the state of Washington and may
28 adopt special rules for the protection of the safety, health and
29 welfare of minor employees((,-such-minimum-wages-not--to--exceed--the
30 state--minimum--wage--as--prescribed--in--RCW--49.46.020,--as--now-or
31 hereafter-amended)). The minimum wage for minors shall be as
32 prescribed in RCW 49.46.020. The committee shall issue work permits
33 to employers for the employment of minors, after being assured the
34 proposed employment of a minor meets the standards set forth
35 concerning the health, safety and welfare of minors as set forth in
36 the rules and regulations promulgated by the committee. No minor

1 person shall be employed in any occupation, trade or industry subject
2 to this 1973 amendatory act, unless a work permit has been properly
3 issued, with the consent of the parent, guardian or other person
4 having legal custody of the minor and with the approval of the school
5 which such minor may then be attending.

6 NEW SECTION. Sec. 4. This act shall take effect January 1,
7 1989.

EXHIBIT 2

EDITION NO. 8 - FINAL

VOLUME 2 — HOUSE AND RCW TO BILL TABLE

Legislative Digest and History of Bills

of the

Senate and House of Representatives

FIFTIETH LEGISLATURE

1987 Regular Session:	January 12, 1987	to	April 26, 1987
1st Special Session:	April 27, 1987	to	May 21, 1987
2nd Special Session:	August 10, 1987		
3rd Special Session:	October 10, 1987		
1988 Regular Session	January 11, 1988	to	March 10, 1988
1st Special Session:	March 11, 1988	to	March 12, 1988

DIGEST & HISTORY ON LEGISLATIVE BILLS, MEMORIALS AND RESOLUTIONS; RCW — BILL TABLE; and TOPICAL INDEX

**** Compiled to and Inclusive of April 22, 1988 ****

GORDON A. GOLOB
Secretary of the Senate

ALAN THOMPSON
Chief Clerk, House of Representatives

With the Cooperation of the Statute Law Committee
& the Legislative Service Center

FOR REFERENCE
Do Not Take From This Room

H. B. 1544 by Representatives Belcher, Allen, Wang, Ebersole, Appelwick, Cole, Unsoeld, Fisher, Locke, Jacobsen, K. Wilson, Lux, Anderson, Scott, Vekich, Grimm, Brekke, Rust, Basich, Wineberry, Sayan, Braddock, Leonard, H. Sommers, R. King, Nelson, Jones, Heavey, Nutley

Increasing the state minimum wage.
(AS OF HOUSE 2ND READING [illegible])
Amends state minimum wage [illegible] delete references [illegible] RCW [illegible] regarding farm employees [illegible] the domestic service [illegible] al labor [illegible] which is not performed [illegible] the employer [illegible] profession.
Provides that the minimum wage employees who are under eighteen years of age is seventy-five [illegible] the minimum wage payable under RCW 49.46.020 to persons [illegible] of age or older.
Substitutes a new [illegible] for the department of labor and [illegible] to calculate a generally [illegible] minimum wage, [illegible] January [illegible], 1989.
Provides for [illegible] penalties for employers who pay a substandard wage.

--1988 REGULAR SESSION--

Jan 20 First reading, referred to Commerce & [illegible]
Jan 27 Majority; do pass.
Minority; do not pass.
Passed to Rules [illegible] second reading.
Feb 2 Placed on second reading by Rules committee.
Feb 5 AMENDED.
Passed to Rules committee [illegible] third reading.
Feb 8 Placed on third reading by Rules committee.
Feb 9 Third reading, passed; Yeas, [illegible]; nays, 45; absent, [illegible].
-IN THE SENATE-
Feb 11 First reading, referred to Economic Development and Labor.

H. B. 1545 by Representatives Brekke, Winsley, Scott, Leonard, H. Sommers, Padden, Meyer, Anderson (by Department of Social & Health Services request)

Clarifying certain provisions governing the relinquishment and adoption of children.
(AS OF HOUSE 2ND READING 2/15/88)
Amends juvenile court jurisdiction provisions under RCW [illegible].030(8) so as to eliminate jurisdiction over certain voluntary Indian child welfare proceedings.
Ratifies certain proceedings regarding Indian children which have taken place in juvenile court or superior court after July 25, 1987, and before the effective date of this act.

--1988 REGULAR SESSION--

Jan 20 First reading, referred to Human Services.
Jan 25 Majority; do pass.
Passed to Rules committee for second reading.
Feb 13 Placed on second reading by Rules committee.
Feb 15 Rules suspended.
Placed on third reading.
Third reading, passed; Yeas, 94; nays, 0; absent, 4.
-IN THE SENATE-
[illegible] First reading, referred to Children and Family Services.

H. B. 1546 by Representatives Brekke, Winsley, Scott, Leonard, H. Sommers, Meyer, Padden, Todd, Anderson (by Department of Social & Health Services request)

Revising provisions governing consultation by department of social and health services on reports of abuse.
(AS OF HOUSE 2ND READING 2/9/88)
Requires the department to conduct ongoing case planning and consultation under RCW 26.44.030 with consultants designated by the department in connection with child and other abuse or neglect matters, instead of at the request of such consultants.

--1988 REGULAR SESSION--

Jan 20 First reading, referred to Human Services.
Jan 25 Majority; do pass.
Passed to Rules committee for second reading.
Feb 8 Placed on second reading by Rules committee.
Feb 9 Rules suspended.
Placed on third reading.
Third reading, passed; Yeas, 95; nays, 0; absent, 3.
-IN THE SENATE-
Feb 11 First reading, referred to Health Care and Corrections.
Feb 17 Committee relieved of further consideration.
Referred to Children and Family Services.
Feb 26 Majority; do pass.
Passed to Rules committee for second reading.

H. B. 1547 by Representatives Leonard, Miller, Scott, Brekke, Todd, Anderson, Lux, Unsoeld

Protecting children from abuse during the creation and implementation of par-

EXHIBIT 2

DECLARATION OF JENNIFER M. BELCHER IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT - 21

EXHIBIT 12

FILED
MAR 01 2018
YAKIMA COUNTY CLERK

THE HONORABLE MICHAEL G. McCARTHY

2 pages

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SUPERIOR COURT OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, v. DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER, Defendants, and WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU, Intervenors.	No. 16-2-03417-39 DECLARATION OF JOSE MARTINEZ-CUEVAS IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

Yo, Jose Martínez Cuevas, declaro bajo pena de perjurio bajo las leyes del estado de Washington:

1. Trabajé como ordeñador para DeRuyter Brothers Dairy, Inc. en Outlook, Washington desde mayo de 2014 hasta agosto de 2015.

2. Casi siempre trabajaba más de cuarenta horas por semana, pero DeRuyter nunca me pagaba una compensación por horas extras al tiempo y medio de mi salario normal por horas más de cuarenta en una semana.

3. Me lesioné dos veces mientras trabajaba para DeRuyter. Una vaca pisó mi mano y en otra ocasión una vaca me dio una patada en el hombro. Me dieron tratamiento para la lesión del hombro en Sunnyside Hospital. El hospital me dio un cabestrillo y medicina para el dolor.

4. Creo que las largas horas que trabajé en DeRuyter hicieron más probable que me lastimara.

5. Durante el tiempo que trabajé en DeRuyter, soy consciente de solo dos individuos que no eran Latinos y que trabajaron como ordeñadores durante un corto tiempo.

6. Asistí a la escuela aproximadamente hasta el quinto grado fuera del estado de Washington y no me gradué.

Fechado este 20 día de febrero de 2018 en Grandview, Washington.

Jose Martinez-Cuevas

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THE HONORABLE MICHAEL G. McCARTHY

3 pages

FILED
MAR 02 2018
YAKIMA COUNTY CLERK

SUPERIOR COURT OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, v. DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER, Defendants, and WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU, Intervenors.	No. 16-2-03417-39 DECLARATION OF TRANSLATION OF DECLARATION OF JOSE MARTINEZ-CUEVAS IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

DECLARATION OF TRANSLATOR

I, Elvia F. Bueno, declare under penalty of perjury under the laws of the State of Washington:

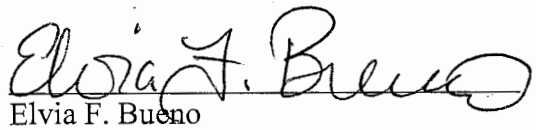
1. I am over the age of 18 and not a party to this action.

2. I am fluent in English and a native Spanish speaker and competent to act as translator.

3. I am a bilingual legal assistant at Columbia Legal Services. My job duties include written translation of documents.

4. The following is a true and accurate translation of the signed Spanish-language declaration of Jose Martinez-Cuevas, filed with this Court on March 1, 2018.

SIGNED at Yakima, Washington this 2nd day of March, 2018.



Elvia F. Bueno

I, Jose Martinez-Cuevas, declare under penalty of perjury under the laws of the State of Washington:

1. I worked as a milker for DeRuyter Brothers Dairy, Inc. in Outlook, Washington from May 2014 until August 2015.

2. I almost always worked over forty hours per week, but DeRuyter never paid me overtime compensation at one and a half times my regular rate for hours over forty in a week.

3. I was injured twice while working for DeRuyter. A cow stepped on my hand and another time a cow kicked me in the shoulder. I was treated at the Sunnyside Hospital for the shoulder injury. The hospital gave me a sling and pain medicine.

4. I believe the long hours I worked at DeRuyter made it more likely that I would get injured.

5. During the time I worked at DeRuyter, I am aware of only two individuals who were not Latino and who worked as milkers for a short time.

6. I attended school through approximately the 5th grade outside of Washington State and did not graduate.

DATED this 20th day of February, 2018 in Granger, Washington.

/s

Jose Martinez-Cuevas

Columbia Legal Services
6 South Second Street, Suite 600
Yakima, WA 98901
(509) 575-5993

CERTIFICATE OF SERVICE

I certify, under penalty of perjury and in accordance with the laws of the State of Washington, that on March 2, 2018, I served a copy of the foregoing document on all counsel of record in the manner shown and at the addresses listed below:

John Ray Nelson Milton G. Rowland FOSTER PEPPER PLLC 618 W. Riverside Ave., Ste 300 Spokane, WA 99201 john.nelson@foster.com milt.rowland@foster.com *Counsel for Defendant DeRuyter Brothers Dairy, Inc.*	[ ] [x]	By First-Class Mail By E-mail – Agreement of the Parties
Timothy J. O'Connell STOEL RIVES LLP 600 University Street, Suite 3600 Seattle, WA 98101 tim.oconnell@stoel.com *Counsel for Intervenors*	[ ] [x] [ ]	By First-Class Mail By E-mail – Agreement of the Parties By Legal Messenger

DATED this 2nd day of March, 2018, at Yakima, Washington.

Elvia F. Bueno

Columbia Legal Services
6 South Second Street, Suite 600
Yakima, WA 98901
(509) 575-5993

EXHIBIT 13

Lori Jordan Isley, WSBA # 21724
Joachim Morrison, WSBA # 23094
COLUMBIA LEGAL SERVICES
6 South Second Street, Suite 600
Yakima, WA 98901

Marc Cote, WSBA # 38924
Frank Freed Subit & Thomas LLP
705 Second Avenue, Suite 1200
Seattle, WA 98104-1798

35 pages

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SUPERIOR COURT OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, vs. DERUYTER BROTHERS DAIRY, INC., Defendants, WASHINGTON STATE DAIRY FEDERATION AND WASHINGTON FARM BUREAU, Intervenors.	No. 16-2-03417-39 **DECLARATION OF JOACHIM MORRISON IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT**

I, Joachim Morrison, declare under penalty of perjury under the laws of the state of Washington and the United States that the foregoing is true and correct:

1. I am one of the attorneys for the Plaintiffs in this matter.

2. I obtained the legislative history from the Washington State Archives in regard to 1975 legislation to amend to the Minimum Wage Act.

3. Attached as Exhibit 1 is a true and accurate copy of the Bill Digest for HB 32 and Substitute HB 32.

4. Attached as Exhibit 2 is a true and accurate transcription of a portion of the House Floor Debate related to HB 32 from February 19, 1975.

5. Attached as Exhibit 3 is a true and accurate copy of a propose amendment made by Representative Irv Newhouse to Substitute House Bill 32.

6. Attached as Exhibit 4 is a true and accurate copy is the Journal of the House relating to HB 32.

7. Attached as Exhibit 5 is a true and accurate copy of an amendment made by Senator Sid Morrison to Engrossed Substitute Bill No. 32 on May 13, 1975.

8. Attached as Exhibit 6 is a true and accurate copy of an additional attachment made by Senator Sid Morrison to Engrossed Substitute Bill No. 32.

9. Attached as Exhibit 7 is a true and accurate copy of Chapter 289 § 3 passed into law in 1975.

10. Attached as Exhibit 8 is a true and accurate copy of a letter submitted by the Toppenish Farm Worker Clinic in support of HB 32.

Executed and dated this 23rd day of February, 2018.

Joachim Morrison

Columbia Legal Services
6 South Second Street, Suite 600
Yakima, WA 98901
(509) 575-5993

EXHIBIT 1

BILL DIGEST

Sub. H. B. No. 32 By Labor

Conforming state minimum wage laws to federal laws.

(DIGEST OF PROPOSED SUBSTITUTE)

Makes all farm workers, domestic workers, state and local government employees subject to the minimum wage law.

Establishes scheduled minimum wage rates for public employees, farm workers, domestic workers, food service employees, nursing home employees, and hospital employees.

Limits the work week to forty hours and the work day to eight and requires payment of time and one half for overtime. Makes specific exclusions for law enforcement and fire fighting personnel.

Declares an emergency and takes effect immediately.

Jan 30 Committee report; substitute bill be substituted, do pass.

ENGROSSED SUBSTITUTE HOUSE BILL NO. 32

State of Washington
44th Regular Session

by Representatives Parker and Adams

Filed with the Chief Clerk of the House of Representatives December 19, 1974, for introduction January 13, 1975. Referred to Committee on Labor.

1 AN ACT Relating to minimum wages; amending section 1, chapter 294,
2 Laws of 1959 as last amended by section 1, chapter 107, Laws
3 of 1974 ex. sess. and RCW 49.46.010; amending section 2,
4 chapter 294, Laws of 1959 as last amended by section 1,
5 chapter 9, Laws of 1973 2nd ex. sess. and RCW 49.46.020;
6 adding a new section to chapter 49.46 RCW; and declaring an
7 emergency.
8 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:
9 Section 1. Section 1, chapter 294, Laws of 1959 as last
10 amended by section 1, chapter 107, Laws of 1974 ex. sess. and RCW
11 49.46.010 are each amended to read as follows:
12 As used in this chapter:
13 (1) "Director" means the director of labor and industries;
14 (2) "Wage" means compensation due to an employee by reason of
15 his employment, payable in legal tender of the United States or
16 checks on banks convertible into cash on demand at full face value,
17 subject to such deductions, charges, or allowances as may be
18 permitted by regulations of the director under *RCW 49.46.050;
19 (3) "Employ" includes to suffer or to permit to work;
20 (4) "Employer" includes any individual, partnership,
21 association, corporation, business trust, or any person or group of
22 persons acting directly or indirectly in the interest of an employer
23 in relation to an employee;
24 (5) "Employee" includes any individual employed by an
25 employer but shall not include:
26 (a) ((~~Any individual employed (i) on a farm, in the employ of~~
27 ~~any person, in connection with the cultivation of the soil, or in~~
28 ~~connection with raising or harvesting any agricultural or~~
29 ~~horticultural commodity, including raising, shearing, feeding, caring~~
30 ~~for, training, and management of livestock, bees, poultry, and~~

DECLARATION OF JOACHIM MORRISON
IN SUPPORT OF PLAINTIFFS' MOTION FOR
SUMMARY JUDGMENT - 5

EXHIBIT 1

furbearing animals and wildlife; or in the employ of the owner or tenant or other operator of a farm in connection with the operation, management, conservation, improvement, or maintenance of such farm and its tools and equipment; or (ii) in packing, packaging, grading, storing or delivering to storage, or to market or to a carrier for transportation to market, any agricultural or horticultural commodity; and the exclusions from the term "employee" provided in this item shall not be deemed applicable with respect to commercial canning, commercial freezing, or any other commercial processing, or with respect to services performed in connection with the cultivation, raising, harvesting, and processing of oysters or in connection with any agricultural or horticultural commodity after its delivery to a terminal market for distribution for consumption;

(((b))) Any individual employed in domestic service in or about a private home;

((((c))) (b) Any individual employed in a bona fide executive, administrative, or professional capacity or in the capacity of outside salesman (as such terms are defined and delimited by regulations of the director);

((((d)) Any individual employed by the United States;

((e))) (c) Any individual engaged in the activities of an educational, charitable, religious, or nonprofit organization where the employer-employee relationship does not in fact exist or where the services are rendered to such organizations gratuitously;

((((f))) (d) Any newspaper vendor or carrier;

((((g))) (e) Any carrier subject to regulation by Part 1 of the Interstate Commerce Act;

((((h))) (f) Any individual engaged in forest protection and fire prevention activities;

((((i)) Any individual employed by the state, any county, city, or town, municipal corporation or quasi-municipal corporation, political subdivision, or any instrumentality thereof;

((j))) (g) Any individual employed by any charitable institution charged with child care responsibilities engaged primarily in the development of character or citizenship or promoting health or physical fitness or providing or sponsoring recreational

1 opportunities or facilities for young people or members of the armed
2 forces of the United States;
3 ((~~f*~~)) (h) Any individual whose duties require that he reside
4 or sleep at the place of his employment or who otherwise spends a
5 substantial portion of his work time subject to call, and not engaged
6 in the performance of active duties;
7 (i) Any resident, inmate, or patient of a state, county, or
8 municipal correctional, detention, treatment or rehabilitative
9 institution.
10 (j) Any individual who holds a public elective or appointive
11 office of the state, any county, city, town, municipal corporation or
12 quasi municipal corporation, political subdivision, or any
13 instrumentality thereof, or any employee of the state legislature.
14 (6) "Occupation" means any occupation, service, trade,
15 business, industry, or branch or group of industries or employment or
16 class of employment in which employees are gainfully employed.
17 Sec. 2. Section 2, chapter 294, Laws of 1959 as last amended
18 by section 1, chapter 9, Laws of 1973 2nd ex. sess. and RCW 49.46.020
19 are each amended to read as follows:
20 (1) Every employer shall pay to each of his employees who have
21 reached the age of eighteen years wages at a rate of not less than
22 one dollar and sixty cents per hour except as may be otherwise
23 provided under subsections (2) through (7) of this section or as
24 otherwise provided under this chapter: PROVIDED, That beginning the
25 calendar year 1974, the applicable rate under this section shall be
26 one dollar and eighty cents per hour, and beginning the calendar year
27 1975 the applicable rate under this section shall be two dollars and
28 ten cents an hour, and beginning the calendar year 1976 the
29 applicable rate under this section shall be two dollars and thirty
30 cents an hour.
31 (2) Any individual eighteen years of age or older, unless
32 exempt under the provisions of section 1(5)(j) of this 1975
33 amendatory act, employed by the state, any county, city, town,
34 municipal corporation or quasi municipal corporation, political
35 subdivision, or any instrumentality thereof shall be paid wages
36 beginning the calendar year 1975, at a rate of not less than two

1 dollars an hour, and beginning the calendar year 1976 at a rate of
2 not less than two dollars and twenty cents an hour, and beginning the
3 calendar year 1977 at a rate of not less than two dollars and thirty
4 cents an hour.
5 (3) Any individual eighteen years of age or older engaged in
6 performing services in a nursing home licensed pursuant to chapter
7 18.51 RCW, shall be paid wages beginning the calendar year 1975, at a
8 rate of not less than two dollars an hour, and beginning the calendar
9 year 1976, at a rate of not less than two dollars and twenty cents an
10 hour, and beginning the calendar year 1977, at a rate of not less
11 than two dollars and thirty cents an hour.
12 (4) Any individual eighteen years of age or older engaged in
13 performing services in a hospital licensed pursuant to chapter 70.41
14 RCW, or chapter 71.12 RCW, shall be paid wages beginning the calendar
15 year 1975, at a rate of not less than two dollars an hour, and
16 beginning the calendar year 1976, at a rate of not less than two
17 dollars and twenty cents an hour, and beginning the calendar year
18 1977 at a rate of not less than two dollars and thirty cents an hour.
19 (5) Any individual eighteen years of age or older employed in
20 a retail or service establishment and who is so employed primarily in
21 connection with the preparation or offering of food or beverages for
22 human consumption, either on the premises, or by such services as
23 catering, banquet, box lunch, or curb or counter service, to the
24 public, to employees, or to members or guests of members of clubs
25 shall be paid wages beginning the calendar year 1975, at a rate of
26 not less than two dollars an hour, and beginning the calendar year
27 1976, at a rate of not less than two dollars and twenty cents an
28 hour, and beginning the calendar year 1977, at a rate of not less
29 than two dollars and thirty cents an hour.
30 (6) Any individual eighteen years of age or older employed:
31 (i) On a farm in the employ of any person, in connection with the
32 cultivation of the soil, or in connection with raising or harvesting
33 any agricultural or horticultural commodity, including raising,
34 shearing, feeding, caring for, training, and management of livestock,
35 bees, poultry, and furbearing animals and wildlife, or in the employ
36 of the owner or tenant or other operator of a farm in connection with

1 the operation, management, conservation, improvement, or maintenance
2 of such farm and its tools and equipment; or (ii) in packing,
3 packaging, grading, storing or delivering to storage, or to market or
4 to a carrier for transportation to market, any agricultural or
5 horticultural commodity; or (iii) in commercial canning, commercial
6 freezing, or any other commercial processing, in connection with the
7 cultivation, raising, harvesting, and processing of oysters or in
8 connection with any agricultural or horticultural commodity after its
9 delivery to a terminal market for distribution for consumption shall
10 be paid wages beginning the calendar year 1975, at a rate of not less
11 than one dollar and eighty cents an hour, and beginning the calendar
12 year 1976 at a rate of not less than two dollars an hour, and
13 beginning the calendar year 1977 at a rate of not less than two
14 dollars and twenty cents an hour, and beginning calendar year 1978 at
15 a rate of not less than two dollars and thirty cents an hour:
16 PROVIDED, That this section shall not apply to any agricultural
17 employee (a) if such employee is the parent, spouse, child, or other
18 member of his employer's immediate family, or (b) if such employee is
19 employed as a hand harvest laborer and is paid on a piece rate basis
20 in an operation which has been, and is customarily and generally
21 recognized as having been, paid on a piece rate basis in the region
22 of employment.
23 NEW SECTION. Sec. 3. There is added to chapter 49.46 RCW a
24 new section to read as follows:
25 (1) No employer shall employ any of his employees for a
26 workweek longer than forty hours unless such employee receives
27 compensation for his employment in excess of the hours above
28 specified at a rate not less than one and one-half times the regular
29 rate at which he is employed, except that the provisions of this
30 subsection (1) shall not apply to any person defined in RCW
31 49.46.010(5)(j) as now or hereafter amended.
32 (2) No public agency shall be deemed to have violated
33 subsection (1) of this section with respect to the employment of any
34 employee in fire protection activities or any employee in law
35 enforcement activities (including security personnel in correctional
36 institutions) if: (a) In a work period of twenty-eight consecutive

days the employee receives for tours of duty which in the aggregate exceed two hundred and forty hours; or (b) in the case of such an employee to whom a work period of at least seven but less than twenty-eight days applies, in his work period the employee receives for tours of duty which in the aggregate exceed a number of hours which bears the same ratio to the number of consecutive days in his work period as two hundred forty hours bears to twenty-eight days; compensation at a rate not less than one and one-half times the regular rate at which he is employed: PROVIDED, That this section shall not apply to any individual employed (i) on a farm, in the employ of any person, in connection with the cultivation of the soil, or in connection with raising or harvesting any agricultural or horticultural commodity, including raising, shearing, feeding, caring for, training, and management of livestock, bees, poultry, and furbearing animals and wildlife, or in the employ of the owner or tenant or other operator of a farm in connection with the operation, management, conservation, improvement, or maintenance of such farm and its tools and equipment; or (ii) in packing, packaging, grading, storing or delivering to storage, or to market or to a carrier for transportation to market, any agricultural or horticultural commodity; or (iii) commercial canning, commercial freezing, or any other commercial processing, or with respect to services performed in connection with the cultivation, raising, harvesting, and processing of oysters or in connection with any agricultural or horticultural commodity after its delivery to a terminal market for distribution for consumption.

NEW SECTION. Sec. 4. This 1975 amendatory act is necessary for the immediate preservation of the public peace, health, and safety, the support of the state government and its existing public institutions, and shall take effect immediately.

EXHIBIT 2

HB 32 Bill
Feb. 19, 1975 House Floor Debate

Representative Parker – starting at approximately minute 17:50

"My amendment would not include agricultural workers on a piece basis. We negotiated with members of the minority party, and those that represent the farm areas. We talked to the food processors and so on. I can understand some of the unique problems of agriculture with regard to the piece-work exemption. While I may not agree with it, I agreed to add it to this bill to encourage further study of the entire situation. So those agricultural workers on a seasonal basis in regions of this state where that's the tradition would be exempt from the provisions of the minimum wage act that you have before you. I also exempted all agricultural workers in my amendment from the time and a half provision of the law so that even those that are included would not have to be paid time and a half. So who really then is included? Really under the amendment that you before you that I've presented, the only individuals in the agricultural community that are included are those who are working on a full-time basis for the agricultural community."

EXHIBIT 3

Amendment to SHB 32

By Representative Amen. Newhouse

on page 1, line 26 after "(a)" strike down to and including "equipment;" p. 2, line 4 and insert "Any individual employed on a farm, in the employ of any person, in connection with the cultivation of the soil, or in connection with raising, or harvesting any agricultural or horticultural commodity, including raising shearing, feeding, caring for, training, and management of livestock, bees, poultry, and furbearing animals and wildlife, or in the employ of the owner or tenant or other operator of a farm in connection with the operation, management, conservation, improvement, or maintenance of such farm and its tools or equipment:"

And renumber the remaining subsections consecutively.

---

on page 4, line 29 after "(i)" strike down and including "(ii)" on line 36

on page 5, line 3 after "or" strike "(iii)" and insert "(ii)"

EXHIBIT 4

Substitute House Bill No. 217 was ordered engrossed, and passed to Committee on Rules for third reading.

HOUSE BILL NO. 314, by Representatives Sommers, O'Brien and Leckenby (by State Treasurer request):

Providing for the transfer of funds from and the abolishment of the world fair bond redemption fund.

The bill was read the second time and passed to Committee on Rules for third reading.

HOUSE BILL NO. 315, by Representatives Sommers, O'Brien and Leckenby (by State Treasurer request):

Directing the investment of current state funds.

MOTION

On motion of Mr. Thompson, consideration of House Bill No. 315 on second reading, was deferred, and the bill was ordered placed on tomorrow's second reading calendar.

HOUSE BILL NO. 316, by Representatives Sommers, O'Brien and Leckenby (by State Treasurer request):

Placing five year statute of limitations on claims against state for state warrants and permitting destruction of redeemed warrants after six years.

The bill was read the second time.

Committee on State Government recommendation: Majority, do pass as amended. (For amendment, see Journal, Thirty-first Day, February 12, 1975.)

On motion of Ms. Sommers, the committee amendment was adopted.

House Bill No. 316 was ordered engrossed and passed to Committee on Rules for third reading.

HOUSE BILL NO. 345, by Representatives Moreau and Erickson (by Department of Revenue request):

Eliminating fee and changing excise tax registration certificate requirements.

The bill was read the second time.

On motion of Mr. Randall, Substitute House Bill No. 345 was substituted for House Bill No. 345, and the substitute bill was placed on the calendar for second reading.

Substitute Bill No. 345 was read the second time and passed to Committee on Rules for third reading.

MOTION

On motion of Mr. Charette, consideration of HOUSE BILL NO. 350 was deferred, and the bill was ordered placed on tomorrow's second reading calendar.

Mr. Eikenberry appeared at the bar of the House.

SUBSTITUTE HOUSE BILL NO. 32, by Committee on Labor (Originally sponsored by Representatives Parker and Adams):

The bill was read the second time.

(For previous action, see Journal, Twenty-fifth Day, February 6, 1975.)

POINT OF INFORMATION

Mr. Amen: "The last time we had this on the floor we were considering an amendment that I had that had been moved and we were in the process of discussing it. Then it was held over to the next day's reading and finally back to rules. What is the status of the amendment now?"

SPEAKER'S RULING

The Speaker: "It is the Chair's ruling that since the bill has been to committee, and is now placed before us again that you would have to replace your amendment. The bill is not back in the status it left the floor, since it went to committee for further consideration.

Therefore, the bill is before us in the original form and as it has been already acted upon or amended—any amendments that were pending or amendments that were pending at the time would have to be replaced."

Mr. Parker moved adoption of the following amendment:

On page 1 strike everything after the enacting clause and insert the following:

"Section 1. Section 1, chapter 294, Laws of 1959 as last amended by section 1, chapter 107, Laws of 1974 ex. sess. and RCW 49.46.010 are each amended to read as follows:

As used in this chapter:

(1) "Director" means the director of labor and industries;

(2) "Wage" means compensation due to an employee by reason of his employment, payable in legal tender of the United States or checks on banks convertible into cash on demand at full face value, subject to such deductions, charges, or allowances as may be permitted by regulations of the director under *RCW 49.46.050;

(3) "Employ" includes to suffer or to permit to work;

(4) "Employer" includes any individual, partnership, association, corporation, business trust, or any person or group of persons acting directly or indirectly in the interest of an employer in relation to an employee;

(5) "Employee" includes any individual employed by an employer but shall not include:

(a) ~~((Any individual employed (i) on a farm, in the employ of any person, in connection with the cultivation of the soil, or in connection with raising or harvesting any agricultural or horticultural commodity; including raising, shearing, feeding, caring for, training, and management of livestock, bees, poultry, and furbearing animals and wildlife, or in the employ of the owner or tenant or other operator of a farm in connection with the operation, management, conservation, improvement, or maintenance of such farm and its tools and equipment; or (ii) in packing, packaging, grading, storing or delivering to storage, or to market or to a carrier for transportation to market, any agricultural or horticultural commodity; and the exclusions from the term "employee" provided in this item shall not be deemed applicable with respect to commercial canning, commercial freezing, or any other commercial processing, or with respect to services performed in connection with the cultivation, raising, harvesting, and processing of oysters or in connection with any agricultural or horticultural commodity after its delivery to a terminal market for distribution for consumption;~~

~~(b))~~ Any individual employed in domestic service in or about a private home;

~~((c)))~~(b) Any individual employed in a bona fide executive, administrative, or professional capacity or in the capacity of outside salesman (as such terms are defined and delimited by regulations of the director);

~~((d) Any individual employed by the United States;~~

~~(e)))~~(c) Any individual engaged in the activities of an educational, charitable, religious, or nonprofit organization where the employer-employee relationship does not in fact exist or where the services are rendered to such organizations gratuitously;

~~((f))~~(d) Any newspaper vendor or carrier;

~~((g)))~~(e) Any carrier subject to regulation by Part I of the Interstate Commerce Act;

~~((h)))~~(f) Any individual engaged in forest protection and fire prevention activities;

~~(((i) Any individual employed by the state, any county, city, or town, municipal corporation or quasi-municipal corporation, political subdivision, or any instrumentality thereof;~~

~~(j))~~ (g) Any individual employed by any charitable institution charged with child care responsibilities engaged primarily in the development of character or citizenship or promoting health or physical fitness or providing or sponsoring recreational opportunities or facilities for young people or members of the armed forces of the United States;

~~((k)))~~(h) Any individual whose duties require that he reside or sleep at the place of his employment or who otherwise spends a substantial portion of his work time subject to call, and not engaged in the performance of active duties;

(i) Any resident, inmate, or patient of a state, county, or municipal correctional, detention, treatment or rehabilitative institution.

(j) Any individual who holds a public elective or appointive office of the state, any county, city, town, municipal corporation or quasi municipal corporation, political subdivision, or any instrumentality thereof, or any employee of the state legislature.

(6) "Occupation" means any occupation, service, trade, business, industry, or branch or group of industries or employment or class of employment in which employees are gainfully employed.

Sec. 2. Section 2, chapter 294, Laws of 1959 as last amended by section 1, chapter 9, Laws of 1973 2nd ex. sess. and RCW 49.46.020 are each amended to read as follows:

(1) Every employer shall pay to each of his employees who have reached the age of eighteen years wages at a rate of not less than one dollar and sixty cents per hour except as may be otherwise provided under subsections (2) through (7) of this section or as otherwise provided under this chapter: *Provided*, That beginning the calendar year 1974, the applicable rate under this section shall be one dollar and eighty cents per hour, and beginning the calendar year 1975 the applicable rate under this section shall be two dollars and ten cents an hour, and beginning the calendar year 1976 the applicable rate under this section shall be two dollars and thirty cents an hour.

(2) Any individual eighteen years of age or older, unless exempt under the provisions of section 1(5)(j) of this 1975 amendatory act, employed by the state, any county, city, town, municipal corporation or quasi

municipal corporation, political subdivision, or any instrumentality thereof shall be paid wages beginning the calendar year 1975, at a rate of not less than two dollars an hour, and beginning the calendar year 1976 at a rate of not less than two dollars and twenty cents an hour, and beginning the calendar year 1977 at a rate of not less than two dollars and thirty cents an hour.

(3) Any individual eighteen years of age or older engaged in performing services in a nursing home licensed pursuant to chapter 18.51 RCW, shall be paid wages beginning the calendar year 1975, at a rate of not less than two dollars an hour, and beginning the calendar year 1976, at a rate of not less than two dollars and twenty cents an hour, and beginning the calendar year 1977, at a rate of not less than two dollars and thirty cents an hour.

(4) Any individual eighteen years of age or older engaged in performing services in a hospital licensed pursuant to chapter 70.41 RCW, or chapter 71.12 RCW, shall be paid wages beginning the calendar year 1975, at a rate of not less than two dollars an hour, and beginning the calendar year 1976, at a rate of not less than two dollars and twenty cents an hour, and beginning the calendar year 1977 at a rate of not less than two dollars and thirty cents an hour.

(5) Any individual eighteen years of age or older employed in a retail or service establishment and who is so employed primarily in connection with the preparation or offering of food or beverages for human consumption, either on the premises, or by such services as catering, banquet, box lunch, or curb or counter service, to the public, to employees, or to members or guests of members of clubs shall be paid wages beginning the calendar year 1975, at a rate of not less than two dollars an hour, and beginning the calendar year 1976, at a rate of not less than two dollars and twenty cents an hour, and beginning the calendar year 1977, at a rate of not less than two dollars and thirty cents an hour.

(6) Any individual eighteen years of age or older employed: (i) On a farm in the employ of any person, in connection with the cultivation of the soil, or in connection with raising or harvesting any agricultural or horticultural commodity, including raising, shearing, feeding, caring for, training, and management of livestock, bees, poultry, and furbearing animals and wildlife, or in the employ of the owner or tenant or other operator of a farm in connection with the operation, management, conservation, improvement, or maintenance of such farm and its tools and equipment; or (ii) in packing, packaging, grading, storing or delivering to storage, or to market or to a carrier for transportation to market, any agricultural or horticultural commodity; or (iii) in commercial canning, commercial freezing, or any other commercial processing, in connection with the cultivation, raising, harvesting, and processing of oysters or in connection with any agricultural or horticultural commodity after its delivery to a terminal market for distribution for consumption shall be paid wages beginning the calendar year 1975, at a rate of not less than one dollar and eighty cents an hour, and beginning the calendar year 1976 at a rate of not less than two dollars an hour, and beginning the calendar year 1977 at a rate of not less than two dollars and twenty cents an hour, and beginning calendar year 1978 at a rate of not less than two dollars and thirty cents an hour; PROVIDED, That this section shall not apply to any agricultural employee (a) if such employee is the parent, spouse, child, or other member of his employer's immediate family, or (b) if such employee is employed as a hand harvest laborer and is paid on a piece rate basis in an operation which has been, and is customarily and generally recognized as having been, paid on a piece rate basis in the region of employment.

NEW SECTION. Sec. 3. There is added to chapter 49.46 RCW a new section to read as follows:

(1) No employer shall employ any of his employees for a workweek longer than forty hours unless such employee receives compensation for his employment in excess of the hours above specified at a rate not less than one and one-half times the regular rate at which he is employed, except that the provisions of this subsection (1) shall not apply to any person defined in RCW 49.46.010(5)(j) as now or hereafter amended.

(2) No public agency shall be deemed to have violated subsection (1) of this section with respect to the employment of any employee in fire protection activities or any employee in law enforcement activities (including security personnel in correctional institutions) if: (a) In a work period of twenty-eight consecutive days the employee receives for tours of duty which in the aggregate exceed two hundred and forty hours; or (b) in the case of such an employee to whom a work period of at least seven but less than twenty-eight days applies, in his work period the employee receives for tours of duty which in the aggregate exceed a number of hours which bears the same ratio to the number of consecutive days in his work period as two hundred forty hours bears to twenty-eight days; compensation at a rate not less than one and one-half times the regular rate at which he is employed: *Provided*, That this section shall not apply to any individual employed (i) on a farm, in the employ of any person, in connection with the cultivation of the soil, or in connection with raising or harvesting any agricultural or horticultural commodity, including raising, shearing, feeding, caring for, training, and management of livestock, bees, poultry, and furbearing animals and wildlife, or in the employ of the owner or tenant or other operator of a farm in connection with the operation, management, conservation, improvement, or maintenance of such farm and its tools and equipment; or (ii) in packing, packaging, grading, storing or delivering to storage, or to market or to a carrier for transportation to market, any agricultural or horticultural commodity; or (iii) commercial canning, commercial freezing, or any other commercial processing, or with respect to services performed in connection with the cultivation, raising, harvesting, and processing of oysters or in connection with any agricultural or horticultural commodity after its delivery to a terminal market for distribution for consumption.

NEW SECTION. Sec. 4. This 1975 amendatory act is necessary for the immediate preservation of the public peace, health, and safety, the support of the state government and its existing public institutions, and shall take effect immediately."

Mr. Newhouse moved adoption of the following amendment to the Parker amendment by Representatives Newhouse, Amen, Leckenby and Hayner:

On page 1, line 22 after "(a)" reinsert the stricken language ending on page 2, line 11 and reletter the remaining subsections.

Representatives Newhouse and Leckenby spoke in favor of the amendment to the amendment, and Representatives Parker and Moon spoke against it.

Mr. Pardini demanded an electric roll call and the demand was sustained.

ROLL CALL

The Clerk called the roll on adoption of the amendment by Representative Newhouse and others to the Parker amendment to Substitute House Bill No. 32, and the amendment to the amendment was not adopted by the following vote: Yeas, 38; nays, 53; not voting, 7.

Voting yea: Representatives Amen, Barnes, Berentson, Bond, Brown, Curtis, Deccio, Dunlap, Eikenberry, Erickson, Freeman, Gilleland, Greengo, Haley, Hansey, Haussler, Hayner, Hendricks, Jastad, Jueling, Kalich, Knowles, Kuehnle, Laughlin, Leckenby, Lee, Matthews, Nelson, Newhouse, Pardini, Patterson, Polk, Schumaker, Seeberger, Tilly, Whiteside, Wilson, Zimmerman.

Voting nay: Representatives Adams, Bauer, Bausch, Becker, Bender, Blair, Boldt, Ceccarelli, Chandler, Charette, Charnley, Chatalas, Clemente, Cochrane, Conner, Douthwaite, Ehlers, Fischer, Gaines, Gallagher, Gaspard, Hanna, Hansen, Hawkins, Hurley G. S., Hurley M., Kilbury, King, Lysen, Martinis, Maxie, May, McCormick, McKibbin, Moon, Moreau, North, O'Brien, Paris, Parker, Peterson, Randall, Savage, Sherman, Smith E. P., Smith R., Sommers, Thompson, Valle, Warnke, Williams, Wojahn, and Mr. Speaker.

Not voting: Representatives Bagnariol, Eng, Flanagan, Fortson, Luders, Perry, Shinpoch.

Mr. Kuehnle moved adoption of the following amendment to the Parker amendment by Representatives Kuehnle, Barnes and Hendricks:

On page 2, line 14 insert a new subsection to read as follows:

"(b) Any person employed in "sheltered workshops" or "programs of the Department of Social and Health Services which operate rehabilitation facilities serving the handicapped and disadvantaged as the terms are defined respectively in RCW 82.04.385 and RCW 72.33.800 (group training homes and day training centers);"

Renumber the remaining subsections consecutively.

Representatives Kuehnle and Parker spoke in favor of the amendment to the amendment, and it was adopted.

Mr. Zimmerman moved adoption of the following amendment to the Parker amendment by Representatives Zimmerman, Haley, Bond and Whiteside:

On page 2, following subsection "(a)" beginning on line 14 insert a new subsection as follows:

"(b) Any person who is over the age of 65 and desires to supplement such moneys as are received as a result of retirement from prior employment or moneys received from the federal government as a result of having reached that age;"

Renumber the remaining subsections consecutively.

Representatives Whiteside, Zimmerman and Leckenby spoke in favor of the amendment to the amendment, and Representatives Parker and King spoke against it.

Mr. Conner demanded an electric roll call and the demand was sustained.

Representatives Zimmerman, Bond and Haley spoke in favor of adopting the amendment to the amendment.

Mr. Charette demanded the previous question, and the demand was sustained.

ROLL CALL

The Clerk called the roll on adoption of the amendment by Representative Zimmerman and others to the Parker amendment to Substitute House Bill No. 32, and the amendment was not adopted by the following vote: Yeas, 37; nays, 50; not voting, 11.

Voting yea: Representatives Amen, Bauer, Berentson, Bond, Brown, Chandler, Curtis, Deccio, Dunlap, Eikenberry, Freeman, Gilleland, Greengo, Haley, Hansey, Haussler, Hayner, Hendricks, Jueling, Kuehnle, Laughlin, Leckenby, Lee, Matthews, McKibbin, Nelson, Newhouse, Pardini, Paris, Patterson, Peterson, Polk, Schumaker, Seeberger, Tilly, Whiteside, Zimmerman.

Voting nay: Representatives Adams, Barnes, Bausch, Becker, Bender, Boldt, Ceccarelli, Charette, Charnley, Chatalas, Clemente, Cochrane, Conner, Douthwaite, Ehlers, Erickson, Fischer, Gallagher, Gaspard, Hanna, Hansen, Hawkins, Hurley G. S., Hurley M., Jastad, Kalich, Kilbury, King, Knowles, Lysen, Martinis, Maxie, May, McCormick, Moon, Moreau, North, O'Brien, Parker, Randall, Savage, Sherman, Smith E. P., Sommers, Thompson, Valle, Warnke, Wilson, Wojahn, and Mr. Speaker.

Not voting: Representatives Bagnariol, Bhair, Eng, Flanagan, Fortson, Gaines, Luders, Perry, Shinpoch, Smith R., Williams.

MOTIONS

On motion of Mr. Charette, further consideration of the bills on today's calendar were deferred, and they were ordered held for tomorrow's calendar.

On motion of Mr. Charette, the House advanced to the eighth order of business.

RESOLUTIONS

HOUSE RESOLUTION NO. 75-13, by Representatives Bauer and Maxie:

WHEREAS, The Legislature of the State of Washington has before it several proposals regarding vocational education; and

WHEREAS, The concerns of vocational education affect both common schools and higher education; and

WHEREAS, The Senate has created a Select Committee on Vocational Education to review these various proposals;

NOW, THEREFORE, BE IT RESOLVED, By the House of Representatives, That the Speaker of the House of Representatives appoint a six-member select committee on vocational education, three members from the House Education Committee with no more than two members from the same political party and three members from the House Higher Education Committee with no more than two members from the same political party. Such select committee shall make every effort to work mutually and jointly with the Senate Select Committee on Vocational Education and shall carry out its special study and report its findings and recommendations to the 44th Legislature as soon as possible, but prior to the conclusion of the 1975 regular legislative session.

BE IT FURTHER RESOLVED, That the Chief Clerk of the House transmit copies of this resolution to the Senate, the Governor, the Superintendent of Public Instruction, and the directors of the State Board for Community College Education and the Coordinating Council for Occupational Education.

Mr. Charette moved adoption of the resolution and spoke in favor of it.

The resolution was adopted.

APPOINTMENT OF COMMITTEE

Under the provisions of House Resolution No. 75-7, the Speaker appointed the following committee to consider and recommend to the House the official photographer for the forty-fourth session of the legislature: Representatives Eng, May and Zimmerman.

Under the provisions of House Resolution No. 75-13, the Speaker appointed the following committee to serve as a select committee on vocational education: Representatives Bauer, Clemente, Hayner, Maxie, Moreau and Nelson.

MOTION

On motion of Mr. Charette, the House adjourned until 10:30 a.m., Thursday, February 20, 1975.

LEONARD A. SAWYER, Speaker.

DEAN R. FOSTER, Chief Clerk

MAJORITY recommendation: The substitute bill be substituted therefor and that the substitute bill do pass. Signed by Representatives Kilbury, Chairman; Becker, Vice Chairwoman; Amen, Boldt, Deccio, Erickson, Flanagan, Hansen, Hansey, Haussler, Laughlin, Schumaker, Tilly.

To Committee on Rules for second reading.

SECOND READING

SUBSTITUTE HOUSE BILL NO. 32, by Committee on Labor (Originally sponsored by Representatives Parker and Adams):

Conforming state minimum wage laws to federal laws.

The House resumed consideration of the bill on second reading. (For previous action, see yesterday's Journal, Thirty-eighth Day, February 19, 1975.)

The Speaker stated the question before the House to be the Parker amendment as amended.

The Clerk read the following amendment to the Parker amendment by Representative Patterson:

On page 2, section 1, line 28 after "(" reinsert the stricken language ending on line 30.

With the consent of the House, Mr. Patterson withdrew his amendment.

Mr. Newhouse moved adoption of the following amendment by Representatives Newhouse, Deccio and Leckenby:

On page 3, line 11 after "thereof," strike everything including "legislature"

Representatives Newhouse and Curtis spoke in favor of the amendment to the amendment, and Mr. Parker spoke against it.

ROLL CALL

The Clerk called the roll on adoption of the amendment by Representative Newhouse and others to the Parker amendment to Substitute House Bill No. 32, and the amendment was not adopted by the following vote: Yeas, 41; nays, 48; not voting, 9.

Voting yea: Representatives Amen, Barnes, Berentson, Bond, Brown, Chandler, Curtis, Deccio, Dunlap, Eikenberry, Freeman, Gaines, Gilleland, Greengo, Haley, Hansey, Haussler, Hayner, Hendricks, Jastad, Jueling, King, Kuehnle, Laughlin, Leckenby, Lee, Lysen, Matthews, Moon, Nelson, Newhouse, Pardini, Patterson, Peterson, Polk, Schumaker, Seeberger, Tilly, Whiteside, Wilson, Zimmerman.

Voting nay: Representatives Adams, Bagnariol, Bauer, Bausch, Becker, Bender, Boldt, Ceccarelli, Charette, Charnley, Chatalas, Clemente, Cochrane, Conner, Douthwaite, Ehlers, Erickson, Fischer, Gallagher, Gaspard, Hanna, Hansen, Hawkins, Hurley G. S., Hurley M., Kilbury, Knowles, Martinis, Maxie, May, McCormick, McKibbin, Moreau, North, O'Brien, Parker, Randall, Savage, Sherman, Shinpoch, Smith E. P., Smith R., Sommers, Thompson, Valle, Warnke, Wojahn, and Mr. Speaker.

Not voting: Representatives Blair, Eng, Flanagan, Fortson, Kalich, Luders, Paris, Perry, Williams.

Mr. Amen moved adoption of the following amendment by Representatives Amen and Tilly to the Parker amendment.

On page 5, section 3, line 29 after "amended" strike the period and insert the following: ": PROVIDED, That the provisions of this section shall not apply to any class or category of employee and employees excluded from such time and one-half compensation under and by reason of provisions of the Federal Fair Labor Standards Act as now provided and as hereafter amended from time to time."

R Representatives Amen and Tilly spoke in favor of the amendment to the amendment, and Mr. Parker spoke against it.

Mr. Conner demanded an electric roll call and the demand was sustained.

ROLL CALL

The Clerk called the roll on adoption of the amendment by Representatives Amen and Tilly to the Parker amendment to Substitute House Bill No. 32, and the amendment was not adopted by the following vote: Yeas, 37; nays, 54; not voting, 7.

Voting yea: Representatives Amen, Barnes, Berentson, Bond, Brown, Chandler, Curtis, Deccio, Dunlap, Eikenberry, Freeman, Gilleland, Greengo, Haley, Hansen, Hansey, Hayner, Hendricks, Jueling, Kalich, Kuehnle, Laughlin, Leckenby, Lee, Matthews, Nelson, Newhouse, Pardini, Patterson, Peterson, Polk, Schumaker, Seeberger, Tilly, Whiteside, Wilson, Zimmerman.

Voting nay: Representatives Adams, Bagnariol, Bauer, Bausch, Becker, Bender, Boldt, Ceccarelli, Charette, Charnley, Chatalas, Clemente, Cochrane, Conner, Douthwaite, Ehlers, Eng, Erickson, Fischer, Fortson, Gaines, Gallagher, Gaspard, Hanna, Haussler, Hawkins, Hurley G. S., Hurley M., Jastad,

Kilbury, King, Lysen, Martinis, Maxie, May, McCormick, McKibbin, Moon, Moreau, North, O'Brien, Parker, Randall, Savage, Sherman, Shinpoch, Smith E. P., Smith R., Sommers, Thompson, Valle, Warnke, Wojahn, and Mr. Speaker.

Not voting: Representatives Blair, Flanagan, Knowles, Luders, Paris, Perry, Williams.

Mr. Kuehnle moved adoption of the following amendment:

On page 5, line 29 after "amended" and before the period insert "or (2) Employees who request compensating time off in lieu of overtime pay"

Mr. Kuehne spoke in favor of the amendment to the amendment, and Mr. Parker spoke against it.

Mr. Kuehnle spoke again in favor of the amendment, and Mr. Douthwaite spoke against it.

The amendment was not adopted on a rising vote.

POINT OF PARLIAMENTARY INQUIRY

Mr. Pardini: "Mr. Speaker, is it not normal procedure in a division of the House to announce the vote?"

The Clerk announced that there were 36 ayes; 43 nays.

The Speaker stated the question before the House to be adoption of the Parker amendment as amended to Substitute House Bill No. 32.

Representatives Parker and Pardini spoke in favor of the amendment.

Mr. Conner demanded an electric roll call and the demand was sustained.

Mr. Bond spoke against adoption of the amendment.

ROLL CALL

The Clerk called the roll on adoption of the amendment by Representative Parker as amended to Substitute House Bill No. 32, and the amendment was adopted by the following vote: Yeas, 89; nays, 3; not voting, 6.

Voting yea: Representatives Adams, Amen, Bagnariol, Barnes, Bauer, Bausch, Becker, Bender, Berentson, Blair, Boldt, Brown, Ceccarelli, Chandler, Charette, Charnley, Chatalas, Clemente, Conner, Curtis, Deccio, Douthwaite, Dunlap, Ehlers, Eikenberry, Eng, Erickson, Fischer, Fortson, Freeman, Gaines, Gallagher, Gaspard, Gilleland, Greengo, Haley, Hanna, Hansen, Hansey, Haussler, Hawkins, Hayner, Hendricks, Hurley G. S., Hurley M., Jastad, Jueling, Kalich, Kilbury, King, Knowles, Kuehnle, Laughlin, Leckenby, Lee, Lysen, Martinis, Maxie, May, McCormick, McKibbin, Moon, Moreau, Nelson, Newhouse, North, O'Brien, Pardini, Parker, Patterson, Peterson, Polk, Randall, Savage, Schumaker, Seeberger, Sherman, Shinpoch, Smith E. P., Smith R., Sommers, Thompson, Tilly, Valle, Warnke, Wilson, Wojahn, Zimmerman, and Mr. Speaker.

Voting nay: Representatives Bond, Cochrane, Whiteside.

Not voting: Representatives Flanagan, Luders, Matthews, Paris, Perry, Williams.

Substitute House Bill No. 32 was ordered engrossed and passed to Committee on Rules for third reading.

HOUSE BILL NO. 315, by Representatives Sommers, O'Brien and Leckenby (by State Treasurer request):

Directing the investment of current state funds.

MOTION

On motion of Mr. Charette, House Bill No. 315 was rereferred to Committee on Rules.

HOUSE BILL NO. 350, by Representatives Randall, Pardini and Erickson (by Department of Revenue request):

Pertaining to hotel, motel excise tax by counties and cities.

MOTION

On motion of Mr. Randall, consideration of House Bill No. 350 on second reading was deferred, and the bill was ordered placed on tomorrow's second reading calendar.

HOUSE BILL NO. 102, by Representatives Chatalas, Curtis, Shinpoch, Polk, Bagnariol, Flanagan, North and Randall (by Legislative Budget Committee request to implement performance audit recommendations):

EXHIBIT 5

ate Amendment to Engrossed Substitute
e Bill No. 32
By Senator Newschwander

page 1, line 6 of the title, strike
; and declaring an emergency"

Adopted May 13, 1975

Title amendment. Deletes declaring an emergency.

ate Amendment to Engrossed Substitute House
1 No. 32
By Senators Donohue and Morrison

page 1, beginning on line 26, after "(a)"
ike all the material down through and including "(b)))"
line 14, and insert:
"Any individual employed (i) on a farm, in the
loy of any person, in connection with the cultivation
the soil, or in connection with raising or harvesting
agricultural or horticultural commodity, including
sing, shearing, feeding, caring for, training, and
agement of livestock, bees, poultry, and furbearing
mals and wildlife, or in the employ of the owner or
ant or other operator of a farm in connection with the
ration, management, conservation, improvement, or main-
ance of such farm and its tools and equipment; or (ii)
packing, packaging, grading, storing or delivering
storage, or to market or to a carrier for transportation
market, any agricultural or horticultural commodity;
the exclusions from the term "employee" provided in
's item shall not be deemed applicable with respect to
mercial canning, commercial freezing, or any other
mercial processing, or with respect to services per-
med in connection with the cultivation, raising, har-
sting, and processing of oysters or in connection with
agricultural or horticultural commodity after its
ivery to a terminal market for distribution for con-
ption;
(b)"

tore original subsection letters consecutively.

Adopted May 13, 1975

Puts agricultural exemption back in.

te Committee Amendment to Engrossed Substitute House Bill
32
Committee on Labor

ge 2, line 22, after "religious," and before "or" insert
rnmental agency,"

MAY 12 1975 ADOPTED

Includes governmental agency within the exemption for volunteers of educational, charitable, religious and non-profit organizations. This is to make sure such people as volunteer firemen for cities and counties are not covered.

ate Amendments to Engrossed Substitute
se Bill No. 32
By Senators Grant/Morrison/Ridder

page 3, line 26, strike "the calendar
r 1975" and insert "((the calendar year
4)) with the effective date of this act"

page 3, line 36, strike "the calendar
r 1975" and insert "with the effective
e of this act"

Adopted May 12, 1975

Provides the minimum wage shall increase to $2.10 beginning with the effective date of the act instead of retroactively covering back to January and specifies governmental rate as of effective date of the act instead of retroactively to January.

EXHIBIT 6

Report of Free Conference Committee

Paulsen Ridder
Matthews Morrison
Savage Morrison

Olympia, Wash.,

MR. PRESIDENT:

MR. SPEAKER:

We of your Free Conference Committee, to whom was referred Engrossed Substitute House Bill No. 32 as amended by the Senate, conforming state minimum wage laws to federal laws,

have had the same under consideration, and we recommend that the following Senate amendments not be adopted:

Senate

On page 6, line 26, after "consumption" insert ": PROVIDED FURTHER, That this section shall not apply in the event that a federal law exists which regulates the work hours or work week of an industry, business or any employee or group of employees" } Preemption

On page 6, beginning on line 27, strike section 4. — emerg. clause

On page 1, line 6 of the title, strike "; and declaring an emergency" — correct title

We further recommend that the following substitute amendments be adopted:

House

On page 6, line 26, after "consumption" insert ": PROVIDED FURTHER, That in the event that a federal law exists which provides the payment of time and a half for a workweek other than forty hours, such federal workweek standard shall apply to any employees subject to this act who belong to the same class of employees to which the different federal workweek standard applies" — [illegible] industry

On page 6, line 30, after "effect" strike "immediately" and insert "August 1, 1975"

On page 1, beginning on line 6 of the title, after "RCW;" strike the remainder of the title and insert "declaring an emergency and providing an effective date."

We further recommend that the following Senate amendments be adopted:

On page 4, line 8, after "dollars" and before "an" insert "and ten cents"

On page 4, line 15 of the engrossed substitute bill, after "dollars" and before "an" and insert "and ten cents"

Senate Members	*House Members*
Ridder	Savage
Morrison	Matthews

DECLARATION OF JOACHIM MORRISON IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT - 26

EXHIBIT 6

Amendment to Engrossed Substitute House Bill No. 32
by Senator Morrison

(4) On page 6, line 26, after "consumption" insert:

": PROVIDED FURTHER, That in any industry in which federal law provides for an overtime payment based on a work week other than forty hours then provisions of this section shall not apply; however the provisions of the federal law regarding overtime payment based on a work week other than forty hours shall nevertheless apply to employees covered by this section without regard to the existence of actual federal jurisdiction over the industrial activity of the particular employer within this state: PROVIDED FURTHER, That "industry" as that term is used in this section shall mean a trade, business, industry, or other activity, or branch, or group thereof, in which individuals are gainfully employed (Section 3(h) of the Fair Labor Standards Act of 1938, as amended (Public Law 93-259)."

replace

~~Any individual employed by~~

~~pursuant to~~

(2) On page 3, line 13, after "legislature" add a new subparagraph

"(K) all vessel operating views and support personnel of the Washington State Ferries operated by the State Highway Commission.

We further recommend that the following new amendments be adopted:

DECLARATION OF JOACHIM MORRISON IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT - 27

EXHIBIT 6

EXHIBIT 7

proviso in effect allows the Senate to reject an appointment to the commission by inaction. I believe this is bad policy and cannot accept such a procedure. A governor goes on record in making an appointment; if the law requires confirmation by the Senate, that body should go on record as confirming or rejecting the appointment. To allow rejection by inaction would be to deprive the governor, the appointee, and the public the right to know who opposed the appointment and the reasons for such opposition.

I am aware that the commission created by this act would be superseded by the new commission on public employment relations designated by Substitute Senate Bill No. 2408, which is also before me for approval. The same proviso appears in that bill, and for the reasons stated herein and for other reasons too, I intend to veto the pertinent portions of that act.

Recognizing that the substantive portions of this bill are unworkable without the existence of the commission created in section 4, and considering that the effective date of those elements of the bill is January 1, 1976, I would urge the Legislature to redraft this section at the next opportune moment.

With the exception of section 4 which I have vetoed, the remainder of the bill is approved."

CHAPTER 289

[Substitute House Bill No. 32]

WAGES AND HOURS——
MINIMUM WAGE——OVERTIME

AN ACT Relating to minimum wages; amending section 1, chapter 294, Laws of 1959 as last amended by section 1, chapter 107, Laws of 1974 ex. sess. and RCW 49.46.010; amending section 2, chapter 294, Laws of 1959 as last amended by section 1, chapter 9, Laws of 1973 2nd ex. sess. and RCW 49.46.020; adding a new section to chapter 49.46 RCW; declaring an emergency and providing an effective date.

Be it enacted by the Legislature of the State of Washington:

Section 1. Section 1, chapter 294, Laws of 1959 as last amended by section 1, chapter 107, Laws of 1974 ex. sess. and RCW 49.46.010 are each amended to read as follows:

As used in this chapter:

(1) "Director" means the director of labor and industries;

(2) "Wage" means compensation due to an employee by reason of his employment, payable in legal tender of the United States or checks on banks convertible into cash on demand at full face value, subject to such deductions, charges, or allowances as may be permitted by regulations of the director under *RCW 49.46.050;

(3) "Employ" includes to suffer or to permit to work;

(4) "Employer" includes any individual, partnership, association, corporation, business trust, or any person or group of persons acting directly or indirectly in the interest of an employer in relation to an employee;

(5) "Employee" includes any individual employed by an employer but shall not include:

(a) Any individual employed (i) on a farm, in the employ of any person, in connection with the cultivation of the soil, or in connection with raising or harvesting any agricultural or horticultural commodity, including raising, shearing, feeding, caring for, training, and management of livestock, bees, poultry, and fur-bearing animals and wildlife, or in the employ of the owner or tenant or other

operator of a farm in connection with the operation, management, conservation, improvement, or maintenance of such farm and its tools and equipment; or (ii) in packing, packaging, grading, storing or delivering to storage, or to market or to a carrier for transportation to market, any agricultural or horticultural commodity; and the exclusions from the term "employee" provided in this item shall not be deemed applicable with respect to commercial canning, commercial freezing, or any other commercial processing, or with respect to services performed in connection with the cultivation, raising, harvesting, and processing of oysters or in connection with any agricultural or horticultural commodity after its delivery to a terminal market for distribution for consumption;

(b) Any individual employed in domestic service in or about a private home;

(c) Any individual employed in a bona fide executive, administrative, or professional capacity or in the capacity of outside salesman (as such terms are defined and delimited by regulations of the director: PROVIDED HOWEVER, That such terms shall be defined and delimited by the state personnel board pursuant to chapter 41.06 RCW and the higher education personnel board pursuant to chapter 28B.16 RCW for employees employed under their respective jurisdictions);

(d) ((~~Any individual employed by the United States;~~

~~(e)~~)) Any individual engaged in the activities of an educational, charitable, religious, governmental agency or nonprofit organization where the employer–employee relationship does not in fact exist or where the services are rendered to such organizations gratuitously;

((~~(f)~~))(e) Any newspaper vendor or carrier;

((~~(g)~~))(f) Any carrier subject to regulation by Part 1 of the Interstate Commerce Act;

((~~(h)~~))(g) Any individual engaged in forest protection and fire prevention activities;

((~~(i) Any individual employed by the state, any county, city, or town, municipal corporation or quasi-municipal corporation, political subdivision, or any instrumentality thereof;~~

~~(j)~~)) (h) Any individual employed by any charitable institution charged with child care responsibilities engaged primarily in the development of character or citizenship or promoting health or physical fitness or providing or sponsoring recreational opportunities or facilities for young people or members of the armed forces of the United States;

((~~(k)~~))(i) Any individual whose duties require that he reside or sleep at the place of his employment or who otherwise spends a substantial portion of his work time subject to call, and not engaged in the performance of active duties;

(j) Any resident, inmate, or patient of a state, county, or municipal correctional, detention, treatment or rehabilitative institution.

(k) Any individual who holds a public elective or appointive office of the state, any county, city, town, municipal corporation or quasi municipal corporation, political subdivision, or any instrumentality thereof, or any employee of the state legislature.

(l) All vessel operating crews of the Washington state ferries operated by the state highway commission.

(m) Any individual employed as a seaman on a vessel other than an American vessel.

(6) "Occupation" means any occupation, service, trade, business, industry, or branch or group of industries or employment or class of employment in which employees are gainfully employed.

Sec. 2. Section 2, chapter 294, Laws of 1959 as last amended by section 1, chapter 9, Laws of 1973 2nd ex. sess. and RCW 49.46.020 are each amended to read as follows:

(1) Every employer shall pay to each of his employees who have reached the age of eighteen years wages at a rate of not less than one dollar and sixty cents per hour except as may be otherwise provided under subsections (2) through (7) of this section or as otherwise provided under this chapter: PROVIDED, That beginning the calendar year 1974, the applicable rate under this section shall be one dollar and eighty cents per hour, and beginning ((~~the calendar year 1975~~)) with the effective date of this act the applicable rate under this section shall be two dollars and ten cents an hour, and beginning the calendar year 1976 the applicable rate under this section shall be two dollars and thirty cents an hour.

(2) Any individual eighteen years of age or older, unless exempt under the provisions of section 1(5)(k)(8) of this 1975 amendatory act, employed by the state, any county, city, town, municipal corporation or quasi municipal corporation, political subdivision, or any instrumentality thereof shall be paid wages beginning with the effective date of this act, at a rate of not less than two dollars an hour, and beginning the calendar year 1976 at a rate of not less than two dollars and twenty cents an hour, and beginning the calendar year 1977 at a rate of not less than two dollars and thirty cents an hour.

(3) Any individual eighteen years of age or older engaged in performing services in a nursing home licensed pursuant to chapter 18.51 RCW, shall be paid wages beginning with the effective date of this act, at a rate of not less than two dollars and ten cents an hour, and beginning the calendar year 1976, at a rate of not less than two dollars and twenty cents an hour, and beginning the calendar year 1977, at a rate of not less than two dollars and thirty cents an hour.

(4) Any individual eighteen years of age or older engaged in performing services in a hospital licensed pursuant to chapter 70.41 RCW, or chapter 71.12 RCW, shall be paid wages beginning with the effective date of this act, at a rate of not less than two dollars and ten cents an hour, and beginning the calendar year 1976, at a rate of not less than two dollars and twenty cents an hour, and beginning the calendar year 1977 at a rate of not less than two dollars and thirty cents an hour.

(5) Any individual eighteen years of age or older employed in a retail or service establishment and who is so employed primarily in connection with the preparation or offering of food or beverages for human consumption, either on the premises, or by such services as catering, banquet, box lunch, or curb or counter service, to the public, to employees, or to members or guests of members of clubs shall be paid wages beginning with the effective date of this act, at a rate of not less than two dollars an hour, and beginning the calendar year 1976, at a rate of not less than two dollars and twenty cents an hour, and beginning the calendar year 1977, at a rate of not less than two dollars and thirty cents an hour.

NEW SECTION. Sec. 3. There is added to chapter 49.46 RCW a new section to read as follows:

(1) No employer shall employ any of his employees for a workweek longer than forty hours unless such employee receives compensation for his employment in excess of the hours above specified at a rate not less than one and one-half times the regular rate at which he is employed, except that the provisions of this subsection (1) shall not apply to any person exempted pursuant to RCW 49.46.010(5) as now or hereafter amended and the provision of this subsection shall not apply to employees who request compensating time off in lieu of overtime pay nor to any individual employed as a seaman whether or not the seaman is employed on a vessel other than an American vessel.

(2) No public agency shall be deemed to have violated subsection (1) of this section with respect to the employment of any employee in fire protection activities or any employee in law enforcement activities (including security personnel in correctional institutions) if: (a) In a work period of twenty-eight consecutive days the employee receives for tours of duty which in the aggregate exceed two hundred and forty hours; or (b) in the case of such an employee to whom a work period of at least seven but less than twenty-eight days applies, in his work period the employee receives for tours of duty which in the aggregate exceed a number of hours which bears the same ratio to the number of consecutive days in his work period as two hundred forty hours bears to twenty-eight days; compensation at a rate not less than one and one-half times the regular rate at which he is employed: PROVIDED, That this section shall not apply to any individual employed (i) on a farm, in the employ of any person, in connection with the cultivation of the soil, or in connection with raising or harvesting any agricultural or horticultural commodity, including raising, shearing, feeding, caring for, training, and management of livestock, bees, poultry, and furbearing animals and wildlife, or in the employ of the owner or tenant or other operator of a farm in connection with the operation, management, conservation, improvement, or maintenance of such farm and its tools and equipment; or (ii) in packing, packaging, grading, storing or delivering to storage, or to market or to a carrier for transportation to market, any agricultural or horticultural commodity; or (iii) commercial canning, commercial freezing, or any other commercial processing, or with respect to services performed in connection with the cultivation, raising, harvesting, and processing of oysters or in connection with any agricultural or horticultural commodity after its delivery to a terminal market for distribution for consumption: PROVIDED FURTHER, That in any industry in which federal law provides for an overtime payment based on a work week other than forty hours then provisions of this section shall not apply; however the provisions of the federal law regarding overtime payment based on a work week other than forty hours shall nevertheless apply to employees covered by this section without regard to the existence of actual federal jurisdiction over the industrial activity of the particular employer within this state: PROVIDED FURTHER, That "industry" as that term is used in this section shall mean a trade, business, industry, or other activity, or branch, or group thereof, in which individuals are gainfully employed (Section 3(h) of the Fair Labor Standards Act of 1938, as amended (Public Law 93-259).

NEW SECTION. Sec. 4. The director of the department of labor and industries and the commissioner of employment security shall each notify employers of the requirements of this act through their regular quarterly notices to employers.

NEW SECTION. Sec. 5. This 1975 amendatory act is necessary for the immediate preservation of the public peace, health, and safety, the support of the state government and its existing public institutions, and shall take effect September 1, 1975.

Passed the House June 6, 1975.
Passed the Senate June 5, 1975.
Approved by the Governor July 2, 1975.
Filed in Office of Secretary of State July 2, 1975.

CHAPTER 290

[Substitute House Bill No. 40]
THE WASHINGTON HEALTH
MAINTENANCE ORGANIZATION ACT OF 1975

AN ACT Relating to licensing of health maintenance organizations; creating a new chapter in Title 48 RCW; adding a new section to chapter 41.04 RCW; and prescribing penalties.

Be it enacted by the Legislature of the State of Washington:

NEW SECTION. Section 1. There is added to Title 48 RCW a new chapter to read as set forth in sections 2 through 19, 21 through 25 of this 1975 amendatory act.

NEW SECTION. Sec. 2. In affirmation of the declared principle that health care is a right of every citizen of the state, the legislature expresses its concern that the present high costs of health care in Washington may be preventing or inhibiting a large segment of the people from obtaining access to quality health care services.

The legislature declares that the establishment of qualified prepaid group and individual practice health care delivery systems should be encouraged in order to provide all citizens of the state with the freedom of choice between competitive, alternative health care delivery systems necessary to realize their right to health. It is the purpose and policy of this chapter to provide for the development and registration of prepaid group and individual practice health care plans as health maintenance organizations, which the legislature declares to be in the interest of the health, safety and welfare of the people.

NEW SECTION. Sec. 3. As used in this chapter, the terms defined in this section shall have the meanings indicated unless the context indicates otherwise.

(1) "Health maintenance organization" means any organization receiving a certificate of authority by the commissioner under this chapter which provides comprehensive health care services to enrolled participants of such organization on a group practice per capita prepayment basis or on a prepaid individual practice plan, either directly or through contractual or other arrangements with other institutions, entities, or persons, and which qualifies as a health maintenance organization pursuant to sections 4 and 5 of this 1975 amendatory act.

EXHIBIT 8

2-10

FARM WORKERS
FAMILY HEALTH CENTER

PHONE 865-2719 • 302 ASOTIN AVENUE • P. O. BOX 390 • TOPPENISH, WASHINGTON 98948

February 7, 1975

Labor Committee of the
State House of Representatives
Capitol Building
Olympia, WA 98504

Gentlemen:

I would like to urge passage of House Bill 32, which, I understand, would include farm workers under the State Minimum Wage Law. I urge you to vote against the amendment which attempts to exclude farm workers from such coverage. It seems inhuman to me to single-out the farm worker and exclude him from the kind of legal protection that is afforded everyone else. He is grossly under-paid and this has its impact on his entire life, including his health.

Sincerely,

FARM WORKERS FAMILY HEALTH CENTER

C. David Spencer

C. David Spencer, M.D.
Medical Coordinator

CDS:sjf

EXHIBIT 14

FILED
MAR 01 2018
YAKIMA COUNTY CLERK

15 pages

SUPERIOR COURT OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, v. DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER, Defendants, and WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU, Intervenors.	No. 16-2-03417-39 **DECLARATION OF MARC C. COTE IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT**

I, Marc C. Cote, declare as follows:

1. I am a partner with Frank Freed Subit & Thomas LLP ("FFST") and co-counsel for Plaintiffs and the Class, along with Columbia Legal Services, in the above-captioned matter.

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Suite 1200 Hoge Building, 705 Second Avenue
Seattle, Washington 98104-1798
(206) 682-6711

I make this declaration based on personal knowledge, and I am competent to testify regarding the following facts.

2. Attached hereto as Exhibit 1 is a true and correct copy of a DeRuyter Brothers Dairy, Inc. employment policy document. Defendant DeRuyter Brothers Dairy, Inc. ("Defendant DeRuyter") Bates-stamped this document DER 000990-991 and produced it in discovery on March 17, 2017.

3. Attached hereto as Exhibit 2 is a true and correct copy of an Excel spreadsheet file that Defendant DeRuyter produced in discovery on May 8, 2017. This spreadsheet file is provided on a disk because of the large volume of data contained in it. Defendant DeRuyter named the document "Timecard Input." Defendant DeRuyter's counsel described this document to me as timekeeping and payroll data showing the rate of pay and hours worked by Class members during the Class period. The spreadsheet shows Defendant DeRuyter's timekeeping and payroll data from December 2013 through the end of November 2016.

4. The contents of Exhibit 2 are voluminous. Attached hereto as Exhibit 3 is a true and correct copy of the spreadsheet file included in Exhibit 2 with the following additions: (1) a sheet with an ER 1006 summary ("OT Summary") of calculations of approximate overtime hours worked by Class members during the Class period based on the data produced in Exhibit 2; (2) separate sheets for each year during the Class period for which Defendant DeRuyter provided data, including the original data Defendant provided and ER 1006 calculations of the approximate overtime hours worked. This spreadsheet shows a calculation of the estimated number of weeks and hours that Class members worked overtime. For each year's sheet, my office staff added four columns (N, O, P, and Q) to Exhibit 3. This spreadsheet file is provided

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on a disk because of the large volume of data contained in it. The ER 1006 calculations in each column are described below.

5. The first added column is "Average Hrs Per Week" (column N), which shows a calculation of the average number of hours worked per week within a pay period. The average number of hours worked per week is calculated by dividing the "Total Hrs on Timecard" (column M) by the number of days per pay period (15) and multiplying the results by the number of days per week (7).

6. The second added column is "Weeks Worked" (column M), which shows a calculation of the estimated number of weeks worked within a pay period. The estimated number of weeks worked is calculated based on the quantity of days worked within a pay period (column I, "Qty"). If "Qty" (column I) is less than or equal to 7, then the estimated number of weeks worked equals 1. If "Qty" (column I) is greater than seven, then the estimated number of weeks worked equals 2.

7. The third added column is "Weeks >40" (column P), which shows a calculation of the estimated number of weeks worked within a pay period for which the total number of hours is greater than 40. This is calculated based on "Qty" (column I), "Total Hrs on Timecard" (column M), and "Average Hrs Per Week" (column N). If "Qty" (column I) is less than or equal to 7 and "Total Hrs on Timecard" (column M) is greater than 40, then the estimated number of weeks worked over 40 hours equals 1. If "Qty" (column I) is greater than 7 and "Average Hrs Per Week" (column N) is greater than 40, then the estimated number of weeks worked over 40 hours equals 2.

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8. The fourth added column is "Total OT Hrs" (column Q), which shows a calculation of the total number of overtime hours worked within a pay period. This is calculated by subtracting 40 from "Total Hrs on Timecard" (column M) if "Qty" (column I) is less than or equal to 7, or by subtracting 40 from "Average Hrs Per Week" (column N) if "Qty" (column I) is greater than 7 and multiplying the result by 2.

9. The chart below is an ER 1006 summary of the data calculations in Exhibit 3. It shows calculations of the estimated number of weeks worked ("# Weeks"), the estimated number of weeks worked over 40 hours ("# OT Weeks"), the estimated percent of weeks worked over 40 hours ("Percent OT"), and the estimated total number of overtime hours worked ("Total OT Hrs") by Class members during the Class Period, from 2013 to 2016. The calculations show that based on Defendant DeRuyter's data, Class members worked almost 48,000 hours of overtime during the Class Period, not including unrecorded, off-the-clock work time. This chart can be found on tab "OT Summary" in Exhibit 3. A printout of this portion of Exhibit 3 is also included with this declaration.

Figure 1: ER 1006 Summary of Approximate Class Overtime

Year	# Weeks	# OT Weeks	Percent OT	Total OT Hrs
2013	124	105	84.68%	1,674.2
2014	1,419	1,253	88.30%	16,843.2
2015	1,503	1,248	83.03%	15,485.5
2016	1,375	1,134	82.47%	13,900.6
Total	4,421	3,740	84.62%	47,903.5

10. Attached hereto as Exhibit 4 is a true and correct copy of an ER 1006 summary of relevant data from Exhibit 2. This spreadsheet file is provided on a disk because of the large volume of data contained in it. This spreadsheet shows ER 1006 calculations of the number of

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weeks and hours that Plaintiffs Jose Martinez-Cuevas and Patricia Aguilar worked overtime, based on DeRuyter's data in Exhibit 2. The number of weeks of overtime is calculated by adding the number of hours worked per shift in columns V, AE, AN, AW, BF, BO, BX, CG, CP, CY, DH, DQ, DZ, EI, ER, and FA for each week and then counting how many weeks totaled more than 40 hours. The number of hours of overtime is calculated by subtracting 40 from the total hours per week, if the total hours per week is greater than 40. For example, the number of hours worked by Plaintiff Jose Martinez-Cuevas during the week of Monday, June 16, 2014 to Sunday, June 22, 2014 totaled 60.35 hours, which equals one overtime week and 20.35 hours of overtime.

11. The charts below are ER 1006 summaries of the data calculations in Exhibit 4. They show calculations of the number of weeks Plaintiffs worked for Defendants ("# Weeks"), the number of weeks Plaintiffs worked over 40 hours ("# OT Weeks"), the calculated percentages of weeks Plaintiffs worked over 40 hours ("Percent OT"), and the calculated total number of overtime hours Plaintiffs worked ("Total OT Hrs"), not including unrecorded, off-the-clock work, based on Defendant DeRuyter's data. According to Defendant DeRuyter's data, the calculations show that Plaintiff Martinez-Cuevas worked approximately 724.9 hours of overtime and Plaintiff Aguilar worked approximately 490.3 hours of overtime during the Class Period. These charts can be found on tab "Pls OT Summary" in Exhibit 4. A printout of this portion of Exhibit 4 is also included with this declaration.

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Figure 2: ER 1006 Summary of Plaintiff Martinez-Cuevas Overtime

Year	# Weeks	# OT Weeks	Percent OT	Total OT Hrs
2014	34	29	85.3%	407.3
2015	32	29	90.6%	317.6
Total	66	58	87.9%	724.9

Figure 3: ER 1006 Summary of Plaintiff Aguilar Overtime

Year	# Weeks	# OT Weeks	Percent OT	Total OT Hrs
2015	33	29	87.9%	319.8
2016	18	14	77.8%	170.5
Total	51	43	84.3%	490.3

I declare under penalty of perjury under the laws of the State of Washington and the United States that the foregoing is true and correct.

Executed and dated this 26th day of February, 2018.

Marc C. Cote, WSBA #39824

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Exhibit 1

DeRuyter Brothers DAIRY, INC.

1. Shifts start at 7:30am, 3:30pm, or 11:30pm. All milkers must be in the pit READY to work by their start time.
2. There will be a 30 minute wash at the beginning and end of each shift. All milkers must stay until all cows are milked and help clean the barn, unless parlor manager excuses them early.
3. Cows will be pre and post-dipped with iodine, stripped, and wiped with a clean towel. Only ONE TOWEL PER COW to be used.
4. At least three (3) milkers are required to be present in the pit at all times, this includes when the head milker is doing tasks away from pit.
5. **Milker sleeves and clean gloves must be worn to work at all times, employees will be given one set and are responsible for replacing them if they are lost or stolen. In the event of quit or termination, employees are required to return milker sleeves and towel bag or apron if one has been issued to them.**
6. Milker Towels are not permitted for use in the bathroom.
7. Use the big red hose to clean machines and pit floor at least one time per pen, but not when cows are on cow deck.
8. Employees, who would like an extra day off, need to find their own replacement, fill out the "Shift Change Sheet," and let parlor manger know 24 hours in advance.
9. Any EXCUSED absence or personal leave must be approved by herd manager. Any requested documentation must be submitted immediately upon return to work.
10. After the First UNEXCUSED absence, employee will receive a written warning. A second unexcused absence may result in termination.

- Examples of Unexcused Absences: Overslept, Car problems, No Babysitter, Court, Personal or Family Illness without Doctor's Note, Appointments.
- Examples of Excused Absences: Illness with Doctor's Note, Time off with prior approval, Family emergency with management notification.
- Family Emergencies (Death in Family, Being Thrown in Jail) may be excused. Decisions are solely made by the discretion of the Herd Manager on a case by case basis.

11. If the parlor manager asks an employee to work on their day off, they will receive a half bonus shift($50) or if possible the option for a different day off; If the parlor manager asks an employee to work a double shift they will receive a bonus shift($100).
12. For the safety of cows and employees, there will be no running or moving quickly around cows, and no whistling or other loud noises.
13. Employees and visitors are to park vehicles in designated parking areas, behind yellow curb markers. Driving on lawns or parking by barns is strictly forbidden.
14. No visitors, including employee family members, are allowed outside of designated parking areas without permission from manager or owner.
15. Headphones, radios, and cell phones are NOT allowed in the pit.
16. NO SMOKING IN BARNS.
17. NO eating or drinking in the milking pit, Food and Drinks need to be kept in lockers or designated cupboard.
18. Employees will work in BOTH Barn 1 and Barn 2.
19. The company is a drug and alcohol free workplace. Random drug testing may occur. Any job related injury/accident/incident may result in a drug and/or alcohol test. Your manager/supervisor reserves the right to request a drug/alcohol test from any employee at any time before, during, or after their work shift. Failure to comply may result in termination.

20. On the job injuries must be reported to a supervisor immediately.
21. Each shift works under the direction of head milker and parlor manager; any work related concerns or safety issues must be immediately brought to their attention.
22. Text messages are not an acceptable form of communication. After hours problems should be directed to night/weekend supervisor or discuss with parlor manager the next day. The parlor manager should only be contacted for emergencies after hours.
23. **Paychecks may only be picked up between the hours of 8am-5pm at office. Pay dates are the 5th and 20th of the month. If the pay date falls on a Saturday, you will be paid on Friday. If the pay date falls on a Sunday; you will be paid on the following Monday.**
24. If there is a problem with a paycheck, let the parlor manager know before the end of the next pay period. If adjustment is not correct on next paycheck, let the parlor manager know immediately.
25. DeRuyter Brothers Dairy is not responsible for any lost or stolen personal property.
26. Closed circuit cameras are utilized on premise.
27. All milkers and cowpushers have the option of a 30 minute paid break during each shift. It is their responsibility to take their break.
28. Breaks: You are allowed one 10-minute rest break for every 4 hours worked. Breaks should be taken mid-morning & mid- afternoon (10 minutes from stopping work to starting work again)
29. Time cards are not to be punched more than 15 minutes before or after a shift start/end time.
30. **Employee Handbooks are located at the break rooms and main office. Employees are responsible to read the handbook and ask any question they may have regarding the policies detailed in the handbook. Additional copies can be made by request at the main office.**
31. Any act that violates the safety of other employees or cows will result in IMMEDIATE TERMINATION.
32. Employees will be written up for NOT FOLLOWING PARLOR RULES and further disciplinary action will take place for repeat violations.

Employee: _____ Date: _____

SUBJECT TO CHANGE AT MANAGENMENT DISCRETION

Exhibit 2

See disk that has been provided to the Court.

Exhibit 3

Exhibit 3 - Tab "OT Summary"

The remaining sheets are on a disk that has been provided to the Court.

ER 1006 Summary of Class Overtime

Year	# Weeks	# OT Weeks	Percent OT	Total OT Hrs
2013	124	105	84.68%	1,674.2
2014	1419	1253	88.30%	16,843.2
2015	1503	1248	83.03%	15,485.5
2016	1375	1134	82.47%	13,900.6
Total	4421	3740	84.62%	47,903.5

Exhibit 4

Exhibit 4 - Tab "Pls OT Summary"

The remaining sheets are on a disk that has been provided to the Court.

ER 1006 Summary of Plaintiff Martinez-Cuevas Overtime

Year	# Weeks	# OT Weeks	Percent OT	Total OT Hrs
2014	34	29	85.3%	407.3
2015	32	29	90.6%	317.6
Total	66	58	87.9%	724.9

ER 1006 Summary of Plaintiff Aguilar Overtime

Year	# Weeks	# OT Weeks	Percent OT	Total OT Hrs
2015	33	29	87.9%	319.8
2016	18	14	77.8%	170.5
Total	51	43	84.3%	490.3

EXHIBIT 15

Lori Jordan Isley, WSBA # 21724
Joachim Morrison, WSBA # 23094
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6 South Second Street, Suite 600
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THE HONORABLE MICHAEL G. McCARTHY

FILED
MAR 01 2018
YAKIMA COUNTY CLERK

SUPERIOR COURT OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, v. DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER, Defendants, and WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU, Intervenors.	No. 16-2-03417-39 DECLARATION OF MARGARET LELAND

I, Margaret Leland, declare as follows:

1. I am an employee of the Washington State Department of Labor and Industries (Department) and work in the Governmental Affairs and Policy Division. I have worked in the Governmental Affairs and Policy Division since 2013 and my current position is Policy Director.

My duties include coordinating agency responses to inquiries from business representatives, labor advocates, and members of the legislature.

2. Since 2015, the Department has received and responded to requests for workers' compensation claim rate data for the dairy industry from business representative, labor advocates, and members of the legislature.

3. I certify that Exhibit 1 is a copy of workers' compensation data for the dairy industry updated on February 23, 2018.

I declare under penalty of perjury under the laws of the state of Washington and the United States that the foregoing is true and correct.

Executed and dated this 26th day of February, 2018.

M Leland

Margaret Leland

Columbia Legal Services
6 South Second Street, Suite 600
Yakima, WA 98901
(509) 575-5993

EXHIBIT

1

Workers' Compensation State Fund Claim Data[1]
Washington State Dairy Industry, NAICS Code 112120

Updated February 23, 2018

All Allowed Claims Rates

The following data includes both non-compensable claims (medical only, no time loss from work) and compensable claims (claims where the worker was injured seriously enough to qualify for wage replacement or disability benefits). As indicated below, non-compensable injuries make up the largest proportion of claims each year.

In 2015, all allowed claims rate was 11.3 per 100 workers. This rate for the dairy industry is 121% higher than the rate for all state fund industries combined (5.1) and 19% higher than the agricultural sector as whole (9.5).

State Fund Claims All Allowed Claims Rate	
Calendar Year	Injury Rate Per 100 Full Time Employees
2009	10.1
2010	10.3
2011	9.4
2012	10.5
2013	10.5
2014	11.1
2015	11.3
2016	10.0

Compensable Claims Rate

The following data includes compensable claims (claims where the worker was injured seriously enough to qualify for wage replacement or disability benefits).

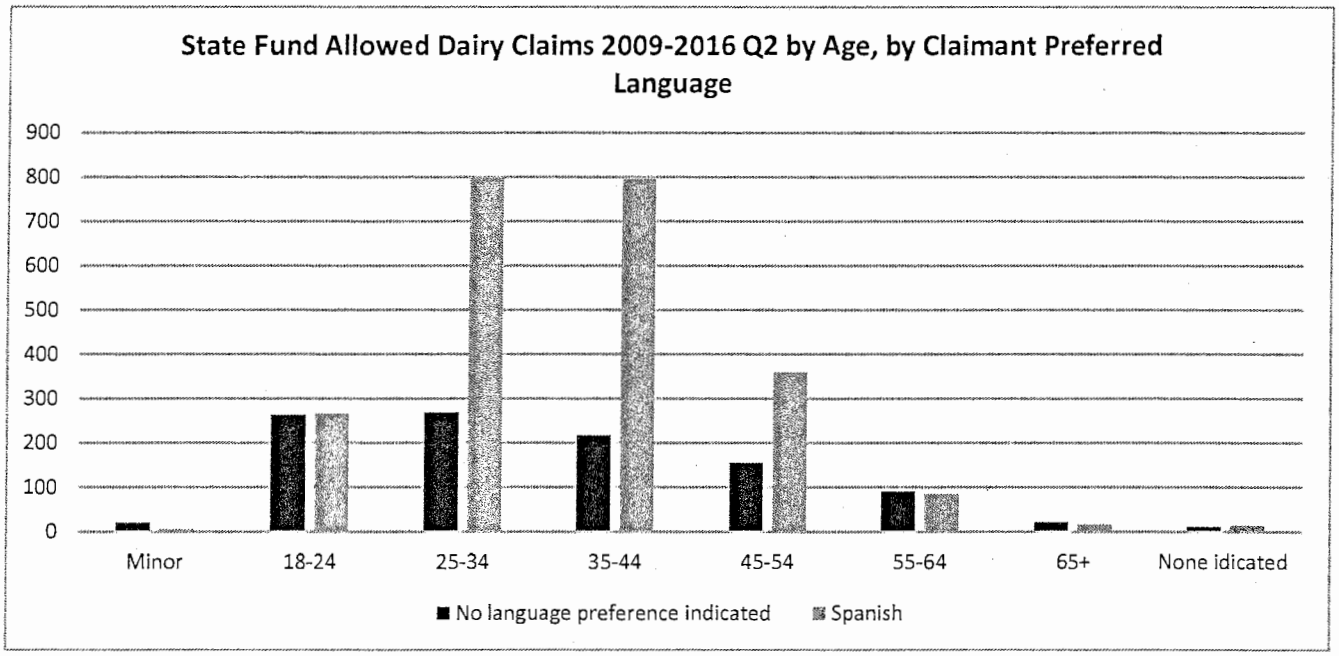
In 2015, the compensable claims rate was 3.1 per 100 workers. This rate for the dairy industry is 138% higher than rate for all state fund industries combined (1.3) and 41% higher than the rate for the agricultural sector as a whole (2.2).

State Fund Compensable Claims Rate	
Calendar Year	Compensable Claims Rate Per 100 Full Time Employees
2009	2.4
2010	3.0
2011	2.3
2012	2.8
2013	2.5
2014	3.0
2015	3.1
2016 through Q2	2.6

[1] *Historical claim rates may change when updated due to additional claims filed that may apply to past injury quarters or claims develop from medical only claims to compensable claims. The data is current as of 12/31/17 and reported through the second quarter of 2016 (January 1 through June 30).*

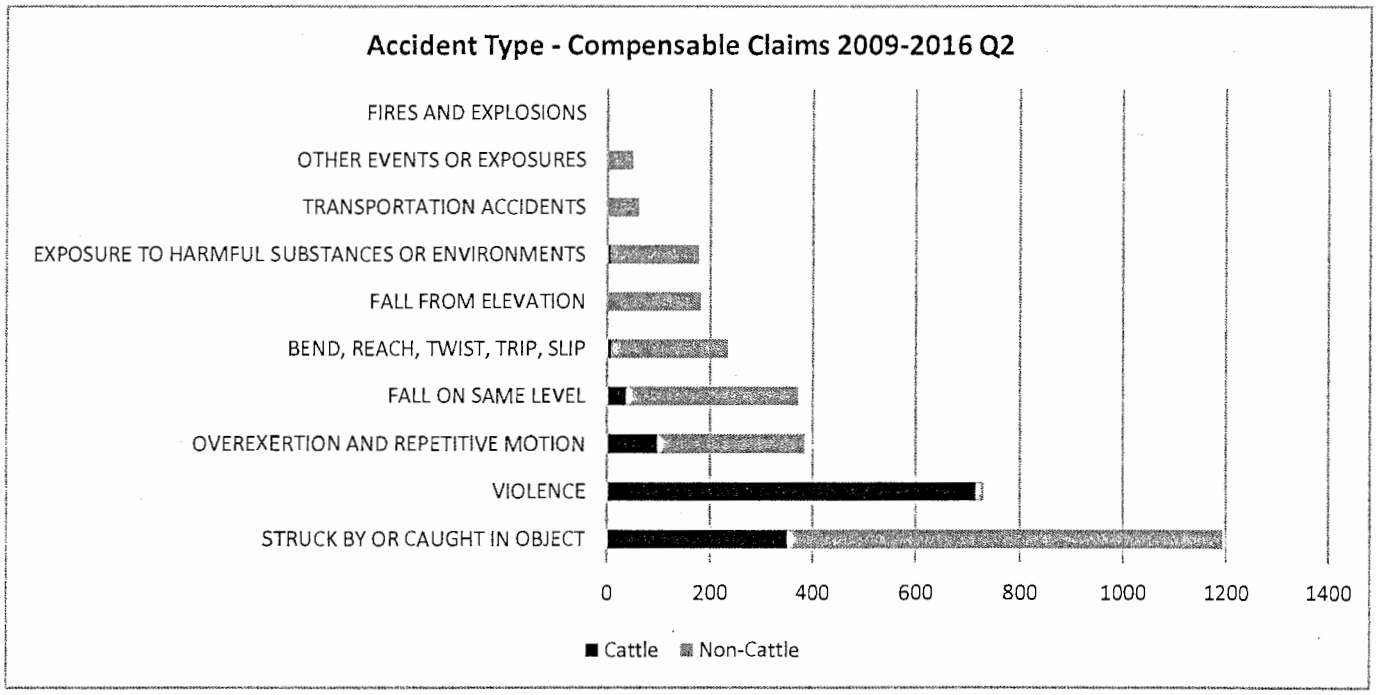
All Allowed Claims - Age and Preferred Language

On average, 70% of claimants indicate a preference for communication in Spanish.



Compensable claims – Accident types

Cattle are involved in a large portion of compensable claims, especially in "struck-by" and "violence" categories, as indicated by the dark blue bars in the table below. Accident types categorized as "violence" include assaults and contact by animals.



Compensable Claims - Nature of Injury or illness

The nature of the injury or illness identifies the principle physical characteristic of the work related injury or illness.

Nature of Injury Compensable Claims 2009-2016 Q2	Percent of Total Compensable Claims
Traumatic injuries to muscles, tendons, ligaments, joints, etc.	32%
Traumatic injuries to bones, nerves, spinal cord	20%
Surface wounds and bruises	15%
Multiple traumatic injuries and disorders	11%
Other traumatic injuries and disorders	8%
Open wounds	7%
Other	7%

Staff contact

Maggie Leland, Policy Director
(360) 902-4504, Maggie.leland@lni.wa.gov

EXHIBIT 16

Lori Jordan Isley, WSBA # 21724
Joachim Morrison, WSBA # 23094
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THE HONORABLE MICHAEL G. McCARTHY

FILED 2 pages
MAR 01 2018
YAKIMA COUNTY CLERK

SUPERIOR COURT OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, v. DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER, Defendants, and WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU, Intervenors.	No. 16-2-03417-39 DECLARATION OF PATRICIA AGUILAR IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

I, Patricia Aguilar, declare under penalty of perjury under the laws of the State of Washington:

1. I worked as a milker for DeRuyter Brothers Dairy, Inc. in Outlook, Washington from May 2015 until May 2016, and February 2017 until May 2017.

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2. I almost always worked over forty hours per week, but DeRuyter never paid me overtime compensation at one and a half times my regular rate for hours over forty in a week.

3. I was injured four times while working for DeRuyter. Almost all of my injuries were caused by contact with the cows.

4. In May 2015, I was kicked in the hand by a cow when I was trying to hook up the milking machine to the cow.

5. In May 2015, I was also kicked in the chest by a cow when moving it into position to hook up the milking machine.

6. In June 2015, I contacted dermatitis on my arm, possibly from the milking sleeve which all milkers are required to wear.

7. Finally, in 2017, I slipped while pushing cows in to be milked and I hurt my hip and back.

8. I believe the long hours I worked at DeRuyter made it more likely that I would get injured.

9. During the time I worked at DeRuyter, I was worried that I would be injured and then not able to work and support my family.

10. My mother was also injured while working for DeRuyter. She was pinned against a wall while pushing cows into the milking facility.

11. During the time I worked at DeRuyter, I am aware of only one individual who was not Latino and who worked as a milker for a short time.

12. I attended primary school and middle school outside of Washington State. I attended Toppenish High School for about three months through an on-line program. I did not graduate from High School and I do not have my GED.

DATED this 20th day of February, 2018 in Granger, Washington.

Patricia Aguilar

Patricia Aguilar

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EXHIBIT 17

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17 pages

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SUPERIOR COURT OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, v. DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER, Defendants, and WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU, Intervenors.	No. 16-2-03417-39 DECLARATION OF PAUL APOSTOLIDIS IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

I, Paul Apostolidis, declare as follows:

1. I am a Professor and Judge & Mrs. Timothy A. Paul Chair of Political Science at Whitman College in Walla Walla, Washington and a Professorial Fellow, Institute for Social Justice, Australian Catholic University, Sydney, NSW, Australia. I make this affidavit based on personal knowledge, and am competent to testify regarding the following facts.

2. This declaration outlines major findings from ten years of research (2005-2014) through Whitman College on social, economic, and political inequalities currently facing Latinos in Washington State, and affecting all whose conditions of life are influenced by the wellbeing of Latino residents of the state of Washington. The research summarized in paragraphs 6 through 12, and 14 through 15 has been done by Whitman undergraduates under my direction in an ongoing community-based research (CBR) program that I founded in 2005 titled "The State of the State for Washington Latinos." The research summarized in paragraph 13 is based on my own research as a scholar of political science.

3. Whitman College's project on "The State of the State for Washington Latinos" has received national recognition and validation from institutions at the highest levels of higher education. The project received major funding from 2008-2010 from Princeton University's Community-Based Learning Initiative (CBLI). We succeeded in a nationwide competition in being named as a recipient of an "Innovation Sub-Grant," joining roughly forty other colleges and universities across the country in a network to develop new approaches to CBR with the aid of a major federal Learn & Serve grant that Princeton administered. In 2008, I delivered the keynote lecture at the annual meeting of the Council on Undergraduate Research, which invited me to discuss the "State of the State" project based on our record of innovation and academic rigor. Accounts of our program have also been featured in the peer-reviewed *Journal of Higher Education Outreach and Engagement* and in documents surveying leading CBR programs nationwide produced by Princeton's Community-Based Learning Initiative.

4. I hold the Judge & Mrs. Timothy A. Paul Endowed Chair of Political Science in the Department of Politics at Whitman College. I earned tenure and promotion to Associate Professor in 2003, and was promoted to Full Professor in 2011. I am also a Professorial Fellow with the Institute for Social Justice at Australian Catholic University in Sydney, Australia. I am the author of several books with leading academic presses, including a forthcoming book in 2018 with Oxford University Press, and I also have authored numerous academic articles in distinguished, peer-reviewed journals, including articles on Latino immigrants in our region. My CV is attached to this document.

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5. Since its inception, "The State of the State for Washington Latinos" has endeavored to analyze a broad range of policy issues in order to provide a widely inclusive picture of the social, economic, and political inequalities facing Latinos in the state of Washington. We have analyzed the barriers to Latino voting rights and political participation as well as the multiple social problems where stronger Latino political representation and better public policy could help make a difference in developing solutions. The paragraphs below summarize major research findings regarding each of the main areas we adopted for study from 2005 through 2014.

6. Voting Rights and Political Representation: Major Trends. Latinos are dramatically under-represented in local elected offices in the ten counties of Washington State with the highest percentage Latino populations. A thorough investigation of political representation and elections laws in these counties revealed that as of December 2009, out of a total of 1,891 local offices only 78 were held by Latinos – a level of 4.1% despite Latino populations ranging from 14.8% to 55.1% in the counties examined. No political offices were exceptions to this pattern of representation. (A 2012 study by a consortium of northwest public radio organizations led by Oregon Public Broadcasting (OPB), which aimed to follow up on our Whitman research by applying the same methods of analysis to investigate levels of Latino political representation across Washington, Oregon, and Idaho, found similarly striking inequalities: among all city councilors, school board members, county commissioners, state elected officials, and US Congress members in these states, just two percent were Latinos, although Latinos constituted 11 percent of the population.) Nearly all local elections in Washington are conducted under at-large voting systems, which tend to systematically reduce the influence of the Latino vote. In addition, state law restricts any changes to the method of election for most local offices. Also, Latinos in the ten counties examined disproportionately possess the socio-demographic characteristics that contribute to low levels of political participation. In these ten counties, furthermore, a historical pattern existed from at least 1983 to at least 2011 according to which only 5% of elections for city council or school board were won by Latinos (309 of 5,882 local races). Although Latino representation grew over this time-period in terms of the absolute number of Latino elected officials in these counties, the under-

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representation of Latinos in local government actually increased in magnitude because the Latino population increased at a faster rate than Latino representation. Even in areas with particularly high concentrations of Latinos in the population, Latino voter registration averages less than half of non-Latino voter registration. Overall, Latino political representation throughout the state of Washington, including in the areas where the Latino population is concentrated, is at dramatically low levels; Latino voter registration and electoral participation are at very low rates, especially compared to other populations; and patterns of voting behavior interact with electoral rules to prevent Latino representation and participation from increasing (see below).

7. Voting Rights and Political Representation: Case Studies. Case studies of municipalities in the Yakima Valley with very large Latino populations but very low levels of Latino political representation have demonstrated that the interaction of at-large electoral districts and racially polarized patterns of voting behavior has helped to produce severe deficits in Latino political representation. In Sunnyside, Washington, our 2006 research showed that racial bloc voting existed in this town where city council members were all elected through a voting system based on at-large districts, Latinos comprised 75% of the town's population, and only one city council member was a Latino. Likewise, in Toppenish, Washington, our 2008 research showed that racially polarized voting existed in elections for the school board, on which only one of five members was a Latino in a town with a Latino population of over 75% and at-large elections for school board (and where Latinos had been elected only 4 times out of 17 school board seat elections from 1999-2007). According to our 2008 research, Wapato, Washington, where Latinos again make up 75% of the municipal population, also has an electoral system for school board in which all five members are elected through at-large elections. As of April 2008, only one of five members was Latino, Latinos had been elected only twice out of 14 school board seat elections from 1999-2007, and a distinctive pattern of racially polarized voting existed in school board elections.

8. Political Participation and Civic Engagement. Interview-based research and content analysis of Spanish-language newspapers suggest that Washington's Latinos face numerous social barriers to effective participation in civic life, including but not limited to voting. The major Spanish-language newspapers in central and eastern Washington, where the

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Latino population is concentrated, tend to give scant coverage to local news and rely heavily on content provided by newswire sources. Latino youth show a distinctive and strong interest in shouldering civic responsibilities and learning about public affairs, as survey research in Walla Walla demonstrated in 2006. Yet neither high school curricula nor leading civic and political organizations effectively reach Latino youth (e.g., in Pasco, where Latinos now constitute a majority of the local population), although promising examples of school-based programs to spark civic engagement among youth have existed (e.g., a successful but now-defunct GEAR-UP program and follow-up efforts in Quincy). Both community organizing and local electoral campaigns for Latino candidates boost prospects for Latino civic engagement through family-oriented strategies, civic educational activities, and person-to-person communication. These successes are particularly notable because they have occurred in a climate of general Latino distrust of local authorities, especially police, in particular due to the participation of local law enforcement in the federal "Secure Communities" immigration control initiative. Latino electoral candidacies and victories, however, are rare for the reasons explained in the preceding paragraphs, and there is continuing uneasiness and sometimes antagonism among non-Latino local leaders toward the idea of greater Latino community power. At the level of neighborhood-based organizing, such as Barrios Unidos in Toppenish and Commitment to Community in Walla Walla, there are clear – albeit scattered and sporadic – signs of the Latino potential for robust civic engagement especially in ways that involve youth. However, a more consistent, widespread, and cumulative process of Latino empowerment that links local civic engagement to a broadening sphere of public communication, and to sustained participation in policy-making and electoral processes, has yet to materialize in Washington State.

9. Education: General. Educational attainment is well known as a key contributor to political empowerment, as a vast array of social scientific research confirms. A constitutional mandate exists in Washington State to provide for the education of the young as the foremost public responsibility. The Latino population in K-12 schools grew by well over 350 percent between 1986 and 2009, and Latino students are expected to experience a 150 percent growth in population by 2030. Yet pronounced, historical rooted disparities persist between the educational achievements and opportunities of Latino children and youth and their non-Latino peers, as

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repeated reports on the "achievement gap" have demonstrated. Dual-language immersion programs in bilingual education have been shown to be especially effective in promoting greater educational success for English-Language Learners (ELL) but these programs have not been made sufficiently available, especially in high school. Public schools also do not offer sufficient training to staff in cultural competency, even though such programs have been shown to promote positive educational outcomes for Latino students and even though a 2009 unfunded mandate expressed recognition by the legislature that promoting cultural competency is an effective means for diminishing the educational achievement gap. Public schools also have disproportionately few Latino teachers compared to Latino students; this is a problem, in part, because Latino teachers are more inclined to understand the need for cultural competency and to exercise such competency in their dealings with students. School-based health centers also promote educational achievement by minority and underserved youth, by improving access to health care for these students; but Washington State has not supported SBHCs in law or policy, despite having made public commitments to insuring all children as well as serving the health care needs of racial minority and low income populations.

10. Education: Higher Education. Deficits in financial, cultural, and social capital inhibit Latino parents from understanding mainstream pathways to higher education and a brighter economic future for their children, even as immigrant values and experiences have fostered a distinctly positive orientation toward educational aspiration among Latino families. An assortment of public programs (e.g., GEAR-UP, Achievement Via Individual Determination (AVID), and TRiO) mitigates the impact of these problems, to a degree, both by augmenting access to practical information about higher education and cultivating higher expectations for personal achievement in this domain among Latino youth. However, major structural factors severely limit the overall extent to which such programs can reasonably be expected to erase the achievement gap in Latino higher education enrollment. These factors include: the massive and continually escalating costs of higher education; the secular shift in financial aid from grants to loans in recent decades; the failure of Congress to provide a path to legalization for undocumented youth even when they perform well in school; the mounting efforts by federal authorities (often in cooperation with local law enforcement) to arrest, detain, and deport

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undocumented persons, which fuel fear and disengagement from educational institutions in Latino communities; and a pervasive atmosphere of racism that Latino students experience in their interactions with non-Latino peers and school personnel alike.

11. Income, Housing, and Taxation. Income is highly correlated with voting participation, civic engagement, and educational attainment alike. Thus, the relatively lower income levels and higher poverty rates of Washington's Latino families and individuals, compared to whites, comprise an additional barrier to progress in all these areas as well as being a matter of concern in its own right. In Walla Walla, Latinos own their own homes at far lower rates than do non-Latinos, a reflection not only of income disparities but also of an under-supply of affordable housing for low-income families as well as the need for more adequate home-buying information practices by lending firms, real estate companies, and local public authorities. (Our survey research in 2009 also found that Latino tenants tend to solve problems with their housing conditions by moving rather than by challenging landlords to provide acceptable housing conditions; this enhances the picture of the overall transience of the Latino population when it comes to housing, with the attendant consequences for Latino households' financial instability.) At the same time, Washington State has perhaps the most regressive tax structure in the nation given the absence of an income tax and the heavier relative reliance on sales taxes and the business and organization tax for government revenues. This further darkens the financial outlook for Washington Latinos. Furthermore, the one major recent policy initiative to brighten working families' prospects through the tax system, the federal Earned Income Tax Credit (EITC), has not sufficiently reached the Latino community. Our research from 2008 shows that Latinos are both disproportionately unlikely to know about the EITC and disproportionately likely to be disqualified from eligibility to receive it. In addition, although the state legislature sought to reinforce the impact of the EITC by passing the Working Families Tax Rebate (WFTR) in 2008, the WFTR did not receive the funding needed for implementation.

12. Employment: General. The low prospect of upward mobility for those employed in low-skill jobs further contributes to the income and poverty disparities between the Latino and non-Latino populations in Washington State. Moreover, there is a mismatch between the employment needs of Latino communities and public efforts to take advantage of growth

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opportunities in the emergent "green" economy. Community college programs focusing on "green jobs" are characterized by low rates of Latino enrollment and tend not to conduct Latino outreach, while Latino community college students tend to be concentrated in employment skills acquisition programs that are not included in the green economy. The health industry is another domain where public interests and Latino employment needs could be matched much more effectively, for the benefit of all, but where this has not occurred. Washington State, like many other states, has experienced a nursing shortage in recent times; health services organizations have a growing need for bilingual and bicultural employees as the Latino population expands; yet historically, Latinos have been concentrated in the lower rungs of the occupational ladder in the health industry.

13. Employment: Occupational Safety and Health. In general, Latinos in Washington State as elsewhere make up large proportions of the workforces in the most dangerous jobs, in terms of occupational safety and health (OSH) risks: meatpacking, construction, farm labor, and lower-tier hospital jobs. Latino workers' disproportionately high exposure to OSH hazards creates additional employment difficulties, since individuals who become ill or injured as a result of their working conditions have more difficulty sustaining employment. In my independent scholarly research (apart from the "State of the State" program), workers in one of the country's largest and most dangerous meatpacking plants, a beef-processing facility and slaughterhouse in eastern Washington, reported perpetually high-level exposure to job-related injuries and illnesses due to overly fast production speeds, excessively repetitive and taxing work-motions in awkward positions with heavy objects, frequent reassignment to new tasks without sufficient training, inadequate responses by supervisors and company medical staff to injured workers' requests for medical attention, and light duty procedures not conducive to healing injured bodies. These workers also reported exceptionally high rates of actual injury and/or illness due to job-related factors. Day laborers are another working population whose members routinely encounter severe OSH hazards. These risks are due to dangerous conditions in the urban construction, moving, home renovation, and residential yardwork jobs they perform, under circumstances in which workers work mostly in isolation from one another, in private environments not regulated by public authorities and subject to employers' discretionary control, and usually with language-

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related disadvantages as well as immigration-related anxieties. These factors add up to a situation of marked powerlessness in the work environment, as much for Latino workers in the informal economy populated by day laborers as for Latino workers in standard, full-time, industrial-manufacturing jobs such as meatpacking.

14. Farm Worker Issues. According to one of our "State of the State" community partner organizations, the Washington State Farmworker Housing Trust, the average income for a farm worker family in 2008 was roughly $17,500 a year, which was only 35% of the state's median income. Washington's farm workers have grave difficulties securing adequate housing for themselves and their families. This problem exists despite the fact that agriculture is one of the most crucial industries in this state, generating a larger economic multiplier than both the aircraft and software/ISP industries, yielding millions of dollars in products annually, producing the majority of the nation's apples, and employing a vast population. The Trust's pathbreaking statewide survey found that 44% of Washington's farm workers pay more than the federal standard 30% of income for housing needs, 36% have problems with their current housing conditions, and 38% have faced difficulty in finding housing. Further analysis of the Trust's survey data by the "State of the State" program found that these workers and their families not only do not qualify for public income assistance ("welfare") under the Temporary Aid to Needy Families (TANF) program, but also tend significantly to under-utilize the Food Stamp and WIC nutrition programs for which they likely would be eligible. Poor housing conditions negatively affect the educational prospects for farm workers' children both directly (by preventing children from having a stable, adequate place to do school work and inhibiting family functioning) and indirectly (by increasing the likelihood of various health problems, such as respiratory disease and environmental toxin poisoning, and thereby having a deleterious effect on children's school attendance and ability to learn). Despite the multiple benefits to entire communities – Latino and non-Latino alike – that stem from the development of better quality housing for farm workers, farm worker housing developers typically confront stiff local opposition when they pursue such projects. Uninformed local residents often respond with "not in my backyard" sentiment because they assume incorrectly that additional housing for farm workers will increase social problems such as crime and decrease area home values.

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15. Health Care. Relatively more Latinos lack health insurance coverage than non-Latino Washingtonians, and this factor, combined with language difficulties, means that access to health care and health service utilization rates are lower for Latinos than for other ethnic-racial groups. These problems, in turn, correlate with disproportionately higher incidences of otherwise preventable health disorders for Latinos. Among these disorders the following are especially noteworthy: diabetes, HIV/AIDS, cervical cancer, asthma, and tuberculosis. Local health clinics such as the Quincy Community Health Center provide vital resources for uninsured Latinos and others who face the many barriers to health services access. In particular, efforts to engage non-specialist community health workers ("promotoras/es") by the Quincy center and Blue Mountain Heart to Heart, the leading eastern Washington HIV/AIDS prevention, education, and services organization, have proven effective at increasing knowledge in the Latino community about the prevention of HIV infection and other sexually transmitted diseases. Nevertheless, the need exists to expand and multiply such programs and to tackle the many barriers to effective health care for Latinos in Washington State. Among those barriers are also the problems with employment, income, and poverty discussed above along with substandard farm worker housing and relatively lower levels of educational attainment.

I declare under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

Executed and dated this 20th day of February, 2018.

Paul Apostolidis

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EXHIBIT

1

Paul Apostolidis

Professor and Judge & Mrs. Timothy A. Paul Endowed Chair of Political Science, Whitman College
Professorial Fellow, Institute for Social Justice, Australian Catholic University, Sydney, AU
509-200-3223 (mobile)----apostopc@whitman.edu

Education

Cornell University, Ph.D., Government, 1996. M.A., Government, 1993. A.D. White Fellow, 1989-93
Princeton University, A.B., Politics, 1986

Academic positions

Whitman College, Professor, Politics, 8/11-present. Assoc. Prof., 9/03-7/11. Asst. Prof., 9/97-8/03
Honors: Judge & Mrs. Timothy A. Paul Endowed Chair of Political Science, 2007-present; Paul Garrett Fellow, 2004-07; G. Thomas Edwards Award for Scholarship & Teaching, 2006
Teaching areas: Critical theory; community-based research; race, labor, & immigration; Latino politics; cultural studies; American political thought; democratic theory; religion & politics; global studies
Administrative experience: Director of First-Year Curriculum (supervised 27 faculty), 7/11-6/13; Chair, Politics Department, 7/03-6/06, 1/08-7/08, 7/15-6/16
Institute for Social Justice, Australian Catholic University, Professorial Fellow, 6/16-6/18
Cornell University, Visiting Assistant Professor, Cornell-in-Washington, 9/96-8/97

Books

The Fight for Time: Migrant Day Laborers and the Politics of Precarity. Oxford University Press, 2018. Generates a critique of precarious work-life through research with Latino day laborers in the US. Formulates a method of "critical-popular" research placing fieldwork with day laborers in dialogue with social-theoretical accounts of precarity, drawing on Freire's popular education theory. Argues that even as day laborers endure exceptional forms of precarity as unauthorized migrants, their experiences epitomize precarious circumstances throughout the economy, especially regarding time-patterns in everyday life. Day laborers' articulations of these problems and worker-center organizations suggest transformative responses to precarious work-life.

Breaks in the Chain: What Immigrant Workers Can Teach America about Democracy. University of Minnesota Press, 2010. Explores how immigrants help produce and challenge inter-related regimes of racial biopolitics on the US-Mexico border, in meatpacking, and in US labor law. Develops a Gramscian method of narrative critique to analyze interviews with Mexican immigrant meatpackers who waged an extraordinary struggle to democratize their union and workplace. Argues that through practices and discourses of migration, labor, and political action, immigrant workers reinforce biopolitical mechanisms of racial domination, foster opposition to these power-operations, and enable critical reformulations of Foucault's theory.

Stations of the Cross: Adorno and Christian Right Radio. Duke University Press, 2000. Interprets the relation between Christian right popular culture and political-economic power in the US based on a critical recovery of Adorno's cultural criticism. Shows how Christian right narratives reinforce and contest authority in an era of health care corporatization, government legitimacy crises, and backlashes against the Civil Rights and women's movements. Closely engages the evangelical conservative organization Focus on the Family.

Public Affairs: Politics in the Age of Sex Scandals. Co-edited with Juliet Williams. Duke University Press, 2004. Approaches sex scandals as points of departure for discussing US political culture from various intellectual perspectives including critical race theory, feminist theory, democratic theory, and liberal constitutionalism. Contains my essay "On the Dalliances of the Commander in Chief: Private Virtue and Political Leadership in Christian Right Narrative" as well as my co-authored "Introduction."

Temporalities of Sovereignty, Coloniality, Ecology, and Capital: Explorations in International Relations Theory. Co-edited with Anna Agathangelou. In progress. Analyzes sovereignty visions, colonizing histories, capitalist formations, and environmental degradation through approaches that treat time as a fundamental problematic of international relations and as constitutive of state formation in international contexts. Contains my co-authored "Introduction" and essay "Migrant Workers, Time, and the Politics of Precarity."

Published journal articles and book chapters

Article dossier editor, "*Against the Day:* Day Labor, Domestic Work, and Precarity's Politics," *South Atlantic Quarterly,* Vol. 117, no. 2 (Apr. 2018). Includes my "Introduction" and essay "Day Laborers and the Refusal of Work."

"Sex Scandals, Reputational Management, and Masculinity under Neoliberal Conditions," co-authored with Juliet A. Williams. *Sexualities,* Vol. 20, No. 7 (Oct. 2017): 793-814. DOI: 10.1177/1363460716658405.

"The Lessons of *Jornaleros:* Rancière's Emancipatory Education, Migrant Artists, and the Aims of Critical Theory." *Philosophy & Rhetoric,* Vol. 49, No. 4 (2016): 368-391.

"Migrant Day Laborers, Neoliberalism, and the Politics of Time." In *Time, Temporality and Violence in International Relations: (De)Fatalizing the Present, Forging Radical Alternatives,* ed. Anna Agathangelou and Kyle Killian. Routledge 2016.

"Immigrant Workers, Animals, and Sovereignty in the Slaughterhouse." In *Political Theory and the Animal-Human Relationship,* ed. Judith Grant and Vincent G. Jungkunz. SUNY Press 2016.

"'Young Americans': Rancière and Bowie in *Dogville." Theory & Event,* Vol. 18, No. 2 (April 2015).

---- also in *Breaking the Rules: Gender, Power and Politics in the Films of Lars von Trier,* ed. Bonnie Honig and Lori Marso, Oxford University Press, 2016.

"Cosmopolitan Politics and the Migrant Day Labor Movement," co-authored with Abel Valenzuela, Jr., *Politics, Groups & Identities,* Vol. 2, No. 2 (June 2014): 222-244.

"Economic Oppression and Women's Interventions: Comments on Mary Hawkesworth's *Political Worlds of Women." Contemporary Political Theory*, Vol. 13, No. 1 (Feb. 2014): 69-74.

"Sex Scandals, Racial Domination, and the Systematic Correlation of Power-Modalities in Foucault." *Journal of Political Power,* Vol 4, No. 2 (Aug. 2011): 179-97.

"Physionomie ou industrie culturelle? Adorno et la critique de la radio chrétienne de droit." Translation of 1998 *Philosophy & Social Criticism* article (see below), *Réseaux* 166 *(Mai 2011).*

"'New' Evangelicals and the Post-Political Horizons of Neoliberalism." In *Radical Religion: Contemporary Perspectives on Religion and the Left*, ed. Ben Pauli, Rowman & Littlefield, 2010.

"Immigration, Liberal Legalism, and Radical Democracy in the US Labor Movement." *Historical Reflections/Reflexiones Historiques*, Vol 35, No. 1 (Spr. 2009): 137-62.

"From Reflective to Catalytic Genealogy: Immigrant Narratives, Racism, and Identity's Contingency." *Theory & Event*, Vol. 11, No. 3 (2008).

"Feminist Theory, Immigrant Workers' Stories, and Counterhegemony in the United States Today." *Signs: Journal of Women in Culture and Society*, Vol. 33, No. 3 (Spring 2008): 545-68.

"Negative Dialectics and Inclusive Communication." In *Feminist Interpretations of Theodor Adorno*, ed. Renee Heberle. Penn State University Press, 2006.

"Hegemony and Hamburger: Immigrant Narratives and Labor's Challenge to Corporate-Led Globalization." *Political Research Quarterly*, Vol. 58, No. 4 (Dec. 2005): 647-58.

"Scanning the 'Stations of the Cross': Christian Right Radio in Post-Fordist Society." In *Radio Reader: Essays in the Cultural History of US Radio Broadcasting*, ed. M. Hilmes & J. Loviglio. Routledge 2001.

"Homosexuality and 'Compassionate Conservatism' in the Discourse of the Post-Reaganite Right." *Constellations*, Vol. 8, No. 1 (March 2001): 78-105.

"Action or Distraction? Cultural Studies in the USA." In *Political Theory and Cultural Studies*, ed. Jodi Dean. Ithaca: Cornell University Press, 2000.

"Culture Industry or Social Physiognomy? Adorno's Critique of Christian Right Radio." *Philosophy & Social Criticism*, Vol. 24, No. 5 (September 1998): 53-84.

Journal article in progress: "Immigrant Workers, Biopolitics, and the Alternative Food Movement." Under revision for resubmission to *Perspectives on Politics*.

Invited lectures and papers

"Migrant Day Laborers and Anti-Precarity Politics." Radical Critical Theory Circle, Nisyros, Greece, 6/18.

"Critical-Popular Research: Critical Theory in Dialogue with Popular Education." Northwest Critical Theory Roundtable, Gonzaga University, 2/18.

"The Fight for Time: Migrant Day Laborers and the Politics of Precarity." Johns Hopkins University, 12/17.

"Day Laborers and the Refusal of Work." Radical Critical Theory Circle, Nisyros, Greece, 6/17.

"On the Theory and Politics of Precarity: Migrant Day Laborers, Mushrooms, and Cooptative Conviviality at Worker Centers." Sydney School for Critical Social Thought, Institute for Social Justice, Australian Catholic University, 5/17.

"The Lessons of *Jornaleros:* Emancipatory Education, Migrant Musicians, and the Aims of Critical Theory." Conference: *Music & Social Justice*. Institute for Social Justice, Australian Catholic University, Sydney, 8/16.

"Reification Reconsidered: Anita Chari's *A Political Economy of the Senses*." University of Oregon, 6/16.

"Refugee Workers and the Condition of Precarity." Sydney School for Critical Social Thought, Institute for Social Justice, Australian Catholic University, 5/16.

"Research and Relevance: Critical-Popular Methods of Social Inquiry." Sydney School for Critical Social Thought, Institute for Social Justice, Australian Catholic University, 5/16.

"Theorizing Neoliberalism with Day Laborers: The Body-Time of Dangerous Work." Race and Ethnic Politics Colloquium, UCLA, 4/16.

"The Fight for Time: Day Laborers and Political Uprising under Neoliberalism." ISJ-ACU, Sydney, 5/15.

"Day Laborers and the Neoliberal Fight for Time." Western Washington University, 5/14.

"Sex Scandals, Reputational Management, and the Neoliberal Condition." Co-authored with Juliet Williams. Northwestern University, Interdisciplinary Conference on "Sexual Reputations," 11/13.

"Migrant Day Laborers, Neoliberalism and the Struggle for Time." Univ. of Massachusetts Amherst, Center for Research on Families, 4/13.

"Neoliberal Time and Popular Education in the Migrant Day Laborer Movement." Univ. of Virginia, Political Theory Colloquium, 2/13.

"Immigrant Workers, Racial Biopolitics and the Meat People Eat." Reed College, 12/12.

"Time, Crisis and Utopia: Why Marx Matters Today." Linfield College, 12/12.

"Migrant Day Laborers, Neoliberal Temporality, and the Politics of Time." UCLA, Political Theory Colloquium, 11/11.

"Immigrant Workers and the Biopolitics of Food Production." UCLA, Labor Studies Center, 11/11.

"Immigration, Labor, and the Politics of Meat." Conference on *Eating, Cooking, Culture: The History and Politics of Food*. Center for International Education, Univ. of Wisconsin-Milwaukie, 4/11.

"'New' Evangelicals and the Post-Political Horizons of Neoliberalism." Forum on *Fundamentalisms and the Politics of Identity,* Univ. of Chicago, Center for Contemporary Critical Theory, 4/09.

"State of the Scandal: Immigration, Sex, and Biopolitics in Bristol Palin's America." Symposium on the *Marriage in the Shadow of Electoral Politics*, UCLA, Center for the Study of Women, 10/08.

"Genealogies of Immigrant Worker Protest: Stories from the Zone of Illegality." Carroll College, Helena, MT, Latin American Studies Program, 3/08.

"Immigration and Critical Theory in Late Modernity: Narrative, Genealogy, and Counter-Hegemony." Conference: *Becoming Plural: The Thought of William Connolly*, Swansea Univ., Wales, U.K., 5/07

"The Politics of Common Sense: Family Devotion and Immigrant Workers' Struggles." Colloquium on *Critical Theorizing Today: Social and Cultural Theory for the Present Crisis*, Institute on Globalization and the Human Condition, McMaster University, Hamilton, ON, Canada, 10/05

"Stations of the Cross: The Politics of Christian Right Radio." Walla Walla College, 2/02

Professional leadership and service

Executive Editorial Board Member, *Political Theory,* 9/14-present.

Coordinator, Interpretive Methods & Methodologies Workshop, Western Political Science Association, 2018

Best Dissertation for 2014 Committee, APSA Race, Ethnicity & Politics Section, 9/14-8/15.

Council Member, APSA Foundations of Political Theory Section, 9/10-8/13

Section Chair, Political Theory, WPSA Annual Meetings, 2011, 2002.

Prize Committee, *Contemporary Political Theory*, judged best article in this journal for 2010.

Best Dissertation for 2004 Committee: APSA Foundations of Political Theory Section, 2005.

Book reviews and review essays

"Time, Theater, and Story: Dimensions of Intercorporeal Resonance in Romand Coles's *Visionary Pragmatism." Democratic Theory* 4.1 (Summer 2017): 79-85.

"*Democracy Disfigured: Opinion, Truth, and the People,* by Nadia Urbinati. *Global Discourse* (2015): DOI:10.1080/23269995.2015.1079442.

"Troubling the Waters: Unmooring Theory amid the Currents of Latino Politics." *The Trouble with Unity: Latino Politics and the Creation of Identity,* by Cristina Beltrán. *Theory & Event* 17.2 (2014).

"*Every Twelve Seconds: Industrialized Slaughter and the Politics of Sight,* by Timothy Pachirat (Yale Univ. Press, 2011)." *Perspectives on Politics* 11, no. 1 (Mar. 2013): 300-2.

"*The Eyes of the People: Democracy in an Age of Spectatorship,* by Jeffrey Green (Oxford Univ. Press, 2009)." *Contemporary Political Theory* 12, no. 1 (Feb. 2013), www.palgrave-journals.com/cpt/

"We Want More, Now – A Utopian Challenge to the Neoliberal Work Ethic: Weeks' *The Problem with Work." Theory & Event* 15, no. 2 (2012).

"*Beyond Gated Politics: Reflections for the Possibility of Democracy*, by Romand Coles (University of Minnesota Press, 2005)." *Political Theory* 35, no. 4 (Aug. 2007): 532-6.

"Monica, America, and the Politics of Cultural Studies." *Our Monica, Ourselves: The Clinton Affair and the National Interest*, ed. L, Berlant & L. Duggan (NYU Press, 2001). *Theory & Event* 6, no. 4 (2003).

"*To Serve God and Mammon: Church-State Relations in American Politics*, by Ted. G. Jelen (Westview Press, 2000)." *American Political Science Review* 95, no. 3 (Sept. 2001): 733-734.

"From Margin to Mainstream: *Religious Schools v. Children's Rights* by James G. Dwyer (Cornell UP, 1998)." *Education Review*, Sept. 1998. Co-author Jeanne Marie Morefield.

Conference papers and roundtable presentations (past 15 years)

Roundtable, Author Meets Critics: Ali Aslam, *Ordinary Democracy: Sovereignty and Citizenship beyond the Neoliberal Impasse*. Western Political Science Association, San Francisco, 3/18.

"Day Labor, Free Labor, and Reification: Migrant Workers and the Paradoxes of Precarity." American Political Science Association, San Francisco, 9/17

"Freirean Theory, Conviviality, and Politicization at Day Labor Centers." Caribbean Philosophical Association, New York City, 6/17

"Contesting the Paradoxes of Precarity: Popular Themes, Leaders' Perspectives, and Organizational Priorities in the Day Labor Movement." Western Political Science Association, Vancouver, 4/17

Workshop Coordinator (Funded), "Time, Temporality and IR in the Anthropocene," International Studies Association, Baltimore, 2/17

Roundtable, "Time, Temporality and Violence in IR," ISA, Baltimore, 2/17

Roundtable, "Time, Temporality and Capitalism: Methods of Decolonization," ISA, Baltimore, 2/17

"Neoliberal Latinidad and Community-Time in the Day Labor Movement." APSA, Philadelphia, 9/16.

Roundtable, Author Meets Critics: Joseph Carens' *The Ethics of Immigration*. ISA, Atlanta, 3/16.

"Fighting for the Job: Day Laborers and Embodied Neoliberal Time on the Corner." APSA, San Francisco, 9/15.

"Young Americans: Rancière in *Dogville*." APSA, Washington DC, 8/14.

"Generative Themes: Freirean Pedagogy and the Politics of Research." APSA, Washington DC, 8/14.

Roundtable, Author Meets Critics: Samuel Chambers' *The Lessons of Rancière*. WPSA, Seattle, 4/14.

Roundtable, Author Meets Critics: Ella Myers' *Worldly Ethics: Democratic Politics and Care for the World.* WPSA 4/14.

"Cosmopolitan Subjectivities and the Day Labor Movement." With Abel Valenzuela, Jr. APSA, Chicago, 8/13.

"Tea Party Nativism and the Struggle for Time." WPSA, Los Angeles, 3/13.

Roundtable, Author Meets Critics: Craig T. Borowiak's *Accountability & Democracy: The Pitfalls and Promise of Popular Control*. WPSA 3/13.

"Race, Poverty and Popular Education at Migrant Day Labor Centers." WPSA, Portland, OR, 3/12.

Roundtable, Author Meets Critics: Mary Hawkesworth's *Political Worlds of Women: Activism, Advocacy and Governance in the 21st Century*." WPSA 3/12.

Roundtable, "Race, Empire, Crisis, and the Time of Politics." WPSA 3/12.

Roundtable, Author Meets Critics: *Breaks in the Chain: What Immigrant Workers Can Teach America about Democracy* by Paul Apostolidis. Caribbean Philosophical Assoc., Rutgers University, 10/11.

"Immigration and Time in the Discourse of the Tea Party." APSA, Seattle, 9/11.

Conference papers and roundtable presentations (past 15 years – continued)

Roundtable, "'There Is No Alternative': Rights and Resistance in Neoliberal Times." APSA, 9/11.

Roundtable, Author Meets Critics: *Breaks in the Chain: What Immigrant Workers Can Teach America about Democracy* by Paul Apostolidis. WPSA, San Antonio, 4/11.

"Day Laborers, the Contested Time of Labor, and Racial Knowledge." APSA, Washington DC, 9/10.

"Hegemony, Immigration, and Biopolitics in the Neoliberal Age." WPSA, San Francisco, 4/10.

"Day Labor, Abstract Labor, and the Catalysts of Immigrant Worker Activism." WPSA 2010.

"Hegemony in Hindsight: Immigrant Workers' Stories of Power in Mexico." Latin American Studies Association, Rio de Janeiro, 6/09.

Roundtable, "Sex Scandals in the Bush Era."APSA, Boston, 8/08.

"Legalist Activism and Worker Self-Organization: Immigrant Worker Protest Narratives in the Face of Discipline and Biopolitics." Association for Law, Culture & the Humanities, Berkeley, 3/08.

"Political Narratives, 'Common Sense,' and Counterhegemony in an Age of Mass Immigration." APSA, Chicago, 9/07.

"They should treat you like a human being, not like an animal": Immigration, Workers' Rights, and Hegemonic Despotism in Meatpacking." WPSA, Las Vegas, 3/07.

"Gramsci, the Critique of Hegemony, and the Contemporary Politics of Immigration." Rethinking Marxism, University of Massachusetts Amherst, 10/06.

Roundtable, "Author Meets Critics: *Beyond Gated Politics* by Romand Coles." MPSA, Chicago, 4/06.

Roundtable, "Reflections on the Ten-Year Anniversary of Wendy Brown's *States of Injury*." APSA, Washington, DC, 9/05.

"Critique, Narrative, Counter-Hegemony: What Critical Theory Can Learn from the Struggles of Immigrant Meatpackers." APSA, Washington, DC, 9/05.

"Immigrant Worker Narratives and the Disciplines of Liberal Legalism." International Conference on Philosophy and the Social Sciences, Prague, Czech Republic, 5/05.

"*La Lucha y La Casa:* Neopolitics of the Labor Movement." WPSA, Oakland, 3/05.

"Immigration, Liberal Legalism, and Radical Democracy in the US Labor Movement." APSA, Chicago, 9/04.

Leadership in Community-Based Action Research Teaching

The State of the State for Washington Latinos, Whitman College, 2005-present (www.walatinos.org)

- Founded nationally recognized Community-Based Research (CBR) program in which students produced annual reports on racial inequalities, policy solutions, and advocacy/action priorities
- Secured and managed a three-year, $32,500 grant from the Princeton Univ. National Community-Based Research Networking Initiative, 2008-10; $11,000 grant, Yakima Valley Community Foundation, 2012; $5,000 grant, Blue Mountain Community Foundation, 2013; $3,000 grant, BMCF, 2011.
- Initiated systematic public outreach program for students to inform policy makers, organization leaders, media representatives, and local communities about findings and recommendations
- Recruited community partners locally and statewide from organizations promoting voting rights, civil rights, social rights, and civic engagement for Latinos and other communities of color
- Developed/supervised a structure of leadership (faculty, staff, & community members) to facilitate partnerships, train students in research methods, and coach students on policy communication

Article: "Community-Based Research, Race and the Public Work of Democracy: Lessons from 'The State of the State for Washington Latinos.'" *Journal of Higher Education Outreach & Engagement* 17.4 (2013): 203-221.

Conference presentations and participation

Council on Undergraduate Research. Keynote address: "Community-Based Research and the Public Work of Democracy." National meeting, St. Joseph, MN, 6/08

Princeton Univ. Community-Based Learning Initiative. Led workshop on "Public Communication about Community-Based Research." National sub-grantee meeting, Princeton, NJ, 10/08

Campus Compact. Conference on Service Learning at Liberal Arts Colleges. Oberlin College, 4/02

Public and community leadership

Casa Latina Day Worker Center, Seattle. Conducted popular-education workshops on occupational safety & health for day laborers (12/17 & 6/10; in Spanish) and volunteers (5/17).

KPFA Public Radio: "Against the Grain." Radio talk show on my paper "Fighting for the Job: Day Laborers and Embodied Neoliberal Time on the Corner." Berkeley, CA. 1/16.

Washington State Access to Justice Conference, Keynote address: "The Path to Racial Equity: Understanding and Dismantling Racialized Structures and Systems." Wenatchee, WA. 6/15.

Walla Walla Public Schools, Annual Community Leadership Award, for coordination of community-based research partnerships (2005-14). 6/14.

Walla Walla Public Schools, Diversity Committee. Community participant, 3/12-present.

Association of Washington Cities, Kennewick, WA. Workshop presentation: "Latinos, Voting Rights & Political Under-Representation in Washington State." 6/13.

Harold Washington Public Library, Chicago. Lecture: "What Immigrant Workers Can Teach America about Democracy and Food." 4/11

Interfaith Worker Justice, Chicago. Talk on immigrant workers' rights and faith communities. 4/11

WHPK Chicago, "Radical Minds." Talk show interview on the politics of immigrant worker movements. 4/11

Immigration & Sustainability: Toward a Multicultural Oregon. Multi-campus regional scholars working group with periodic workshops to share research and plan outreach to state policy makers.

City Club of Portland. Lecture: "Immigration, Labor, & the Politics of Food." Oregon Public Radio broadcast. 1/10. Podcast: http://pdxcityclub.org/content/politics-immigration-labor-and-food

Slow Food of Portland. Organized community forum with four panel presentations including my talk "Immigrant Workers and the Slow Food Movement – Seeking Common Ground." 6/10

Pacific NW Labor History Assoc. Talk: "Organizing Immigrant Workers: The Battle at Tyson." Portland, 6/10

Univ. of Washington, NW Center for Occupational Safety & Health, Seattle. Grand Rounds: "Breaking the Chain: Immigrant Narratives and the Politics of Work-Related Injuries in Meatpacking." 11/07

League of United Latin American Citizens. Keynote address: "The 'State of the State' for Washington Latinos." Washington State annual conference, Leavenworth, WA, 5/07

Safe Work/Safe Food. Founded and ran nonprofit organization cooperating with transnational, national, and local groups to support immigrant workers' rights. Walla Walla, WA, 3/03-2/05

Immigrant Workers Freedom Ride. Coordinated local events and housing for Seattle and Portland bus riders and supporters *en route* to New York, Walla Walla, WA, 8/03-9/03

Parents & Friends of Lesbians And Gays (PFLAG), Board of Directors. Walla Walla, WA, 9/00-9/02

Language studies abroad

Spanish: Instituto Chac-Mool, Cuernavaca, Mexico, 6/03

German: Goethe Institut and Freie Universität, Berlin, Germany, 9/93-12/93

Modern Greek: learned through travel in Greece, college courses, and family

Professional political experience

Issues Director for Pennsylvania, Clinton-Gore '92. 8/92-11/92. Wrote briefings for candidates and surrogate speakers. Directed research on targeted issues. Organized "rapid response" network of media spokespersons. Designed campaign advertisements and literature. Hired, trained, and supervised staff.

Regional Field Coordinator, Dukakis-Bentsen '88. 8/88-11/88. Directed campaign operations in northeast Pennsylvania and Tampa Bay, Florida. Coordinated relations with constituency groups, public officials, and regional media. Developed and managed organizations of over 300 volunteers in each region.

Deputy Finance Convention Manager, 1988 Democratic National Convention. 5/88-7/88. Managed convention operations to host National Finance Committee members.

Field Organizer, Dukakis for President '88. 7/87-5/88. Developed volunteer organizations for caucuses/primaries in Iowa, Florida, Michigan, and Ohio. Liaison to Greek-American communities.

Legislative Correspondent, US Representative Frank J. Guarini. 2/89-7/89. Wrote floor statements and constituency correspondence. Supervised student interns.

Policy Analyst, Massachusetts Department of Public Welfare. 7/86-6/87. Coordinated policy changes for employment/training and emergency shelter programs.

EXHIBIT 18

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505 pages

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SUPERIOR COURT OF WASHINGTON
FOR YAKIMA COUNTY

JOSE MARTINEZ-CUEVAS and PATRICIA AGUILAR, individually and on behalf of all others similarly situated, Plaintiffs, vs. DERUYTER BROTHERS DAIRY, INC., GENEVA S. DERUYTER, and JACOBUS N. DERUYTER, Defendants, WASHINGTON STATE DAIRY FEDERATION and WASHINGTON FARM BUREAU, Intervenors.	No. 16-2-03417-39 DECLARATION OF RACHAEL PASHKOWSKI IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT

I, Rachael Pashkowski, declare under penalty of perjury under the laws of the State of Washington:

1. I am over the age of 18 and am competent to testify as to the contents of this declaration.

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2. Attached hereto as Exhibit 1 are true and accurate copies of reports from DeRuyter Brothers Fairy, Inc. ("DeRuyter") to the Occupational Safety and Health Administration for the years 2014-2016. DeRuyter Bates-stamped these documents DBD0000307, DBD0000309, and DBD0000311 and produced them in discovery. The redactions in these documents were done by DeRuyter.

3. Based on the accident descriptions provided in Exhibit 1, I calculated the number of injuries that were related to contact with animals. I then divided the number of animal-related injuries by the total number of injuries to determine the annual percentage of injuries that were animal-related. After averaging the percentages for 2014-2016, I determined that approximately 75% of the accidents reported for those years were caused by contact with animals. Below is an ER 1006 summary of the calculations based on the documents produced by DeRuyter:

DeRuyter OSHA-Reported Injuries – Animal-related

	Injuries	Animal-Related Injuries	% Animal-Related Injuries
2014	12	9	75%
2015	17	12	71%
2016	10	8	80%
TOTAL	**39**	**29**	**75%**

4. Based on the accident descriptions provided by DeRuyter in discovery and included as Exhibit 1, and the milker pay lists produced by DeRuyter as Bates numbers DER001479-DER001481, I divided the number of injured workers by the total number of workers for each year to arrive at an annual percentage of workers injured, and then averaged the annual percentage to conclude that approximately 10% of DeRuyter workers were injured during the three-year period from 2014-2016. Below is an ER 1006 summary of the calculations based on the documents produced by DeRuyter:

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DeRuyter OSHA-Reported Injuries – % Workers Injured

	Injured Workers	Total Workers	% of Workers Injured
2014	11	130	8%
2015	16	115	14%
2016	10	116	9%
TOTAL	**39**	**361**	**10%**

5. According to the documents produced by DeRuyter, some workers were injured more than once during any given year. Based on the accident descriptions produced by DeRuyter in discovery and included as Exhibit 1, and the milker pay lists produced by DeRuyter as Bates numbers DER001479-DER001481, I divided the number of injuries by the number of workers for each year to obtain an annual worker injury rate, and then averaged the annual rates to reach a worker injury rate of approximately 11% at DeRuyter over the three-year period from 2014-2016. Below is an ER 1006 summary of the calculations based on the documents produced by DeRuyter:

DeRuyter OSHA-Reported Injuries – % Workers Injured

	Injured Workers	Total Workers	% of Workers Injured
2014	12	130	9%
2015	17	115	15%
2016	10	116	9%
TOTAL	**39**	**361**	**11%**

6. Attached as Exhibit 2 is a true and accurate copy of the National Institute for Occupational Safety and Health, *Agricultural Safety* webpage, which Plaintiffs produced in discovery as MAR0905-906. I viewed the document at the publicly available website at: https://www.cdc.gov/niosh/topics/aginjury/ (last visited Feb. 22, 2018).

7. Attached as Exhibit 3 is a true and accurate copy of Eric Hansen & Martin Donohoe, *Health Issues of Migrant and Seasonal Farmworkers*, 14 *Journal of Health*

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Care for the Poor and Underserved 153 (2003), which Plaintiffs produced in discovery as MAR0362-373. I viewed the document at the publicly available website at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.506.6070&rep=rep1&type=pdf (last visited Feb. 22, 2018).

8. Attached as Exhibit 4 is a true and accurate copy of National Center for Farmworker Health, *2014 Agricultural Worker Fact Sheet*, which Plaintiffs produced in discovery as MAR0896-904. I viewed the document at the publicly available website at: http://www.ncfh.org/uploads/3/8/6/8/38685499/fs-dairyworkers.pdf (last visited Feb. 22, 2018).

9. Attached as Exhibit 5 is a true and accurate copy of the United States Department of Labor Bureau of Labor Statistics news release dated December 16, 2016, detailing occupational injury rates for the year 2015, which Plaintiffs produced in discovery as MAR0344-0354. I viewed the document at the publicly available website at: https://www.bls.gov/news.release/archives/cfoi_12162016.pdf (last visited Feb. 22, 2018).

10. Attached as Exhibit 6 is a true and accurate copy of pages produced from United States Department of Labor, Bureau of Labor Statistics, *Fatal Occupational Injuries in 2016* (Charts), which Plaintiffs produced in discovery as MAR0917-919. I viewed the document at the publicly available website at: https://www.bls.gov/iif/oshwc/cfoi/cfch0015.pdf (last visited Feb. 22, 2018).

11. Attached as Exhibit 7 is a true and accurate copy of the United States Department of Labor Bureau of Labor Statistics news release dated December 19, 2017, detailing occupational injury rates for the year 2016, which Plaintiffs produced in discovery as MAR0907-

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0916. I viewed the document at the publicly available website at: https://www.bls.gov/news.release/pdf/cfoi.pdf (last visited Feb. 22, 2018).

12. Attached as Exhibit 8 is a true and accurate copy of the United States Department of Labor Occupational Safety and Health Administration webpage *Agricultural Operations* and subpage *Hazards and Controls*, which Plaintiffs produced in discovery as MAR0920-932. I viewed the document at the publicly available website at: https://www.osha.gov/dsg/topics/agriculturaloperations/index.html (last visited Feb. 22, 2018) and https://www.osha.gov/dsg/topics/agriculturaloperations/hazards_controls.html (last visited Feb. 22, 2018).

13. Attached as Exhibit 9 is a true and accurate copy of the United States Department of Labor Bureau of Labor Statistics news release dated May 5, 2017 detailing fatal occupational injury rates for the year 2015, which Plaintiffs produced in discovery as MAR0355-361. I viewed the document at the publicly available website at: https://www.bls.gov/regions/west/news-release/fatalworkinjuries_washington.htm (last visited Feb. 22, 2018).

14. Attached as Exhibit 10 is a true and accurate copy of the 2016 National Occupational Research Agenda for Agriculture, Forestry and Fishing (strategic goals on Agriculture Safety and Agriculture Health), which Plaintiffs produced in discovery as MAR0374-414. I viewed the document at the publicly available website at: https://www.cdc.gov/niosh/nora/pdfs/NORA-AgFF-Revised-Agenda-Sept2016.pdf (last visited Feb. 22, 2018), obtained through https://www.cdc.gov/niosh/nora/comment/agendas/agforfish/default.html (last visited Feb. 22, 2018).

15. Attached as Exhibit 11 is a true and accurate copy of the National Center for Farmworker Health 2014 fact sheet on dairy workers, which Plaintiffs produced in discovery as

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MAR0415-418. I viewed the document at the publicly available website at: http://www.ncfh.org/uploads/3/8/6/8/38685499/fs-dairyworkers.pdf (last visited Feb. 22, 2018).

16. Attached as Exhibit 12 is a true and accurate copy of National Center for Disease Control, *Heat Related Deaths Among Crop Workers – United States, 1992-2006, Morbidity and Mortality Weekly Report* (June 20, 2008), which Plaintiffs produced in discovery as MAR0933-939. I viewed the document at the publicly available website at: https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5724a1.htm (last visited Feb. 22, 2018).

17. Attached as Exhibit 13 is a true and accurate copy of Tim Craig, *Deaths of Farmworkers in Cow Manure Ponds Put Oversight of Dairy Farms into Question*, The Washington Post, Sept. 24, 2017, which Plaintiffs produced in discovery as MAR0940-943. I viewed the document at the publicly available website at: https://www.washingtonpost.com/national/deaths-of-farmworkers-in-cow-manure-ponds-put-oversight-of-dairy-farms-into-question/2017/09/24/da4f1bae-8813-11e7-961d-2f373b3977ee_story.html?utm_term=.653f04e09de2 (last visited Feb. 22, 2018).

18. Attached as Exhibit 14 is a true and accurate copy of A. E. Dembe, et al, *The Impact of Overtime and Long Work hours on Occupational Injuries and Illnesses: new evidence from the United States*, 62 *Journal of Occupational and Environmental Medicine* 588 (2005), which Plaintiffs produced in discovery as MAR0468-477. I viewed the document at the publicly available website at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1741083/pdf/v062p00588.pdf (last visited Feb 22, 2018).

19. Attached as Exhibit 15 is a true and accurate copy of the Center for Disease Control report *Overtime and Extended Work Shifts: Recent Findings on Illnesses, Injuries, and*

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Health Behaviors (2004), which Plaintiffs produced in discovery as MAR0419-467. I viewed the document at the publicly available website at: https://www.cdc.gov/niosh/docs/2004-143/pdfs/2004-143.pdf (last visited Feb. 22, 2018).

20. Attached as Exhibit 16 is a true and accurate copy of A. Bannai & A Tamakoshi, *The Association Between Long Working Hours and Health: a systematic review of epidemiological evidence*, 40 *Scand. J. Work Environ. Health* 4 (2014), which Plaintiffs produced in discovery as MAR0478-492. I viewed the document at the publicly available website at: http://www.sjweh.fi/show_abstract.php?abstract_id=3388 (last visited on Feb. 22, 2018). The document itself may be downloaded by selecting the pdf icon under the "review" heading.

21. Attached as Exhibit 17 is a true and accurate copy of Chris Cargill, Washington Policy Center, *Agriculture: the cornerstone of Washington's economy*, (2016), which Plaintiffs produced in discovery as MAR0296-302. I viewed the document at the publicly available website at: https://www.washingtonpolicy.org/publications/detail/agriculture-the-cornerstone-of-washingtons-economy (last visited Feb. 22, 2018).

22. Attached as Exhibit 18 is a true and accurate copy of the Washington State Department of Commerce webpage regarding agriculture and food manufacturing, which Plaintiffs produced in discovery as MAR0647-648. I viewed the document at the publicly available website at: http://www.commerce.wa.gov/growing-the-economy/key-sectors/agriculture-food-manufacturing/ (last visited Feb. 22, 2018).

23. Attached as Exhibit 19 is a true and accurate copy of the Washington State Department of Agriculture webpage entitled *Agriculture: A Cornerstone of Washington's*

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Economy, which Plaintiffs produced in discovery as MAR0649-MAR650. I viewed the document at the publicly available website at: https://agr.wa.gov/aginwa/ (last visited Feb. 22, 2018).

24. Attached as Exhibit 20 is a true and accurate copy of *Lenders See Consolidation of Washington Tree Fruit Companies*, Capital Press, December 6, 2017, which Plaintiffs produced in discovery as MAR0651-652. I viewed the document at the publicly available website at: http://www.capitalpress.com/Washington/20171206/lenders-see-consolidation-of-wa-tree-fruit-companies (last visited Feb. 22, 2018).

25. Attached as Exhibit 21 is a true and accurate copy of United States Department of Agriculture, *Report 9* (2010), which Plaintiffs produced in discovery as MAR0654-666. I viewed the document at the publicly available website at: http://usda.mannlib.cornell.edu/usda/current/USDairyIndus/USDairyIndus-09-22-2010.pdf (last visited Feb. 22, 2018).

26. Attached as Exhibit 22 is a true and accurate copy of the United States Department of Agriculture, *2012 Census of Agriculture, Full Report, Table 12 – Hired Farm Labor – Workers and Payroll*, which Plaintiffs produced in discovery as MAR0667. I viewed the document at the publicly available website at: https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_State_Level/Washington/st53_1_012_013.pdf (last visited Feb. 22, 2018).

27. Attached as Exhibit 23 is a true and accurate copy of Washington Dairy Farmers webpage entitled *Economic Impact*, which Plaintiffs produced in discovery as MAR 0653. I viewed the document at the publicly available website at: http://www.wadairy.com/beyond-farm/economic-impact (last visited Jan. 9, 2018). The cited webpage is not available as of

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February 22, 2018, but was archived at http://web.archive.org/web/20171202085657/ http://www.wadairy.com/beyond-farm/economic-impact (last visited Feb. 22, 2018).

28. Attached as Exhibit 24 is a true and accurate copy of a US Census Bureau *Small Area Income and Poverty Estimate* for 2016, which Plaintiffs produced in discovery as MAR0668-682. I viewed the document at the publicly available website at: https://www.census.gov/data-tools/demo/saipe/saipe.html?s_appName=saipe&map_yearSelector=2016&map_geoSelector=aa_c&s_state=53&menu=grid_proxy (last visited Feb. 22, 2018). Prior to downloading the document, I sorted it by the column "Percent in Poverty" by clicking on the column header.

29. Attached as Exhibit 25 is a true and accurate copy of The Washington State Farmworker Housing Trust report *A Sustainable Bounty: Investing in Our Agricultural Future, the Washington State Farmworker Survey* (2008), which Plaintiffs produced in discovery as MAR0683-800. I viewed the document at the publicly available website at: https://static1.squarespace.com/static/58178a6cbe659444e1f37890/t/588d40141b10e309aee5b0bb/1485651993974/sustainablebounty.pdf (last visited Feb. 22, 2018).

30. Attached as Exhibit 26 is a true and accurate copy of the United States Department of Labor, Bureau of Labor Statistics, *Occupational Employment Statistics* for May 2016, which Plaintiffs produced in discovery as MAR0801-803. I obtained the document at the publicly available website at: https://data.bls.gov/oes/#/home (last visited Feb. 22, 2018). To obtain the documents I performed the following steps:

a. MAR 801: (1) select "Multiple occupations for one geographical area"; (2) select geographic type "state"; (3) select Washington; (4) select the occupations "Farmworkers

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and Laborers, Crop, Nursery, and Greenhouse" and "Farmworkers, Farm, Ranch, and Aquacultural Animals" by holding down the Ctrl key; (5) select datatypes "Annual Mean Wage" and "Annual Median Wage" by holding down the Ctrl key; (6) select release date "May 2016"; and (7) select output type "HTML".

b. MAR 802: (1) select "One occupation for multiple geographical areas"; (2) select occupation "Farmworkers and Laborers, Crop, Nursery, and Greenhouse"; (3) select geographic type "Metropolitan or Non Metropolitan Area"; (4) Select all the areas listed under Washington by holding down the Ctrl key; (5) select Annual Mean Wage and Annual Median Wage by holding down the Ctrl key; (6) select release date "May 2016"; and (7) select output type "HTML"

c. MAR 803: (1) select "One occupation for multiple geographical areas"; (2) select occupation "Farmworkers, Farm, Ranch, and Aquacultural Animals"; (3) select geographic type "Metropolitan or Non Metropolitan Area"; (4) Select all the areas listed under Washington by holding down the Ctrl key; (5) select Annual Mean Wage and Annual Median Wage by holding down the Ctrl key; (6) select release date "May 2016"; and (7) select output type "HTML"

31. Attached as Exhibit 27 is a true and accurate copy of Philip Martin & Daniel Costa, *Farmworker Wages in California: Large Gap between Full-time and Actual Earnings*, *Economic Policy Institute Working Economics Blog* (March 21, 2017), which Plaintiffs produced in discovery as MAR0804-806. I viewed the document at the publicly available website at: http://www.epi.org/blog/farmworker-wages-in-california-large-gap-between-full-time-equivalent-and-actual-earnings/ (last visited Feb. 22, 2018).

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(509) 575-5993

32. Attached as Exhibit 28 is a true and accurate copy of the findings from the National Agricultural Workers Survey 2013-2014 *Research Report No. 12*, which Plaintiffs produced in discovery as MAR0807-895. I viewed the document at the publicly available website at: https://www.doleta.gov/naws/pages/research/docs/NAWS_Research_Report_12.pdf (last visited Feb. 22, 2018).

33. Attached as Exhibit 29 is a true and accurate copy of correspondence received by our firm referencing a statement made by Steve George, currently serving as the Secretary of the Yakima County Farm Bureau, part of the leadership of Intervenor, the Washington State Farm Bureau, which we produced in discovery as MAR0295. I viewed the information about Mr. George at the publicly available website at: https://wsfb.com/county-secretaries/ (last visited Feb. 22, 2018).

Signed at Wenatchee, Washington this 23rd day of February, 2018.

Rachael Pashkowski

Columbia Legal Services
6 South Second Street, Suite 600
Yakima, WA 98901
(509) 575-5993

EXHIBIT

1

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employee to the extent possible while the information is being used for occupational safety and health purposes.

Year 2014

U.S. Department of Labor

Occupational Safety and Health Administration

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident report (OSHA 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Form approved OMB no. 1218-0176

Company name: DeRuyter Brothers Dairy, Inc.

Establishment name: DeRuyter Brothers Dairy, Inc.

City: Outlook State: WA

Identify the person			Describe the case			Classify the Case: CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:					
								Remained at Work				(M)					
(A) Case no.	(B) Employee's name	(C) Job Title	(D) Date of injury or onset of illness	(E) Where the event occurred	(F) Describe the injury or illness, parts of body affected, and objects/substance that directly injured or made the person ill	Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other recordable cases (J)	Away from Work (K)	On Job transfer or restriction (L)	Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other illnesses (6)
Redacted																	
AV179 06	Fransisco Ortega	Milker	02/03	Barn 2, Milking Parlor	Employee poured formaldehyde in a chlorine bottle. When he realized it was wrong and tried to empty the bottle, it splashed in his eye. He was not wearing PPE's.		✓			2	0	✓					
Redacted																	
AV179 80	Omar David Gonzalez	Milker	04/07	Milk Parlor #1	Employee was standing behind the last cow in line on the cow deck. The cow spooked and kicked him in the chest.		✓			2	0	✓					
AU699 88	Eduardo Guzman Navarro	Milker	06/14	Barn 1	Employee was loading cows onto the cow deck in barn 1. The last cow spooked and kicked him in the lower left leg.		✓			3	0	✓					
AU700 05	Jose Cuevas Martinez	Milker	06/20	Milking Parlor	Employee went to attach the milking machine, and a cow kicked him in the forearm.			✓		0	1	✓					
AU803 74	Mauricio Juarez	Milker	06/24	Barn 1 Milking Parlor	Employee was reaching in between the cows legs to attach a milking machine when the cow kicked him in the head.		✓			3	75	✓					
AU700 71	Jose Pablo Garcia	Milker	07/20	Milking Barn	Employee was attaching a milking unit to a cow when the cow kicked him in the head.		✓			1	0	✓					
					Page Totals >>	0	8	1	0	21	150	9	0	0	0	0	0

Public reporting burden for this collection is estimates to average 14 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of this information. Persons are not required to respond to the collection of information unless it displays a current valid OMB control number. If you have any comments about the estimate or any other aspects of this data collection, including suggestions for reducing this burden, contact US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington DC 20210. Do not send completed forms to this office.

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

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Year 2014

U.S. Department of Labor

Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

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Company name DeRuyter Brothers Dairy, Inc.
Establishment name DeRuyter Brothers Dairy, Inc.
City Outlook *State* WA

Identify the person			Describe the case			Classify the Case: CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:					
								Remained at Work				(M)					
(A) Case no.	(B) Employee's name	(C) Job Title	(D) Date of injury or onset of illness	(E) Where the event occurred	(F) Describe the injury or illness, parts of body affected, and objects/substance that directly injured or made the person ill	Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other recordable cases (J)	Away from Work (K)	On Job transfer or restriction (L)	Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other Illnesses (6)
Redacted																	
AW197 94	Juan Partida	Milker	10/01	Milk Barn	Employee was kicked in the chest by a cow		✓			2	0	✓					
AW198 07	Juan Partida	Milker	10/06	DeRuyter Brothers Dairy, Inc Barn 2	Another employee punched Juan in the face.		✓			0	17	✓					
AW198 16	Salvador Trejo	Milker	10/08	Milking Parlor	Employee was milking a cow, when she kicked his chest.		✓			2	0	✓					
AW331 05	Juan Luis Espitia	Milker	11/12	Milking Barn	Employee Stated he was kicked by a cow when he worked for us previously			✓		0	7	✓					
Redacted																	
AW562 45	Jose Cohetzaltitla	Milker	12/29	Changing Room	Employee was changing clothes when he hit his head on a sharp pipe, and cut his scalp				✓	0	0	✓					
					Page Totals >>	0	6	2	1	41	116	9	0	0	0	0	0
												Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other Illnesses (6)

Public reporting burden for this collection is estimates to average 14 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of this information. Persons are not required to respond to the collection of information unless it displays a current valid OMB control number. If you have any comments about the estimate or any other aspects of this data collection, including suggestions for reducing this burden, contact US Department of Labor, OSHA Office of Statistics, Room N-3664, 200 Constitution Ave, NW, Washington DC 20210. Do not send completed forms to this office.

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2014

U.S. Department of Labor

Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing the summary.

Using the Log, count the individual entries you made in each category. Then write the total below, making sure you've added the entries from every page of the Log. If you no cases write "0".

Employees, former employees and their representatives have the right to review the OSHA 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	14	3	1
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days with job transfer or restriction
62	266
(K)	(L)

Injury and Illness Types

Total number of ...

(M)

(1) Injuries	18	(4) Poisonings	0
(2) Skin disorders	0	(5) Hearing loss	0
(3) Respiratory conditions	0	(6) All other illnesses	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Public reporting burden for this collection is estimated at 50 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB number. If you have any comments about these estimates or any other aspects of this data collection, contact: US department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Establishment name
DeRuyter Brothers Dairy, Inc.

Location
DeRuyter Brothers Dairy, Inc.

Street
5111 Van Belle Rd.

City	State	Zip
Outlook	WA	98938

Industry Description
Dairy farms (7)

Standard Industry Classification (SIC)
024

North American Industrial Classification (NAICS), if known
112120

Employment Information

Annual average number of employees **78**

Total hours worked by all employees last year **194732**

Sign Here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate and complete

Company Executive _____ Title _____

( ) - Phone _____ / / Date _____

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employee to the extent possible while the information is being used for occupational safety and health purposes.

Year 2015

U.S. Department of Labor

Occupational Safety and Health Administration

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Form approved OMB no. 1218-0176

Company name: DeRuyter Brothers Dairy, Inc.
Establishment name: DeRuyter Brothers Dairy, Inc.
City: Outlook State: WA

Identify the person			Describe the case			Classify the Case: CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:					
								Remained at Work				(M)					
(A) Case no.	(B) Employee's name	(C) Job Title	(D) Date of injury or onset of illness	(E) Where the event occurred	(F) Describe the injury or illness, parts of body affected, and objects/substance that directly injured or made the person ill	Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other recordable cases (J)	Away from Work (K)	On Job transfer or restriction (L)	Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other illnesses (6)
AW562 58	Jose Trejo	Milker	01/09	Pen 42	Jose was cleaning a crossover in pen 42. He slipped and bumped his head.	☐	☐	☑	☐	0	1	☑	☐	☐	☐	☐	☐
Redacted																	
AW359 02	Miguel Olmedo	Milker	01/27	Barn 2 Milking Parlor	Employee was milking a cow, when the cow kicked, and he hit his elbow on a metal ledge.	☐	☐	☑	☐	0	36	☑	☐	☐	☐	☐	☐
AW986 01	Javier Rodriguez	Milker	02/23	Milking Barn	Employee was changing a milk filter, when the filter jammed and he crushed his finger in it.	☐	☐	☑	☐	0	3	☑	☐	☐	☐	☐	☐
AY534 25	Alberto Escareno	Milker	02/26	Milking Parlor	Employee was attaching a milking machine, when the kicked, and his left arm got stuck in between the post and himself.	☐	☐	☑	☐	0	7	☑	☐	☐	☐	☐	☐
Redacted																	
AW986 96	Maria Gonzalez	Milker	04/15	Milking Parlor	Employee was moving cows into the milking line when a cow pinned her against the fence.	☐	☐	☑	☐	0	53	☑	☐	☐	☐	☐	☐
					Page Totals >>	0	0	6	3	0	107	9	0	0	0	0	0
												Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other illnesses (6)

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OSHA's Form 300 (Rev. 01/2004)

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Year 2015

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Form approved OMB no. 1218-0176

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Establishment name: DeRuyter Brothers Dairy, Inc.
City: Outlook State: WA

Identify the person			Describe the case			Classify the Case: CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "Injury" column or choose one type of illness:					
								Remained at Work				(M)					
(A) Case no.	(B) Employee's name	(C) Job Title	(D) Date of injury or onset of illness	(E) Where the event occurred	(F) Describe the injury or illness, parts of body affected, and objects/substance that directly injured or made the person ill	Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other recordable cases (J)	Away from Work (K)	On Job transfer or restriction (L)	Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other illnesses (6)
AY534 65	Jose Chaman	Milker	04/26	Milking Parlor	Employee was putting on the milking machine, and the cow stepped on his hand.			✓		0	7	✓					
AY534 97	Andres Reyes	Milker	05/14	Milking Parlor	Employee was cleaning the udder of a cow, she picked up her foot and stepped on the employees arm.			✓		0	180	✓					
Redacted																	
AY535 31	Patricia H. Aguilar	Milker	05/29	Milking Parlor	Employee was putting a milking machine on a cow. The cow kicked her leg, and hit the employees hand.			✓		0	2	✓					
AX465 65	Eduardo Jose Guzman	Milker	06/12	Milking Parlor	Employee was kicked in the right hand when he was moving a cow into her milking spot.			✓		0	3	✓					
BA160 24	Javier Rodriguez	Milker	07/02	Milking Parlor	Employee was moving cattle in the milking parlor, when a cow kicked him. He fell on his elbow.		✓			3	19	✓					
AX466 77	Julio Mota	Milker	07/13	Barn 2	Employee was milking a cow in the milking line. She kicked the employee in the arm.		✓			3	15	✓					
AX619 68	Teren Underwood	Milker	08/08	Milking Barn	Employee was attaching a milking machine. He moved backwards to avoid a cow kick. He hit his head on the metal tubing.		✓			3	0	✓					
Redacted																	
					Page Totals >>	0	4	4	1	12	226	9	0	0	0	0	0
												Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other illnesses (6)

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OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

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Year 2015

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Form approved OMB no. 1218-0176

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Establishment name: DeRuyter Brothers Dairy, Inc.
City: Outlook State: WA

Identify the person		Describe the case				Classify the Case: CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:					
								Remained at Work				(M)					
(A) Case no.	(B) Employee's name	(C) Job Title	(D) Date of injury or onset of illness	(E) Where the event occurred	(F) Describe the injury or illness, parts of body affected, and objects/substance that directly injured or made the person ill	Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other recordable cases (J)	Away from Work (K)	On Job transfer or restriction (L)	Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other illnesses (6)
BA186 65	Brandon Ruiz	Milker	08/18	Milking Barn	Employee was moving cows, when a cow pushed his arm against the wall.		✓			9	57	✓					
BA160 96	Ruben Beccera	Milker	08/26	Cattle Pen	Employee was moving cattle in the dark. He mistepped and sprained his ankle.				✓	0	0	✓					
Redacted																	
AX584 28	Anthony Nino	Milker	09/22	Milking Parlor	Employee was trying to attach a machine to the udder. The cow stepped on his hand.		✓			5	0	✓					
Redacted																	
AZ341 97	Angel Nino	Milker	11/27	Milking Barn 1	Employee was moving a cow on the cow deck, when a cow stepped on his right foot.				✓	0	0	✓					
BA006 97	Elias Mendoza	Milker	11/27	Barn 2 Milking Parlor	Employee slipped and fell on a patch of ice				✓	0	0	✓					
AZ341 23	Cristian Ramirez Sanchez	Milker	12/15	Milking Parlor	Employee was cleaning equipment, and cut his hand on some metal.			✓		0	19	✓					
					Page Totals >>	0	3	1	4	22	84	8	0	0	0	0	0
												Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other illnesses (6)

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OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2015

U.S. Department of Labor

Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

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Using the Log, count the individual entries you made in each category. Then write the total below, making sure you've added the entries from every page of the Log. If you no cases write "0".

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Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	7	11	8
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days with job transfer or restriction
34	417
(K)	(L)

Injury and Illness Types

Total number of ...

(M)

(1) Injuries	26	(4) Poisonings	0
(2) Skin disorders	0	(5) Hearing loss	0
(3) Respiratory conditions	0	(6) All other illnesses	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Public reporting burden for this collection is estimated at 50 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB number. If you have any comments about these estimates or any other aspects of this data collection, contact: US department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Establishment name
DeRuyter Brothers Dairy, Inc.

Location
DeRuyter Brothers Dairy, Inc.

Street
5111 Van Belle Rd.

City	State	Zip
Outlook	WA	98938

Industry Description
Dairy farms (7)

Standard Industry Classification (SIC)
024

North American Industrial Classification (NAICS), if known
112120

Employment Information

Annual average number of employees **81**

Total hours worked by all employees last year **197690**

Sign Here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate and complete

Company Executive _____ Title _____

( ) - Phone _____ / / Date _____

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employee to the extent possible while the information is being used for occupational safety and health purposes.

Year 2016

U.S. Department of Labor

Occupational Safety and Health Administration

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Form approved OMB no. 1218-0176

Company name: DeRuyter Brothers Dairy, Inc.
Establishment name: DeRuyter Brothers Dairy, Inc.
City: Outlook State: WA

Identify the person			Describe the case			Classify the Case: CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "Injury" column or choose one type of illness					
								Remained at Work				(M)					
(A) Case no.	(B) Employee's name	(C) Job Title	(D) Date of injury or onset of illness	(E) Where the event occurred	(F) Describe the injury or illness, parts of body affected, and objects/substance that directly injured or made the person ill	Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other recordable cases (J)	Away from Work (K)	On Job transfer or restriction (L)	Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other Illnesses (6)
AZ341 65	Marcos Martinez	Milker	01/03	Barn 2	Employee states he was adjusting a milking unit on a cow at Barn 2. He was in the middle part of the barn.	☐	☐	☑	☐	0	7	☑	☐	☐	☐	☐	☐
Redacted																	
BB305 86	Jose Lupercio	Milker	03/17	Barn 1	Employee was putting a machine on a cow. The cow kicked the employees arm.	☐	☐	☑	☐	0	4	☑	☐	☐	☐	☐	☐
BB305 91	Elias Mendoza	Milker	03/22	Milking Barn	Employee was stripping milk from the cow, when she kicked him in the hand.	☐	☐	☑	☐	0	15	☑	☐	☐	☐	☐	☐
Redacted																	
BB728 29	Elvia Teresa Alvarez	Milker	04/09	Barn 1 milking Parlor	Employee was preparing a cow to get milked, when the cow kicked, and the employee was thrown back, and hit her arm on a piece of machinery.	☐	☐	☐	☑	0	0	☑	☐	☐	☐	☐	☐
BB688 33	Oscar M Avila Sanchez	Milker	04/19	Tank Room	Employee fell, and cut his hand	☐	☑	☐	☐	23	0	☑	☐	☐	☐	☐	☐
					Page Totals >>	0	3	5	1	28	56	9	0	0	0	0	0

Public reporting burden for this collection is estimates to average 14 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of this information. Persons are not required to respond to the collection of information unless it displays a current valid OMB control number. If you have any comments about the estimate or any other aspects of this data collection, including suggestions for reducing this burden, contact US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington DC 20210. Do not send completed forms to this office.

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employee to the extent possible while the information is being used for occupational safety and health purposes.

Year 2016

U.S. Department of Labor

Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident report (OSHA 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Company name DeRuyter Brothers Dairy, Inc.
Establishment name DeRuyter Brothers Dairy, Inc.
City Outlook *State* WA

Identify the person			Describe the case			Classify the Case: CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "Injury" column or choose one type of illness:					
								Remained at Work				(M)					
(A) Case no.	(B) Employee's name	(C) Job Title	(D) Date of injury or onset of illness	(E) Where the event occurred	(F) Describe the injury or illness, parts of body affected, and objects/substance that directly injured or made the person ill	Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other recordable cases (J)	Away from Work (K)	On Job transfer or restriction (L)	Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other illnesses (6)
Redacted																	
BB688 54	Patricia Aguilar	Milker	05/02	Milking Barn 2	Employee was trying to move a cow, when the cow kicked her in the chest.		✓			1	0	✓					
BB688 82	Florentino Pina	Milker	05/24	Barn 1 Milking Parlor	Employee was milking a cow, and the cow kicked him in the hand/thumb		✓			15	0	✓					
BB689 28	Ruben Ramirez	Milker	06/12	Milking Parlor	Employee was milking a cow, when the cow kicked him in the chest		✓			1	0	✓					
BB689 46	Javier Rodriguez	Milker	06/19	Milking Barn	Employee was milking a cow, when the cow kicked his hand.		✓			2	7	✓					
Redacted																	
BA402 78	Daniel Solis	Milker	11/07	Milking Parlor	Employee was putting on a machine on the cow, and the cow stepped on his hand.		✓			2	0	✓					
					Page Totals >>	0	6	0	1	43	44	9	0	0	0	0	0
												Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other illnesses (6)

Public reporting burden for this collection is estimates to average 14 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of this information. Persons are not required to respond to the collection of information unless it displays a current valid OMB control number. If you have any comments about the estimate or any other aspects of this data collection, including suggestions for reducing this burden, contact US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington DC 20210. Do not send completed forms to this office.

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Form approved OMB no. 1218-0176

Company name DeRuyter Brothers Dairy, Inc.
Establishment name DeRuyter Brothers Dairy, Inc.
City Outlook *State* WA

Identify the person			Describe the case			Classify the Case											
						CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness					
								Remained at Work									
(A) Case no.	(B) Employee's name	(C) Job Title	(D) Date of injury or onset of illness	(E) Where the event occurred	(F) Describe the injury or illness, parts of body affected, and objects/substance that directly injured or made the person ill	Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other recordable cases (J)	Away from Work (K)	On Job transfer or restriction (L)	(M) Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other illnesses (6)

Redacted

Page Totals >>	0	2	0	1	45	14	3	0	0	0	0	0
							Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other illnesses (6)

Public reporting burden for this collection is estimates to average 14 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of this information. Persons are not required to respond to the collection of information unless it displays a current valid OMB control number. If you have any comments about the estimate or any other aspects of this data collection, including suggestions for reducing this burden, contact US Department of Labor, OSHA Office of Statistics, Room N-3664, 200 Constitution Ave, NW, Washington DC 20210. Do not send completed forms to this office.

DBD0000311

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2016

U.S. Department of Labor

Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing the summary.

Using the Log, count the individual entries you made in each category. Then write the total below, making sure you've added the entries from every page of the Log. If you no cases write "0".

Employees, former employees and their representatives have the right to review the OSHA 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	13	5	3
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days with job transfer or restriction
116	114
(K)	(L)

Injury and Illness Types

Total number of ...

(M)

(1) Injuries	21	(4) Poisonings	0
(2) Skin disorders	0	(5) Hearing loss	0
(3) Respiratory conditions	0	(6) All other illnesses	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Public reporting burden for this collection is estimated at 50 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB number. If you have any comments about these estimates or any other aspects of this data collection, contact: US department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Establishment name
DeRuyter Brothers Dairy, Inc.

Location
DeRuyter Brothers Dairy, Inc.

Street
5111 Van Belle Rd.

City	State	Zip
Outlook	**WA**	**98938**

Industry Description
Dairy farms (7)

Standard Industry Classification (SIC)
024

North American Industrial Classification (NAICS), if known
112120

Employment Information

Annual average number of employees **N/A**

Total hours worked by all employees last year **N/A**

Sign Here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate and complete

Company Executive _____ Title _____

( ) - Phone _____ / / Date _____

EXHIBIT

2

AGRICULTURAL SAFETY

Agriculture ranks among the most hazardous industries. Farmers are at very high risk for fatal and nonfatal injuries; and farming is one of the few industries in which family members (who often share the work and live on the premises) are also at risk for fatal and nonfatal injuries.

In 1990, NIOSH developed an extensive agricultural safety and health program to address the high risks of injuries and illnesses experienced by workers and families in agriculture. NIOSH supports intramural research and funds extramural research and prevention programs at university centers in 10 states. These programs conduct research on injuries associated with agriculture, as well as pesticide exposure, pulmonary disease, musculoskeletal disorders, hearing loss, and stress.

Who's at Risk?

- Approximately 2,088,000 full-time workers were employed in production agriculture in the US in 2015.
- Approximately 1.4 to 2.1 million hired crop workers are employed annually on crop farms in the US.
- An estimated 893,000 youth under 20 years of age resided on farms in 2014, with about 454,000 youth performing farm work. In addition to the youth who live on farms, an estimated 266,000 youth were hired to work on US farms in 2014.

Fatalities

- In 2015, 401 farmers and farm workers died from a work-related injury, resulting in a fatality rate of 19.2 deaths per 100,000 workers. Transportation incidents, which include tractor overturns were the leading cause of death for these farmers and farm workers.
- The most effective way to prevent tractor overturn deaths is the use of a Roll-Over Protective Structure (ROPS). In

2012, 59% of tractors used on farms in the US were equipped with ROPS. If ROPS were placed on all tractors used on US farms manufactured since the mid-1960's, the prevalence of ROPS-equipped tractors could be increased to over 80%.

- On average, 113 youth less than 20 years of age die annually from farm-related injuries (1995 -2002), with most of these deaths occurring to youth 16-19 years of age (34%).
- Of the leading sources of fatal injuries to youth, 23% percent involved machinery (including tractors), 19% involved motor vehicles (including ATVs), and 16% were due to drowning.

Injuries

- Every day, about 100 agricultural workers suffer a lost-work-time injury.
- From 2008-2010, 50% of all hired crop worker injuries were classified as a sprain or strain.
- In 2014, an estimated 12,000 youth were injured on farms; 4,000 of these injuries were due to farm work.

A national occupational safety and health agenda for the agricultural production industry has been developed as part of the National Occupational Research Agenda (NORA) process. Further information on agriculture production safety and health is also available as part of the NORA Agricultural, Forestry, and Fishing Sector activities.

- Cost-effective Rollover Protective Structures (CROPS)
- Occupational Injury Surveillance of Production Agriculture (OISPA) Survey
- Minority Farm Operator Occupational Injury Surveillance of Production Agriculture (M-OISPA) Survey
- Farm Safety Survey (FSS)
- National Agricultural Workers Survey (NAWS)
- Publications
- Other Links of Interest
- Childhood Agricultural Injury Prevention Initiative

Related Topics

Traumatic Occupational Injuries

Agriculture

Child Agricultural Injury Prevention Initiative

Hazards to Outdoor Workers

Pesticide Illness & Injury Surveillance

MAR 0906

EXHIBIT

3

HEALTH ISSUES OF MIGRANT AND SEASONAL FARMWORKERS

ERIC HANSEN, MD
St. Mary's Medical Center, San Francisco
MARTIN DONOHOE, MD
Old Town Clinic and Oregon Health and Science University

Abstract: This paper describes the socioeconomic conditions under which the 3 to 5 million migrant and seasonal farmworkers in the United States live. Health consequences resulting from occupational hazards and from poverty, substandard living conditions, migrancy, language and cultural barriers, and impaired access to health care are described. Specific problems include infectious diseases, chemical- and pesticide-related illnesses, dermatitis, heat stress, respiratory conditions, musculoskeletal disorders and traumatic injuries, reproductive health problems, dental diseases, cancer, poor child health, inadequate preventive care, and social and mental health problems. By increasing awareness among health care professionals of the plight of migrant and seasonal farmworkers, the authors hope to encourage development of a stronger public health infrastructure and to improve the health status of these individuals.

Key words: Migrant farmworkers, seasonal farmworkers, agriculture, occupational injuries, pesticides, poverty, access to health care

Background

The plight of migrant and seasonal farmworkers (MSFWs) in the United States was first brought to national attention on Thanksgiving Day in1960 by famed journalist Edward R. Murrow's documentary, "Harvest of Shame."[1] While families at homes across the country enjoyed their bountiful Thanksgiving dinners, the program depicted the miserable living conditions associated with migrant agricultural work as "sweatshops in the fields." Forty years later, MSFWs remain one of the most impoverished and underserved populations in the United States. MSFWs suffer morbidity and mortality rates greater than the vast majority of the American population, due in large part to

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DOI: 10.1177/1049208903251513

occupational hazards, poverty, substandard living conditions, migrancy, and language and cultural barriers.[1,2]

Characteristics of the agricultural workforce

Although it is difficult to quantify the number of hired farm laborers in the United States, because of their social, economic, and linguistic marginalization, current estimates suggest that the agricultural industry employs some 2.5 million such laborers.[3] According to the U.S. Department of Labor's National Agricultural Workers Survey (NAWS), approximately 1.4 million of these farm laborers are MSFWs.[4] Other estimates have reported that between 3 and 5 million MSFWs and their dependents (including husbands, wives, children, and other family members) live in the United States.[5] A seasonal farmworker has been defined as "an individual whose principal employment is in agriculture on a seasonal basis who has been so employed within the last twenty-four months."[6] A migrant farmworker meets the same definition but "establishes for the purposes of such employment a temporary abode."[6]

About two-thirds of MSFWs are "shuttle migrants" who travel from a home base (either inside or outside of the United States) to a specific destination for seasonal employment in agriculture. The remaining one-third follow crops for employment and move from place to place, usually along predetermined migratory streams along the Atlantic seaboard or the West Coast, or through the midwestern states and Texas.

Although knowledge about the subgroup of MSFWs is incomplete, the available evidence indicates that hired farm laborers are demographically very different from family farmers and members of nearly every other occupational category. Hired crop workers are predominantly male (80 percent) and young (66 percent younger than 35 years, median age 29 years).[4] Slightly more than half (52 percent) are married; 55 percent of married couples migrate and work together.[4] Forty-five percent have children, and 24 percent have children with whom they reside.[4] Eighty-one percent of farmworkers and their families are foreign-born: 95 percent of these are from Mexico, 2 percent from other parts of Central America and the Caribbean, and 1 percent from Asia.[4] Spanish is the predominant native language of 84 percent, followed by English (12 percent).[4] The remaining 4 percent speak languages such as Tagalog, Ilocano, Creole, and Mixtec.[4] The median educational attainment of MSFWs is 6th grade. Even in their native language, 20 percent of these workers are completely illiterate, 38 percent are functionally illiterate (capable of reading at the 4th- to 7th-grade levels), and 27 percent are marginally literate (capable of reading at the 8th- to 12th-grade levels).[4]

Socioeconomic conditions

According to the Economic Research Institute of the U.S. Department of Agriculture, the U.S. agricultural industry's net farm income during the 1990s

was $45.5 billion per year.[7] Agricultural workers cultivate and/or hand-harvest up to 85 percent of fruits and vegetables produced by this industry.[8] One-half of all individual farmworkers earns less than $7,500 per year, and one-half of all farmworker families earns less than $10,000 per year.[4] Consequently, 61 percent of all individual farmworkers, and 50 percent of those with three to five family members, have incomes below federal poverty levels (individual: $8,860/year, three to five family members: $15,020 to $21,180/year).[9]

While some employers provide labor camps for MSFWs, attempts to enforce housing standards by the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) have created a trend toward discontinuing this practice.[10] Many employers are unable or unwilling to pay for the construction and maintenance of standard-meeting labor camps. Those farmworkers unable to find employer-provided housing units use local private housing that is not subject to federal regulation. Private housing tends to be substandard and expensive.[10]

Since units are rarely equipped with laundry facilities, pesticide-contaminated clothing may be washed in the same sink in which food is prepared or in the bathtub in which children are bathed. Housing camps may also be located next to pesticide-treated fields, resulting in persistent pesticide exposure via drift or even direct spray. Although some housing is well kept, many camps are overcrowded, with poor ventilation and inadequate, faulty, or even nonexistent plumbing. In this environment, infectious diseases, such as tuberculosis, spread easily. Garbage heaps and stagnant water breed rodents and insects, which can further harbor and transmit zoonotic diseases such as tularemia, anthrax, or rickettsial infections. Unfortunately, some MSFWs do not have access to or cannot afford housing; they may be forced to sleep in tents, vans, cars, or even ditches or open fields.[10,11] Migrant camps are not easy for the public or government to find, especially when they are privately owned. One of the many barns seen from a distance while driving on a rural road might, in fact, be a labor camp (Figure 1).

Occupational hazards

MSFWs face numerous occupational hazards. Farm labor is seasonal and intensive. Migrant workers labor in all seasons and weather conditions, including extreme heat, cold, rain, and bright sun. Work often requires stoop labor, working with soil and/or heavy machinery, climbing, and carrying burdensome loads, all of which lead to chronic musculoskeletal symptoms. Direct contact with plants can cause allergic rashes or, in the case of tobacco farmers, "green tobacco sickness" (i.e., transdermal nicotine poisoning).

Agriculture is one of the most hazardous occupations in the United States. In 2000, there were 780 deaths and 130,000 disabling injuries in agriculture.[12] The only industry that had more deaths was construction, with 1,220.[12] The actual rate of occupational injuries and illnesses in agriculture may, in fact, be

FIGURE 1
POOR CONDITIONS ABOUND AT MIGRANT LABOR CAMPS

much higher. Underreporting of medical conditions is significant due to limited access to health services, different cultural conceptions of health and disease, and fear of lost wages or jobs.[13] Although OSHA regulations require agricultural employers of 11 or more workers to provide drinking water and hand-washing and toilet facilities, compliance with these regulations is poor; sanitation violations have been noted in up to 69 percent of its field inspections.[10] Moreover, farms with fewer than 11 employees, a category that includes 95 percent of U.S. farms, are exempt from many OSHA regulations.[14] As a result, some MSFWs resort to drinking or bathing in water contaminated with pesticides, chemical fertilizers, or organic waste.

Health problems

Although MSFWs and their families suffer from the same health problems found in the general population, the occupational hazards, poverty, substandard living conditions, migrancy, and language and cultural barriers that they face result in unique health hazards as well. As a result, the average life expectancy of MSFWs is 49 years, compared with the national average of 75 years.[15] Various categories of health problems faced by MSFWs are discussed below.

Infectious disease. Migrant workers are at increased risk for contracting a variety of viral, bacterial, fungal, and parasitic infections.[13,15-19] They are approximately 6 times more likely to have tuberculosis than the general population; up to 44 percent of migrants have positive purified protein derivative of tuberculin skin tests.[13] Parasitic infection rates are 11 to 59 times higher than

in the general population.[15] Untreated parasitic conditions can lead to chronic anemia or malnutrition. There is a high incidence of sexually transmitted diseases, primarily among young, single men in labor camps, who face social isolation and have limited recreational facilities. While the national seroprevalence rate of HIV infection is 0.4 percent, HIV seroprevalence rates among migrant workers are 2.6 to 13 percent.[17-19] Migrant women are at particular risk of contracting HIV because of boyfriends or husbands visiting prostitutes; variable cultural beliefs about the use of contraceptive methods such as condoms; and a lack of access to educational, counseling, and preventive services.[18]

Migrant workers are also at increased risk for urinary tract infections, partly as a result of a lack of toilets at the workplace and stringent working conditions that promote chronic urine retention.[10,20] Urinary retention in turn encourages bacterial growth and stretches and weakens the bladder wall; this in turn promotes chronic infections or colonization.

Chemical and pesticide-related illnesses. The full extent of acute and chronic pesticide poisoning among MSFWs is not known, due to the lack of formal reporting systems, the reluctance of workers to report poisonings, workers' inability to seek medical treatment when accidents occur, and a dearth of physician knowledge and training in recognizing and treating pesticide-related illnesses.[20] Migrant workers suffer from the highest rates of toxic chemical injuries of any group of workers in the United States; the Environmental Protection Agency estimates that 300,000 farmworkers suffer acute pesticide poisoning each year.[21] Chemical and pesticide poisoning may result from direct spraying of workers; indirect spray from wind drifts; direct dermal contact with residues on crops; bathing in, or drinking, contaminated water; or transfer of residues from contaminated hands while eating, smoking, or defecating. Acute organophosphate exposure causes increased salivation, tearing, blurred vision, nausea, vomiting, abdominal cramps, urinary and fecal incontinence, increased bronchial secretions, cough, wheezing, and sweating. In more severe acute intoxication, dyspnea, bradycardia, heart block, hypotension, pulmonary edema, paralysis, convulsions, or death may occur. Long-term pesticide exposure may cause permanent neurological deficits, such as peripheral neuropathy or deficits in motor skills, memory (or, attention), and cancer.[3,22] This is especially true with certain outlawed (in this country) persistent organic pollutants, which may have endocrine, reproductive, and oncogenic effects on pregnant women and on growing children.[14,23]

Dermatitis. Agricultural workers have a higher incidence of skin disorders than employees in any other industry; dermatitis is the most common occupational health problem among MSFWs.[13,20] Skin disorders may stem from exposure to pesticides, fertilizers, latex, chemicals, allergenic plants (e.g., poison ivy, ragweed, and sumac), and allergenic crops (e.g., asparagus, barley, tobacco, celery, lettuce, and mustard). Sun, sweat, chapped or abraded skin,

lack of protective clothing, and absence of hand-washing facilities at the worksite all contribute to skin conditions. Because occupational dermatitis often occurs on the hands, migrant workers may suffer a reduction in their work capability and/or income.[20]

Heat stress. Strenuous outdoor labor with few, if any, rest periods, combined with a lack of potable water, contributes to a high incidence of heat stroke, heat exhaustion, and heat cramps. Farmworkers are four times more likely than nonagricultural workers to suffer from heat-related illnesses.[20]

Respiratory conditions. Migrant workers are exposed to many hazardous agents, including organic and inorganic dusts (e.g., cotton, grain, hay, silica), gases (e.g., NH_3, H_2S, CO, CO_2, CH_4, NO_2), herbicides (e.g., Paraquat), fertilizers, solvents, fuels, and welding fumes.[14] As a result, they are at risk for mucous membrane irritation, allergies, asthma, hypersensitivity pneumonitis (i.e., farmer's lung), pulmonary fibrosis, chronic bronchitis, pulmonary edema, tracheobronchitis, emphysema, and asphyxiation.[3,13,14,16]

Musculoskeletal disorders and traumatic injuries. Agricultural labor places migrant workers at risk for musculoskeletal disorders as a result of heavy lifting and carrying; prolonged kneeling, stooping, or otherwise difficult postures; working with the arms above shoulder level; whole body vibration (e.g., tractor driving); and rapid repetitive motions.[3,13,14,20] Workers face three main categories of problems: traumatic injuries (e.g., fractures, strains), joint and tissue irritation, and accelerated joint degeneration. Interventions such as warming up, stretching, and ergonomic education and training might help to reduce traumatic injuries and chronic musculoskeletal illnesses in this population.[13,14]

Reproductive health. Prolonged standing and bending, overexertion, dehydration, poor nutrition, and pesticide or chemical exposure contribute to an increased risk of spontaneous abortion, premature delivery, fetal malformation and growth retardation, and abnormal postnatal development.[18,20,24] Moreover, low socioeconomic status; frequently young maternal age; and late, little, or no prenatal care increase risk to mother and child.[18] The infant mortality rate among MSFWs has been estimated to be twice the national average.[25] In one study of California migrant women, 24 percent had had at least one miscarriage or stillbirth.[26]

Child health. Although the U.S. government limits the legal age of child labor in most industries to at least 16 years, for agricultural labor it is 12 years.[10,18] Children are particularly vulnerable to pesticide poisonings and respiratory and communicable diseases. In fact, children may be more vulnerable than adults to the same dose of pesticides, since they have greater surface area to body weight ratios than adults, greater circulatory flow rates that affect the distribution of toxic chemicals, and less mature immune systems that may

be less effective than adults' immune systems in detoxifying and eliminating hazardous agents.[27] During development, changes also occur in liver enzymes that can increase the toxicity of environmental chemicals, causing a greater proportional impact from the same amount of chemicals.[27] Many migrant children are below average height. They suffer more frequent respiratory, parasitic, and skin infections; chronic diarrhea; vitamin deficiencies; and dental problems than other children.[18,20,28] Children of migrant farmworkers experience homelessness, frequent moves, poverty, and interruptions of schooling and friendships that pose both psychosocial and developmental risks.[15]

Oral health. MSFWs experience 150 to 300 percent more decayed teeth than their peers.[29] Dental caries is the most common untreated health problem in migrant children; at least one-half of farmworker children have at least one and an average of three carious teeth.[18] Children who do not receive dental care are at increased risk of developing severe periodontal problems as adults. Dental disease results in part from an overall lack of knowledge about dental care. Many MSFWs have weak knowledge of the relationship between sweet foods and caries and of the positive effects of good oral hygiene and fluoride on periodontal health.[18,30]

Cancer. Migrant workers are exposed to a wide variety of carcinogens, including pesticides, solvents, oils, fumes, ultraviolet radiation from chronic sun exposure, and biologic agents such as human and animal viruses. Farm laborers have increased mortality rates for cancers of the lip, stomach, skin (melanotic and nonmelanotic), prostate, testes, and hematopoietic and lymphatic systems (e.g., multiple myeloma, and Hodgkin's and non-Hodgkin's lymphomas).[3,13,14,31] A recent study reported that the California members of the United Farm Workers of America developed more cases of leukemia, stomach cancer, and uterine corpus and cervix cancers than the general California Hispanic population.[32] Farmworkers also experienced later stage disease at diagnosis in comparison with the general California Hispanic population for most major cancer sites, which may reflect impaired access to preventative and screening health services.[32] Children exposed to pesticides seem to show higher relative risks than adults for developing many of these cancers.[33] Farmworkers have decreased mortality from cancers of the lung and bladder, which may be related to a lower prevalence of smoking.[14] Very few studies have focused on hired farmworkers, so data must be interpreted cautiously. Methodological challenges for future research include the difficulty of follow-up due to migrancy, the complexities of estimating exposure, and the (in)accuracy of occupational codes on death certificates.

Social and mental health. Migrant workers face numerous sources of stress, including job uncertainty, poverty, social and geographic isolation, intense time pressures, poor housing conditions, intergenerational conflicts, separation from family, lack of recreation, and health and safety concerns.[13,14]

Manifestations of stress include relationship problems, substance abuse, domestic violence, and psychiatric illness. Heavier drinking patterns have been noted in communities of predominantly single men compared with those consisting primarily of families. Children of migrant workers experience a sixfold greater risk of mistreatment than children in the general population.[13]

Despite the stressors faced by migrant workers, their lifetime prevalence of psychiatric disorders actually may be lower than that of Mexican Americans and of the U.S. population as a whole.[34] However, prolonged U.S. residence leads to an increased risk of psychiatric disorders; the increased risk may be attributed to the loss of protective sociocultural factors (e.g., cohesive communities based on strong social support, family ties, language and group identity), or it could represent initially healthy migrants becoming less psychologically healthy with acculturation over time.[34]

Impaired access to health care

Migrant workers face numerous barriers to medical care, including lack of transportation, insurance, and sick leave; the threat or fear of wage or job loss; language barriers between MSFWs and health care providers; and limited clinic hours.[10,13,15,16,20] Illiteracy further limits verbal communication and the degree to which written information can be relied on to provide educational or preventive advice and information regarding how to get health care. The fact that treatment is often sought for acute rather than for chronic conditions or for preventative services is likely due, in part, to this illiteracy. Migrant workers have increased hospitalization rates and mortality from common conditions (e.g., pneumonia mortality may be up to 200 percent higher than the national average); the prevalence of chronic conditions such as hypertension, anemia, obesity, and dental disease is high.[10,14] Chronic illnesses that require careful monitoring, such as diabetes, tuberculosis, and HIV, present special problems to MSFWs, who often lack follow-up care or a long-term relationship with a single health care provider or clinic.

The migrant health care system of approximately 400 federally authorized clinic sites (funded under the Public Health Service Act) reaches only 12 to 15 percent of the migrant population annually.[18] Although many MSFWs are eligible for assistance programs, as few as 15-20 percent actually obtain benefits. [13] Incomes can fluctuate during different agricultural seasons, preventing qualification based on monthly or weekly wages, even though annual earnings are below poverty levels. Fear of immigration penalties and a lack of knowledge of eligibility criteria also hinder enrollment. Migrant workers are often disqualified because they do not meet the 45-day residency requirement that many states impose. As many employers do not report wages of MSFWs, they are often unable to prove claims for Social Security, workers' compensation, occupational rehabilitation or disability compensation benefits.[10,14,18,20]

Finally, as few as 1-2 percent of MSFWs have protections afforded by labor union representation, which could provide collective bargaining agreements for services such as employer-provided health insurance.[13]

Limitations of available data

Historically, much of the information available concerning MSFWs has been derived from secondary sources and has been limited in scope. Frequently, survey data of employers or information gathered from analyses of administrative data have been used.[13] Recently, however, there has been a trend toward using experienced interviewers who are bilingual and who conduct interviews directly with the MSFWs.[13] Consequently, many of the language and cultural barriers that previously isolated researchers from the MSFW community have fallen. In addition, reports such as the Department of Labor's NAWS have improved the accuracy of demographic data collection. Each year, NAWS enumerates all farms and randomly selects populations of about 2,500 farmworkers for interviews to compile demographic, employment, and migratory data.[4] Nevertheless, much data on MSFWs are descriptive and sometimes are anecdotal. Future studies must continue to provide accurate baseline data on MSFWs in order to examine them alongside comparison groups. Systematic epidemiological investigation of the causes and prevention of the health problems described above will be critical in improving the lives of MSFWs and their families. Basic health status indicators such as age-related death rates and prevalence rates for common causes of morbidity and mortality need to be characterized. Research on interventions (such as education programs), new regulations, or protective technologies may further elucidate specific actions that may be taken on behalf of the MSFW community.

Summary and recommendations

Migrant and seasonal farmworkers are vital to our nation's economy and diverse culture, yet they constitute a marginalized and underserved population with many unmet socioeconomic and health care needs. (Table 1 summarizes the major points made above.) Occupational hazards, poverty, substandard living conditions, migrancy, and language and cultural barriers contribute to MSFWs' health problems and constitute barriers to health care. The challenge to providers, policy makers, and socially conscious Americans is to create a stronger public health infrastructure; to collect more data on specific health conditions in MSFWs; to improve education among MSFWs and health care providers; and to increase awareness of the plight of these men, women, and children (Table 2). Those who harvest our fields deserve better than they are getting now.

Table 3 contains a list of informational resources regarding MSFWs.

TABLE 1
SUMMARY POINTS

- Migrant and seasonal farmworkers (MSFWs) constitute a tragically underserved population with many socioeconomic and health care needs.
- Occupational hazards, poverty, substandard living conditions, migrancy, and language and cultural barriers contribute to MSFWs' health problems and constitute barriers to health care.
- Specific health challenges faced by MSFWs include infectious diseases, chemical and pesticide-related illnesses, dermatitis, heat-related illnesses, respiratory conditions, musculoskeletal disorders, traumatic injuries, reproductive and child health problems, tooth decay, cancer, mental illness, and lack of access to health care.
- Increased attention, resources, education, and preventive services should be directed toward these men, women, and children, and toward those who serve them.

TABLE 2
WHAT CAN BE DONE TO IMPROVE THE HEALTH OF MSFWs?

Create a stronger public health infrastructure
- Enroll more health care providers to work with underserved populations
- Employ more community outreach workers
- Train bilingual and bicultural health care providers
- Encourage alternative health care delivery methods (e.g., "health care vans")
- Implement more advanced information-tracking systems that can be networked among clinicians
- Increase preventive health services such as dental care, family planning, accident prevention, and detection and control of chronic diseases
- Broaden legislation and protection through improved U.S. Department of Labor, Occupational Safety and Health Administration, and Environmental Protection Agency standards to eliminate overcrowded and unsanitary living conditions and workplace hazards and exposures
- Create a system of universal access to care
- Improve education among migrant and seasonal farmworkers (MSFWs) and health care providers
- Educate MSFWs about prevention, detection, and treatment at their homes, workplaces, or community centers
- Include migrant health care in medical, nursing, and dental school curricula (e.g., interactive lectures)
- Improve physician recognition, management, and reporting of pesticide-related illnesses

TABLE 3
INFORMATION RESOURCES

- Health Resources & Services Administration, Bureau of Primary Health Care, Migrant Health Program (www.bphc.hrsa.gov/migrant)
- Health Resources & Services Administration of Minority and Women's Health (www.bphc.hrsa.gov/omwh)
- National Center for Farmworker Health (www.ncfh.org)
- Migrant Clinicians Network (www.migrantclinician.org)

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EXHIBIT

4

FACTS ABOUT AGRICULTURAL WORKERS

BASICS

It is estimated that there are over 2.5-3 million agricultural workers in the United States. These agricultural workers travel throughout the U.S. serving as the backbone for a multi-billion dollar agricultural industry.(1) Within the population, 16% have been identified as migrating, while 84% are seasonal agricultural workers. The bulleted list below provides agricultural worker demographic information from the 2013-2014 National Agricultural Workers Survey (NAWS) results.(2)

- The majority (73%) of all agricultural workers were foreign born.
  - 68% of all agricultural workers were born in Mexico
    - 46 percent were from the traditional sending states of west central Mexico, including Guanajuato, Jalisco, and Michoacán
    - 22 percent of agricultural workers were from the non-traditional sending states of southern Mexico, including Guerrero, Oaxaca, Chiapas, Puebla, Morelos, and Veracruz
  - 4 percent of agricultural workers were born in Central American countries
  - 1 percent of agricultural workers in other countries

- Seventy two percent of crop workers were male and 28% were female.

- The following was noted for English speaking ability:
  - 27 percent said they could not speak English "at all"
  - 32 percent said they could speak "a little" English
  - 11 percent said they could speak English "somewhat"
  - 31 percent said they could speak English "well"

- Agricultural workers in the United States have an average age of 38.
  - 82 percent are over 25 years old or older
  - 8 percent are between 22 and 24
  - 9 percent are between 18 and 21
  - 1 percent are between 14 and 17

- The average level of completed education was 8th grade.
  - 3 percent had not completed any formal schooling
  - 36 percent had completed grades 1 to 6

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- 21 percent had completed grades 7 to 9
- 28 percent had completed grades 10 to 12
- 11 percent had attained some form of higher education

ECONOMIC CONTRIBUTION

Agricultural workers support the $985 billion agricultural industry in the U.S.(3) Some studies have noted an increase in the agricultural worker population over the last decade, and the presence of agricultural workers has been shown to increase the overall economic output of the regions in which they work.(4) Eliminating the presence of agricultural workers or switching to less labor-intensive crops has been shown to negatively impact productive agricultural regions and significantly reduced the number of jobs available to permanent local residents.(4) Research conducted about the agricultural economy of Michigan found that agricultural workers contributed over $23.3 million (2001 dollars) to the state's economy annually by enabling farmers to produce higher-value crops, after the costs of wages and housing for agricultural workers were deducted.(5) Stringent immigration laws that were passed in Arizona and Georgia demonstrated the severe impact of farm labor shortages.(6) A University of Georgia study found that House Bill 87, passed in April 2011, had a devastating effect on the state's agricultural output due to increased labor shortages: over $181 million was lost due to inadequate labor in less than a year.(7)

AGRICULTURAL GUEST WORKER PROGRAM

The U.S. has experienced farm labor shortages for the past century, which became severe during World War II. To meet the demand for farm laborers, the Bracero Program was created in 1942.(8) The Bracero Program allowed over 4 million guest workers to come in from rural, poor areas in Mexico because of agricultural worker shortage in the United States.(8) In 1964, the program was terminated and replaced by the H2 Temporary Guest Worker program, with H-2A being agricultural workers and H-2B being guest workers who do non-agricultural work.(9) During the fiscal year of 2016, the U.S. Department of State certified 165,741 H2-A visas out of 172,654 that were requested.(10,11)

WAGES AND BENEFITS

Agricultural workers represent some of the most economically disadvantaged people in the U.S. According to the 2013-2014 NAWS survey results, 30% of agricultural worker families had total family income levels below the national poverty guidelines.(2) The same NAWS survey found that 83% of agricultural workers said they were paid by the hour, 9% were paid by the piece, and 8% were salaried or had other payment methods. Using piece rate as a basis for payment is common in agricultural work when the crop being picked is easily weighed and measured.(12) One reason some employers prefer this form of payment is that workers are motivated to work faster during such a short window of seasonal crop harvesting.(12) In addition to low wages, agricultural workers rarely have access to worker's compensation, occupational rehabilitation, or disability compensation benefits. Because worker's compensation benefits are state-dependent, agricultural workers are often further challenged by the qualifications and requirements of each individual state. Farmworker Justice has compiled a chart of state-specific worker's compensation coverage limitations for agricultural workers. Within the United

States and U.S. territories, 17 states do not require workers' compensation insurance for agricultural workers, 14 states require workers' compensation for all agricultural workers and the remainder require it, but provide exceptions for small employers.(13) Although many agricultural workers fit eligibility profiles for programs such as Medicaid and the Food Stamp Program, very few are able to secure these benefits because of different state eligibility requirements. Also, there are administrative barriers to medical coverage for mobile populations and some organizations have recently focused their interest in overcoming these.(14–16) Recent research has demonstrated that portable health service programs such as Medicaid and WIC, currently administered at the state level, would benefit mobile agricultural worker families.(17) Some solutions that reports have suggested to solve the portability issue involve a multistate Medicaid card and an interstate provider network.

HOUSING

Although there are good examples of improving agricultural worker housing conditions, such as the Farmworker Housing Program in Washington, for the most part agricultural worker housing is often substandard or non-existent.(18,19) A study conducted in 2008 in North Carolina found that about 89% of the agricultural worker labor camps had more than one violation against the Migrant Housing Act of North Carolina.(19) This same study reported that up to 78% of residents felt they lived in a crowded living space. Another study conducted in 2007 in the Coachella Valley of California concluded that 2% of those surveyed reported having living situations not meant for human habitation (such as the outdoors, cars, trucks, or vans parked in streets or parking lots, or inhabited converted garages).(20) This number increased to 30% amongst respondents who were migratory agricultural workers in the same area. Over the course of the last decade, governmental agencies and nonprofit groups have become more interested in the improvement of agricultural worker housing conditions. The U.S. Department of Agriculture's Rural Housing Service, the U.S. Department of Labor, and the U.S. Department of Housing and Urban Development all provide housing services to agricultural workers and can be contacted with agricultural worker housing questions.(21) Some of these programs include the Farm Labor Housing Loans and Grants Program, the National Farmworker Jobs Housing Assistance Program and the Family Self-Sufficiency Program.

HEALTH

A study conducted in New York in 2007 found that poverty, frequent mobility, low literacy, language and cultural barriers impede agricultural workers' access to social services and cost effective primary health care.(22) The small percentage of agricultural workers who do take advantage of health services are faced with further issues: limited means of transportation, language and cultural barriers, the lack of time-efficient healthcare delivery methods and the medical referral system.(23) For over 40 years, health centers have provided primary care services to agricultural workers via the federal Health Center Program.(24) Health centers are community-based and patient-directed organizations that serve populations with limited access to health care. These include low income populations, the uninsured, those with limited English proficiency, agricultural workers, individuals and families experiencing homelessness, and those living in public housing.(25) Some of these Health Centers receive federal funds to provide health services to agricultural worker patients. In 2015, the Health and Resources

Services Administration of the U.S. Department of Health and Human Services reported that the health center program provided health services to 910, 172 agricultural workers (including family members) as reported by all Community Health Centers; of which 833, 271 were served by the 174 receiving specific funds to provide services to this population.(26) According to HRSA's Health Center Data, the following are the most common diagnosis reported by Health Centers for this set of patients in 2015.(27) See NCFH's fact sheet on Farmworker Health for more detailed information about health issues among agricultural workers nationally.

Diagnosis	**Number of Agricultural Worker Patient with Diagnosis, 2015**
Overweight/obesity	118,357
Hypertension	93,594
Diabetes mellitus	70,511
Otitis media & Eustachian tube disorders	33,163
Depression & other mood disorders	30,077

LEGISLATIVE PROTECTION

According to the U.S. Bureau of Labor Statistics, agriculture is frequently ranked as one of the most dangerous industries in the nation.(28) Commonly-reported injuries involve exposure to the elements, symptoms associated with pesticide exposure in parents and children, farm equipment injuries and heat stress. One of the biggest dichotomies with the agricultural worker population is that despite providing the hard work behind the foods that sustain us, they are a group that receives very few benefits and protections, and are frequently excluded from regulatory labor protections. The following are some basic legislative protections that apply to agricultural workers:

The Fair Labor Standards Act: First enacted in 1938, the FLSA has undergone many amendments; it establishes a minimum wage, overtime pay, record-keeping and child labor standards.(29) We know today that overtime pay is rarely honored in agriculture and that child worker ages are set very low in the agricultural industry.(30,31)

Migrant and Seasonal Agricultural Worker Protection Act: Enacted in 1983, the MSPA offers employment-related protections for agricultural workers.(32) Every non-exempt farm labor contractor, agricultural employer, and agricultural association must:

- Disclose the terms and conditions of employment to each mobile agricultural worker in writing at the time of recruitment and to each seasonal worker when employment is offered, in writing if requested;
- Post information about worker protections at the worksite;
- Pay each worker the wages owed when due and provide each with an itemized statement of earnings and deductions;
- Ensure that housing, if provided, complies with substantive federal and state safety and health standards;

- Ensure that each vehicle, if transportation is provided, meets applicable federal and state safety standards and insurance requirements and that each driver be properly licensed;
- Comply with the terms of any working arrangement made with the workers; and
- Make and keep payroll records for each employee for three years.

Occupational Safety and Health Act: Enacted in 1970, the Field Sanitation Standards specifies that agricultural employers with 11 or more employees who conduct hand labor operations in a field must provide: drinking water at a suitable drinking temperature, toilet and hand-washing facilities within a reasonable, accessible distance and the employee must be notified by the employer of the location of such facilities.(33)

Agricultural Worker Protection Standard: Enacted in 1992 and revised in 2015, this standard is enforced by the Environmental Protection Agency.(34) Primarily focused on the safe handling of pesticides, the standard now prohibits children under the age of 18 from handling pesticides, requires that workers do not enter areas recently sprayed with pesticides, and improves protection for workers from retaliation if they make complaints about violations of the standard.

Immigration and Nationality Act: The H-2A portion of the Immigration and Nationality Act offers protections for H-2A workers concerning: a pay rate, written notification of the work contract with beginning and end dates, the three-fourths guarantee (employee must guarantee employment for at least 75% of the contract period), housing will be provided at no cost to the employee, employer will also be responsible for transportation to and from work and transportation to and from their country of origin.(35)

Title VII of The Civil Rights Act of 1964: Enacted in 1964, the basis of this act initially involved the prohibition of employment discrimination based on race, sex, color, national origin and religion. Since 1964, the act has undergone many amendments, but Title VII is significant for farmworker women. One study conducted recently in California stated that sexual harassment, sexually suggestive dialogue and inappropriate touching are commonly experienced by farmworker women.(36) The same study found that 24% of the women even reported sexual coercion. Supervisors would also often suggest a form of payments (either money or goods) as a means to negotiate for potential sexual favors. Title VII protects employees of both sexes because of the Equal Employment Opportunity Commission's guidelines for sexual harassment. Quid pro quo (offering a professional benefit in exchange for sexual acts), hostile environment (sexual comments, suggestive physical contact or showing sexual material) and retaliation (punishment from the employer for reporting or formalizing a complaint on sexual harassment) are all protections that both male and female employees have regardless of the industry.(37)

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EXHIBIT

5

NEWS RELEASE

BUREAU OF LABOR STATISTICS
U. S. DEPARTMENT OF LABOR

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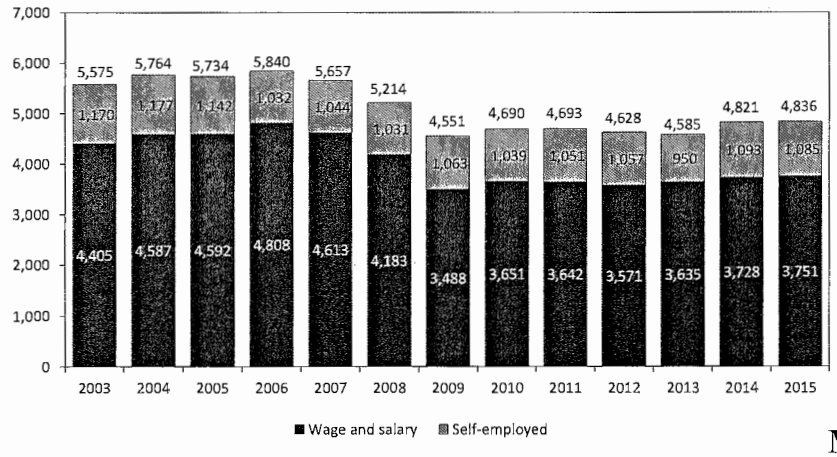
NATIONAL CENSUS OF FATAL OCCUPATIONAL INJURIES IN 2015

A total of 4,836 fatal work injuries were recorded in the United States in 2015, a slight increase from the 4,821 fatal injuries reported in 2014, the U.S. Bureau of Labor Statistics reported today. (See chart 1.) This release marks the first time that the Census of Fatal Occupational Injuries (CFOI) has published a single, annual release with no revisions and will be the only release for 2015 CFOI data. A similar schedule will be followed in future years. Preliminary releases, which appeared in August or September in past years, will no longer be produced.

Key findings of the 2015 Census of Fatal Occupational Injuries:

- Annual total of 4,836 fatal workplace injuries in 2015 was the highest since 5,214 fatal injuries in 2008.
- The overall rate of fatal work injury for workers in 2015, at 3.38 per 100,000 full-time equivalent (FTE) workers, was lower than the 2014 rate of 3.43.
- Hispanic or Latino workers incurred 903 fatal injuries in 2015—the most since 937 fatalities in 2007.
- Workers age 65 years and older incurred 650 fatal injuries, the second-largest number for the group since the national census began in 1992, but decreased from the 2014 figure of 684.
- Roadway incident fatalities were up 9 percent from 2014 totals, accounting for over one-quarter of the fatal occupational injuries in 2015.
- Workplace suicides decreased 18 percent in 2015; homicides were up 2 percent from 2014 totals.
- Heavy and tractor-trailer truck drivers recorded 745 fatal injuries, the most of any occupation.
- The 937 fatal work injuries in the private construction industry in 2015 represented the highest total since 975 cases in 2008.
- Fatal injuries in the private oil and gas extraction industries were 38 percent lower in 2015 than 2014.
- Seventeen percent of decedents were contracted by and performing work for another business or government entity in 2015 rather than for their direct employer at the time of the incident.

Chart 1. Number of fatal work injuries by employee status, 2003–15



Source: U.S. Bureau of Labor Statistics, 2016.

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Worker characteristics

Non-Hispanic Black or African-American workers incurred 495 fatal work injuries in 2015, the most since 2008, though the rate of fatal injury remained the same as 2014 at 3.2 per 100,000 FTE workers. Fatal injuries involving Hispanic or Latino workers rose 12 percent in 2015 to 903 fatalities, up from 804 in 2014. The Hispanic or Latino worker rate also rose from 3.7 to 4.0 per 100,000 FTE workers in 2015 and was the highest rate among the racial/ethnic groups for which rates are calculated (see table 1).

The number of fatally-injured workers born in Mexico rose 22 percent in 2015 to 415 cases from 340 in 2014. Overall, fatal injuries involving foreign-born workers were at the highest level since 2007. Fatally-injured workers in 2015 who were born abroad came from about 100 different countries.

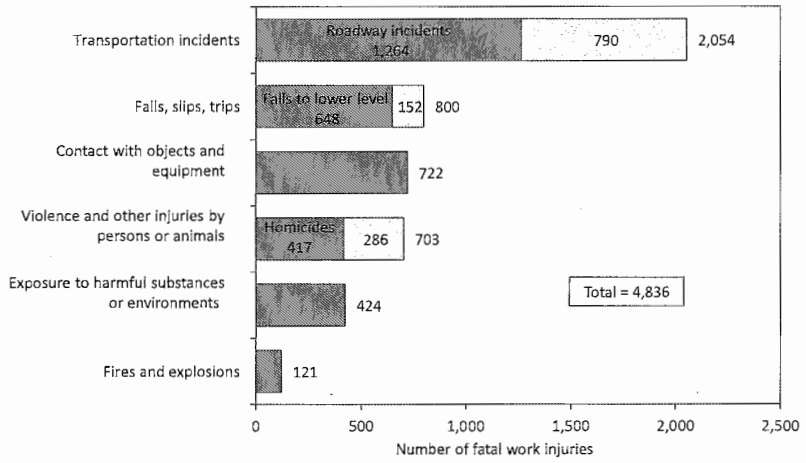
While workers age 45 years and older accounted for 58 percent of workplace fatalities in 2015, they accounted for only 45 percent of the total hours worked. Fatal injury rates were generally lower among younger workers (2.3 per 100,000 FTE workers for those age 25 to 34 years) and higher among older workers (9.4 per 100,000 FTE workers for those age 65 years and older).

Fatal injuries among wage and salary workers rose slightly in 2015, but were lower among self-employed workers. Self-employed workers, however, had a fatal injury rate that was 4 times higher than the rate for wage and salary workers (13.1 fatalities per 100,000 FTE workers compared with 2.8 for wage and salary workers). While women accounted for 43 percent of the hours worked in 2015, they accounted for only 7 percent of the fatal injuries.

Type of incident

The number of fatal work injuries involving transportation incidents, the incident leading to the most fatal work injuries, increased in 2015. Roadway incidents were up 9 percent in 2015 to 1,264 and accounted for 26 percent of all fatal work injuries (see chart 2). Almost half of these fatalities (629) involved a semi, tractor-trailer, or tanker truck. Of the 253 non-roadway fatalities in 2015, the most frequent vehicle involved was a farm tractor (73). Fatal injuries involving pedestrians were lower in 2015, as were rail and water vehicle incidents.

Chart 2. Fatal occupational injuries by major event, 2015



Source: U.S. Bureau of Labor Statistics, 2016.

Violence and other injuries by persons or animals resulted in 703 fatal injuries in 2015, down 8 percent from the 2014 total (see table 2). The number of work-related suicides dropped to 229 in 2015 from 280 in 2014. Workplace homicides rose by 2 percent to 417 cases in 2015, with shootings increasing by 15 percent, the first increase since 2012. Assailants in workplace homicides differed greatly depending on the gender of the decedent. Approximately 43 percent of female decedents were fatally assaulted by a relative or domestic partner; the corresponding figure for male decedents was 2 percent.

Falls to a lower level accounted for 81 percent of all fatal falls. Of those cases where the height of the fall was known, more than two-fifths of fatal falls occurred from 15 feet or lower. Fatal falls to a lower level accounted for nearly 40 percent of fatal work injuries in the private construction industry in 2015.

Workers were fatally struck by an object or equipment 519 times in 2015. Workers were most frequently struck by plants, trees, and vegetation (110); highway vehicles (104); and construction, logging, and mining machinery (54).

Fatal exposures to electricity were down in 2015, but fatalities due to exposure to temperature extremes rose. Workplace deaths due to nonmedical use of drugs or alcohol, unintentional overdose, increased 45 percent in 2015 to 165. A total of 136 workers were killed in incidents associated with confined spaces in 2015. The number of workers who died in multiple-fatality incidents (incidents where more than one worker was killed) was down 9 percent to 343 fatalities in 2015. These 343 decedents were killed in 134 separate incidents.

Occupation

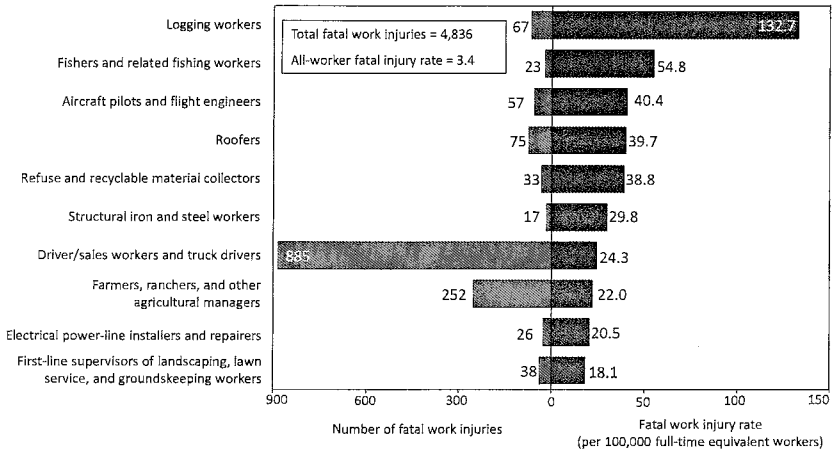
Fatal injuries among construction and extraction occupations rose by 2 percent to 924 cases in 2015—the highest level since 2008. Several construction occupations recorded their highest fatality total in years, including construction laborers (highest since 2008); carpenters (2009); electricians (2009); and plumbers, pipefitters, and steamfitters (2003). In contrast, fatal injuries among extraction workers were down sharply to 45 in 2015 from 88 in 2014.

Transportation and material moving occupations recorded fewer fatal injuries in 2015 than in 2014, but still accounted for over one-fourth of all fatal work injuries in 2015. Heavy and tractor-trailer truck drivers incurred 745 fatal work injuries in 2015, the most of any occupation. Fatal injuries among aircraft pilots and flight engineers were down 30 percent in 2015 to a series low of 57 fatalities (see chart 3) although they did have a high fatal injury rate compared to all workers. Aircraft incidents in 2015 were at their highest level since 2011 even with this decrease for aircraft pilots and flight engineers.

Fatal injuries in farming, fishing, and forestry occupations increased 10 percent in 2015 to 284 fatalities—the highest level reported for that occupational group in 7 years. Fatalities among agricultural workers rose to 180, an increase of 22 percent from the 148 cases reported in 2014. Farmworkers and laborers involved in crop, nursery, and greenhouse operations recorded 106 fatalities, an increase of 33 percent from 2014 and matched highest total ever reported (in 2010) for that occupational group.

Fatal injuries among building and grounds cleaning and maintenance workers rose 15 percent to 289 in 2015, a series high. Fatal injuries involving grounds maintenance workers increased to 183 in 2015 from 158 in 2014, which matched the series high in 2011. These workers also had a rate 4 times higher than the national rate—15.0 per 100,000 FTE workers compared with 3.4 for all workers (see table 3).

Chart 3. Civilian occupations with high fatal work injury rates, 2015



Note: Fatal injury rates exclude workers under the age of 16 years, volunteers, and resident military. The number of fatal work injuries represents total published fatal injuries before the exclusions. For additional information on the fatal work injury rate methodology, please see www.bls.gov/iif/oshnotice10.htm.
Source: U.S. Bureau of Labor Statistics, Current Population Survey, Census of Fatal Occupational Injuries, 2016.

Resident military fatalities rose to 73 in 2015 from 56 in 2014. Multiple fatality incidents account for 49 percent of fatalities to the resident military and 7 percent to all workers.

Industry and contracted workers

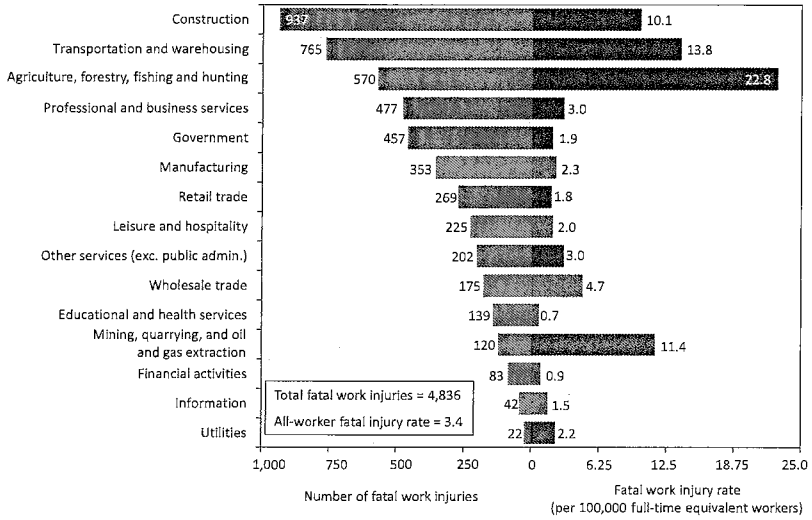
Fatal injuries in the private construction industry rose 4 percent in 2015 to 937 from 899 in 2014 (see chart 4). The 2015 total for construction was the highest since 2008 and was primarily led by an increase in fatal injuries among specialty trade contractors, though the rate for construction remained statistically unchanged. The largest increase among specialty trade contractors involved foundation, structure, and building exterior contractors whose fatal injury total rose 27 percent to 231 fatal injuries in 2015 from 182 in 2014.

The private mining, quarrying, and oil and gas extraction industry recorded fewer fatal injuries in 2015, declining 34 percent to 120 fatal injuries from 183 in 2014 (see table 4). Fatal work injuries in the combined oil and gas extraction industries (North American Industry Classification System [NAICS] 21111, 213111, and 213112) were 38 percent lower. The 2015 combined total for oil and gas extraction industries was the lowest since 2009.

Fatal injuries in the private manufacturing industry rose slightly in 2015 to 353 from 349 in 2014. Though the increase in manufacturing was small, the 2015 fatal injury total for manufacturing was the highest for that industry sector since 2008. The rate remained statistically unchanged from 2014.

Wholesale trade declined 8 percent to 175 cases in 2015—a series low. The number of private transportation and warehousing fatalities was essentially unchanged from 2014, but fatal injuries in the private truck transportation industry rose 9 percent to 546 in 2015, the highest total since 2007.

Chart 4. Number and rate of fatal work injuries by industry sector, 2015



Note: Fatal injury rates exclude workers under the age of 16 years, volunteers, and resident military. The number of fatal work injuries represents total published fatal injuries before the exclusions. For additional information on the fatal work injury rate methodology, please see www.bls.gov/iif/oshnotice10.htm.
Source: U.S. Bureau of Labor Statistics, Current Population Survey, Census of Fatal Occupational Injuries, 2016.

Public sector workers accounted for 9 percent of all occupational fatalities. These government workers had a lower fatal injury rate (1.9 per 100,000 FTEs) than their private sector counterparts (3.6).

Fatalities among contracted workers rose to 829 in 2015 from 802 in 2014 and accounted for 17 percent of all fatalities in 2015. Workers were most often contracted by a firm in the private construction industry (210) or by a government entity (147).

State and metropolitan statistical area (MSA)

Twenty-one states reported higher numbers of fatal injuries in 2015 than in 2014 while 29 states and the District of Columbia reported fewer fatalities. Six states recorded fatal injury totals in 2015 that were at or below the lowest total ever reported for those states – Alabama, Alaska, Indiana, Maine, Virginia, and West Virginia.

Although data for Puerto Rico, the U.S. Virgin Islands, and Guam are not included in the national totals for this release, results for these jurisdictions are available. Participating agencies may be contacted to request more detailed state results. Contact information is available at www.bls.gov/iif/oshstate.htm.

Detailed 2015 data are also available on fatal work injuries for more than 50 Metropolitan Statistical Areas (MSAs), and counts of fatal work injuries are available for over 350 MSAs.

Corrections to 2014 CFOI rate data

The published fatal occupational injury rates and the total hours worked for 12 occupations, 2 industries, and for Asian, non-Hispanic workers were improperly calculated. For details on the affected rates and products, please visit www.bls.gov/bls/errata/cfoi-errata-2016.htm.

TECHNICAL NOTES

Background of the program

The Census of Fatal Occupational Injuries (CFOI), part of the BLS Occupational Safety and Health Statistics (OSHS) program, compiles a count of all fatal work injuries occurring in the U.S. during the calendar year. The CFOI program uses diverse state, federal, and independent data sources to identify, verify, and describe fatal work injuries. This ensures counts are as complete and accurate as possible. For the 2015 data, over 21,400 unique source documents were reviewed as part of the data collection process. For technical information and definitions for CFOI, please go to the BLS Handbook of Methods on the BLS website at www.bls.gov/opub/hom/pdf/homch9.pdf.

The Survey of Occupational Injuries and Illnesses (SOII), another component of the OSHS program, presents frequency counts and incidence rates by industry and also by detailed case circumstances and worker characteristics for nonfatal workplace injuries and illnesses for cases that result in days away from work. Incidence rates for 2015 by industry and case type were published in October 2016, and information on 2015 case circumstances and worker characteristics was published in November 2016. For additional data, access the BLS website: www.bls.gov/iif/.

Identification and verification of work-related fatalities

In 2015, there were 9 cases included for which work relationship could not be independently verified; however, the information on the initiating source document for these cases was sufficient to determine that the incident was likely to be job-related. Data for these fatalities were included in the Census of Fatal Occupational Injuries (CFOI) counts.

Federal/State agency coverage

The Census of Fatal Occupational Injuries includes data for all fatal work injuries, whether the decedent was working in a job covered by the Occupational Safety and Health Administration (OSHA) or other federal or state agencies or was outside the scope of regulatory coverage. Thus, any comparison between the BLS fatality census counts and those released by other agencies should take into account the different coverage requirements and definitions being used by each agency.

Acknowledgements

BLS thanks the participating states, New York City, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam for their efforts in collecting accurate, comprehensive, and useful data on fatal work injuries. BLS also appreciates the efforts of all federal, state, local, and private sector entities that provided source documents used to identify fatal work injuries. Among these agencies are the Occupational Safety and Health Administration; the National Transportation Safety Board; the U.S. Coast Guard; the Mine Safety and Health Administration; the Office of Workers' Compensation Programs (Federal Employees' Compensation and Longshore and Harbor Workers' Compensation divisions); the Federal Railroad Administration; the National Highway Traffic Safety Administration; state vital statistics registrars, coroners, and medical examiners; state departments of health, labor, and industrial relations and workers' compensation agencies; state and local police departments; and state farm bureaus.

Information in this release is available to sensory-impaired individuals. Voice phone: (202) 691-5200; Federal Relay Service: (800) 877-8339.

Table 1. Fatal occupational injuries counts and rates by selected demographic characteristics, 2014-15

Characteristic	Counts		Rates[1]	
	2014	2015	2014	2015
Total[2]	4,821	4,836	3.4	3.4
Employee status				
Wage and salary workers[3]	3,728	3,751	2.8	2.8
Self-employed[4]	1,093	1,085	13.6	13.1
Gender				
Women	367	344	0.6	0.6
Men	4,454	4,492	5.6	5.5
Age				
Under 16 years	8	12	N/A	N/A
16 to 17 years	14	12	N/A	N/A
18 to 19 years	42	50	2.0	2.1
20 to 24 years	292	329	2.3	2.7
25 to 34 years	753	758	2.4	2.3
35 to 44 years	860	864	2.8	2.7
45 to 54 years	1,161	1,130	3.6	3.5
55 to 64 years	1,007	1,031	4.3	4.3
65 years and over	684	650	10.7	9.4
Race or ethnic origin[5]				
White (non-Hispanic)	3,332	3,241	3.6	3.5
Black or African-American (non-Hispanic)	475	495	3.2	3.2
Hispanic or Latino	804	903	3.7	4.0
American Indian or Alaskan Native (non-Hispanic)	34	36	N/A	N/A
Asian (non-Hispanic)	137	114	1.8	1.4
Native Hawaiian or Pacific Islander (non-Hispanic)	5	9	N/A	N/A
Multiple races (non-Hispanic)	20	12	N/A	N/A
Other races or not reported (non-Hispanic)	14	26	N/A	N/A

[1] Fatal injury rates are per 100,000 full-time equivalent workers (FTEs). Complete national rates can be found at www.bls.gov/iif/oshcfoi1.htm#rates. Complete state rates can be found at www.bls.gov/iif/oshstate.htm. National and state rates are calculated using different methodology and cannot be directly compared. Please see www.bls.gov/iif/oshfaq1.htm#q17 for more information on how rates are calculated and caveats for comparison. N/A means a rate was not published for this group.

[2] The Census of Fatal Occupational Injuries (CFOI) has published data on fatal occupational injuries for the United States since 1992. During this time, the classification systems and definitions of many data elements have changed. Please see the CFOI Definitions page (www.bls.gov/iif/oshcfdef.htm) for a more detailed description of each data element and their definitions.

[3] May include volunteers and workers receiving other types of compensation.

[4] Includes self-employed workers, owners of unincorporated businesses and farms, paid and unpaid family workers, and may include some owners of incorporated businesses or members of partnerships.

[5] Persons identified as Hispanic or Latino may be of any race. The race categories shown exclude data for Hispanics and Latinos.

Note: Data for all years are final. Totals for major categories may include subcategories not shown separately. CFOI fatal injury counts exclude illness-related deaths unless precipitated by an injury event.

Source: U.S. Department of Labor, Bureau of Labor Statistics, in cooperation with state, New York City, District of Columbia, and federal agencies, Census of Fatal Occupational Injuries

Table 2. Fatal occupational injuries for selected events or exposures, 2011-15

Characteristic	Counts				
	2011	2012	2013	2014	2015
Total[1]	4,693	4,628	4,585	4,821	4,836
Event or exposure[2]					
Violence and other injuries by persons or animals	791	803	773	765	703
Intentional injury by person	718	725	686	689	646
Homicides	468	475	404	409	417
Shooting by other person—intentional	365	381	322	307	354
Stabbing, cutting, slashing, piercing	42	35	38	40	28
Suicides	250	249	282	280	229
Transportation incidents	1,937	1,923	1,865	1,984	2,054
Aircraft incidents	145	127	136	135	139
Rail vehicle incidents	50	38	41	57	50
Pedestrian vehicular incident	316	293	294	318	289
Pedestrian struck by vehicle in work zone	63	65	48	53	44
Water vehicle incident	72	63	60	55	44
Roadway incident involving motorized land vehicle	1,103	1,153	1,099	1,157	1,264
Roadway collision with other vehicle	525	565	564	611	660
Roadway collision moving in same direction	150	124	144	146	166
Roadway collision moving in opposite directions, oncoming	172	204	192	230	224
Roadway collision moving perpendicularly	111	134	136	131	154
Roadway collision with object other than vehicle	313	338	332	317	360
Vehicle struck object or animal on side of roadway	292	318	311	292	335
Roadway noncollision incident	262	247	201	228	240
Jack-knifed or overturned, roadway	208	202	171	193	201
Nonroadway incident involving motorized land vehicle	222	233	227	248	253
Nonroadway noncollision incident	169	175	181	191	182
Jack-knifed or overturned, nonroadway	113	115	118	127	131
Fire or explosion	144	122	149	137	121
Fall, slip, trip	681	704	724	818	800
Fall on same level	111	120	110	138	125
Fall to lower level	553	570	595	660	648
Fall from collapsing structure or equipment	38	35	45	44	55
Fall through surface or existing opening	60	72	68	82	87
Exposure to harmful substances or environments	419	340	335	390	424
Exposure to electricity	174	156	141	154	134
Exposure to temperature extremes	63	41	38	26	40
Exposure to other harmful substances	144	110	124	182	215
Inhalation of harmful substance	57	40	39	59	45
Contact with objects and equipment	710	723	721	715	722
Struck by object or equipment	476	519	509	503	519
Struck by falling object or equipment	219	241	245	243	247
Caught in or compressed by equipment or objects	145	124	131	132	99
Caught in running equipment or machinery	118	93	105	105	74
Struck, caught, or crushed in collapsing structure, equipment, or material	84	73	78	74	90

[1] The Census of Fatal Occupational Injuries (CFOI) has published data on fatal occupational injuries for the United States since 1992. During this time, the classification systems and definitions of many data elements have changed. Please see the CFOI Definitions page (www.bls.gov/iif/oshcfdef.htm) for a more detailed description of each data element and their definitions.
[2] Based on the BLS Occupational Injury and Illness Classification System (OIICS) 2.01 implemented for 2011 data forward.

Note: Data for all years are final. Totals for major categories may include subcategories not shown separately. CFOI fatal injury counts exclude illness-related deaths unless precipitated by an injury event.

Source: U.S. Department of Labor, Bureau of Labor Statistics, in cooperation with state, New York City, District of Columbia, and federal agencies, Census of Fatal Occupational Injuries

Table 3. Fatal occupational injuries counts and rates for selected occupations, 2014-15

Characteristic	Counts		Rates[1]	
	2014	2015	2014	2015
Total[2]	4,821	4,836	3.4	3.4
Occupation (SOC)[3]				
Management occupations	440	379	2.5	2.1
Business and financial operations occupations	28	31	0.4	0.4
Computer and mathematical occupations	16	8	0.4	N/A
Architecture and engineering occupations	35	37	1.2	1.2
Life, physical, and social science occupations	18	11	1.3	N/A
Community and social services occupations	33	28	1.1	1.0
Legal occupations	7	12	N/A	N/A
Education, training, and library occupations	27	19	0.4	0.3
Arts, design, entertainment, sports, and media occupations	47	65	1.6	2.4
Healthcare practitioners and technical occupations	53	74	0.7	0.9
Healthcare support occupations	14	23	N/A	0.7
Protective service occupations	213	213	6.1	6.2
Fire fighting and prevention workers	26	30	N/A	N/A
Law enforcement workers	106	102	N/A	N/A
Food preparation and serving related occupations	55	56	0.9	0.9
Building and grounds cleaning and maintenance occupations	252	289	5.1	5.8
Building cleaning and pest control workers	56	59	N/A	N/A
Grounds maintenance workers	158	183	13.1	15.0
Personal care and service occupations	63	51	1.4	1.1
Sales and related occupations	239	228	1.7	1.6
Supervisors, sales workers	124	101	N/A	N/A
Retail sales workers	78	82	N/A	N/A
Office and administrative support occupations	100	86	0.6	0.5
Farming, fishing, and forestry occupations	259	284	24.7	25.3
Agricultural workers	148	180	N/A	N/A
Fishing and hunting workers	22	25	N/A	N/A
Forest, conservation, and logging workers	78	69	N/A	N/A
Construction and extraction occupations	902	924	12.1	12.5
Supervisors of construction and extraction workers	130	123	17.4	16.1
Construction trades workers	625	694	N/A	N/A
Extraction workers	88	45	N/A	N/A
Installation, maintenance, and repair occupations	406	392	8.1	7.6
Vehicle and mobile equipment mechanics, installers, and repairers	128	129	N/A	N/A
Production occupations	212	250	2.5	3.0
Transportation and material moving occupations	1,346	1,301	15.4	14.7
Air transportation workers	84	57	N/A	N/A
Motor vehicle operators	979	978	N/A	N/A
Material moving workers	224	206	N/A	N/A
Military occupations[4]	56	73	N/A	N/A

[1] Fatal injury rates are per 100,000 full-time equivalent workers (FTEs). Complete national rates can be found at www.bls.gov/iif/oshcfoi1.htm#rates. Complete state rates can be found at www.bls.gov/iif/oshstate.htm. National and state rates are calculated using different methodology and cannot be directly compared. Please see www.bls.gov/iif/oshfaq1.htm#q17 for more information on how rates are calculated and caveats for comparison. N/A means a rate was not published for this group.

[2] The Census of Fatal Occupational Injuries (CFOI) has published data on fatal occupational injuries for the United States since 1992. During this time, the classification systems and definitions of many data elements have changed. Please see the CFOI Definitions page (www.bls.gov/iif/oshcfdef.htm) for a more detailed description of each data element and their definitions.

[3] CFOI has used several versions of the Standard Occupation Classification (SOC) system since 2003 to define occupation. For more information on the version of SOC used in this year, see our definitions page at www.bls.gov/iif/oshcfdef.htm.

[4] Includes fatal injuries to persons identified as resident armed forces regardless of individual occupation listed.

Note: Data for all years are final. Totals for major categories may include subcategories not shown separately. CFOI fatal injury counts exclude illness-related deaths unless precipitated by an injury event.

Source: U.S. Department of Labor, Bureau of Labor Statistics, in cooperation with state, New York City, District of Columbia, and federal agencies, Census of Fatal Occupational Injuries

Table 4. Fatal occupational injuries counts and rates by selected industries, 2014-15

Characteristic	Counts		Rates[1]	
	2014	2015	2014	2015
Total[2]	4,821	4,836	3.4	3.4
Industry (NAICS)[3]				
Private industry[4]	4,386	4,379	3.7	3.6
Goods producing	2,015	1,980	7.1	6.9
Agriculture, forestry, fishing and hunting	584	570	25.6	22.8
Crop production	251	230	22.4	18.4
Animal production and aquaculture	166	171	19.3	17.8
Forestry and logging	95	81	N/A	N/A
Mining, quarrying, and oil and gas extraction[5]	183	120	14.2	11.4
Mining (except oil and gas)	38	28	15.8	12.4
Support activities for mining	127	86	13.8	12.2
Construction	899	937	9.8	10.1
Construction of buildings	180	175	N/A	N/A
Heavy and civil engineering construction	140	148	N/A	N/A
Specialty trade contractors	564	595	N/A	N/A
Manufacturing	349	353	2.3	2.3
Food manufacturing	56	44	3.3	2.5
Fabricated metal product manufacturing	34	66	2.9	5.3
Service providing	2,371	2,399	2.6	2.6
Wholesale trade	191	175	5.1	4.7
Retail trade	272	269	1.9	1.8
Motor vehicle and parts dealers	47	62	2.4	3.0
Food and beverage stores	69	58	2.5	2.2
Transportation and warehousing	766	765	14.1	13.8
Truck transportation	503	546	23.9	25.2
Utilities	17	22	1.7	2.2
Information	35	42	1.2	1.5
Finance and insurance	29	19	0.4	0.3
Real estate and rental and leasing	88	64	3.4	2.3
Professional, scientific, and technical services	80	76	0.8	0.8
Administrative and support and waste management and remediation services	342	401	N/A	N/A
Educational services	40	30	1.0	0.7
Health care and social assistance	106	109	0.6	0.6
Arts, entertainment, and recreation	81	82	3.4	3.3
Accommodation and food services	135	143	1.6	1.6
Other services, except public administration	186	202	2.7	3.0
Government[6]	435	457	1.9	1.9
Federal government[4]	94	118	1.1	1.3
State government[4]	72	81	1.2	1.3
Local government[4]	269	257	2.6	2.6

[1] Fatal injury rates are per 100,000 full-time equivalent workers (FTEs). Complete national rates can be found at www.bls.gov/iif/oshcfoi1.htm#rates. Complete state rates can be found at www.bls.gov/iif/oshstate.htm. National and state rates are calculated using different methodology and cannot be directly compared. Please see www.bls.gov/iif/oshfaq1.htm#q17 for more information on how rates are calculated and caveats for comparison. N/A means a rate was not published for this group.

[2] The Census of Fatal Occupational Injuries (CFOI) has published data on fatal occupational injuries for the United States since 1992. During this time, the classification systems and definitions of many data elements have changed. Please see the CFOI Definitions page (www.bls.gov/iif/oshcfdef.htm) for a more detailed description of each data element and their definitions.

[3] CFOI has used several versions of the North American Industry Classification System (NAICS) since 2003 to define industry. For more information on the version of NAICS used in this year, see our definitions page at www.bls.gov/iif/oshcfdef.htm.

[4] Includes all fatal occupational injuries meeting this ownership criterion across all specified years, regardless of industry classification system.

[5] Includes fatal injuries at all establishments categorized as Mining, quarrying, and oil and gas extraction (Sector 21) in the North American Industry Classification System, including establishments not governed by the Mine Safety and Health Administration (MSHA) rules and reporting, such as those in Oil and Gas Extraction.

[6] Includes fatal injuries to workers employed by governmental organizations regardless of industry. Includes all fatal occupational injuries meeting this ownership criterion across all specified years, regardless of industry classification system.

Note: Data for all years are final. Totals for major categories may include subcategories not shown separately. CFOI fatal injury counts exclude illness-related deaths unless precipitated by an injury event.

Source: U.S. Department of Labor, Bureau of Labor Statistics, in cooperation with state, New York City, District of Columbia, and federal agencies, Census of Fatal Occupational Injuries

Table 5. Fatal occupational injuries counts and rates by state of incident, 2014-15

Characteristic	Counts		Rates[1]	
	2014	2015	2014	2015
Total[2]	4,821	4,836	3.4	3.4
State of incident				
Alabama	75	70	4.0	3.7
Alaska	30	14	7.8	4.1
Arizona	88	69	3.1	2.4
Arkansas	67	74	5.7	5.8
California	344	388	2.0	2.2
Colorado	84	75	3.3	2.9
Connecticut	35	44	2.1	2.6
Delaware	12	8	2.8	1.9
District of Columbia	11	8	3.1	2.4
Florida	228	272	2.7	3.1
Georgia	152	180	3.6	4.3
Hawaii	31	18	5.0	2.6
Idaho	34	36	4.7	4.8
Illinois	164	172	2.9	2.9
Indiana	130	115	4.4	3.9
Iowa	91	60	6.0	3.9
Kansas	73	60	5.5	4.4
Kentucky	82	99	4.5	5.5
Louisiana	120	112	6.3	5.8
Maine	19	15	2.9	2.5
Maryland	74	69	2.6	2.4
Massachusetts	55	69	1.7	2.1
Michigan	143	134	3.3	3.1
Minnesota	62	74	2.3	2.7
Mississippi	75	77	7.1	6.8
Missouri	106	117	3.9	4.3
Montana	28	36	4.9	7.5
Nebraska	55	50	5.8	5.4
Nevada	40	44	3.1	3.5
New Hampshire	17	18	2.6	2.7
New Jersey	87	97	2.1	2.3
New Mexico	53	35	6.7	4.1
New York (including N.Y.C.)	241	236	2.8	2.7
New York City	79	74	2.2	2.0
North Carolina	137	150	3.1	3.4
North Dakota	38	47	9.8	12.5
Ohio	185	202	3.6	3.9
Oklahoma	98	91	6.2	5.5
Oregon	69	44	3.9	2.6
Pennsylvania	179	173	3.1	3.0
Rhode Island	10	6	2.1	1.2
South Carolina	64	117	3.3	5.6
South Dakota	29	21	7.2	4.9
Tennessee	127	112	4.8	3.7
Texas	531	527	4.5	4.5
Utah	54	42	4.2	3.2
Vermont	10	9	3.2	2.9
Virginia	116	106	2.8	2.8
Washington	88	70	2.7	2.1
West Virginia	38	35	5.2	5.0
Wisconsin	99	104	3.5	3.6
Wyoming	37	34	13.1	12.0

[1] Fatal injury rates are per 100,000 full-time equivalent workers (FTEs). Complete national rates can be found at www.bls.gov/iif/oshcfoi1.htm#rates. Complete state rates can be found at www.bls.gov/iif/oshstate.htm. National and state rates are calculated using different methodology and cannot be directly compared. Please see www.bls.gov/iif/oshfaq1.htm#q17 for more information on how rates are calculated and caveats for comparison.

[2] The Census of Fatal Occupational Injuries (CFOI) has published data on fatal occupational injuries for the United States since 1992. During this time, the classification systems and definitions of many data elements have changed. Please see the CFOI Definitions page (www.bls.gov/iif/oshcfdef.htm) for a more detailed description of each data element and their definitions.

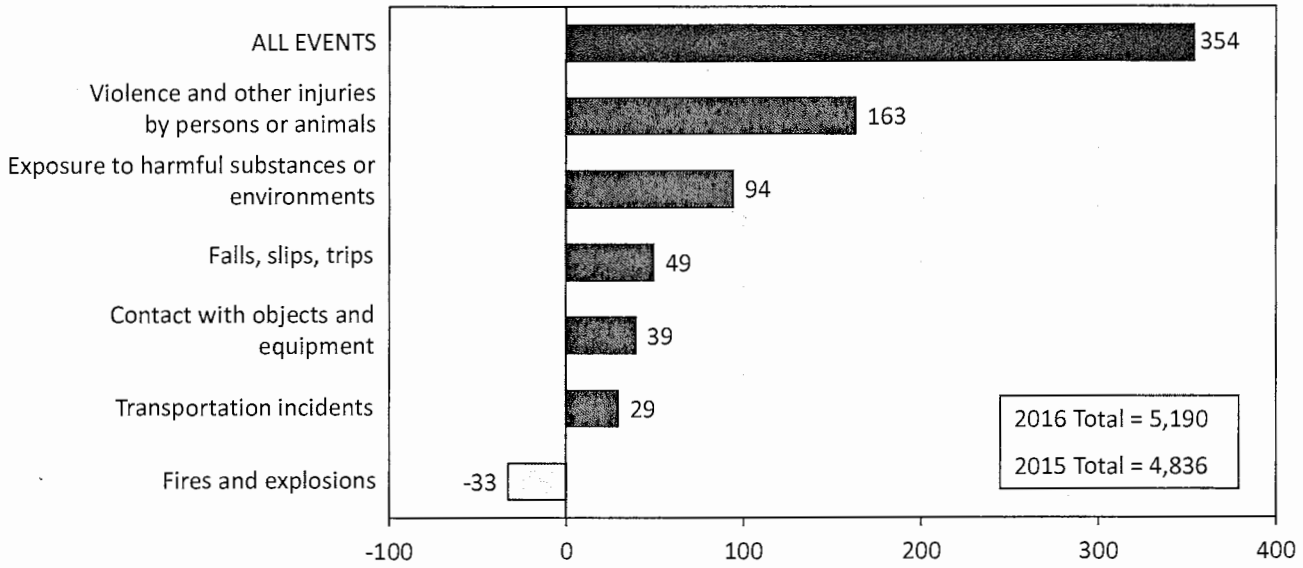
Note: Data for all years are final. CFOI fatal injury counts exclude illness-related deaths unless precipitated by an injury event.

Source: U.S. Department of Labor, Bureau of Labor Statistics, in cooperation with state, New York City, District of Columbia, and federal agencies, Census of Fatal Occupational Injuries

EXHIBIT

6

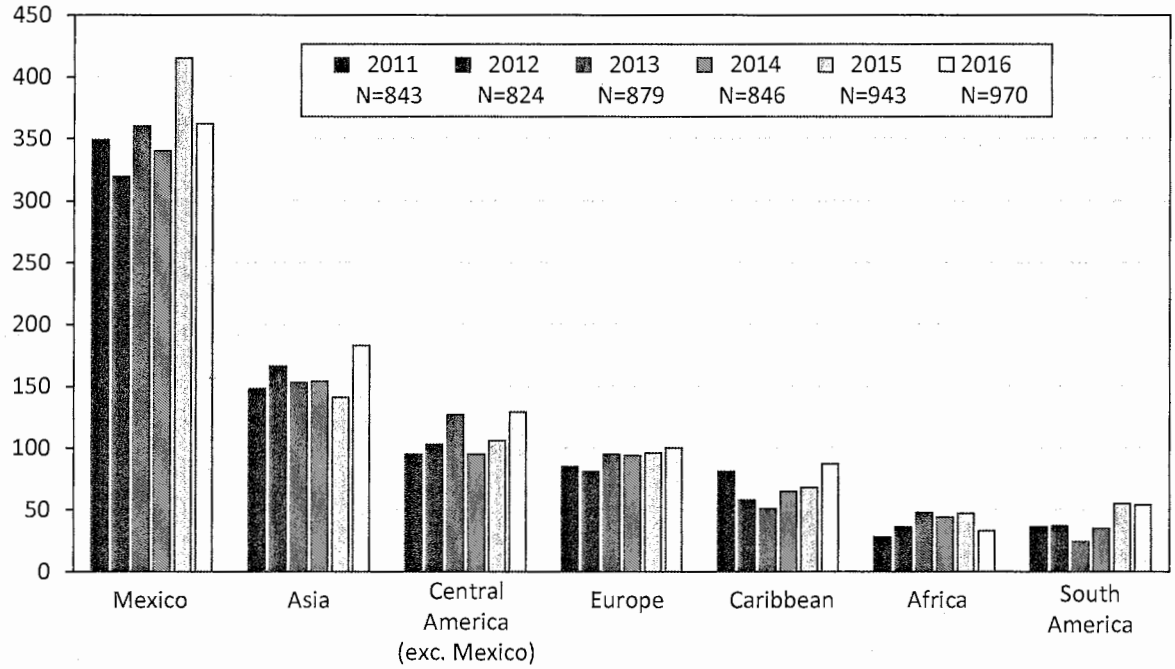
Change in fatal work injury counts by event, 2015–16



- The all-event total for 2016 was higher by 354 cases over the 2015 total.
- Violence and other injuries by persons or animals saw the greatest increase from 2015.
- All types of injuries saw increases in 2016 except for fires and explosions, which decreased by 33 fatal injuries.

Source: U.S. Bureau of Labor Statistics, 2017.

Fatal injuries involving foreign-born workers by country or region of birth, 2011–16

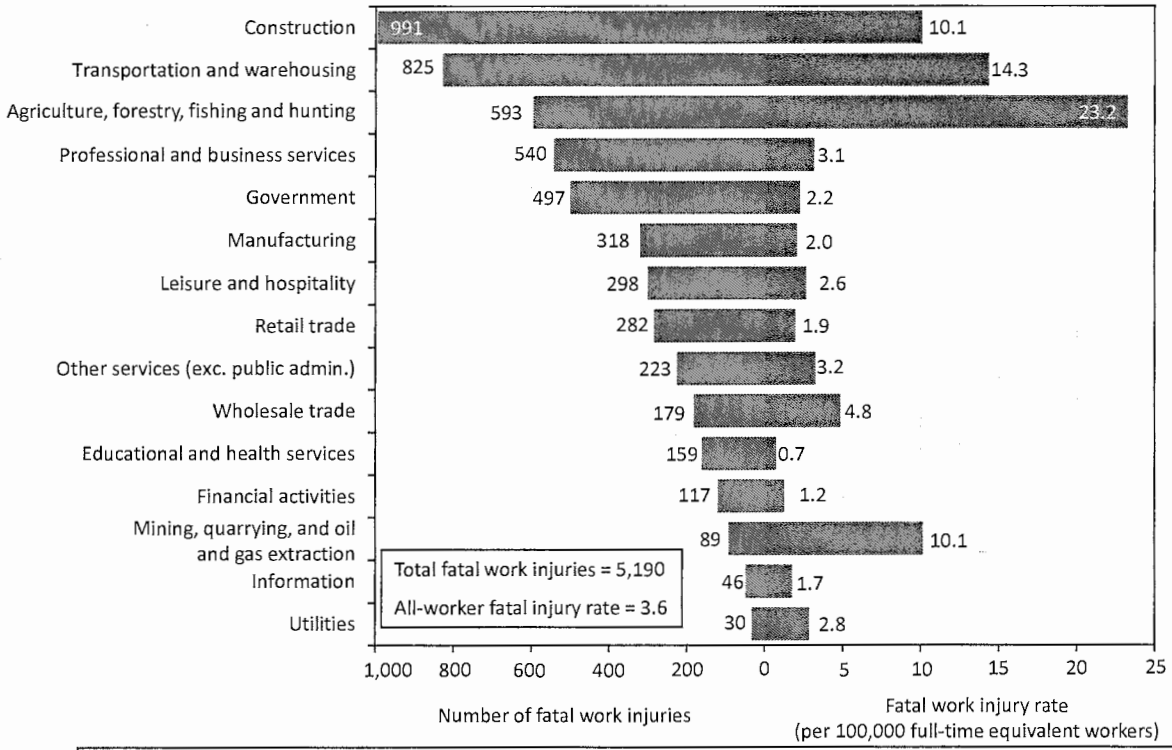


- Foreign-born fatalities were the highest number in 2016 (970) since 2007.
- About one-fifth of fatalities in 2016 were to foreign-born workers.
- Fatalities involving workers born in Asia increased in 2016 to 183.

Note: Not all countries or regions of birth are shown.
Source: U.S. Bureau of Labor Statistics, 2017.

MAR 0918

Number and rate of fatal work injuries by industry sector, 2016



- Private construction had the highest count of fatal injuries in 2016, but the private agriculture, forestry, fishing and hunting sector had the highest fatal work injury rate.

Note: Fatal injury rates exclude workers under the age of 16 years, volunteers, and resident military. The number of fatal work injuries represents total published fatal injuries before the exclusions. For additional information on the fatal work injury rate methodology, please see www.bls.gov/iif/oshnotice10.htm.
Source: U.S. Bureau of Labor Statistics, Current Population Survey, Census of Fatal Occupational Injuries, 2017.

MAR 0919

EXHIBIT

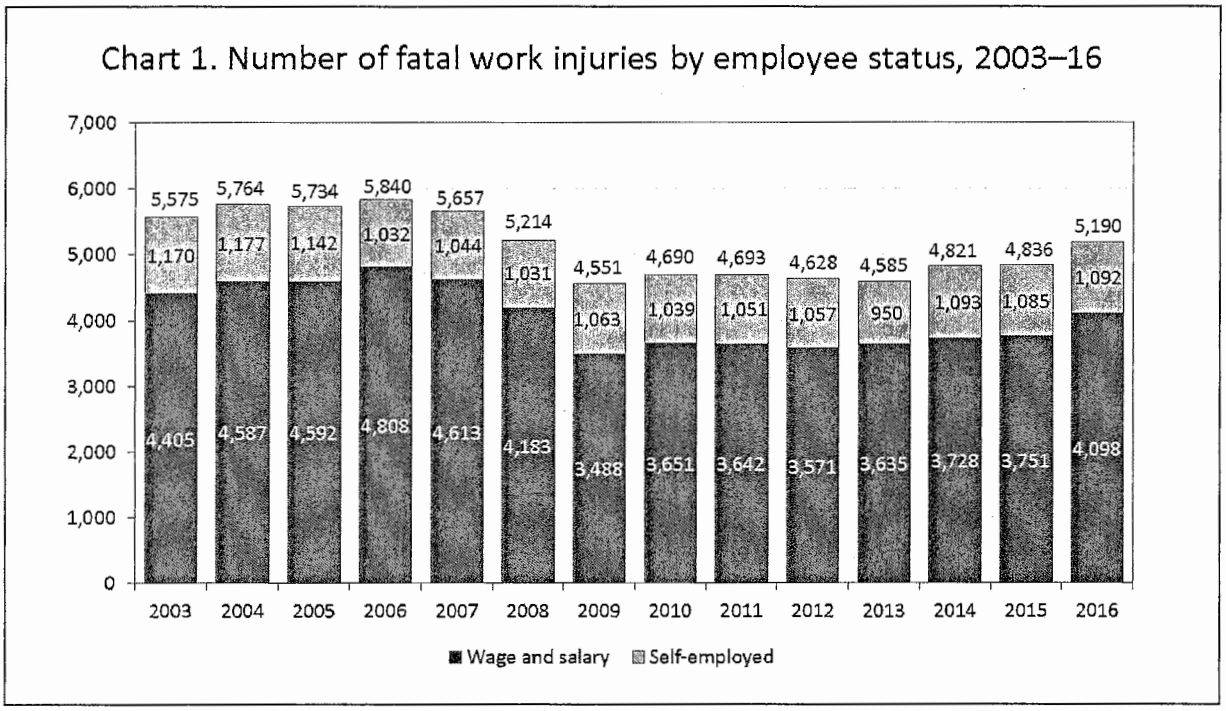
7

NEWS RELEASE
BUREAU OF LABOR STATISTICS
U. S. DEPARTMENT OF LABOR

For release 10:00 a.m. (EST) Tuesday, December 19, 2017 USDL-17-1667
Technical information: (202) 691-6170 • iifstaff@bls.gov • www.bls.gov/iif/oshcfoi1.htm
Media contact: (202) 691-5902 • PressOffice@bls.gov

NATIONAL CENSUS OF FATAL OCCUPATIONAL INJURIES IN 2016

There were a total of 5,190 fatal work injuries recorded in the United States in 2016, a 7-percent increase from the 4,836 fatal injuries reported in 2015, the U.S. Bureau of Labor Statistics reported today. (See chart 1.) This is the third consecutive increase in annual workplace fatalities and the first time more than 5,000 fatalities have been recorded by the Census of Fatal Occupational Injuries (CFOI) since 2008. The fatal injury rate increased to 3.6 per 100,000 full-time equivalent (FTE) workers from 3.4 in 2015, the highest rate since 2010. (See table 1.)



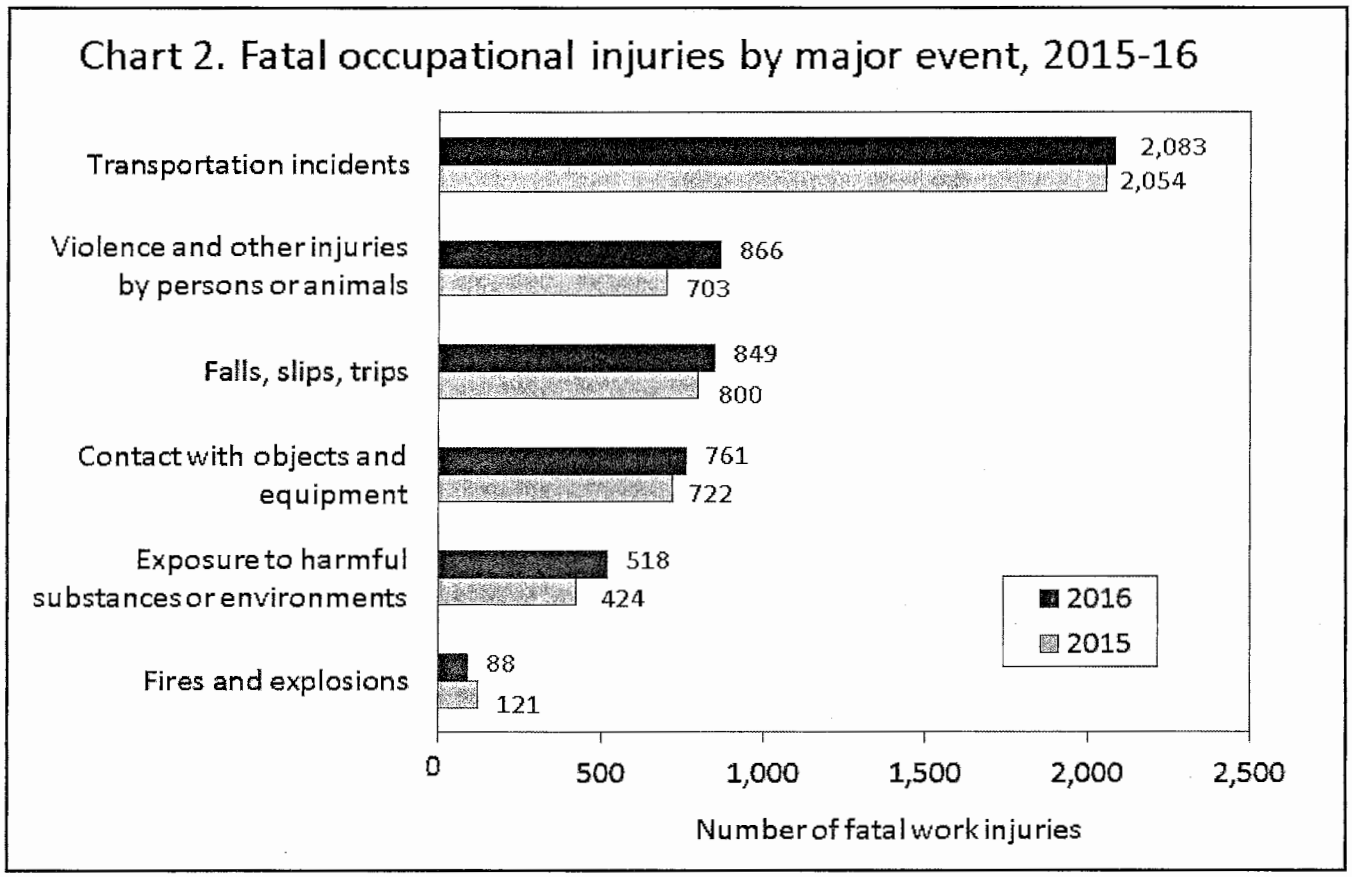
Type of incident

Work injuries involving transportation incidents remained the most common fatal event in 2016, accounting for 40 percent (2,083). Violence and other injuries by persons or animals increased 23 percent to become the second-most common fatal event in 2016. Two other events with large changes were exposure to harmful substances or environments, which rose 22 percent, and fires and explosions, which declined 27 percent. (See chart 2 and table 2.)

Interactive charts now available

This is the first year that CFOI has produced interactive charts to accompany the news release. These charts are available at www.bls.gov/charts/census-of-fatal-occupational-injuries/.

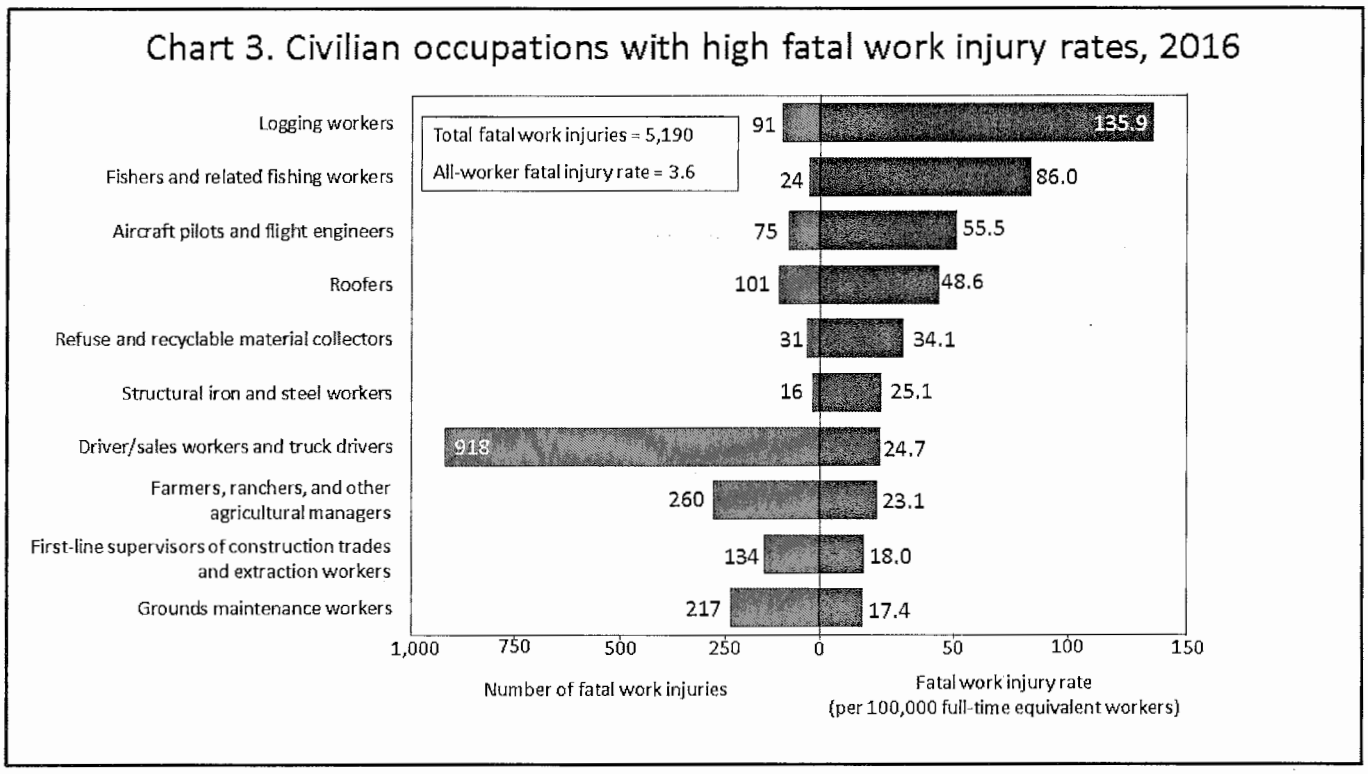
MAR 0907



- Fatal work injuries involving violence and other injuries by persons or animals increased by 163 cases to 866 in 2016. Workplace homicides increased by 83 cases to 500 in 2016, and workplace suicides increased by 62 to 291. This is the highest homicide figure since 2010 and the most suicides since CFOI began reporting data in 1992.
- Fatal work injuries from falls, slips, or trips continued a general upward trend that began in 2011, increasing 6 percent to 849 in 2016 and 25 percent overall since 2011. Falls increased more than 25 percent in 2016 for roofers, carpenters, tree trimmers and pruners, and heavy and tractor-trailer truck drivers.
- Overdoses from the non-medical use of drugs or alcohol while on the job increased from 165 in 2015 to 217 in 2016, a 32-percent increase. Overdose fatalities have increased by at least 25 percent annually since 2012.

Occupation

In 2016, fatal injuries among transportation and material moving occupations increased by 7 percent to 1,388, the highest count since 2007 and accounting for more than one-quarter of all work-related fatalities. Occupations with increases greater than 10 percent in the number of fatal work injuries in 2016 include food preparation and serving related occupations (64 percent); installation, maintenance, and repair occupations (20 percent); building and grounds cleaning and maintenance occupations (14 percent); and sales and related occupations (11 percent). Declines greater than 10 percent in the number of fatal work injuries in 2016 include healthcare practitioners and technical occupations (19 percent), military occupations (15 percent), and production occupations (14 percent). (See table 3.)



- Logging workers continued to have a high fatal injury rate in 2016, at 135.9 fatalities per 100,000 FTE workers. The number of fatalities among loggers increased from 67 in 2015 to 91. (See chart 3.)
- A number of occupations recorded their highest fatality counts in 2016 since CFOI adopted the Standard Occupational Classification (SOC) system in 2003. This includes first-line supervisors of construction trades and extraction workers with 134 fatal injuries; landscaping and groundskeeping workers, 125; roofers, 101; tree trimmers and pruners, 84; driver/sales workers, 71; automotive service technicians and mechanics, 64; and farmworkers, farm, ranch, and aquacultural animals, 61.
- Fatal work injuries among protective service occupations increased by 68 fatalities (32 percent) in 2016 to a total of 281. This included an increase of 24 fatalities among police officers, 13 fatalities among first-line supervisors/managers of law enforcement workers, and 23 fatalities among miscellaneous protective service workers, including crossing guards and lifeguards, ski patrol, and other recreational protective service workers. Police officers incurred 51 homicides in 2016, up 50 percent from 34 fatalities in 2015.

Other key findings of the 2016 Census of Fatal Occupational Injuries:

- Asian, non-Hispanic workers incurred 160 fatal injuries, up from 114 in 2015, which was the highest percentage increase (40 percent) among any race or ethnic origin. Black or African-American, non-Hispanic workers also had a large percentage increase (19 percent), with 587 fatal injuries compared to 495 in 2015. The rate of fatal injury for both groups also increased. Hispanic or Latino workers had 3 percent fewer workplace fatalities in 2016 with 879 fatalities, down from 903. (See table 1.)
- Foreign-born workers make up about one-fifth of the total fatal work injuries. Thirty-seven percent of these workers were born in Mexico, followed by 19 percent from Asian countries.
- Workers age 55 years and over had 1,848 fatal injuries, the highest number for this cohort since CFOI began reporting national data in 1992. In 1992, workers age 55 and over accounted for 20 percent of fatalities; in 2016, they accounted for 36 percent. These workers also have a higher fatality rate than other age groups. (See table 1.)

- The number of workplace fatalities in private industry increased 7 percent in 2016. This was led by an increase in service-providing industries, which were up 13 percent to 2,702 from 2,399. Fatal workplace injuries to government workers increased 9 percent overall to 497, with a 9-percent decrease in federal employee fatalities that was more than offset by increases in state and local government fatalities, up 20 percent and 13 percent, respectively. (See table 4.)
- Mining, quarrying, and oil and gas extraction and manufacturing both experienced large decreases in workplace fatalities in 2016, decreasing 26 percent and 10 percent, respectively. (See table 4.)
- Fatal injuries in the leisure and hospitality sector were up 32 percent (225 to 298) and reached an all-time series high in 2016. This was largely due to a 40-percent increase in fatal injuries in the food services and drinking places industry from 118 to 165.
- A total of 36 states had more fatal workplace injuries in 2016 than 2015, while 13 states and the District of Columbia had fewer; Wyoming had the same number as 2015. (See table 5.)

TECHNICAL NOTES

Background of the program

The Census of Fatal Occupational Injuries (CFOI), part of the BLS Occupational Safety and Health Statistics (OSHS) program, compiles a count of all fatal work injuries occurring in the U.S. during the calendar year. The CFOI program uses diverse state, federal, and independent data sources to identify, verify, and describe fatal work injuries. This ensures counts are as complete and accurate as possible. For the 2016 data, over 23,300 unique source documents were reviewed as part of the data collection process. For technical information and definitions for CFOI, please go to the BLS Handbook of Methods on the BLS website at www.bls.gov/opub/hom/cfoi/home.htm. Fatal injury rates are subject to sampling errors as they are calculated using employment data from the Current Population Survey (CPS), a sample of households. For more information on measurement errors, please see: www.bls.gov/iif/osh_rse.htm.

The Survey of Occupational Injuries and Illnesses (SOII), another component of the OSHS program, presents frequency counts and incidence rates by industry and also by detailed case circumstances and worker characteristics for nonfatal workplace injuries and illnesses for cases that result in days away from work. Incidence rates by industry and case type and information on case circumstances and worker characteristics for 2016 were published in November 2017. For additional data, access the BLS website: www.bls.gov/iif.

Identification and verification of work-related fatalities

In 2016, there were 12 fatal work injuries included for which work relationship could not be independently verified; however, the information on the initiating source document for these cases was sufficient to determine that the incident was likely to be job-related. Data for these fatalities were included in the CFOI counts.

Federal/State agency coverage

The CFOI includes data for all fatal work injuries, even those that may be outside the scope of other agencies or regulatory coverage. Thus, any comparison between the BLS fatality census counts and those released by other agencies should take into account the different coverage requirements and definitions being used by each agency. More on the scope of CFOI can be found at www.bls.gov/iif/cfoiscope.htm.

Acknowledgements

BLS thanks the participating states, New York City, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam for their efforts in collecting accurate, comprehensive, and useful data on fatal work injuries. Although data for Puerto Rico, the U.S. Virgin Islands, and Guam are not included in the national totals for this release, results for these jurisdictions are available. Participating agencies may be contacted to request more detailed state results. Contact information is available at www.bls.gov/iif/oshstate.htm.

BLS also appreciates the efforts of all federal, state, local, and private sector entities that provided source documents used to identify fatal work injuries. Among these agencies are the Occupational Safety and Health Administration; the National Transportation Safety Board; the U.S. Coast Guard; the Mine Safety and Health Administration; the Office of Workers' Compensation Programs (Federal Employees' Compensation and Longshore and Harbor Workers' Compensation divisions); the Federal Railroad Administration; the National Highway Traffic Safety Administration; state vital statistics registrars, coroners, and medical examiners; state departments of health, labor, and industrial relations and workers' compensation agencies; state and local police departments; and state farm bureaus.

Information in this release is available to sensory-impaired individuals. Voice phone: (202) 691-5200; Federal Relay Service: (800) 877-8339.

Table 1. Fatal occupational injuries counts and rates by selected demographic characteristics, 2015-16

Characteristic	Counts		Rates[1]	
	2015	2016	2015	2016
Total[2]	4,836	5,190	3.4	3.6
Employee status				
Wage and salary workers[3]	3,751	4,098	2.8	3.0
Self-employed[4]	1,085	1,092	13.1	13.1
Gender				
Women	344	387	0.6	0.6
Men	4,492	4,803	5.5	5.8
Age				
Under 16 years	12	13	N/A	N/A
16 to 17 years	12	17	N/A	2.1
18 to 19 years	50	43	2.1	1.9
20 to 24 years	329	310	2.7	2.4
25 to 34 years	758	834	2.3	2.5
35 to 44 years	864	979	2.7	3.1
45 to 54 years	1,130	1,145	3.5	3.5
55 to 64 years	1,031	1,160	4.3	4.7
65 years and over	650	688	9.4	9.6
Race or ethnic origin[5]				
White (non-Hispanic)	3,241	3,481	3.5	3.7
Black or African-American (non-Hispanic)	495	587	3.2	3.6
Hispanic or Latino	903	879	4.0	3.7
American Indian or Alaskan Native (non-Hispanic)	36	38	N/A	N/A
Asian (non-Hispanic)	114	160	1.4	1.8
Native Hawaiian or Pacific Islander (non-Hispanic)	9	7	N/A	N/A
Multiple races (non-Hispanic)	12	15	N/A	N/A
Other races or not reported (non-Hispanic)	26	23	N/A	N/A

[1] Fatal injury rates are per 100,000 full-time equivalent workers (FTEs). Fatal injury rates exclude workers under the age of 16 years, volunteers, and resident military. Complete national rates can be found at www.bls.gov/iif/oshcfoi1.htm#rates. Complete state rates can be found at www.bls.gov/iif/oshstate.htm. National and state rates are calculated using different methodology and cannot be directly compared. Please see www.bls.gov/iif/oshfaq1.htm#q16 for more information on how rates are calculated and caveats for comparison. N/A means a rate was not published for this group.

[2] The Census of Fatal Occupational Injuries (CFOI) has published data on fatal occupational injuries for the United States since 1992. During this time, the classification systems and definitions of many data elements have changed. Please see the CFOI Definitions page (www.bls.gov/iif/oshcfdef.htm) for a more detailed description of each data element and their definitions.

[3] May include volunteers and workers receiving other types of compensation.

[4] Includes self-employed workers, owners of unincorporated businesses and farms, paid and unpaid family workers, and may include some owners of incorporated businesses or members of partnerships.

[5] Persons identified as Hispanic or Latino may be of any race. The race categories shown exclude data for Hispanics and Latinos.

Note: Data for all years are final. Totals for major categories may include subcategories not shown separately. CFOI fatal injury counts exclude illness-related deaths unless precipitated by an injury event.

Source: U.S. Bureau of Labor Statistics, Current Population Survey, Census of Fatal Occupational Injuries

Table 2. Fatal occupational injuries for selected events or exposures, 2011-16

Characteristic	Counts					
	2011	2012	2013	2014	2015	2016
Total[1]	4,693	4,628	4,585	4,821	4,836	5,190
Event or exposure						
Violence and other injuries by persons or animals	791	803	773	765	703	866
Intentional injury by person	718	725	686	689	646	792
Homicides	468	475	404	409	417	500
Shooting by other person—intentional	365	381	322	307	354	394
Stabbing, cutting, slashing, piercing	42	35	38	40	28	38
Suicides	250	249	282	280	229	291
Transportation incidents	1,937	1,923	1,865	1,984	2,054	2,083
Aircraft incidents	145	127	136	135	139	130
Rail vehicle incidents	50	38	41	57	50	50
Pedestrian vehicular incident	316	293	294	318	289	342
Pedestrian struck by vehicle in work zone	63	65	48	53	44	58
Water vehicle incident	72	63	60	55	44	48
Roadway incident involving motorized land vehicle	1,103	1,153	1,099	1,157	1,264	1,252
Roadway collision with other vehicle	525	565	564	611	660	628
Roadway collision moving in same direction	150	124	144	146	166	168
Roadway collision moving in opposite directions, oncoming	172	204	192	230	224	199
Roadway collision moving perpendicularly	111	134	136	131	154	150
Roadway collision with object other than vehicle	313	338	332	317	360	342
Vehicle struck object or animal on side of roadway	292	318	311	292	335	321
Roadway noncollision incident	262	247	201	228	240	278
Jack-knifed or overturned, roadway	208	202	171	193	201	238
Nonroadway incident involving motorized land vehicle	222	233	227	248	253	245
Nonroadway noncollision incident	169	175	181	191	182	182
Jack-knifed or overturned, nonroadway	113	115	118	127	131	120
Fire or explosion	144	122	149	137	121	88
Fall, slip, trip	681	704	724	818	800	849
Fall on same level	111	120	110	138	125	134
Fall to lower level	553	570	595	660	648	697
Fall from collapsing structure or equipment	38	35	45	44	55	65
Fall through surface or existing opening	60	72	68	82	87	87
Exposure to harmful substances or environments	419	340	335	390	424	518
Exposure to electricity	174	156	141	154	134	154
Exposure to temperature extremes	63	41	38	26	40	48
Exposure to other harmful substances	144	110	124	182	215	268
Nonmedical use of drugs or alcohol unintentional overdose	73	65	82	114	165	217
Inhalation of harmful substance	57	40	39	59	45	39
Contact with objects and equipment	710	723	721	715	722	761
Struck by object or equipment	476	519	509	503	519	553
Struck by powered vehicle nontransport	196	201	197	202	216	232
Struck by falling object or equipment	219	241	245	243	247	255
Caught in or compressed by equipment or objects	145	124	131	132	99	117
Caught in running equipment or machinery	118	93	105	105	74	103
Struck, caught, or crushed in collapsing structure, equipment, or material	84	73	78	74	90	82

[1] The Census of Fatal Occupational Injuries (CFOI) has published data on fatal occupational injuries for the United States since 1992. During this time, the classification systems and definitions of many data elements have changed. Please see the CFOI Definitions page (www.bls.gov/iif/oshcfdef.htm) for a more detailed description of each data element and their definitions. Event of exposure is based on the BLS Occupational Injury and Illness Classification System (OIICS) 2.01 implemented for 2011 data forward.

Note: Data for all years are final. Totals for major categories may include subcategories not shown separately. CFOI fatal injury counts exclude illness-related deaths unless precipitated by an injury event.

Source: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries

Table 3. Fatal occupational injuries counts and rates for selected occupations, 2015-16

Characteristic	Counts		Rates[1]	
	2015	2016	2015	2016
Total[2]	4,836	5,190	3.4	3.6
Occupation (SOC)				
Management occupations	379	377	2.1	2.0
Business and financial operations occupations	31	27	0.4	0.4
Computer and mathematical occupations	8	16	N/A	0.3
Architecture and engineering occupations	37	41	1.2	1.3
Life, physical, and social science occupations	11	15	N/A	1.1
Community and social services occupations	28	27	1.0	1.0
Legal occupations	12	13	N/A	N/A
Education, training, and library occupations	19	32	0.3	0.4
Arts, design, entertainment, sports, and media occupations	65	64	2.4	2.3
Healthcare practitioners and technical occupations	74	60	0.9	0.7
Healthcare support occupations	23	30	0.7	1.0
Protective service occupations	213	281	6.2	8.4
Fire fighting and prevention workers	30	35	N/A	N/A
Law enforcement workers	102	127	N/A	N/A
Food preparation and serving related occupations	56	92	0.9	1.3
Building and grounds cleaning and maintenance occupations	289	329	5.8	6.6
Building cleaning and pest control workers	59	74	N/A	N/A
Grounds maintenance workers	183	217	15.0	17.4
Personal care and service occupations	51	55	1.1	1.1
Sales and related occupations	228	254	1.6	1.8
Supervisors, sales workers	101	104	N/A	N/A
Retail sales workers	82	102	N/A	N/A
Office and administrative support occupations	86	78	0.5	0.5
Farming, fishing, and forestry occupations	284	290	25.3	24.9
Agricultural workers	180	157	N/A	N/A
Fishing and hunting workers	25	26	N/A	N/A
Forest, conservation, and logging workers	69	95	N/A	N/A
Construction and extraction occupations	924	970	12.5	12.4
Supervisors of construction and extraction workers	123	134	16.1	18.0
Construction trades workers	694	736	N/A	N/A
Extraction workers	45	41	N/A	N/A
Installation, maintenance, and repair occupations	392	470	7.6	9.4
Vehicle and mobile equipment mechanics, installers, and repairers	129	154	N/A	N/A
Production occupations	250	216	3.0	2.6
Transportation and material moving occupations	1,301	1,388	14.7	15.4
Air transportation workers	57	75	N/A	N/A
Motor vehicle operators	978	1,012	N/A	N/A
Material moving workers	206	228	N/A	N/A
Military occupations[3]	73	62	N/A	N/A

[1] Fatal injury rates are per 100,000 full-time equivalent workers (FTEs). Fatal injury rates exclude workers under the age of 16 years, volunteers, and resident military. Complete national rates can be found at www.bls.gov/iif/oshcfoi1.htm#rates. Complete state rates can be found at www.bls.gov/iif/oshstate.htm. National and state rates are calculated using different methodology and cannot be directly compared. Please see www.bls.gov/iif/oshfaq1.htm#q16 for more information on how rates are calculated and caveats for comparison. N/A means a rate was not published for this group.

[2] The Census of Fatal Occupational Injuries (CFOI) has published data on fatal occupational injuries for the United States since 1992. During this time, the classification systems and definitions of many data elements have changed. Please see the CFOI Definitions page (www.bls.gov/iif/oshcfdef.htm) for a more detailed description of each data element and their definitions. Occupation is based on the Standard Occupational Classification (SOC) 2010 system.

[3] Includes fatal injuries to persons identified as resident armed forces regardless of individual occupation listed.

Note: Data for all years are final. Totals for major categories may include subcategories not shown separately. CFOI fatal injury counts exclude illness-related deaths unless precipitated by an injury event.

Source: U.S. Bureau of Labor Statistics, Current Population Survey, Census of Fatal Occupational Injuries

Table 4. Fatal occupational injuries counts and rates by selected industries, 2015-16

Characteristic	Counts		Rates[1]	
	2015	2016	2015	2016
Total[2]	4,836	5,190	3.4	3.6
Industry (NAICS)				
Private industry[3]	4,379	4,693	3.6	3.8
Goods producing	1,980	1,991	6.9	6.8
Agriculture, forestry, fishing and hunting	570	593	22.8	23.2
Crop production	230	261	18.4	20.9
Animal production and aquaculture	171	151	17.8	15.4
Forestry and logging	81	106	N/A	N/A
Mining, quarrying, and oil and gas extraction[4]	120	89	11.4	10.1
Mining (except oil and gas)	28	22	12.4	10.0
Support activities for mining	86	56	12.2	10.1
Construction	937	991	10.1	10.1
Construction of buildings	175	182	N/A	N/A
Heavy and civil engineering construction	148	159	N/A	N/A
Specialty trade contractors	595	631	N/A	N/A
Manufacturing	353	318	2.3	2.0
Food manufacturing	44	40	2.5	2.3
Fabricated metal product manufacturing	66	41	5.3	3.4
Service providing	2,399	2,702	2.6	2.8
Wholesale trade	175	179	4.7	4.8
Retail trade	269	282	1.8	1.9
Motor vehicle and parts dealers	62	42	3.0	1.9
Food and beverage stores	58	71	2.2	2.7
Transportation and warehousing	765	825	13.8	14.3
Truck transportation	546	570	25.2	25.6
Utilities	22	30	2.2	2.8
Information	42	46	1.5	1.7
Finance and insurance	19	26	0.3	0.4
Real estate and rental and leasing	64	91	2.3	3.2
Professional, scientific, and technical services	76	100	0.8	0.9
Administrative and support and waste management and remediation services	401	439	N/A	N/A
Educational services	30	42	0.7	1.0
Health care and social assistance	109	117	0.6	0.7
Arts, entertainment, and recreation	82	96	3.3	3.9
Accommodation and food services	143	202	1.6	2.2
Other services, except public administration	202	223	3.0	3.2
Government[5]	457	497	1.9	2.2
Federal government[3]	118	107	1.3	1.2
State government[3]	81	97	1.3	1.5
Local government[3]	257	291	2.6	3.0

[1] Fatal injury rates are per 100,000 full-time equivalent workers (FTEs). Fatal injury rates exclude workers under the age of 16 years, volunteers, and resident military. Complete national rates can be found at www.bls.gov/iif/oshcfoi1.htm#rates. Complete state rates can be found at www.bls.gov/iif/oshstate.htm. National and state rates are calculated using different methodology and cannot be directly compared. Please see www.bls.gov/iif/oshfaq1.htm#q16 for more information on how rates are calculated and caveats for comparison. N/A means a rate was not published for this group.

[2] The Census of Fatal Occupational Injuries (CFOI) has published data on fatal occupational injuries for the United States since 1992. During this time, the classification systems and definitions of many data elements have changed. Please see the CFOI Definitions page (www.bls.gov/iif/oshcfdef.htm) for a more detailed description of each data element and their definitions. Industry is based on the 2012 North American Industry Classification System (NAICS).

[3] Includes all fatal occupational injuries meeting this ownership criterion across all specified years, regardless of industry classification system.

[4] Includes fatal injuries at all establishments categorized as Mining, quarrying, and oil and gas extraction (Sector 21) in the North American Industry Classification System, including establishments not governed by the Mine Safety and Health Administration (MSHA) rules and reporting, such as those in Oil and Gas Extraction.

[5] Includes fatal injuries to workers employed by governmental organizations regardless of industry. Includes all fatal occupational injuries meeting this ownership criterion across all specified years, regardless of industry classification system.

Note: Data for all years are final. Totals for major categories may include subcategories not shown separately. CFOI fatal injury counts exclude illness-related deaths unless precipitated by an injury event.

Source: U.S. Bureau of Labor Statistics, Current Population Survey, Census of Fatal Occupational Injuries

Table 5. Fatal occupational injuries counts and rates by state of incident, 2015-16

Characteristic	Counts		Rates[1]	
	2015	2016	2015	2016
Total[2]	4,836	5,190	3.4	3.6
State of incident				
Alabama	70	100	3.7	5.2
Alaska	14	35	4.1	10.6
Arizona	69	77	2.4	2.6
Arkansas	74	68	5.8	5.3
California	388	376	2.2	2.2
Colorado	75	81	2.9	3.0
Connecticut	44	28	2.6	1.6
Delaware	8	12	1.9	2.6
District of Columbia	8	5	2.4	1.4
Florida	272	309	3.1	3.6
Georgia	180	171	4.3	3.9
Hawaii	18	29	2.6	2.4
Idaho	36	30	4.8	4.1
Illinois	172	171	2.9	2.9
Indiana	115	137	3.9	4.5
Iowa	60	76	3.9	4.8
Kansas	60	74	4.4	5.2
Kentucky	99	92	5.5	5.0
Louisiana	112	95	5.8	5.0
Maine	15	18	2.5	2.4
Maryland	69	92	2.4	3.2
Massachusetts	69	109	2.1	3.3
Michigan	134	162	3.1	3.5
Minnesota	74	92	2.7	3.4
Mississippi	77	71	6.8	6.3
Missouri	117	124	4.3	4.3
Montana	36	38	7.5	7.9
Nebraska	50	60	5.4	6.3
Nevada	44	54	3.5	4.2
New Hampshire	18	22	2.7	3.2
New Jersey	97	101	2.3	2.4
New Mexico	35	41	4.1	4.9
New York (including N.Y.C.)	236	272	2.7	3.1
New York City	74	56	2.0	1.5
North Carolina	150	174	3.4	3.7
North Dakota	47	28	12.5	7.0
Ohio	202	164	3.9	3.1
Oklahoma	91	92	5.5	5.6
Oregon	44	72	2.6	3.9
Pennsylvania	173	163	3.0	2.8
Rhode Island	6	9	1.2	1.8
South Carolina	117	96	5.6	4.4
South Dakota	21	31	4.9	7.5
Tennessee	112	122	3.7	4.3
Texas	527	545	4.5	4.4
Utah	42	44	3.2	3.2
Vermont	9	10	2.9	3.2
Virginia	106	153	2.8	4.0
Washington	70	78	2.1	2.4
West Virginia	35	47	5.0	6.6
Wisconsin	104	105	3.6	3.6
Wyoming	34	34	12.0	12.3

[1] Fatal injury rates are per 100,000 full-time equivalent workers (FTEs). Fatal injury rates exclude workers under the age of 16 years, volunteers, and resident military. Complete national rates can be found at www.bls.gov/iif/oshcfoi1.htm#rates. Complete state rates can be found at www.bls.gov/iif/oshstate.htm. National and state rates are calculated using different methodology and cannot be directly compared. Please see www.bls.gov/iif/oshfaq1.htm#q16 for more information on how rates are calculated and caveats for comparison. N/A means a rate was not published for this group.

[2] The Census of Fatal Occupational Injuries (CFOI) has published data on fatal occupational injuries for the United States since 1992. During this time, the classification systems and definitions of many data elements have changed. Please see the CFOI Definitions page (www.bls.gov/iif/oshcfdef.htm) for a more detailed description of each data element and their definitions.

Note: Data for all years are final. CFOI fatal injury counts exclude illness-related deaths unless precipitated by an injury event.

Source: U.S. Bureau of Labor Statistics, Current Population Survey, Census of Fatal Occupational Injuries

EXHIBIT

8

UNITED STATES
DEPARTMENT OF LABOR

Occupational Safety and Health Administration

English | **Spanish**

MENU

- Safety and Health Topics
- /
- Agricultural Operations

Agricultural Operations

- Youth in Agriculture
- Hazards and Controls
- Vehicle Hazards
- General Resources
- Standards
- Agriculture Industry Publications

Overview

Highlights

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- Green Tobacco Sickness. OSHA-NIOSH Recommended Practices, (2015). Also available in Spanish.
- Tree Care Work: Falls and Falling Object Hazards (PDF | EPUB | MOBI). OSHA Hazard Bulletin (Publication HB-3731), (2014). Also available in Spanish | EPUB | MOBI).
- Safe Use of Tripod Orchard Ladders. OSHA Fact Sheet (Publication FS-3728), (2014).
- Protecting Workers from Tripod Orchard Ladder Injuries. OSHA QuickCard™ (Publication 3705), (2014). Also available in Spanish.

Farmworkers are at high risk for fatal and nonfatal injuries, work-related lung diseases, noise-induced hearing loss, skin diseases, and certain cancers associated with chemical use and prolonged sun exposure.

Agriculture ranks among the most dangerous industries. Between 2003 and 2011, 5,816 agricultural workers died from work-related injuries in the US.[1,2]

- In 2011, 570 agricultural workers died from work-related injuries.[1] The fatality rate for agricultural workers was 7 times higher than the fatality rate for all workers in private industry; agricultural workers had a fatality rate of 24.9 deaths per 100,000, while the fatality rate for all workers was 3.5.[3]
- The leading cause of death for farmworkers between 1992 and 2009 was tractor overturns, accounting for over 90 deaths annually. The most effective way to prevent tractor overturn deaths is the use of Roll-Over Protective Structures; however in 2006 only 59% of tractors used on farms in the US were equipped with these devices.[2]
- Every day, about 243 agricultural workers suffer a serious lost-work-time injury. Five percent of these injuries result in permanent impairment.[2]
- In 2011, the injury rate for agricultural workers was over 40 percent higher than the rate for all workers. Crop production agricultural workers' injury rates were 5.5 per 100 workers. Animal production agricultural workers' injury rates were 6.7 per 100 workers. The rate for all workers was 3.8.[4]
- Young workers who live and work on farms are also exposed to potentially dangerous farm-related hazards. Farm operators who hire youth to work on their farm should be aware of all applicable child labor laws.
- Approximately one half of farmworkers are Hispanic. OSHA requires that employers conduct all required training of workers in a language and vocabulary workers can understand. OSHA lists Spanish-language outreach resources on the following pages: Hispanic Outreach Module of Compliance Assistance Quick Start, Spanish-Language Compliance Assistance Resources, Spanish-Language Publications, and Podemos Ayudar (We Can Help).

Agricultural operations are covered by several Occupational Safety and Health standards including Agriculture (29 CFR 1928), General Industry (29 CFR 1910), and the General Duty Clause. You can view all of the applicable OSHA standards, preambles to final rules, directives and standard interpretations for agricultural operations, as well as other Federal standards applicable to Agriculture here.

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Note: For all Bureau of Labor Statistics (BLS) data in this Safety and Health Topics Page, "agricultural worker" refers to any worker in the Agriculture, Forestry, Fishing and Hunting (GP2AFH) industry. These numbers are the best available representation of workers in the agricultural industry.

How do I find out about employer responsibilities and workers' rights?

Workers have a right to a safe workplace. The law requires employers to provide their employees with safe and healthful workplaces. The OSHA law also prohibits employers from retaliating against employees for exercising their rights under the law (including the right to raise a health and safety concern or report an injury). For more information see www.whistleblowers.gov or Workers' rights under the OSH Act.

OSHA can help answer questions or concerns from employers and workers. To reach your regional or area OSHA office, go to the OSHA Offices by State webpage or call 1-800-321-OSHA (6742).

Small business employers may contact OSHA's free and confidential On-Site Consultation program to help determine whether there are hazards at their worksites and work with OSHA on correcting any identified hazards. Consultants in this program from state agencies or universities work with employers to identify workplace hazards, provide advice on compliance with OSHA standards, and assist in establishing injury and illness prevention programs. On-Site Consultation services are separate from enforcement activities and do not result in penalties or citations. To contact OSHA's free consultation service, go to OSHA's On-Site Consultation web page or call 1-800-321-OSHA (6742) and press number 4.

Workers may file a complaint to have OSHA inspect their workplace if they believe that their employer is not following OSHA standards or that there are serious hazards. Workers can file a complaint with OSHA by calling 1-800-321-OSHA (6742), online via eComplaint Form, or by printing the complaint form and mailing or faxing it to the local OSHA area office. Complaints that are signed by a worker are more likely to result in an inspection.

If you think your job is unsafe or if you have questions, contact OSHA at 1-800-321-OSHA (6742). Your contact will be kept confidential. We can help. For other valuable worker protection information, such as Workers' Rights, Employer Responsibilities, and other services OSHA offers, visit OSHA's Workers' page.

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[1] Bureau of Labor Statistics (BLS), United States Department of Labor. Occupational Injuries and Illnesses and Fatal Injuries Profiles database queried by industry for Agriculture, Forestry, Fishing and Hunting (GP2AFH), Accessed June 2013.

[2] Agricultural Safety. Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health (NIOSH) Workplace Safety and Health Topic.

[3] Bureau of Labor Statistics, United States Department of Labor. Number and rate of fatal occupational injuries, by industry section, 2011. Available online.

[4] Workplace Injuries and Illnesses - 2011. Department of Labor, Bureau of Labor Statistics (BLS) News Release, October 25, 2012.

UNITED STATES
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200 Constitution Ave., NW,
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www.OSHA.gov

FEDERAL GOVERNMENT

- White House
- Affordable Care Act
- Disaster Recovery Assistance
- USA.gov
- Disability.gov
- Plain Writing Act
- Recovery Act
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- U.S. Office of Special Counsel

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- Frequently Asked Questions
- A - Z Index
- Freedom of Information Act
- Read the OSHA Newsletter
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UNITED STATES
DEPARTMENT OF LABOR

Occupational Safety and Health Administration

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Hazards & Controls

What hazards are agricultural workers exposed to?

Farmworkers are exposed to numerous safety, health, environmental, biological, and respiratory hazards. These include

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vehicle rollovers, heat exposure, falls, musculoskeletal injuries, hazardous equipment, grain bins, unsanitary conditions, pesticides, and many others.

VEHICLE HAZARDS

In 2011, vehicular accidents caused close to half (276) of the 570 fatalities in agriculture.[1] Injuries from vehicular incidents are serious and debilitating to farm activities. For more information, visit the Vehicle Hazards page.

HEAT

Heat-related illness. **HEAT ILLNESS CAN BE DEADLY**. Every year, thousands of workers become sick from exposure to heat, and some even die. **These illnesses and deaths are preventable**.

Workers exposed to hot and humid conditions are at a high risk of heat illness, especially if they are doing heavy work tasks or using bulky protective clothing and equipment. New workers may also be greater risk than others if they have not built up a tolerance to hot conditions. Employers must take steps to help workers become acclimated.

Prevention. Heat-related illnesses, while potentially deadly, are easily preventable. When working in hot conditions, remember "WATER, REST, SHADE." Drink water every 15 minutes, even when not thirsty. Wear a hat and light-colored clothing. Rest in the shade. Be sure to watch out for fellow workers and know your location in case you need to call for assistance. Get help right away if there are any signs of illness.

LADDERS & FALLS

Deaths and injuries from falls remain a major hazard for farmworkers.

- According to the Bureau of Labor Statistics (BLS), agricultural workers had a non-fatal, fall-related injury rate of 48.2 per 10,000 workers in 2011—far higher than the same type of injury rates in the transportation, mining or manufacturing industries.[1]
- Between 2007 and 2011 the BLS reported 167 agricultural workers' deaths were due to falls.[1]

Fall protection and ladder safety. OSHA's Fall Protection topics page and the National Institute of Occupational Safety and Health's Fall Injuries Prevention in the Workplace site provide general information on different types of fall protection. The following resources provide fall protection guidance for farm workers and employers:

- Fall Prevention in the Agriculture Sector
- Guidance note: Falls prevention in the agricultural sector

MUSCULOSKELETAL INJURIES

Workers in agricultural operations for both crop and animal production typically use repetitive motions in awkward positions and which can cause musculoskeletal injuries.[2]

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Ergonomic risk factors are found in jobs requiring repetitive, forceful, or prolonged exertions of the hands; frequent or heavy lifting, pushing, pulling, or carrying of heavy objects; and prolonged awkward postures. Vibration and cold may intensify these conditions.

New technology may reduce some types of ergonomic injuries but increase others. For instance, while dairy farmers have traditionally been at a higher risk for developing osteoarthritis of the knee[3], more recent research has shown new technology used in milking has resulted in a shift in musculoskeletal disorders to the shoulders, hands and arms.

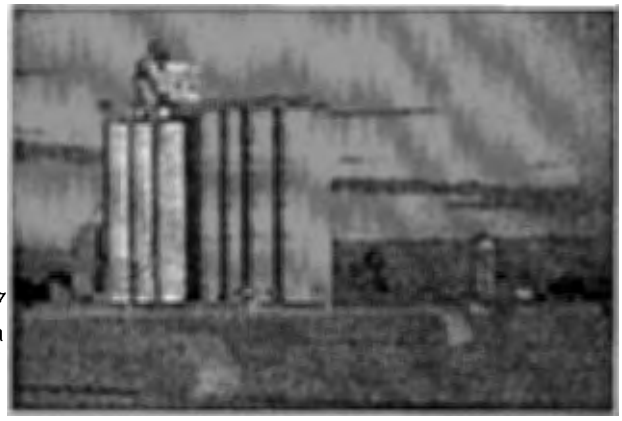
Ergonomic protections. Proper tools, padding to reduce vibration, and fewer activities with high repetition are some methods for reducing musculoskeletal injuries.[4] The National Institute for Occupational Safety and Health's page on Ergonomics and Musculoskeletal Disorders provides general information on the topic. In addition, NIOSH's Simple Solutions: Ergonomics for Farmworkers has information about early intervention to prevent these injuries for growers, safety specialists, human resources managers or anyone with an interest in safe farms.

HAZARDOUS EQUIPMENT AND MACHINERY

Farmworkers routinely use knives, hoes, and other cutting tools; work on ladders; or use machinery in their shops. However, these simple tools can be hazardous and have the potential for causing severe injuries when used or maintained improperly.

- All tools should be maintained in good condition and used according to the manufacturers' instructions.
- Power tools must be properly grounded or double insulated and all guards or shields must be in place.
- Farmworkers should wear the proper personal protective equipment (PPE) and make sure that clothing has no strings or loose ends that could be caught by machinery. Long hair should be tied back to prevent entanglement.
- In addition, shops should be well lit and have clear walkways to eliminate slips, trips and falls.

GRAIN BINS AND SILOS



While safety issues surrounding grain bins and silos are sometimes overlooked on farms, they pose many dangers. Farmworkers are exposed to suffocation or engulfment hazards when working with grain bins and silos, as well as grain dust exposures and explosions. Suffocation is a leading cause of death in grain storage bins. In 2010, the number of workers engulfed by grain stored in bins hit a record high of 57 engulfments and 26 deaths. As a direct result, OSHA issued a Hazard Alert and an illustrated hazard wallet card explaining the dangers of working inside grain storage bins. In 2012, 19 workers were engulfed by grain stored in bins, and 8 died.[5]

Suffocation can occur when a worker becomes buried (engulfed) by grain as they walk on moving grain or attempt to clear grain built up on the inside of a bin. Moving grain acts like "quicksand" and can bury a worker in seconds. "Bridged" grain and vertical piles of stored grain can also collapse unexpectedly if a worker stands on or near it. Additional information on safety and health issues associated with grain handling, such as personal protective equipment, use of lifelines, lockout/tagout, and training is located on the OSHA Grain Handling Safety and Health Topics Page.

UNSANITARY CONDITIONS

The lack of drinking water, sanitation facilities and/or handwashing facilities can lead to many health effects. Farmworkers may suffer heat stroke and heat exhaustion from an insufficient intake of potable water, urinary tract

infections due to urine retention from inadequate availability of toilets, agrichemical poisoning resulting from lack of handwashing facilities, and infectious and other communicable diseases from microbial and parasitic exposures.

The Field Sanitation standard (1928.110) applies to any agricultural establishment where eleven (11) or more workers are engaged on any given day in hand-labor operations in the field. OSHA standards require covered employers to provide: toilets, potable drinking water, and hand-washing facilities to hand-laborers in the field; to provide each worker reasonable use of the above; and to inform each worker of the importance of good hygiene practices.

PESTICIDES AND OTHER CHEMICALS

Pesticide exposure. Pesticides pose risks of short- and long- term illness to farmworkers and their families. Workers who mix, load or apply pesticides (known as pesticide handlers) can be exposed to toxic pesticides due to spills and splashes, defective, missing or inadequate protective equipment, direct spray, or drift. Workers who perform hand labor tasks in areas that have been treated with pesticides face exposure from direct spray, drift or contact with pesticide residues on the crop or soil.

Pesticides can present a hazard to applicators, to harvesters reentering a sprayed field, to family members due to take-home contamination, and to rural residents via air, ground water and food. Workers may be exposed to pesticides in a variety of ways, including: working in a field where pesticides have recently been applied; breathing in pesticide "drift" from adjoining or nearby fields; working in a pesticide-treated field without appropriate PPE; eating with pesticide-contaminated hands; eating contaminated fruits and vegetables; and eating in a pesticide-contaminated field. Workers may also be exposed to pesticides if they drink from, wash their hands, or bathe in irrigation canals or holding ponds, where pesticides can accumulate.

Pesticide protection. The Environmental Protection Agency (EPA) oversees pesticide use through the Worker Protection Standard (WPS). The WPS is a regulation for agricultural pesticides which is aimed at reducing the risk of pesticide poisonings and injuries among agricultural workers and pesticide handlers. The WPS protects employees on farms, forests, nurseries, and greenhouses from occupational exposure to agricultural pesticides. The regulation covers two types of workers:

- **Pesticide handlers** -- those who mix, load, or apply agricultural pesticides; clean or repair pesticide application equipment; or assist with the application of pesticides in any way.
- **Agricultural workers** -- those who perform tasks related to the cultivation and harvesting of plants on farms or in greenhouses, nurseries, or forests. Workers include anyone employed for any type of compensation (including self-employed) doing tasks -- such as carrying nursery stock, repotting plants, or watering -- related to the production of agricultural plants on an agricultural establishment. Workers do ***not*** include office employees, truck drivers, mechanics, and any others not engaged in handling, cultivation, or harvesting activities.

The WPS contains requirements for pesticide safety training, notification of pesticide applications, use of personal protective equipment, restricted-entry intervals after pesticide application, decontamination supplies, and emergency medical assistance. While EPA covers the use of respirators in the application of pesticides, OSHA's Safety and Health Topic page on Respiratory Protection provides general information on respirator use and OSHA standards that may apply with the use of other chemicals.

Hazard Communication. Chemicals must be properly labeled so farmworkers know the identity and hazards of the chemicals they may be exposed to at work. OSHA has information to assist employers and workers ensure that hazard communication is properly addressed in their workplaces. In addition, certain OSHA standards address hazard communications. As explained in 1910.1200(b)(5)(i), pesticides covered under FIFRA are exempt from the OSHA labeling requirements since EPA regulates these labels.

RESPIRATORY DISTRESS

Respiratory hazards. Respiratory hazards. Respiratory hazards in barns, manure pits, machinery and silos range from acute to chronic air contaminants. Farmworkers' most common respiratory hazards are bioaerosols, such as organic dusts, microorganisms, and endotoxins and chemical toxicants from the breakdown of grain and animal waste. Inorganic dust, from silicates in harvesting and tilling, is prevalent but less significant.[6]

Changes to farming mechanisms have both improved working conditions and increased exposure to respiratory hazards —mainly due to the increased density in animal confinement.[6]

Respiratory protection. Control of aerosols might include the enclosure and ventilation of tractors, applying moisture to friable material, and respirators.[6]

Helpful links include:

- OSHA's Safety and Health Topic page on Respiratory Protection.
- OSHA's Safety and Health Topics page on Cotton Dust.
- NIOSH Hazard Control page on Control of Organic Dusts From Bedding Choppers in Dairy Barns.
- OSHA's Safety and Health Topics page on Ventilation.

ANIMAL-ACQUIRED INFECTIONS & RELATED HAZARDS

Agricultural workers may be exposed to animals that can transmit diseases.

Zoonotic diseases, or zoonoses, are diseases that can be transmitted from vertebrate animals to humans. Zoonoses are caused by bacteria, protozoa, fungi, viruses, parasites or prions, which are often part of an animal's natural flora (i.e., microorganisms that live in and on the animal) but are able to cause disease in humans. Infections can result from direct contact with animals or their products such as manure or placenta. Direct transmission can also occur through consumption of animal products (e.g., raw meat, raw milk, etc.) or through an animal bite. Humans can also become indirectly infected by contact with contaminated soil, food, or water. Farmers, ranchers, veterinarians, slaughterhouse workers, and other agricultural workers have a higher risk of contracting zoonoses because of their close contact with animals.

Some examples of zoonotic diseases include: Anthrax, Bovine Tuberculosis, Brucellosis, Cryptosporidiosis, Giardiasis, Hantavirus diseases, Leptospirosis, Ovine Chlamydiosis, Psittacosis and Rabies. Outbreaks of avian flu (normally produces a mild disease in aquatic birds), Q fever (a disease common in cattle, sheep and goats), and certain strains of methicillin-resistant Staphylococcus aureus (MRSA) normally restricted to certain animals are recent examples of zoonoses.

Arboviruses are infectious agents that are transmitted to humans by arthropods, such as ticks and mosquitos. The recent Zika and West Nile Virus outbreaks are examples of arbovirus outbreaks.

An agricultural worker's risk of acquiring a zoonotic, arboviral or other animal-borne infection varies with the type of work tasks he or she performs, the kind(s) of animal(s) to which he or she has exposure and the geographic location of the worksite.

OSHA maintains resources for employers and workers in operations that may expose them to animals and animal-borne diseases, including:

Safety and Health Topics web pages:

- Anthrax
- Avian Flu
- Hantavirus
- Plague

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Tularemia
- Zika

Fact Sheets:

- Avian Flu Fact Sheet (in English and Spanish, PDF*)
- West Nile Virus Fact Sheet (in English and Spanish, PDF*)
- Zika Virus Fact Sheet (in English; see Zika page for Spanish)

QuickCards:

- Avian Flu QuickCards - Variety of QuickCards targeted to specific worker populations
- Flu: Protecting Swine Production Workers from Influenza QuickCard (PDF*)
- Rodents, Snakes, and Insects QuickCard (PDF*)
- West Nile Virus QuickCard (in English and Spanish, PDF*)
- Zika Virus Protection for Outdoor Workers (in English and Spanish, PDF*)

The National Association of State Public Health Veterinarians (http://www.nasphv.org/Documents/VeterinaryStandardPrecautions.pdf) has identified several important measures for preventing zoonotic infections in workers, including:

- Worker infection control measures:
  - Hand hygiene;
  - Appropriate use of personal protective equipment (e.g., gloves and outer protection, facial and respiratory protection);
  - Making vaccinations available to workers, as appropriate; and
  - Worker training, including on these infection control measures.

- Environmental control measures:
  - Cleaning and disinfecting surfaces and equipment;
  - Vaccinating healthy animals;
  - Isolating diseased animals;
  - Tracking aggressive animals, so that restraints may be used when necessary;
  - Disposing of infected tissues or dead animals appropriately; and
  - Controlling the infestation of pests which can be carriers of infectious agents.

Needlestick and Related Hazards

Needlesticks, common in veterinary medicine, can cause serious injury. Needlesticks may result in the inoculation of vaccines containing live organisms, chemotherapeutics and other chemicals, hormones or infective materials. In addition, the wound can serve as a portal of entry for infectious agents other than those contained in the needle.

Needlestick injuries are preventable by following OSHA's Bloodborne Pathogens Standard (29 CFR 1910.1030) which was amended pursuant to the 2000 Needlestick Safety and Prevention Act (https://www.gpo.gov/fdsys/pkg/BILLS-106hr5178enr/pdf/BILLS-106hr5178enr.pdf). The National Association of State Public Health Veterinarians, Veterinary Infection Control Committee (http://www.nasphv.org/Documents/VeterinaryStandardPrecautions.pdf)* have identified several methods to prevent needlestick and related injuries, including:

- Having an approved sharps container;
- Never removing the needle cap by mouth;
- Avoiding recapping needles; and
- Wearing the appropriate personal protective equipment, such as gloves.

NOISE

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Thousands of workers every year suffer from preventable hearing loss due to high workplace noise levels, and research has shown that those who live and work on farms have had significantly higher rates of hearing loss than the general population.[8] In fact, farming is among the occupations recognized as having the highest risks for hearing loss.[9]

Tractors, forage harvesters, silage blowers, chain saws, skid-steer loaders, grain dryers, squealing pigs and guns are some of the most typical sources of noise on the farm. Studies suggest that lengthy exposure to these high sound levels have resulted in noise-induced hearing loss to farmworkers of all ages, including teenagers. Hearing loss is not as dramatic nor as sudden as an injury from a tractor overturn or machine entanglement, but it is permanent.

Employers can achieve noise reduction in several ways - usually related to the maintenance of the equipment:

- Worn, loose, or unbalanced machine parts can increase decibel levels during operation. Regular lubrication and parts replacement (bearings, mufflers, silencers, etc.,) reduce friction and lower noise levels.
- Larger engines that can be operated at lower speeds reduce noise levels, and may even conserve fuel.
- Vibration isolation pads may be installed under the legs of noisy equipment to reduce noise generated by the equipment vibrating on a cement floor.
- Newer chainsaws and leaf blowers have flexible mountings to reduce vibration-induced noise as well.
- Tractor and skid-steers can be purchased with sound reducing cabs and tightly fitted cab doors and windows to reduce how much outside noise reaches the operator.
- Acoustical materials may be installed on walls and ceilings to enclose sound.

In addition, employers may provide workers with personal protective equipment (PPE) but must train them in using the PPE correctly. OSHA's Safety and Health Topics Page on PPE describes proper use of personal protective equipment.

Noise and Hearing Conservation - OSHA's Safety and Health Topics Page on Occupational Noise Exposure provides a comprehensive review of the hazards of noise, the means of protection, as well as OSHA requirements.

OTHER HAZARDS

Farmworkers may face a number of other hazards due to being outside. The National Institute for Occupational Safety and Health's (NIOSH's) Workplace Safety and Health Topics page on Hazards to Outdoor Workers includes information on:

- *Other Biological Hazards*. These include vector-borne diseases, venomous wildlife and insects, and poisonous plants.
- *Extreme Cold.*
- *Lightning.*
- *Ultraviolet Radiation.*

Confined Space. Besides grain storage, farmworkers face dangers in entering other confined spaces such as:

- Manure pits.
- Flat storage buildings.
- Tanks.

A NIOSH Alert publication, Preventing Deaths of Farm Workers in Manure Pits, provides basic guidance. In addition, OSHA's Safety and Health Topics page on Confined Space, provides further guidance on different types of confined spaces.

Skin Disorders. Workers in the agricultural sector are at risk of potentially harmful exposures of the skin. The NIOSH Workplace Safety & Health Topics page on Skin Exposures & Effects provides information on the different types of exposures and the associated hazards.

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Electrical Hazards. Electrical hazards in agriculture range from the dangers of hitting overhead wires when using large equipment to the possibility of hitting underground wires when digging. OSHA's page on Electrical Safety and the NIOSH Workplace Safety & Health Topics page on Electrical Safety provide resources on preventing a range of electrical accidents.

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UNITED STATES
DEPARTMENT OF LABOR

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www.OSHA.gov

FEDERAL GOVERNMENT

- White House
- Affordable Care Act
- Disaster Recovery Assistance
- USA.gov

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- Disability.gov
- Plain Writing Act
- Recovery Act
- No Fear Act
- U.S. Office of Special Counsel

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EXHIBIT

9

NEWS RELEASE
BUREAU OF LABOR STATISTICS
U. S. DEPARTMENT OF LABOR

For Release: Friday, May 05, 2017 17-568-SAN

WESTERN INFORMATION OFFICE: San Francisco, Calif.
Technical information: (415) 625-2270 BLSinfoSF@bls.gov www.bls.gov/regions/west
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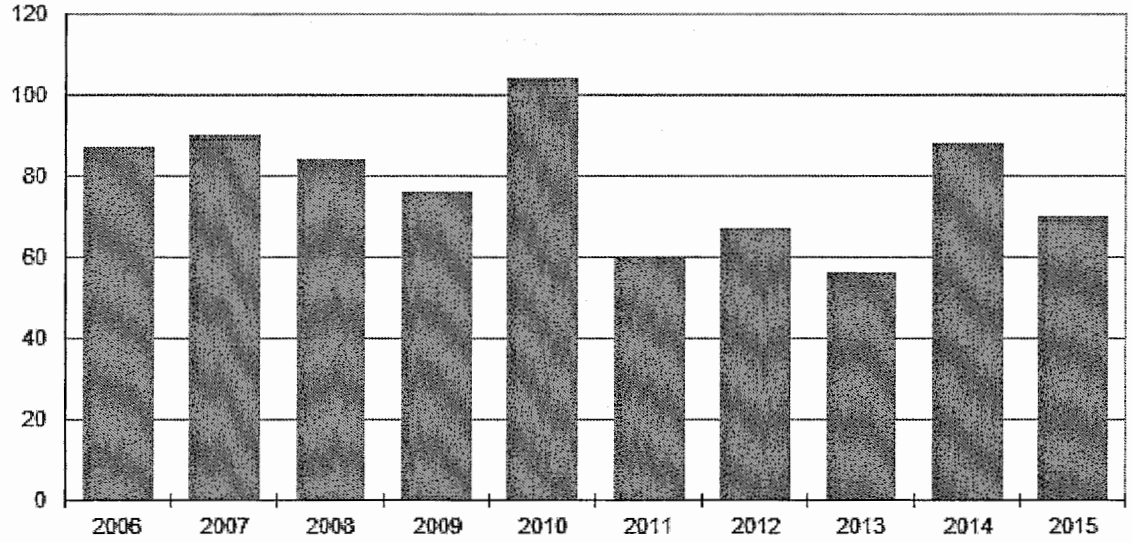
Fatal Work Injuries in Washington – 2015

Fatal work injuries totaled 70 in 2015 for Washington, the U.S. Bureau of Labor Statistics reported today. Assistant Commissioner for Regional Operations Richard Holden noted that the number of work-related fatalities in Washington decreased by 18 from the previous year. Fatal occupational injuries in the state have ranged from a high of 128 in 1996 to a low of 56 in 2013. (See chart 1.)

Nationwide, a total of 4,836 fatal work injuries were recorded in 2015, a slight increase from the 4,821 fatal injuries in 2014, according to the results from the Census of Fatal Occupational Injuries (CFOI) program.

Chart 1. Total fatal occupational injuries, Washington, 2006–2015



SOURCE: U.S. Bureau of Labor Statistics.

Type of incident

In Washington, transportation incidents resulted in 29 fatal work injuries and falls, slips, or trips accounted for 21 fatalities. These two major categories accounted for 71 percent of all workplace fatalities in the state. (See table 1.) The number of worker deaths from transportation incidents rose by five over the year, and worker fatalities due to falls, slips, or trips increased by four.

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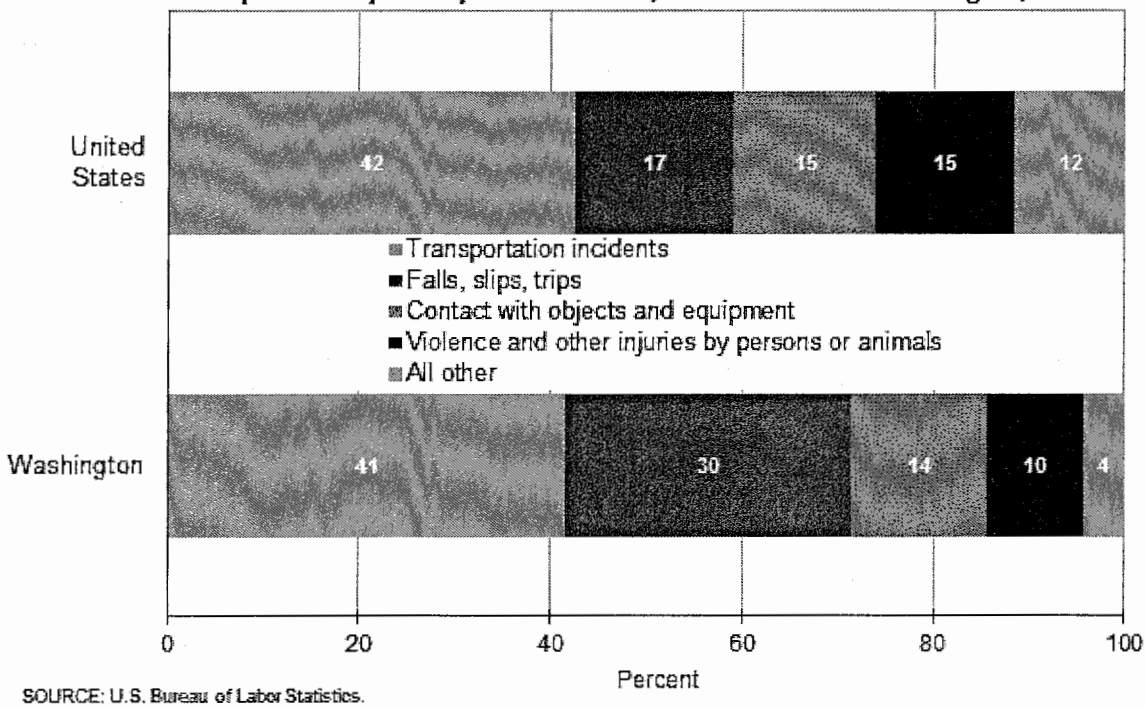
Contact with objects and equipment was the third-most frequent fatal work event with 10 fatalities, down by 11 from the prior year. Violence and other injuries by persons or animals resulted in 7 work-related deaths, down from 15 in 2014.

Nationally, transportation incidents were the most frequent fatal workplace event in 2015, accounting for approximately 42 percent of fatal work injuries. (See chart 2.) Falls, slips, or trips was the second-most frequent type of event (17 percent), followed by contact with objects and equipment (15 percent).

Chart 2. Fatal occupational injuries by selected event, United States and Washington, 2015



SOURCE: U.S. Bureau of Labor Statistics.

Industry

The private agriculture, forestry, fishing, and hunting industry had the largest number of fatalities in Washington with 16, down from 19 in the previous year. (See table 2.) Contact with objects and equipment was the most frequent fatal event in the sector with eight worker deaths, followed by transportation incidents with five fatalities. Six of the 16 fatally injured in this sector worked in fruit and tree nut farming.

The private construction sector had nine workplace fatalities, down by eight from the previous year. Specialty trade contractors accounted for two-thirds of the fatal injuries in this industry.

Occupation

Farming, fishing, and forestry occupations and transportation and material moving occupations had the highest number of workplace fatalities with 13 each. (See table 3.) The majority of the fatalities within the farming, fishing, and forestry group were crop, nursery, and greenhouse farmworkers and laborers with five. Heavy and tractor-trailer truck drivers accounted for 4 of the 13 fatalities among transportation and material workers

Additional highlights:

- Men accounted for 89 percent of the work-related fatalities in Washington, compared to the 93-percent national share. (See table 4.) Transportation incidents made up 42 percent of the fatalities for men in Washington.
- White non-Hispanics accounted for 71 percent of those who died from a workplace injury. Nationwide, this group accounted for 67 percent of work-related deaths.
- Workers 25-54 years old accounted for 49 percent of the state's work-related fatalities in 2015, compared to 57 percent nationally.
- Of the 70 fatally-injured workers in Washington, 74 percent worked for wages and salaries; the remainder were self-employed. The most frequent fatal event for both groups of workers was transportation incidents.

Change in the Census of Fatal Occupational Injuries (CFOI) News Release Schedule

Beginning with the 2015 reference year, CFOI will publish a single, annual release with no revisions. A similar schedule will be followed in subsequent years. Preliminary releases, which normally appeared in August or September in past years, will no longer be produced.

Technical Note

Background of the program. The Census of Fatal Occupational Injuries (CFOI), part of the BLS Occupational Safety and Health Statistics (OSHS) program, compiles a count of all fatal work injuries occurring in the U.S. during the calendar year. The CFOI program uses diverse state, federal, and independent data sources to identify, verify, and describe fatal work injuries. This ensures counts are as complete and accurate as possible. For the 2015 data, over 21,400 unique source documents were reviewed as part of the data collection process. For technical information and definitions for CFOI, please go to the BLS Handbook of Methods on the BLS web site at www.bls.gov/opub/hom/pdf/homch9.pdf.

Federal/State agency coverage. The Census of Fatal Occupational Injuries includes data for all fatal work injuries, whether the decedent was working in a job covered by the Occupational Safety and Health Administration (OSHA) or other federal or state agencies or was outside the scope of regulatory coverage. Thus, any comparison between the BLS fatality census counts and those released by other agencies should take into account the different coverage requirements and definitions being used by each agency.

Acknowledgments. BLS appreciates the efforts of all federal, state, local, and private sector entities that provided source documents used to identify fatal work injuries. Among these agencies are the Occupational Safety and Health Administration; the National Transportation Safety Board; the U.S. Coast Guard; the Mine Safety and Health Administration; the Office of Workers' Compensation Programs (Federal Employees' Compensation and Longshore and Harbor Workers' Compensation divisions); the Federal Railroad Administration; the National Highway Traffic Safety Administration; state vital statistics registrars, coroners, and medical examiners; state departments of health, labor, and industrial relations and workers' compensation agencies; state and local police departments; and state farm bureaus.

Information in this release will be made available to sensory impaired individuals upon request. Voice phone: (202) 691-5200. Federal Relay Service: (800) 877-8339.

Table 1. Fatal occupational injuries by event or exposure, Washington, 2014–15

Event or exposure [1]	2014	2015	
	Number	Number	Percent
Total	88	70	100
Violence and other injuries by persons or animals	15	7	10
Intentional injury by person	13	6	9
Homicides (Intentional injury by other person)	8	5	7
Shooting by other person--intentional	5	5	7
Transportation incidents	24	29	41
Aircraft incidents	--	4	6
Parachuting incident	--	1	1
Pedestrian vehicular incident	6	6	9
Pedestrian struck by vehicle in roadway	3	3	4
Pedestrian struck by vehicle in nonroadway area	--	3	4
Water vehicle incidents	--	1	1
Capsized or sinking water vehicle	--	1	1
Roadway incidents involving motorized land vehicle	9	12	17
Roadway collision with object other than vehicle	3	5	7
Vehicle struck object or animal on side of roadway	3	5	7
Roadway noncollision incident	3	5	7
Nonroadway incident involving motorized land vehicles	5	5	7
Nonroadway noncollision incident	3	4	6
Falls, slips, trips	17	21	30
Falls on same level	3	4	6
Falls to lower level	14	17	24
Other fall to lower level	13	15	21
Other fall to lower level less than 6 feet	--	3	4
Other fall to lower level 6 to 10 feet	--	3	4
Exposure to harmful substances or environments	9	3	4
Contact with objects and equipment	21	10	14
Struck by object or equipment	14	9	13
Struck by falling object or equipment--other than powered vehicle	8	6	9

Footnotes:
(1) Based on the BLS Occupational Injury and Illness Classification System (OIICS) 2.01 implemented for 2011 data forward.
NOTE: Data for all years are final. Totals for major categories may include subcategories not shown separately. Percentages may not add to totals because of rounding. CFOI fatality counts exclude illness-related deaths unless precipitated by an injury event. Dashes indicate no data reported or data that do not meet publication criteria.

Table 2. Fatal occupational injuries by industry, Washington, 2014–15

Industry [1]	2014	2015	
	Number	Number	Percent
Total	88	70	100
Private industry	83	63	90
Natural resources and mining	19	16	23
Agriculture, forestry, fishing and hunting	19	16	23
Crop production	4	7	10
Fruit and tree nut farming	--	6	9
Noncitrus fruit and tree nut farming	--	6	9
Apple orchards	--	4	6
Forestry and logging	9	6	9
Logging	9	5	7
Logging	9	5	7
Fishing, hunting and trapping	--	1	1
Fishing	--	1	1
Fishing	--	1	1
Finfish fishing	--	1	1
Construction	17	9	13
Construction	17	9	13
Specialty trade contractors	12	6	9
Foundation, structure, and building exterior contractors	3	4	6
Manufacturing	4	6	9
Manufacturing	4	6	9
Trade, transportation, and utilities	22	15	21
Wholesale trade	--	4	6
Retail trade	9	4	6
Clothing and clothing accessories stores	--	1	1
Jewelry, luggage, and leather goods stores	--	1	1
Jewelry stores	--	1	1
Transportation and warehousing	10	7	10
Truck transportation	6	5	7
Specialized freight trucking	4	3	4
Couriers and messengers	--	1	1
Local messengers and local delivery	--	1	1
Local messengers and local delivery	--	1	1
Professional and business services	8	6	9
Administrative and waste services	8	5	7
Administrative and support services	8	5	7
Services to buildings and dwellings	5	5	7
Landscaping services	3	3	4
Carpet and upholstery cleaning services	--	1	1
Educational services	--	1	1
Educational services	--	1	1
Technical and trade schools	--	1	1
Technical and trade schools	--	1	1
Flight training	--	1	1
Leisure and hospitality	4	3	4
Other services, except public administration	--	4	6
Other services, except public administration	--	4	6
Government [2]	5	7	10
Federal government	--	6	9

Footnotes:
(1) Industry data are based on the North American Industry Classification System, 2012.
(2) Includes fatal injuries to workers employed by governmental organizations regardless of industry.
NOTE: Data for all years are final. Totals for major categories may include subcategories not shown separately. Percentages may not add to totals because of rounding. CFOI fatality counts exclude illness-related deaths unless precipitated by an injury event. Dashes indicate no data reported or data that do not meet publication criteria.

Table 3. Fatal occupational injuries by occupation, Washington, 2014–15

Occupation [1]	2014	2015	
	Number	Number	Percent
Total	88	70	100
Management occupations	6	5	7
Building and grounds cleaning and maintenance occupations	6	4	6
Personal care and service occupations	4	--	--
Sales and related occupations	5	3	4
Farming, fishing, and forestry occupations	13	13	19
Agricultural workers	--	6	9
Miscellaneous agricultural workers	--	6	9
Farmworkers and laborers, crop, nursery, and greenhouse	--	5	7
Fishing and hunting workers	--	1	1
Fishers and related fishing workers	--	1	1
Fishers and related fishing workers	--	1	1
Forest, conservation, and logging workers	8	6	9
Logging workers	8	6	9
Fallers	3	4	6
Construction and extraction occupations	14	9	13
Construction trades workers	11	7	10
Installation, maintenance, and repair occupations	8	6	9
Other installation, maintenance, and repair occupations	7	3	4
Production occupations	3	4	6
Textile, apparel, and furnishings workers	--	1	1
Transportation and material moving occupations	18	13	19
Motor vehicle operators	11	8	11
Driver/sales workers and truck drivers	11	6	9
Driver/sales workers	--	1	1
Heavy and tractor-trailer truck drivers	10	4	6
Military specific occupations [2]	--	3	4

Footnotes:
(1) Occupation data are based on the Standard Occupational Classification system, 2010.
(2) Includes fatal injuries to persons identified as resident armed forces regardless of individual occupation listed.
NOTE: Data for all years are final. Totals for major categories may include subcategories not shown separately. Percentages may not add to totals because of rounding. CFOI fatality counts exclude illness-related deaths unless precipitated by an injury event. Dashes indicate no data reported or data that do not meet publication criteria.

Table 4. Fatal occupational injuries by worker characteristics, Washington, 2014–15

Worker characteristics	2014	2015	
	Number	Number	Percent
Total	88	70	100
Employee status			
Wage and salary workers (1)	76	52	74
Self-employed (2)	12	18	26
Gender			
Men	82	62	89
Women	6	8	11
Age (3)			
20 to 24 years	4	4	6
25 to 34 years	15	14	20
35 to 44 years	12	5	7
45 to 54 years	19	15	21
55 to 64 years	23	20	29
65 years and over	12	12	17
Race or ethnic origin (4)			
White, non-Hispanic	71	50	71
Black or African-American, non-Hispanic	--	--	--
Hispanic or Latino	8	14	20

Footnotes:
(1) May include volunteers and workers receiving other types of compensation.
(2) Includes self-employed workers, owners of unincorporated businesses and farms, paid and unpaid family workers, and may include some owners of incorporated businesses or members of partnerships.
(3) Information may not be available for all age groups.
(4) Persons identified as Hispanic or Latino may be of any race. The race categories shown exclude Hispanic and Latino workers.
NOTE: Data for all years are final. Totals for major categories may include subcategories not shown separately. Percentages may not add to totals because of rounding. CFOI fatality counts exclude illness-related deaths unless precipitated by an injury event. Dashes indicate no data reported or data that do not meet publication criteria.

EXHIBIT

10

Preface

In 2008, the National Occupational Research Agenda (NORA) Agriculture, Forestry, and Fishing (AgFF) Sector Council released a national Agriculture, Forestry and Fishing Agenda to be used by researchers throughout the United States. This plan was to guide research projects to fill high-priority knowledge and action gaps. The Agenda lists goals and priorities for work-related safety and health research in the AgFF sector. With the development of new technologies, procedures, and surveillance over the decade, the NORA AgFF Sector Council perceived a need for revised goals and clarification of the Agenda. This document provides updates to the background and goals of the NORA AgFF Agenda.

The NORA AgFF Sector Council divided itself into working groups to address each of the nine Strategic Goals outlined in the Agenda:

- Surveillance
- Vulnerable Workers
- Outreach, Communications, and Partnerships
- Agriculture Safety
- Agriculture Health
- Forestry*
- Fishing*

*These working groups addressed Strategic Goals for both health and safety.

Over the past 4 years, working groups have met individually to review the Agenda and provide clarification and updates. Each working group had a designated leader who led discussions to reach consensus on any updates or additions.

The 2008 version of the Agenda divided the goals into three levels.

- **Strategic Goals** are the long-term goals that have effect on decreasing illness, injury, and exposure of workers.
- **Intermediate Goals** intend to produce research results that may lead to efforts to change policy, procedures, and actions toward the accomplishment of the Strategic Goals.
- **Action Step Goals** include research that leads to outputs such as research and trade publications, conference presentations, and outreach efforts.

The Action Step Goals can lead to Intermediate Goals being addressed, which in turn can lead to the accomplishment of the Strategic Goals. In this revision we have made changes and additions to only the Intermediate Goals and Action Step Goals.

Besides providing updates and revisions to the NORA AgFF goals, this document also provides indicators (grey text) of goals that have been addressed and completed, whether by NIOSH or its research partners. Information on the work NIOSH is doing to address the NORA AgFF Agenda can be found at the NIOSH AgFF web site and linked pages. NORA leadership is aware of many organizations that have or are currently working to address goals.

Further information and background on NORA can be found here. Information specific to the NORA AgFF Sector Council can be found here.

Bradley J. Husberg

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Director, NIOSH Office of Agriculture Safety and Health
Manager, NIOSH AgFF Sector Program
Anchorage, Alaska
September 2016

Acknowledgments

NIOSH AgFF Sector Program wishes to thank all NORA Sector Council Working Group members for their contributions to the development, implementation, and revision of the 2008 NORA AgFF Agenda, and especially to the Working Group leaders for their role in preparing this revision.

NORA Sector Council Working Group leaders (at the time of this revision)

Surveillance	Risto Rautiainen	University of Nebraska
Vulnerable Workers	Deliana Garcia	Migrant Clinicians Network
Outreach, Communications, and Partnerships	Brad Husberg	NIOSH
Agriculture Safety	William Krycia	California OSHA
Agriculture Health	Dan Hair	Workers Compensation Fund
Forestry	Mathew Smidt	Auburn University
Fishing	Jennifer Lincoln	NIOSH

Strategic Goal 1: Surveillance

Improve surveillance within the Agriculture, Forestry, and Fishing (AgFF) Sector to describe the nature, extent, and economic burden of occupational illnesses, injuries, and fatalities; occupational health hazards; and worker populations at risk for adverse health outcomes.

Public health surveillance is an essential part of any public health prevention program [Halperin 1992]. These data define which populations are at risk for injury or illnesses and assess the impact of intervention programs by tracking changes over time, while providing the means of identifying new and emerging health issues.

Ideally, AgFF surveillance systems would identify injury and illness events on an ongoing basis at the state and local level, such that trends could be tracked over time and new policies and interventions could be evaluated. Currently, injury and illness surveillance in the AgFF sector is sparse, and ongoing census activities at the state and federal level track only fatal injuries. Although surveys are used to supplement the system, non-fatal injuries and illnesses and illness-related deaths are not adequately tracked at this time [National Academy of Sciences 2007].

Progress has been made in some areas, such as injury surveillance for youth on farms and pesticide poisoning surveillance, but these advances have not been extended to cover other farm populations or outcomes [NIOSH 2006, 2008]. Information is limited on the numbers and types of workers at risk within this sector. The available surveillance data are not always readily accessible to those who need the data to take preventive actions [National Academy of Sciences 2007]. All these areas need major improvement if the occupational health of this sector is to be significantly improved.

At its core, the AgFF sector surveillance goal includes (a) improved occupational injury, illness, and hazard surveillance; (b) improved data on the sector work force; and (c) improved data accessibility for researchers and communities. The sector council recognizes that building an appropriate AgFF surveillance system is a long-term undertaking and that consideration must be given to laying the foundations for a surveillance system for the future as well as making the best use of currently available data.

Intermediate Goal 1.1

Maximize the use of existing surveillance resources in AgFF in the short-term to describe the nature, extent, and economic burden of occupational illnesses, injuries, and fatalities; occupational hazards; and worker populations at risk for adverse health outcomes.

Action Step Goals

1.1.1. Assemble a list of accessible datasets that pertain to occupational injury or illness in AgFF. Review and describe the content of these datasets in terms of included populations, injury and illness outcomes, and their frequency, severity, cost, preventability, communicability, and public interest.

1.1.2. Maintain, expand, and modify existing surveillance systems, including pesticide poisoning and childhood agricultural injury surveillance, to fill identified gaps and increase the utility of the data for prevention activities.

1.1.3. Explore new occupational injury, illness, hazard, and exposure data collection approaches (include pilot testing and evaluation) for agriculture, forestry, and fishing. Approaches may include medical surveillance methods, case-based surveillance methods, physician reporting methods, worksite assessment methods, or other methodologies. Priority should be given to understudied conditions (such as musculoskeletal conditions, hearing loss, respiratory diseases, and zoonoses), hazard assessments, and exposure assessments.

1.1.4. Maintain ongoing best available estimates of at-risk populations for agriculture, forestry, and fishing, with limitations and caveats explained. For production agriculture, this includes undocumented farmworkers, unpaid family members, and children residing on family farms.

1.1.5. Continue research into the feasibility of using hours at risk rather than total workforce population numbers since there are so many workers in this sector who work other than the typical 40 hour week.

1.1.6. Work with U.S. Department of Agriculture National Agricultural Statistics Service (USDA-NASS), the U.S. Bureau of the Census, National Safety Council, Agricultural Safety and Health Council of America, and Workers' Compensation insurance providers on assessing the feasibility of conducting occupational injury and illness surveillance within the forestry industry.

1.1.7. In collaboration with the U.S. Coast Guard, expand the NIOSH Commercial Fishing Injury Database (CFID) to all regions of the United States

1.1.8. Hold a national meeting of surveillance experts and stakeholders to assess the current status of AgFF health surveillance systems, to identify new approaches to conducting health surveillance for all AgFF sub-sectors, and to identify existing or new partners for conducting AgFF health surveillance (recommendation from the National Academy of Sciences [2007], NIOSH Agriculture Program Review Committee).

Intermediate Goal 1.2

Develop over time an effective national surveillance system for AgFF (in collaboration with other sectors).

Action Step Goals

1.2.1. Work with other NIOSH sectors toward increasing the use of occupation and industry coding in existing national databases to identify occupational injuries, illnesses, hazards, and exposures.

1.2.2. Advocate for resource allocation for industry studies of the AgFF sector to establish populations at risk. Improve worker demographic information at the national and state level by creating new systems to better characterize the workforce within each AgFF sub-sector.

1.2.3. Incorporate variables into existing or new surveillance systems to facilitate the identification of known vulnerable worker populations. For example, variables such as "native language" and "temporary worker status" make it possible to compare health outcomes among known vulnerable populations.

1.2.4. Improve comparability of research data over time by encouraging researchers to utilize terms, definitions, and categorical variables from the "Dictionary of Terms for Agricultural Safety & Health Professionals" 2008 NORA AgFF Agenda Appendix 2) in their surveillance systems.

1.2.5. Increase level of detail in occupational illness, injury, and fatality surveillance data in the AgFF sector, and make these data readily available to workers, employers, research scientists, and the public in a timely manner.

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Strategic Goal 2: Vulnerable Workers

Reduce deleterious health and safety outcomes in workers more susceptible to injury or illness due to circumstances limiting options for safeguarding their own safety and health.

Background

Some workers experience disproportionate rates of occupational injuries and illnesses within the AgFF Sector, because of social or physiological factors that can lead to increased workplace exposures and/or individual susceptibilities. For many workers, vulnerability is multifactorial and may change during their careers. Appropriate interventions and remedies require an understanding of the factors that increase and reduce vulnerability of workers in the AgFF Sector.

The Intersection of Surveillance and Vulnerability

Surveillance of work-related health conditions is an essential tool to inform and evaluate the design of control measures to prevent them. Though some specific surveillance systems exist for occupational causes (such as asthma and pesticide poisoning), most surveillance of occupational illness and injuries is collected through nonspecific systems, such as workers' compensation and the Bureau of Labor Statistics (BLS).

These systems are not designed specifically for occupational safety and health surveillance and therefore do not have representative coverage of all workers, workplaces, and geographic areas. In this sector, workers and workplaces in particular are often not well-covered by such systems. Worker compensation rules vary considerably from state to state. Worker compensation is not required, nor at times available, for all employers. Agriculture is often fully or partially exempted from worker compensation requirements. Federal regulation requires any employer with 11 or more employees to maintain OSHA work-related illness and injury logs, which are then reported to BLS and form the basis for the national-level occupational safety and health surveillance program. Many agricultural establishments have fewer than 11 employees and are therefore exempt from this requirement.

Workers in employment settings that are not covered by a workers' compensation program or who work for very small employers may be systematically excluded from surveillance. They also may be a high-risk or particularly vulnerable group of workers. Exclusion from surveillance makes planning and evaluating preventive measures more difficult. Risk increases when fewer evaluated, effective prevention measures are known and implemented.

Social Factors

Researchers recognize the effects of various social factors on health, for example, housing quality and affordability, English ability, literacy and numeracy, socioeconomic status, migration, discrimination, and temporary, seasonal, and precarious employment. These factors work through many mechanisms to influence worker health. Several of these factors increase vulnerability by compromising workers' ability to seek protections and/or access resources that others employed in this sector access. Though not the only workers experiencing the negative effects of so many of these factors, recent immigrant workers tend to be among the most vulnerable because they experience many of these effects simultaneously and over the life course.

Recent Immigrants

Recent immigrants may experience multiple factors contributing to their vulnerability, such as limited English, low literacy, low socioeconomic status (SES), lack of social support networks, and dire economic need. Foreign-born workers make up a large proportion of the AgFF workforce. Workers with undocumented immigration status make up one third of the foreign-born labor force [Kochhar 2008]. Although foreign-born workers are primarily from Latin America, the countries and regions of origin for this workforce are changing rapidly.

Demographic data are difficult to obtain for the forestry workforce (see 2008 NORA AgFF Agenda Appendix 1), but it is estimated to be heavily dependent on Latinos, Southeast Asians, and Eastern Europeans. Among agricultural workers, approximately 80% are foreign born, more than half are undocumented, and 87% are Latino, predominantly Mexican [Steege and Baron 2007]. Latino AgFF workers have experienced elevated and increasing occupational fatality rates every year since 1992. The Medical Expenditure Panel Survey found that Latinos experience higher rates of nonfatal lost-work-time injuries than do other AgFF workforce segments.

Their economic situation, the seasonal nature of much of the work, and the contingent work status of most Latino AgFF workers force many of them to change occupations within the sector and across sectors and to relocate themselves and their families (migration). These circumstances also make them less likely to challenge or to walk away from unsafe working conditions, the results of which are compounded by their lower rates of health insurance coverage. For these reasons, Latino workers are highlighted as Vulnerable Workers in Strategic Goal 2.

These conditions are not unique to Latino AgFF sector workers; other immigrant workers face similar challenges that may go unrecognized. Each of these circumstances leads to increased vulnerability because they may result in social and economic marginalization, isolating the worker from services (such as health care), resources (such as training), and protections available to AgFF workers overall.

Physiologic Factors

Physiologic factors such as age, gender, race/ethnicity, and underlying health conditions are important to consider when assessing vulnerability and risk. "Fatal occupational injury rates are higher in the agriculture, forestry, and fishing sector than the private sector for every age group. The rates ranged from 13.7/100,000 for workers aged 16–24 to 62.0 for workers older than 64" [BLS 2003].

With fewer legal restrictions, AgFF workers may start work at a younger age due to family connections or economic necessity, before they are physically or mentally prepared for hazardous work. On the other hand, the agriculture workforce overall is getting significantly older. Many farmers continue to work in spite of physical or mental limitations accumulated over time, which may accelerate the onset and severity of disabilities. Underlying health conditions, physical and cognitive disabilities, and medications can affect risk for work-related injury. Age, gender, and race/ethnicity all affect fit of respirators and other personal protective equipment (PPE), potentially putting some workers at greater risk than others even when they use the right PPE.

Women Farmers and Workers

Many women are engaged in agricultural work, often working in nurseries or greenhouses. Additionally, there has been an increase in the number of women working as principal operators of farms, particularly on organic farms (2007 Census of Agriculture). Although women are exposed to the same hazards and risks as male workers, they may have additional risks associated with their health. Women's average size and strength can impact their ability to work safely on farm operations. The proper use of PPE can be influenced by finding appropriately sized equipment. Reduced strength and size may influence their ability to operate large machinery [McCoy et al. 2002].

Agricultural work involves strenuous activities and repetitive tasks that may put a pregnant woman at greater risk for injury [McCulloch 2002]. Exposure to pesticides has also been associated with increased adverse pregnancy outcomes, including infant mortality, low birth weight, and reduced fertility [Runkle et al. 2014]. In animal agriculture, where endocrinological pharmaceuticals are often used, pregnancies may be threatened by exposure [Wilkins & Bowman 1997; Weese & Jack 2008]. Women farmworkers are also at much higher risk of

experiencing sexual violence at work than their male counterparts, largely as a result of the intersection of being female and many of the social factors mentioned above [Oxfam America 2015].

Young Workers

Work tradition, economic need, and other circumstances lead to children working in family or community businesses. More than one million youth lived on farms in 2006, and more than half of them performed work or chores on the farm [NIOSH 2007; NIOSH 2004]. Hired workers younger than 18 years made up approximately 3% of the crop production workforce in 2003–2004 [Steege 2008]. For workers under 18 years of age, the AgFF industries have higher rates of fatal traumatic injuries than all industries [Hard and Myers 2006]. The physical and cognitive development and lack of experience of young workers make them more vulnerable to work-related injuries than their adult counterparts.

Older Workers

The average age of farmers is on the rise. In 1997 the average age of the principal farmer operator was 54 years, and it rose steadily to 58.3 by 2012, and almost one-third (32.5%) of farmers were 55 years of age or older [USDA 2014]. Farmers often work past the average age of retirement, as compared to other occupations. At a time of physical diminishment, such as reduced mobility, limited vision and hearing, and reduced reaction time, older farmers face increased vulnerability to injuries and illness and may continue to perform tasks beyond their ability to safely accomplish farmwork.

Older farmers have a higher rate of skin cancer, high blood pressure, and hearing problems than older workers in the general population [Hernandez-Peck 2001]. The nature of farmwork—such as jumping off farm equipment, riding on vibrating machinery, and constant bending—can aggravate age-related ergonomic issues. Arthritis affects approximately one third of all adult farm and ranch operators and is considered one of the leading causes of disability [AgrAbility 2008]. Older farmers are more likely to be hospitalized for farm-related injuries and are more likely to sustain permanently disabling or fatal injuries than younger farmers. Chronic health conditions may impair older farmers' ability to perform certain tasks and operate machinery safely [Marcum 2011].

As with all occupations, not only does biological and physical functioning decline as people age, but cognitive functioning may deteriorate, which can influence risk of injury. Older workers have been found to take longer to return to work following injury, illness, and disability.

Though demographic data are scarce for the fishing and forestry sectors, it is probable that they too are aging and experiencing the same conditions.

Physically and Cognitively Disabled Workers

Workers who are physically and cognitively disabled are at higher risk of occupational injury as a result of decreased ability to perform their job tasks and respond to nonroutine or emergency situations. According to Field [2007], "Approximately one in five of the farm and ranch population have a disability that restricts daily living or hinders completion of essential work-related tasks." The disabilities most frequently reported among these workers are musculoskeletal disorders, hearing impairment, cardiovascular diseases, and respiratory impairment [Field 2007].

Unpaid Family Workers

Work traditions and economic need can lead to family members of all ages working without pay for family or community businesses. The Trades Union Congress Commission on Vulnerable Employment [2007] describes the risk inherent in being an unpaid family worker:

"... Unpaid family workers are people ... undertaking unpaid work for a business they own or for a business that a relative owns. ... Not receiving a wage puts people at greater risk of exploitation – primarily because they have no agreed terms and conditions and are not entitled to even the most basic of legal employment protections."

Although it is suggested that unpaid family workers are more prevalent in agriculture, employment on small fishing vessels does not require the contract protections seen on larger vessels. The forestry industry has little documentation on this category of vulnerable workers.

The USDA 2012 Census of Agriculture [2014] showed that over 1.5 million principal operators in the United States indicated their place of residence was on the farm they operate. Leshed, Håkansson, and Kaye [2014] reported that farm families intentionally embrace merging home and work. Often the home is located strategically near the agricultural worksite to improve accessibility to high-labor facilities or where there are high care demands associated with animal husbandry [Midwest Plan Service 1990]. Other reasons for having the home on the production site may likely include sheltering the home structure from taxation or the opportunity to hand over the farm to heirs [Hoppe & Banks 2010]. Estimates indicate that over 6,000 nonworking youth were injured on farms in 2012 [NIOSH 2013]. Children and nonpaid family members living on farms may be more vulnerable to an agriculture-related incident because of the co-location of the home and workplace on the agricultural production site and therefore the close proximity to worksite hazards [Sanderson et al. 2010]. Children and family members may be given chores to help out during periods of labor shortage or because of the perception that farmwork builds work ethic and a desire to return to the farm [Leshed et al. 2014; Sanderson et al. 2010].

The circumstances and characteristics leading to vulnerability are defined here to include extremes in age (under 18 and over 65 years), gender, limited English language and literacy, non-U.S. birth and length of time in the United States, sector fluidity and migration, socioeconomic status, authorization to live and/or work in the United States, ethnicity, culture, and physical or cognitive disability.

Intermediate Goal 2.1

Define and identify "vulnerable workers" in each sector—agriculture, forestry, and fishing.

This Intermediate Goal and the associated Action Step Goals reference the surveillance segment of this plan to provide for collection of population-based data about vulnerable workers.

Because of the range of characteristics that can lead to vulnerability, it is a challenge to define each condition in a way that allows measurement in the target population. Such definitions are necessary to allow comparison of survey data between sectors, industries, or population groups.

Action Step Goals

2.1.1. Draft and encourage use of a surveillance definition developed for vulnerable workers and/or those suffering health disparities, specific to agriculture/fishing/forestry in the work setting.

2.1.2. Enumerate vulnerable workers by location and characteristics to establish a baseline for identifying disparities in health outcomes in vulnerable workers.

Intermediate Goal 2.2

Identify the deleterious health and safety exposures and outcomes experienced by vulnerable workers in each sector—agriculture, forestry, and fishing.

With the vulnerable worker population defined, the next step is to acquire data on their health outcomes. This will establish the level of health and safety risks for this population and allow comparisons to other AgFF worker populations to ascertain any increase in risk for vulnerable workers.

Action Step Goals

2.2.1. Identify health and safety exposures and outcomes for each of the vulnerable worker groups that are not traditionally categorized as occupational but that substantially impact the work-life of that group.

Examples include accumulation of pesticides on clothing because of limited laundry facilities and health hazards from unsafe housing.

2.2.2. Monitor patterns and trends of excess morbidity and mortality for vulnerable workers.

Intermediate Goal 2.3

Improve data collection and existing databases to provide information on safety and health disparities among vulnerable workers.

Although preliminary data are often informative, they are rarely comprehensive. Continuing effort should be made to acquire other data sources and refine the characteristics of the parameters used, to better identify the vulnerable worker population. Characteristics of the target population's activities and lifestyle, such as mobility and migration, must be taken into consideration when locating additional data sources and determining outcome rates. Continual improvement should be made in data collection methods to expedite the process and ensure the most complete data sets achievable.

Action Step Goals

2.3.1. Seek new data collection mechanisms where gaps exist.

2.3.2. Incorporate variables into existing or new surveillance systems to facilitate the identification of vulnerable worker populations.

2.3.3. Promote the integration of environmental and occupational health elements in primary and emergency care health records to facilitate the identification of vulnerable workers and occupationally related exposures, injuries and diseases.

2.3.4. Establish data-sharing mechanisms among universities, government agencies, and community-based and non-governmental organizations.

2.3.5. Develop methods to track workers who are mobile geographically or across industries to be able to assess long-term health effects.

Intermediate Goal 2.4

Use innovative and proven communication, education, training, and marketing techniques to tailor workplace safety and health programs to be responsive to the unique needs of vulnerable workers.

Once the risks are determined, the data must be used to advise the stakeholders: clinicians, healthcare facilities, employers, worker support agencies, and the vulnerable workers themselves. The information should be communicated in a timely manner, before the affected population is no longer accessible or conditions change. Any information describing the risks, how to avoid or prevent them, and what action to take when exposed to a hazard should be provided in a language, literacy level, and medium (such as radio) that is accessible to the target audience. Developing partnerships and continued collaboration with industry and government agencies

and other stakeholders could ensure improved development and dissemination of materials and program interventions.

Action Step Goals

2.4.1. Assess and describe existing materials and interventions that have been evaluated and shown to be effective to determine their suitability for different vulnerable worker populations.

2.4.2. Determine effectiveness of existing interventions and educational materials that are tailored to address unique factors associated with vulnerability.

2.4.3. Facilitate the development and evaluation of high quality and appropriate materials where gaps exist.

2.4.4. Where gaps exist, conduct pilot studies and real-world testing of tailored interventions to support scale-up and large-scale implementation.

2.4.5. Facilitate large-scale implementation and industry adoption of effective health and safety interventions tailored to address risk factors associated with vulnerability, through partnerships with industry leaders and others in agriculture, forestry, and fishing.

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Strategic Goal 3: Outreach, Communications, and Partnerships

Move proven health and safety strategies into agricultural, forestry, and fishing workplaces through the development of partnerships and collaborative efforts.

This goal sets out a course of action to disseminate evidence-based strategies to all those who have a stake in improving the health and safety of workers in the agriculture, forestry and fishing industries. **Outreach** is a necessary step to effectively implement the full NORA AgFF plan. Disseminating relevant interventions and promoting the adoption of best practices in the workplace can be best achieved through **partnerships** and collaborations. Proven approaches to worker health and safety for each of the sector industries should be identified and a wide variety of outreach and **communications** methods applied to assure that optimal health and safety are achieved. These best practices include but are not limited to new technologies and engineering controls; behavior change interventions; training; incentive programs; and guidelines and policy approaches.

Recently new technologies have increased options to implement outreach and communications efforts. Increased availability of the internet to provide information and training, mobile computing platforms with corresponding communication and training applications, and portability of communication equipment have all recently been shown to augment outreach and communication activities. These new technologies can be incorporated in many of the goals and action Step Goals below.

Intermediate Goal 3.1

Form collaborative efforts with key partners and stakeholders to:

1) **Biennially assess current and emerging major occupational health and safety concerns and solutions**
2) **Prioritize interventions for implementation**
3) **Report on status of all ongoing collaborative efforts in outreach and communications and highlight some of the success stories**
4) **Discuss innovative intervention opportunities.**

Assuring the implementation of best practices, techniques, and equipment that promote health and safety in these industries will require the "buy in" of as much of the sector as possible. One of the best ways to ensure broad-based support for the adoption of best practices is to have a strong group of partners and stakeholders involved. These partners must be encouraged to communicate their needs as well as be committed to promoting the adoption of the latest and best safety and health methods available to the agriculture, forestry and fishing industries.

Action Step Goals

3.1.1. Identify partners and stakeholders and ensure they are aware of the NORA AgFF purpose and plan. Stakeholders should include policy makers, federal and state agencies, safety and health researchers and practitioners, agribusiness, agricultural producers, union representatives, farm labor contractors, farmworker representatives, commercial fishermen, extension forestry services, youth-serving groups, community-based organizations, and national-level coalitions.

3.1.2. With partners, prioritize interventions for implementation in the agriculture, forestry, and fishing industries.

3.1.3. Convene a national state-of-the-science conference on agriculture, forestry, and fishing safety and health resources, interventions, program needs, and training issues. Use this conference to facilitate networking, program implementation, and improved training among a wide range of collaborators.

Intermediate Goal 3.2

Identify practical and proven occupational safety and health interventions, and then encourage new studies to meet needs where proven strategies do not exist.

It is critical that the best practices in agriculture, forestry, and fishing be identified and reassessed on a regular basis. Such best practices may include methods developed in the United States as well as by comparable industries in other countries.

Action Step Goals

3.2.1. Determine best methods to influence safety and health related behaviors of agricultural workers, loggers, and commercial fishermen. Methods should account for social, economic, cultural, and other factors affecting the adoption of best practices among workers and employers. Assessments of barriers, motivators, and ideal strategies should be undertaken by NIOSH Agricultural Research Centers, USDA, Cooperative Extension services, universities, and other partners with expertise to conduct relevant, valid studies.

3.2.2. Document and report proven interventions. Determine how and where a list and description of proven strategies should be maintained for easy access by stakeholders in the AgFF industries. The NIOSH Agricultural Research Centers and other relevant groups should participate in this process to identify strategies of national as well as regional relevance.

3.2.3. Identify gaps in health and safety best practices and methods. Encourage and facilitate studies and programs to meet industry needs for improved safety, including engineering, information technology, and policy approaches.

Intermediate Goal 3.3

Use innovative and proven communication, education, and social marketing techniques to influence knowledge, attitudes, and practices of agricultural workers, loggers, and commercial fishermen.

As best practices are identified, it will be crucial that they be implemented as rapidly and thoroughly as possible in order to improve the health and safety of the target groups in each industry. The methods of dissemination of best practices in each industry must be varied and innovative. Farmers, fishermen, loggers, and their employees are unlikely to change their behaviors as a result of a single input of information. Research has shown that education alone is not sufficient for preventing injuries or changing behaviors. The panoply of techniques known to influence positive behaviors and reduce hazards in the work setting must be used.

Action Step Goals

3.3.1. Facilitate implementation of evidence-based programs that are culturally, linguistically, and educationally appropriate for workers and employers.

3.3.2. Increase awareness and promote expanded application of best practices, materials, technologies, and policies via partners such as producer organizations, health and safety practitioners, regulatory personnel, vocational teachers, extension agents, insurers, clinicians, and others in positions to influence adoption of best practices.

3.3.3. Facilitate the development of public awareness and social marketing campaigns regarding high priority agriculture, forestry, and fishing safety and health issues.

3.3.4. Encourage and promote proven outreach initiatives targeted for high-risk populations, including children and bystanders in the work setting.

Intermediate Goal 3.4

Use innovative educational techniques and certification programs to improve the safety practices of agricultural workers, loggers, and commercial fishermen.

Developing and promoting best practices in the workplace may be enhanced through training and certification programs. Proven approaches to worker health and safety for each of the sector industries are more likely to be developed, tested, and implemented if accessible, affordable, and high-quality training (including certification) programs are available for the industries of agriculture, forestry, and fishing.

Certification programs that currently exist provide examples, such as (a) operation of tractors and equipment, including power take-offs (PTOs), guards, and shields, for 14- to 15-year-olds under the Hazardous Occupation Safety Training in Agriculture (HOSTA) program at USDA; and (b) pesticide handling for farmworkers and handlers under EPA's Worker Protection Standard. Examples of modules in forestry and logging that could be developed for certification include (a) felling and bucking (cross cutting) timber; b) operator training for machines such as log loaders; and (c) operator training for mechanized equipment such as harvesters and forwarders. Training modules in commercial fishing for potential development and certification could include (a) surviving a vessel sinking and (b) preventing falls overboard and slipping.

Action Step Goals

3.4.1. Assess current, and develop additional, training programs (including train-the-trainer programs), materials, incentives, and methods; regularly update training materials and programs to be culturally, linguistically, and educationally appropriate. Training should provide options for AgFF employers and employees, health and safety practitioners, regulatory personnel, vocational teachers, extension agents, and others.

3.4.2. Promote and facilitate worker safety and health training at agriculture, forestry, and fishing industry/association regional events and national conferences.

3.4.3. Provide occupational safety and health content and recommendations for graduate level curricula (such as for USDA graduate school courses) related to production and management training programs in agriculture, forestry, and fishing held across the United States.

3.4.4. Develop nationally recognized certification programs for occupational safety training and health protection for agriculture, forestry, and fishing workers.

3.4.5. Annually assess the training programs, materials, and methods; update and modify them based on injury surveillance data and participant impact measures.

Strategic Goal 4: Agriculture Safety

Reduce the number, rate, and severity of traumatic injuries and deaths involving hazards of production agriculture and support activities.

To address the high fatal and nonfatal injury risk, six intermediate goals are proposed to reduce the overall burden of injury among workers in the agricultural production sector.

The Working Group members also felt that study and review of the use of highly automated, semi-autonomous, and autonomously operated ground-based agricultural vehicles in the United States, while currently not

included in this document as an Action Step, would become warranted as technologies and applications developed. Working Group members also felt that at this initial phase, NIOSH and its agricultural partners should promote and facilitate prevention by design to reduce the potential for agricultural injuries.

Intermediate Goal 4.1

Reduce the number of fatalities due to overturns of tractors in agriculture by 50%, through the use of Roll-Over Protective Structures (ROPS) or similar technologies, by 2018.

Action Step Goals

4.1.1. Work to increase the number of older non-ROPS tractors retrofitted with ROPS and seatbelts or replaced by ROPS- and seatbelts-equipped tractors.

4.1.2. Bring awareness to the issue by conducting extensive outreach to production agriculture and get more tractor operators to use a tractor with ROPS and wear seatbelts on ROPS-equipped tractors. Outreach materials could include pamphlets, posters, and radio and TV ads. Establish rebate programs to encompass the entire nation, similar to recent efforts in New York and Virginia.

4.1.3. Improve surveillance: include economics, intervention cost-effectiveness, epidemiology, behavior, and other human factors, as well as engineering and technology.

4.1.4. Because ROPS are proven technology, more research should be done on determining barriers preventing farmers from retrofitting their tractors with ROPS, assessing which tractors are overturning, and identifying where fatalities are occurring.

4.1.5. Partnership groups and coalitions, essential to preventing tractor-related injuries and deaths, should be formed in each region or state to influence adoption of proven interventions (such as engineering, incentives, and policies). Partners should include, among others, government agencies, employer associations, labor representatives, tractor manufacturers, family farm representatives, farm cooperatives, insurance companies, universities, and NIOSH Agricultural Research Centers.

Intermediate Goal 4.2

Reduce the number and rate of fatalities in production agriculture and in support activities due to runovers by agricultural field and farmstead machinery by 50% by 2018 from 2006 baseline data.

Runovers are the second most common type of death associated with farm tractors in the United States, accounting for 759 deaths between 1992 and 2005 [NIOSH 2006]. An additional 240 runover deaths occurred during this time period, involving other types of machines [BLS 2008]. Nearly half of these runovers (485 deaths) involved the operator falling from and being run over by the moving equipment, followed by 270 deaths from being struck by rolling equipment not in normal use (such as due to brake failure, with no one on the equipment, or due to an individual bypass-starting a machine in gear). In addition, 244 pedestrians were struck by equipment during normal use [BLS 2008]. As with overturns, farmers and farmworkers over the age of 54 years account for a significant number (68%) of these runover deaths [Myers et al. 2007b; BLS 2008]. Youths younger than 16 years old and especially those younger than 5 years old are at high risk for being run over by tractors and other mobile farm equipment [Goldcamp et al. 2004].

Operators and others, including persons providing support services, can be run over by agricultural field or farmstead equipment. Equipment operators, for example, can be run over when they attempt to start or move such equipment from a position other than the recommended operator's station or in a manner contrary to equipment manufacturer recommendations. Operators may also be run over when they are near equipment

that continues to move or moves unexpectedly, whether or not the engine is running, or when they attempt to mount equipment that is in motion. In addition, terrain, obstacles, and other factors can contribute to an operator being run over after falling from the equipment operator's station.

Extra riders, including persons authorized to provide training or being trained, can also fall from, exit, or attempt to remount field or farmstead equipment and be run over by it. For example, an extra rider may fall from the fender of an open station tractor, through an operator enclosure doorway, from a platform, or from a host of other places not designed or intended to be occupied while the machine is moving. In addition, extra riders may approach unnoticed or attempt to mount or dismount machines before the equipment has been fully stopped and secured. In some instances a person exiting and assumed to have cleared the area can be run over when the operator resumes equipment operation. In other instances, riders can fall from work platforms not intended for riders but nonetheless used for monitoring or other diagnostic purposes.

A bystander or helper can become a runover victim in a variety of ways even when neither riding on nor attempting to mount or dismount the equipment. For example, a person assisting a tractor operator to position a tractor making a connection to an implement could be run over by the tractor or the implement. An unsuspecting bystander of any age could be run over in the swept area of a wide machine traveling or turning. An unseen person near or approaching a machine that is moving or put into motion could also become a runover fatality.

The following activities are proposed to meet this intermediate goal.

Action Step Goals

4.2.1. Collaborate with producer groups, trade and technical associations, and safety professionals to identify ways to protect operators, helpers, and bystanders (adults or children) exposed to risks of being run over by field or farmstead equipment by identifying runover-related problems addressable by technical solutions.

4.2.2. Evaluate studies associated with current runover prevention intervention technologies and develop improved solutions. Efforts should be made to identify persons, tasks, and risk factors associated with runover events, identify commonalities and differences among the types, and evaluate strategies to reduce exposure to being run over by field or farmstead equipment.

4.2.3. Identify the risk associated with two vulnerable populations, children and older farmers, regarding runovers.

4.2.4. Identify, evaluate, and investigate ways to improve the performance of sensors and systems for enhanced vision and human presence protection, interlock and lockout systems, Global Positioning Systems (GPS) for worker location and activity monitoring, and sensor technologies that could be applied in the production agriculture and service activity workplace as means to address runovers by field or farmstead equipment.

4.2.5. Evaluate the effectiveness of existing runover prevention intervention measures (including barriers, obstacles, and incentives) in use by production agriculture and support activity workers (such as equipment dealers); then expand awareness and use of existing, effective runover prevention intervention measures by farmers, ranchers, farmworkers, their families, and persons providing support services for production agriculture through relevant partnerships.

4.2.6. Document and report the effectiveness of engineering, educational training, and other runover prevention intervention measures translated into practice.

4.2.7. Based on evaluation results and injury/fatality surveillance data, raise awareness and influence use of runover prevention intervention by farmers, ranchers, farmworkers, their families, and persons providing support services for production agriculture.

4.2.8. Respond to the unique needs of an increasingly diverse workforce, not limited to accommodating persons with disabilities (hearing impairment, physical limitations, or otherwise), in terms of runover prevention strategies.

Intermediate Goal 4.3

Reduce the number and rate of fatalities in production agriculture and in support activities involving agricultural field and farmstead equipment, not covered in 4.1 and 4.2, by 25% by 2018.

Machinery and industrial vehicle deaths not associated with overturns or runovers accounted for 1,505 deaths between 1992 and 2005 [BLS 2008]. These deaths are more varied in nature but involve such events as being caught in running machinery (624 deaths), nonhighway transportation events excluding overturns and runovers (269 deaths), highway collisions between the farm equipment and other vehicles (154 deaths), being struck by falling parts of machinery (144 deaths), or equipment contacting electrical lines (72 deaths). As with the overturns and runovers, farmers and farmworkers over 54 years old account for more than half of these deaths (774 deaths), especially those involving other nonhighway transportation events, where older workers were the victims 71% of the time. To address these other machinery and industrial vehicle risks, the following activities are proposed.

Action Step Goals

4.3.1. Enhance/expand safety interventions with farmers and farm families, including resources such as safety videos, hazard identification kits, and best practices guidelines. Incorporate information regarding economic issues/benefits of maintaining a safe working environment (lost family income, medical costs, lawsuits and legal issues, and tax benefits).

4.3.2. Conduct studies to determine the most cost-effective and practical strategies for eliminating fatalities, including engineering design (such as sensors), information technology (such as GPS), incentive programs, and guidelines or policies.

4.3.3. Using available data, identify and report fatality trends and keystone issues, such as entanglements, operations (dropping, raising, swinging), electrocutions, slips, trips, falls, and collisions, associated with equipment-related deaths.

4.3.4. With partners in agricultural production and support activities, promote and implement those interventions and materials. These interventions and materials are to be distributed by partner organizations.

4.3.5. Establish a national standard for lighting and marking for farm equipment. [completed]

Intermediate Goal 4.4

Reduce the number, rate, and severity of nonfatal injuries (OSHA-recordable type) in production agriculture and in support activities involving agricultural field and farmstead equipment by 25% by 2018.

Data from NIOSH estimate an average of 93,000 nonfatal OSHA-recordable injuries occurred on U.S. farms during the years 2001 and 2004 [NIOSH 2006]. Machinery (such as balers, mowers, augers, and combines) and industrial vehicles (such as farm tractors and forklifts) accounted for 12% of these injuries [NIOSH 2008]. Machinery accounted for 7,400 injuries, whereas industrial vehicles caused 4,000 injuries. For machinery-related injuries, the highest portion (38%) involved getting caught in running equipment, followed by being struck by the

machine or parts of the machine (26%). For industrial vehicles, half the injuries involved off-road vehicle incidents, which included overturns and falls from running equipment. Unlike fatal injuries associated with machines and industrial vehicles, most nonfatal injuries occur to farmers and farmworkers younger than 55 years old (65%). However, workers over the age of 54 years accounted for 45% of industrial vehicle injuries. To reduce these nonfatal machinery and industrial vehicle injuries by 25% over the next 10 years, the following activities are proposed.

Action Step Goals

4.4.1. Work with and encourage the development of new, and the enhancement of existing, surveillance systems with agricultural organizations, workers' compensation carriers, other interested parties, and both federal and state agencies.

4.4.2. Assess existing educational materials for accuracy, relevance, and usability for target audiences.

4.4.3. Ensure educational materials incorporate economic issues/benefits of maintaining a safe working environment (lost family income, medical costs, lawsuits and legal issues, and tax benefits) and proven strategies for the most common equipment-related injuries.

4.4.4. Facilitate dissemination of these materials through partner organizations and various distribution mechanisms (refer to Strategic Goal 3).

4.4.5. Conduct research to identify innovative strategies, other than traditional educational approaches, for reducing the rate of nonfatal equipment-related injuries. Interventions to be tested should address engineering design, information technology, incentive programs, and policies.

Intermediate Goal 4.5

Reduce the number, rate, and severity of nonfatal injuries (OSHA recordable type) and the number and rate of fatalities in production agriculture and support activities not covered in 4.1, 4.2, 4.3 and 4.4 by 25% by 2018. Examples: livestock, tools, buildings, bins, and structures.

Non-machinery causes of deaths accounted for 3,479 fatalities in production agriculture between 1992 and 2005. These fatal agricultural injuries involved trucks associated with highway transportation events (743 deaths), working surfaces associated with falls (345 deaths), animals (317 deaths), and ammunition associated with assaults and self-inflicted injuries (249 deaths) [BLS 2008]. Farmers and farmworkers over the age of 54 years account for approximately 63% of the animal-related deaths reported in agriculture [Hard et al. 2002; BLS 2008]. For the annual 93,000 nonfatal OSHA recordable injuries that occur on farms, an average estimated by NIOSH, the most common sources of injury were identified as working surfaces associated with falls (22%), animals (19%), and hand tools (8%) [NIOSH 2008]. Nearly three-quarters of these nonfatal injuries occur to workers younger than 55 years old, with this age group accounting for just over three quarters of the animal-related injuries and 65% of the working surface–related injuries associated with falls. To address this broad range of fatal and nonfatal risks, the following activities are proposed.

Action Step Goals

4.5.1. Work with and provide additional resources to USDA-NASS and state governments to conduct injury surveillance to provide state-level data that identify and describe the nature and extent of nonfatal work-related injury according to the preferred categorical variables in the Dictionary of Terms for AgFF Professionals.

4.5.2. Analyze data from USDA-NASS, NIOSH, and refereed journals to determine major causes of nonfatal agricultural work–related injuries and to identify effective strategies that could prevent these injuries.

4.5.3. Encourage collaboration with USDA, NIOSH, the Agricultural Safety and Health Council of America (ASHCA) (www.ashca.org), and other similar partners to create and enhance financial resources available to reduce nonfatal work-related injury.

4.5.4. Work with the NIOSH Agricultural Research Centers, Cooperative Extension safety specialists, Farm Bureau safety leaders, and others to identify effective, research-based intervention programs for nonfatal work-related injury for application at national, state, county, and community levels.

4.5.5. Work with ASHCA, ISASH, NIOSH Agricultural Research Centers, Cooperative Extension safety specialists, Farm Bureau safety leaders, producer organizations, and others to promote and implement safety education, intervention programs, and recommended guidelines/policies for nonfatal work-related injury (refer to Strategic Goal 3).

4.5.6. Work with ASHCA, major farm organizations, agribusiness, and the farm media to influence farmers' and the public's perspectives on the value of working to better manage hazards and risks among workers and bystanders in agricultural occupational settings (refer to Strategic Goal 3).

4.5.7. Identify best methods, practices, and interventions for protecting nonworkers from hazards in and around production agriculture and support activities.

Intermediate Goal 4.6

Study and review the use of unmanned aerial vehicles (drones) in agriculture in the United States to determine what hazards they present to workers. Conduct surveillance on the hazards associated with their use and develop and evaluate controls for the hazards identified; implement prevention through design).

Action Step Goal

4.6.1. Establish professional relationships between agricultural safety organizations, the Federal Aviation Administration, and other relevant organizations in regards to unmanned aerial vehicle safety issues.

Strategic Goal 5: Agriculture Health

Improve the health and well-being of agricultural workers by reducing occupational causes or contributing factors to acute and chronic illness and disease.

Agricultural workers face an exceptionally wide range of acute and chronic health exposures at work. Agricultural work is hard work; it involves long hours under difficult conditions and repetitive exposure to musculoskeletal strains and sprains, respiratory hazards, toxic chemicals, psychological stresses, and a variety of zoonotic diseases. These problems have been recognized by the agricultural health and safety community for some time. Many of the salient issues, clearly identified in the groundbreaking report *Agriculture at Risk: A Report to the Nation*, remain a concern [Merchant et al. 1989]. Additionally, emerging concerns associated with new production methods, environmental issues, technologies, and changing demographics of the workforce warrant attention.

With respect to limitations in agricultural occupational surveillance data, the 1989 report by Merchant et al. noted that "These statistics... ignore the wide range of agriculturally related diseases that have been documented in several epidemiologic studies, but for which adequate state or national statistics are not available." Although some data are available, such as estimates of national occupational pesticide-related illnesses, the data collection challenge remains a problem and is addressed throughout this document.

Note: For Goal 5, target dates were excluded because baseline data from which to measure change are not yet available.

Action Step Goal

5.0. Develop, test, and continually improve surveillance systems to document incidence and prevalence of disease outcomes associated with agricultural work.

The five intermediate goals are not meant to be all inclusive but represent recommendations of the Council regarding priority issues.

Intermediate Goal 5.1

Reduce the incidence and prevalence of musculoskeletal disorders (MSD) associated with work practices and production agriculture.

Among available general industry data sources (BLS, National Safety Council, Liberty Mutual Annual Workplace Safety Index), strains and sprains consistently comprise the largest share of the most frequent cause of workplace injuries and illnesses. It is generally agreed that "while there is not good national data on the extent of these injuries and illnesses either within agriculture or relative to other industries, there is growing evidence that this problem likely exceeds all other types of injury and disease in the agricultural industry" [Chapman and Myers 2001]. Agricultural work encompasses the full range of identified musculoskeletal injury risk criteria, including force, repetition, duration, posture, and metabolic factors. Helpful research and successful intervention projects have been initiated on a modest scale in some industry segments, such as the nursery and wine industries, but significantly more is needed [Janowitz et al. 1998; Meyers et al. 2006].

Action Step Goals

5.1.1. Conduct continued research on MSD risk factors as they relate to workers in the agricultural sector.

5.1.2. Conduct research on alternative methods to accomplish tasks with high incident rates of MSD.

5.1.3. Develop, test, and widely promote best practice models and guidelines for MSD prevention in specific agricultural operations.

5.1.4. Conduct research on MSD injury recovery and return to work in an agricultural setting that provides guidelines to health care providers, injured workers, and employers.

5.1.5. Continue research into and development and validation of MSD exposure assessment tools as well as the etiology of MSDs.

5.1.6. Improve utilization of the NIOSH Agricultural Research Centers, Education and Research Centers (ERCs), and other partners to address regional work and environmental hazards that cause unique illness and disease conditions that can be rectified in the future by research and program interventions.

Intermediate Goal 5.2

Reduce acute and chronic respiratory disease caused or exacerbated by agricultural exposures, including asthma, chronic obstructive pulmonary disease, and interstitial and infectious diseases.

A wide range of respiratory diseases have been associated with exposures in agriculture [Schenker 1998]. These diseases include effects on the upper respiratory tract, the airways, and the pulmonary interstitium. In addition, exposures to biologic agents (bacteria, viruses, and fungi) in agricultural processes may result in respiratory infections. Upper respiratory tract effects include inflammation of the mucous membranes in the nasopharynx and sinuses. Airway disorders cover a wide range of diseases, including upper airway irritation, asthma and asthma-like syndrome, toxic tracheobronchitis, and chronic airflow obstruction. Interstitial diseases include fibrosis, organic dust toxic syndrome, and hypersensitivity pneumonitis. A contributing risk factor is that agricultural work is associated with very high exposures to respiratory toxicants, often orders of magnitude higher than in other occupational settings [Doekes et al. 1998]. Epidemiologic studies have documented increased respiratory morbidity and mortality in a wide range of agricultural settings. This is of particular concern because cigarette smoking prevalence is lower among farmers and farmworkers than in the general population [NIOSH 2013]. A challenge to reducing respiratory disease in agriculture is that farmers do not believe their risk to be increased, and use of respiratory protection is limited [Schenker et al. 2002]. As with many hazards in agriculture, specific risks vary greatly with the climate, geographic region, and agricultural practices. For example, hypersensitivity pneumonitis is a greater risk in regions with increased moisture, which is conducive to mold growth. Conversely, dry climate farming in the western states has a greater risk for dust-induced airflow obstruction and restrictive lung disease. Some respiratory diseases such as tuberculosis may be increased among immigrant farmworkers, but dissemination may be associated with agricultural practices and/or housing conditions [Ciesielski et al. 1991].

Action Step Goals

5.2.1. Provide outreach and education to employers and the employees on the hazards to which they could be exposed and proven strategies and interventions for exposure control.

5.2.2. Conduct research on facility and equipment design and other engineering modifications that can reduce employee exposure to respiratory disease–causing agents.

5.2.3. Conduct continued research on chronic respiratory disease and its effects on agricultural workers, giving attention to the synergistic effect of occupational and nonoccupational risk factors.

5.2.4. Develop and improve methods for assessment of exposures and better characterization of pathophysiological disorders.

5.2.5. Conduct research on how to best develop respiratory protection programs for rural communities and on best practices for providers of these programs and services.

5.2.6. Improve utilization of the NIOSH Agricultural Centers and ERCs to address regional work and environmental hazards that cause unique illness and disease conditions that can be rectified in the future by research, outreach, and education.

Intermediate Goal 5.3

Reduce acute and chronic illnesses associated with exposure to pesticides and other agrochemicals.

Pesticides are a diverse group of chemicals in terms of their toxicity, modes of action, and uses. Broadly, pesticides include insecticides, herbicides, fungicides, fumigants, growth regulators, miticides, algaecides, biopesticides, and rodenticides. The pesticide landscape is steadily changing as chemicals move off the market while others move in. For many decades, pesticides have been an integral part of crop and animal production. They have also been used in forestry to control insects and diseases and have emerged in commercial fish farming. Workers in the agriculture, forestry, and fishing sector are also exposed to other agrochemicals, such as fertilizers and adjuvants.

Historically, the effects of acute pesticide exposure were initially described, especially the effects from acute exposure to organophosphorus (OP) and carbamate acetylcholinesterase-inhibiting pesticides. Ongoing work is needed to track the magnitude of these acute effects, to identify emerging pesticide problems, and to evaluate efforts to mitigate acute pesticide-related health effects. More recently, the effects of chronic pesticide exposure, as well as the delayed effects of acute pesticide exposure, are becoming better understood. Chronic exposure to certain pesticides has been associated in some epidemiological studies with certain cancers (such as non-Hodgkin's lymphoma; prostate, colon, and bladder cancer; multiple myeloma; and leukemia), with respiratory disease (allergic asthma) and respiratory symptoms (such as wheeze), with certain neurological conditions and disorders (such as Parkinson's, depression, cognitive dysfunction, and organophosphate-induced delayed neurotoxicity), with retinal degeneration, and with hearing loss [Alavanja et al. 2004; Kirkhorn and Schenker 2002; Richter and Chlamtac 2002; Dich et al. 1997; Zahm et al. 1997; Maroni and Fait 1993]. Ongoing or additional research is needed to confirm these associations and to understand the biological mechanisms of action, utilizing appropriate in vitro human systems, human cell lines, human primary cells, and humanized transgenic animal models. Human metabolism studies, using genotyped samples with polymorphisms, can also reveal the extent of variation within the population, thereby improving human health risk assessment. Certain pesticides have also shown reproductive or developmental effects in animals; however, human data are limited [Iyer 2001]. Less understood is the effect of co-exposure to multiple pesticides, which may dramatically alter the metabolism and/or elimination of pesticides and enhance pesticide toxicity. Interactions between pesticides and endogenous metabolites such as steroid hormones may have important human health implications. Finally, as the working population ages, attention will need to be focused to better understand how agrochemical exposures might interact with the prescription drug intake of older workers. These workers may also experience different recovery responses to acute or chronic exposures.

Exposure monitoring, pesticide poisoning surveillance, and epidemiological studies have been used to varying degrees to describe the extent of pesticide exposure, morbidity, and mortality, primarily in agriculture [Kasner et al. 2012; Curwin et al. 2005b; Alavanja et al. 2004; Hines et al. 2003; Kirkhorn and Schenker 2002]. Workers exposed to pesticides include farmers, ranchers, commercial pesticide applicators, horticultural workers, tree nursery workers, forestry workers, hired agricultural workers, crop advisors, and commercial fish farmers. The families (spouses and children) of AgFF workers may also be exposed to agricultural pesticides, either as a result of the close proximity of the home and work environment or through pesticides carried home on the clothes

and equipment of the workers [Curwin et al. 2005, 2007; Bradman et al. 1997; Fenske et al. 2000; Loewenherz et al. 1997; Simcox et al. 1995]. Methods to assess pesticide exposure include environmental measurement of pesticides in air and dermal samples, qualitative and quantitative fluorescent tracer techniques, and biological monitoring. These techniques have generally required significant laboratory facilities. More rapid, but still reliable, in-field assays would be desirable. The wide-ranging chemistry of pesticides and their metabolites, together with the continual introduction of new pesticides, poses a challenge for developing exposure monitoring tools. Since personal protective equipment (PPE) is one of the primary methods of reducing pesticide exposure among handlers, indirect methods of assessing pesticide exposure must include assessing the extent to which pesticide applicators use correct PPE practices.

As exposure and health studies identify determinants of pesticide exposure and exposure pathways among AgFF populations, research to evaluate interventions for reducing exposure will be needed. These interventions might focus on equipment modifications, work practice changes, PPE use, hygiene practices, culturally and language-appropriate training and education materials, and risk perceptions.

Action Step Goals

5.3.1. Improve the organization of existing information. Based on an evaluation of findings, develop and implement biological monitoring guidelines, such as cholinesterase testing.

5.3.2. Develop and distribute pesticide education materials that can be easily understood by all workers, including foreign-born workers, reflecting language and cultural differences.

5.3.3. Test and evaluate interventions that lead to implementation of best practices and behavioral change related to protection from chemical exposures.

5.3.4. Develop and improve methods for assessment of exposures to agrochemicals, including interactions of multiple chemicals found in the workplace.

5.3.5. Improve utilization of the NIOSH Agricultural Research Centers, ERCs, and other partners to address regional work and environmental hazards that cause unique illness and disease conditions that can be rectified in the future by research and program interventions.

5.3.6. Conduct research to assess the health effects of occupational exposures to pesticides and other agrochemicals on men, women, and children.

Intermediate Goal 5.4

Reduce illness and disease due to physical and infectious exposures in agriculture such as ultraviolet radiation, heat and cold, noise, and zoonotic diseases.

Farmworkers are exposed to a wide variety of environmental hazards, chemical exposures, biological agents, and physical agents (noise, heat, cold, vibration, ultraviolet light, etc.). Farmworkers undertake many work situations: traditional crop and livestock production, machinery repair, welding, and chemical application. The hours of outdoor work common in many agricultural settings often result in intense exposures to ultraviolet radiation and dermatologic health outcomes such as skin cancer. Exposures to noise and vibration are a common occurrence in agriculture through exposure to a range of farm machinery and animal confinement operations. Studies document that noise-induced hearing loss can accompany these exposures in farmers. Agricultural tasks often involve close work with many different types of domestic animals, providing opportunity for the manifestation of zoonotic diseases through contact with diseased animals or their body fluids, aerosols from contaminated agricultural settings, or needlestick injuries. Brucellosis, leptospirosis, tuberculosis, and avian or swine influenza are some examples of zoonotic diseases and exposure hazards among agricultural workers.

It is difficult to quantify the illness and disease status of workers on American farms in relation to environmental exposures. The Bureau of Labor Statistics gathers statistics on agricultural injury and fatalities, but these provide only a partial picture of the hazards faced by farmers. Occupational illness is common in agriculture. However, documenting an exposure and its health effect is often difficult because of the long latency period (years) between exposure and health outcome. Better surveillance is needed to determine the extent of these diseases and evaluate their reduction by interventions.

Action Step Goals

5.4.1. Establish systems to more efficiently access currently available data and acquire new data on exposure and health outcomes associated with environmental, physical agent, and infectious agricultural conditions.

5.4.2. Augment current research associated with animal-related diseases or zoonosis, such as but not limited to avian influenza, bovine tuberculosis, and other emerging issues such as agroterrorism. Exposure assessment, prevention, vaccination, and treatment all need to be included in the research.

5.4.3. Test and evaluate interventions that lead to the implementation of best practices and behavioral change related to environmental, physical agent, and infectious exposures.

5.4.4. Develop methods of exposure evaluation as well as ongoing research into the characterization of the pathophysiology of these illnesses.

5.4.5. Increase involvement of the NIOSH Agricultural Research Centers and ERCs to address regional work and environmental hazards associated with unique illness and disease conditions that can be rectified in the future by research and program interventions.

Intermediate Goal 5.5

Develop and promote adoption of effective interventions to enhance psychological well-being of workers and to minimize the adverse effects of stressful agricultural working conditions (such as economic forces, weather, and isolation).

Psychological stress is typically a product of overwork or conflicting or competing demands on the job. Inadequate time to complete a task can create anxiety and stress that then challenge the ability of workers to cope with the job demands. As this high level of demand continues over many hours or days, fatigue accumulates along with the stress; then farmers and farmworkers are less able to attend to the hazardous conditions in their work environments. The cumulative impact of psychological stressors can lead to conditions of acute stress in the short term and chronic strain over the long term. Changing weather conditions provide an excellent example of circumstances where the agricultural worker has no control over the forces of nature but is nevertheless responsible for maintaining the agricultural operations.

The experience of the U.S. farm crisis of the 1980s has been replicated around the world. An economic recession in the United States which followed a period of high inflation resulted in some farmers owing more money than their entire operations were then worth. In the language of agricultural economics, the debt-to-asset ratio on some U.S. farms rose above 1.0. One consequence of this crisis is that the suicide rate (from confirmed suicides) of principal owner/operators of farms climbed to approximately four times that of other rural residents, including other farm family members [Gunderson et al. 1993]. (The actual rate of suicides among principal owner/operators in the United States is almost certainly much higher because of the stigma associated with suicide, as well as possible loss of any insurance benefits.) The continuing stress and worry associated with these economic problems resulted in the loss of many family farms, marital breakups, and as noted, many suicides.

The combination of stress and fatigue has both short- and long-term consequences [Kidd, Scharf, and Veazie, 1996]. In the short term, stress and fatigue can result in lack of attention to changing hazards, which can lead to poor decision-making by the farmer or farmworker. In the long term, prolonged stress can lead to chronic strain, depression, deterioration of societal functioning, and even suicide. Furthermore, in considering the psychological health and stressors in agricultural work as they concern the individual, it is important to examine the ripple effect on interpersonal relationships within rural societies and farm and farmworker families.

More research is needed to examine family, domestic, and sexual violence as an adverse effect of stressful agricultural working conditions.

Action Step Goals

5.5.1. Develop a surveillance system to help qualify the types and extent of psychological disorders experienced by agricultural workers. Use those findings to develop research priorities.

5.5.2. Conduct targeted research on factors associated with psychological disorders, especially as they relate to specific regional concerns or patterns.

5.5.3. Develop, implement, and evaluate culturally appropriate educational and outreach programs for promoting psychological well-being of agricultural producers, farms workers, and their families. Involve agricultural workers in their development and delivery.

Intermediate Goal 5.6

Develop and create mechanisms to get industrial hygienists and safety professionals onto agricultural worksites to identify, evaluate, and control or eliminate occupational health and safety hazards of exposed farmworkers.

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Strategic Goal 6: Forestry Safety

Reduce the number, rate, and severity of traumatic injuries and deaths involving hazards of forestry.

The enumeration of workers in the forestry workforce varies according to who does the counting. The numbers also may depend on states and how important forestry is to the economy of each state agency making the count. National counts aggregating state numbers or census data may not show the complete picture. For example, until 2001 (2003 in practice) logging was included in Standard Industrial Classification (SIC) code 241, and forestry tracts and services were included in SIC in 2008. The current North American Industrial Classification Standard (NAICS) moved the forestry workforce, in part, into the Natural Resources sector grouping of Agriculture, Forestry and Fishing. Previously, logging was associated with milling forest products and partially covered by the Census of Manufacturing periodically. There are persistent vagaries about which jurisdictional agency is primarily responsible for the safety and health of the forestry workforce. The Census of Agriculture covers farms and farmers and enumerates forestry products but not workers.

Reporting of acute, traumatic deaths and severe injuries related to commercial logging, although of not yet fully determined completeness, appears to be stronger than is the detection of related chronic injuries and illnesses. However, establishing the true causes of injury events is often not possible because of the method by which data are collected and investigations are conducted. In states with good data on logging and forestry services, the rates of fatalities, disability claims, occupations, exposure events, nature of injuries, and source of injury provide the basis for interventions and tracking of progress trends (Information Management Division, Oregon Department of Consumer & Business Services, October 2007).

For more information on this industry, see NORA AgFF Agenda 2008, Appendix 1, The Forestry Workforce, Statistics, and Organizations.

In order to develop performance measures and track improvements in safety and health and in working conditions, baseline data are needed. Since valid information is difficult to ascertain, the first goal is to improve injury and fatality surveillance options for the forestry sector. Refer to Strategic Goal 1 for a description of the surveillance goals and Action Step Goals.

Intermediate Goal 6.1

Reduce logging-related deaths, traumatic injuries, and exposures through collection and analysis of injury data and evidence-based safety improvements. Over time, reductions of 50% seem possible based on comparison with international injury and fatality rates for forestry and logging.

Action Step Goals

6.1.1. Support ongoing improvements in data collection of forestry workforce subsectors (logging, forestry services, etc.) and associated illness/injury data collection.

6.1.2. Assess the adequacy of fatality and injury reporting by type of logging (such as manual vs. mechanized logging, worker job category, full-time vs. part-time workers) for determination of optimal injury prevention strategies.

6.1.3. Use available data, research findings, program results, and other evidence of outcomes to identify cost-effective, practical approaches to safe forestry practices.

6.1.4. Determine what approaches or studies might be needed to fill gaps in information needed for developing and testing new interventions, including engineering, information technology, guidelines, and policies. Implement trials for improved data collection and review potential for improvements.

6.1.5. Determine the impact of solitary work conditions and remote locations on fatality rates in order to design effective countermeasures (more specific first-aid training, better communication devices, location/navigation aids for first responders). Technologies like SPOT® provide low-cost location and satellite communication for remote workers.

Intermediate Goal 6.2

Assess current federal and state forestry safety codes and voluntary consensus standards (such as OSHA, ISO, Federal Forest Activities, and state laws) for their coverage, and provide guidance to update them to maximize adoption of practices that minimize logging and forestry hazards.

Action Step Goals

6.2.1. Review 1994 OSHA logging standards at the federal level for currency and adequacy, using industry, state agency, and cooperative review. For example, AgFF researchers could collaborate with OSHA and a National Logging Committee composed of experts, state OSHA agencies, etc., to review the standards.

6.2.2. Review currency of state logging codes, plans for updating, and processes used within three years. For example, forestry researchers could help organize regional OSHA offices, state OSHA agencies, and industries to stimulate updating of current state logging codes.

6.2.3. Review Federal Safety Standards for coverage of forestry services activities.

6.2.4. Assist states in code revisions with research results and methodologies and model standards/approaches.

6.2.5. Provide recommendations for a revised Federal OSHA Code for Logging.

6.2.6. Prepare a model standard for forestry services at the federal level.

6.2.7. Provide a draft Federal OSHA Code for forestry services.

Intermediate Goal 6.3

Identify factors (such as risk-taking behaviors, workers' compensation vs. self-insurance) that limit the adoption of safe logging practices and the treatment of logging-related injuries, and propose interventions to address these factors.

Establishing cause and effect for forestry accidents can be difficult. Some injury investigations by state and federal organizations are not able to show specific causes. Comprehensive investigations of injuries and fatalities by competent forestry specialists with knowledge of equipment, conditions, and procedures would be helpful. The population of seriously disabled forestry workers might provide essential information on the actual cause of the injury after legal issues are resolved and workers' compensation issues settled, and if disabled workers are providing information anonymously. There is a need to better understand risk-taking behaviors of forestry workers.

Action Step Goals

6.3.1. Assess populations of seriously disabled forestry workers, via legal and ethical interviews, to understand circumstances of the injury event that can be reported in a manner that maintains worker anonymity.

6.3.2. Conduct trial regional studies (interviews), using interviewers with knowledge of the forestry industry, to assess disabled workers' circumstances of injuries.

6.3.3. Develop models of risk-taking behaviors with testable hypotheses and assess models with research and data.

6.3.4. Develop, implement, and evaluate interventions designed to reduce risk-taking behaviors among forestry workers and employers.

Intermediate Goal 6.4

Establish a Forestry Sector Partnership to develop new technologies (such as synthetic rope, "smart" clothing) that reduce workloads and injury risks associated with logging and forest operations.

Action Step Goals

6.4.1. Establish partnerships between the forestry sector and NIOSH researchers and cooperators to reduce workloads in the sector. For example, NIOSH and the AgFF Council could support and participate in a "Future of the Forestry Workforce Conference" with sector leaders to establish working relationships with forestry researchers and Extension Forestry faculty to disseminate results.

6.4.2. Establish a working group for future occupational safety and health research in the forestry subsector.

6.4.3. Conduct trials with technologies (such as synthetic rope to replace wire rope) in logging and trucking to document workload reductions and establish best practices guidelines and/or policies.

6.4.4. Review the use of powered hand tools in steep terrain to build fire trails and assess use of modified logging equipment to fight wildland fires for safety and health improvements. For example, NIOSH could work with the U.S. Forest Service Equipment Development Centers to reduce workloads in wildland firefighting.

6.4.5. Review technologies that reduce workloads (such as radio-controlled chokers, robotic functions, and autonomous systems for harvesting) and conduct trials for documenting gains; establish best practices guidelines and/or policies.

Intermediate Goal 6.5

Build future capacity in safety and health for the forestry sector via advanced training programs.

The advancement of injury prevention principles in the forestry and logging sector will require a continuous influx of safety professionals dedicated to building our knowledge base and modifying recommendations as production methods change. Strategic Goal 3 addresses advanced training and certification needs. Specific requests for the forestry sector are noted here.

Action Step Goals

6.5.1. Establish a mechanism of supporting research capacity of forestry sector research partners and for graduate students from the forestry sector to conduct safety and health research in cooperation with NIOSH.

6.5.2. Produce a Forestry Safety and Health web-based curriculum with materials adapted for U.S. regions that introduces undergraduate forestry students to safety and health concepts. Build support and connections to future forestry sector leaders. Request government funding, with a university taking lead for development and production of the curriculum.

Intermediate Goal 6.6

Reduce forestry-related deaths and traumatic injuries, with improved worker protection, through improvements in PPE and equipment design.

Action Step Goals

6.6.1. Utilize incident data to prioritize hazards for traumatic injury to identify where PPE or equipment design improvements will be most effective. Use tools like risk analysis to evaluate equipment hazards. Communicate this information to users, researchers, and manufacturers to help direct efforts to develop safer operations and equipment. Use outlets like Forest Resources Association Safety Alerts to share information about known hazards.

6.6.2. Support research to evaluate effective design of PPE and equipment operator protection. Safety development research should not be conducted in proprietary settings where findings have limited publication. Encourage federal research labs and university consortia to become engaged in this work by communicating value of research through program review and evaluation opportunities. Identify a list of research groups that can be used to communicate funding opportunities.

6.6.3. Engage in standards development work to insure current safety practice and design are represented in products. This happens at state, national, and international levels. Identify a point of contact for each body responsible for logging safety standards. Communicate with this list about the most recent developments in PPE and equipment design standards. Maintain a liaison to get updates on current standards work.

6.6.4. Review safety hard hats for improvements (such as head and neck protection during falls) that can be applied during hot weather conditions.

6.6.5. Develop eye protection that is effective in both sun and rain conditions.

6.6.6. Develop PPE for hand application of chemicals that is effective in varying forestry environments.

Strategic Goal 7: Forestry Health

Improve the health and well-being of forestry workers by reducing occupational causes or contributing factors to acute and chronic illness and disease.

Forestry workers face health risks related to the arduous jobs they perform, often in inclement weather and for long work shifts. Resulting musculoskeletal diseases and illnesses are often present in workers and may shorten working lives. Exposures to hazards and toxic materials require protective clothing and equipment. Use of drugs (whether prescription, recreational, and illegal) and alcohol is raised as a major concern among forestry workers. The complete health status of workers is not known but has likely changed with mechanization.

Scant data are available regarding forestry workers, their occupational exposures, and the disease outcomes associated with work. Without valid data, it is impossible to establish performance measures or track improvements in health status in the sector. Thus, the first priority will be to establish surveillance systems to gather and continuously improve data. Refer to Strategic Goal 1 for a description of the surveillance goals and Action Step Goals.

Intermediate Goal 7.1

Develop and implement interventions to minimize the frequency and causes of work-related musculoskeletal diseases (MSDs) and other acute and chronic illnesses leading to premature disability.

Action Step Goals

7.1.1. Assess tree planting operations for possible mechanization and means to reduce workloads causing muscle strain, such as delivering trees to planters in steep terrain.

7.1.2. Compare and contrast mechanized harvesting operations versus manual systems for health effects.

7.1.3. Review technologies that reduce workloads, such as radio-controlled chokers, robotic functions, and autonomous systems for harvesting, to reduce MSDs and other negative health effects. For example, research documentation is needed to show how efforts to reduce workloads result in fewer diseases and illnesses, with the long-term goal of maintaining the working lives of people.

Intermediate Goal 7.2

Developments in technology have the potential to monitor worker physiology in research and applied settings. This is especially important for safety and health in tasks with very high physical demands (e.g., choker setting, rigging, felling, and tree planting). Developments could come from research partnerships with forestry researchers within universities, U.S. Forest Service research units, and NIOSH research units.

Action Step Goals

7.2.1. Assign a NIOSH and forestry sector team to continue and monitor developments in this research area, at the NIOSH National Personal Protective Technology Laboratory (NIOSH-NPPTL).

7.2.2. Assess potentials of "smart clothing" currently used in other sectors (such as sports, military) for use in logging and forestry services to provide feedback and data on workers during operations and worker status on tasks.

7.2.3. Implement trials of "smart clothing" in the forestry sector to collect workload data (such as heart rate) and worker status (such as heat stress); then facilitate adoption of effective, practical interventions.

7.2.4. Continue research on inhalation hazards, including dust, and respirators for use in wildland firefighting, and assess exposure to smoke for wildland firefighters. Develop a complete product certification standard for respirators. **RETIRED: Wildland Firefighting goals are now part of the NORA Public Safety sector.**

Intermediate Goal 7.3

Evaluate the frequency of, impact of, and possible interventions for the use of alcohol and illicit prescription or other drugs by forestry workers, especially as it pertains to transportation of workers and products.

Action Step Goals

7.3.1. Assess current data sets on forestry worker injuries and fatalities for drug involvement to determine if recordkeeping provides basis for assessment.

7.3.2. Modify recordkeeping procedures consistent with legal and ethical guidelines to provide data for future assessments.

7.3.3. In states where "medical use" of cannabis is allowed, assess the extent of legal and illegal use by forestry workers. Provide assessments of other drug use (such as methamphetamines) on the job.

7.3.4. Assess current methodologies available to employers and improve them for field testing of workers for drug impairment.

7.3.5. Develop strategies for eliminating "perceived" need for drug use on the job. For example, strategies might address wake/rest cycles, alert/warning devices, workload reduction, and rest/refreshment breaks.

Intermediate Goal 7.4

Assess the health conditions of forestry workers to improve work design and work practices for workers entering the sector and those at later career stages.

Action Step Goals

7.4.1. Conduct preliminary health screening of workers entering the workforce for mechanized logging, manual logging, tree planting, wildland firefighting, etc.

7.4.2. Explore adoption of Total Worker Health strategies for forestry and logging workforce. Researchers may establish baseline data on the health and wellness of the forestry workforce and determine the impact of health promotion and wellness activities on the incidence of occupational illnesses and injuries in forestry and logging. Several factors, including worker status (part-time, seasonal, vulnerable, etc.), age, and occupation, could be important in determining the impact.

7.4.3. Assess health conditions of workers and work demands at selected career points and by occupation in logging, forestry services, etc.

7.4.4. Assess health conditions of workers over age 45 in forestry for health conditions that will affect continuing in the same occupation or that will need review for work modifications in their future.

7.4.5. Assess design improvements to work arrangements to address worker health conditions by occupation in logging, forestry services, etc. For example, health screenings may suggest worker pre-conditions for illness or disease that adjustments in work practices can help alleviate.

7.4.6. Assess interventions to worker health conditions related to work demands in logging, forestry, etc.

Strategic Goal 8: Fishing Safety

Reduce the number, rate, and severity of traumatic injuries (including deaths) involving hazards of commercial fishing.

Commercial fishing remains one of the most hazardous occupations in America. Despite reductions in fatalities since passage of the Commercial Fishing Industry Vessel Safety Act of 1988, commercial fishermen remain over 30 times more likely to die pursuing their occupation than the average worker in America. According to the Bureau of Labor Statistics [U.S. Department of Labor 2012] the fatality rate for the commercial fishing sector in 2011 was 121 per 100,000 workers. This compares to the national average of 3.5 per 100,000 workers, making commercial fishing the most dangerous occupation in America. During 2000–2012, 624 commercial fishermen died in the United States, an average of 48 per year. Vessel disasters caused 317 fatalities (51%), and another 191 (31%) were due to falls overboard. The remainder of the fatalities were due to onboard injuries (69; 11%), diving injuries (28; 5%), and onshore injuries (19; 3%) [NIOSH 2013].

The impact of the high rate of death and injury on fishing communities and fishermen's families is severe. The independent culture of those within the fishing industry and the limited safety and health regulations combine to create an environment where high-risk practices may be accepted as part of the job. Working conditions on board fishing vessels include a working platform exposed to the elements of weather in some extremely harsh conditions and which is continually in motion, most frequently wet, and reliant upon heavy machinery. Fishermen endure these conditions for extended periods of time, adding fatigue as a significant safety issue. Exacerbating this situation, some of the industry is overcapitalized, and competition for a tightly controlled resource adds competitive pressure that supports risk taking.

We have outlined the NORA Strategic Goals focusing on the commercial fishing industry to address the highest safety and health priorities.

According to an analysis by NIOSH [2013], 51% of fatalities in the commercial fishing industry are attributed to catastrophic vessel disasters in which the crews were forced to abandon ship. Another 31% of the fatalities were due to falls overboard. Drowning due to vessel disasters and falls overboard account for over three-quarters of all fatalities, making water exposure by far the most significant factor in worker deaths. Current safety regulations are focused on mitigating adverse events rather than preventing them, for example, keeping fishermen warm and afloat as they wait for rescue vs. preventing the vessel from sinking. Mitigating these events has resulted in measurable decreases in fatalities.

Many injury solutions have focused on education and other outreach efforts and should continue. Some notable examples of the positive impact of ensuring compliance with regulations and aggressive education have resulted in notable improvements in fatality rates, such as the pre-season boarding program with the crab fleet in Western Alaska [Lincoln et al. 2007]. The Intermediate Goals 8.1 and 8.2 address the most significant causes of fatalities.

Intermediate Goal 8.1

Reduce the vessel sinking and fatality rate due to vessel sinking by 50% by 2018.

Action Step Goals

8.1.1. Identify the fishery-specific hazards across the country for vessel sinking and subsequent fatalities. [Completed] Apply risk-management techniques.

8.1.2. Develop tailored interventions for the highest-risk fisheries to reduce injury and fatality rates by half. Such interventions may include pre-season safety checks similar to the ones conducted in Western Alaska.

8.1.3. Evaluate whether safety training reduces the fatality rate of commercial fishermen involved in vessel sinking.

8.1.4. Evaluate the effects that fisheries management practices have on safety in 6 different fisheries in the United States.

8.1.5. Develop a Top 10 list of fisheries management practices that contribute to unsafe practices in the commercial fishing industry. [completed]

8.1.6. Determine the cost effectiveness and benefits of safety training in reducing the rate of fatalities.

8.1.7. Determine the benefits of self-inspection of fishing vessels in reducing maintenance-related vessel sinking.

8.1.8. Determine factors affecting the risk-taking behaviors of fishermen that lead to vessel sinking.

8.1.9. Determine the benefits of stability training in reducing vessel capsizing and sinking.

Intermediate Goal 8.2

Reduce fatal falls overboard events and rates by 50% by 2018.

Action Step Goals

8.2.1. Develop and evaluate best practices for preventing falls overboard and fatalities due to falls overboard. These would include activities such as field evaluations of Personal Flotation Devices (PFDs), surveys of fishermen, developing better recovery devices and practices, and ways to prevent the fall in the first place.

8.2.2. Publicize best practices and recommendations for preventing falls overboard and reducing fatalities due to falls overboard.

Intermediate Goal 8.3

Understand and reduce the number, rate, and severity of hospitalized injury rates by 50% by 2018.

Action Step Goals

8.3.1. Identify data sources to analyze and determine high-risk operations leading to serious nonfatal injuries by fishery (see Action Step 1.2.6 for the Commercial Fishing Injury Database and Action Step 1.3.5 for the Census of Fatal Occupational Injuries).

8.3.2. Develop regional or fishery-specific interventions to address highest-risk operations for serious nonfatal injuries.

8.3.3. Complete fishery-specific outreach plans to share best practices for high-risk operations (see Action Step 3.3.2 for best methods of communication).

Intermediate Goal 8.4

Make commercial fishing vessel safety an interagency effort/priority.

Intermediate Goal 8.4 addresses this secondary contributing factor to casualties: fisheries management decisions that may unintentionally require unnecessary risk taking, penalize operators for safety-related decisions, or otherwise place a higher priority on fisheries issues at the sake of safety concerns. This is especially germane as fisheries management decisions place additional restrictions on commercial fishing to the point that

many fisheries cannot support the number of operators permitted in those fisheries. This recommendation stems from a study of fishing vessel safety sponsored by the U.S. Coast Guard [1999].

Action Step Goals

8.4.1. Develop a Memorandum of Agreement among NIOSH, National Marine Fisheries Service (NMFS), OSHA, and the Coast Guard on cooperation in improving commercial fishing safety.

8.4.2. Form a National Fisheries Management and Safety Coordination Committee to coordinate national policy integrating fishery management and safety regimes. [completed]

8.4.3. Through the National Fisheries Management and Safety Coordination Committee, develop specific guidelines for fisheries managers to use when assessing the potential safety issues that a proposed or current fisheries plan contains (such as overcapitalization, human resource issues, and economic pressures).

Strategic Goal 9: Fishing Health

Improve the health of commercial fishermen by reducing occupational causes or contributing factors to illness and disease.

Commercial fishing workers face an exceptionally wide range of acute and chronic health exposures at work. However, little research has been completed in regard to these health issues or their prevention. Commercial fishing is hard physical labor that involves long hours under difficult conditions and repetitive exposure to musculoskeletal strains and sprains, physical factors such as noise, psychological stresses, and toxic chemicals.

There is also no surveillance system or reporting requirement for health hazards present in the commercial fishing industry. The data collection challenge remains a problem and is addressed throughout this document. The three intermediate goals are not meant to be all inclusive but represent decisions of the Council regarding priority attention.

Intermediate Goal 9.1

Measure and reduce work-related musculoskeletal disease (MSD) due to acute and chronic exposures and ergonomic factors.

Action Step Goals

9.1.1. Conduct continued research on MSD risk factors as they relate to commercial fishing workers.

9.1.2. Conduct research on safe alternative methods to accomplish tasks with high incident rates of MSD.

9.1.3. Develop best practice models for MSD prevention in specific fishing operations.

9.1.4. Conduct research on MSD injury recovery and return to work in a commercial fishing setting that provides guidelines to health care providers, injured workers, and employers.

9.1.5. Develop and distribute guidelines for prevention of musculoskeletal injuries specific to the commercial fishing subsector.

9.1.6. Continue research into and development and validation of MSD exposure assessment tools as well as the etiology of MSDs.

9.1.7. Investigate potential sources of epidemiological data relating to rates and severities of musculoskeletal injuries in commercial fishing.

9.1.8. Investigate literature relating to MSD risk factors (and combinations of risk factors) specific to the commercial fishing industry. These factors include cold temperatures, moving work surfaces, slippery work surfaces, extreme fatigue, poor lighting, foot-line entanglement when moving the feet, etc.

Intermediate Goal 9.2

Measure and reduce illnesses and disease due to exposures to physical factors such as noise, cold, heat, and ultraviolet radiation.

Action Step Goals

9.2.1. Conduct continued research on exposures and related disease/injury rates to physical factors such as noise, cold, heat, and ultraviolet radiation.

9.2.2. Test and evaluate interventions that lead to implementation of best practices and behavioral change.

Intermediate Goal 9.3

Measure and reduce acute and chronic illnesses due to exposures (such as biological organisms, chemicals, particulate matter).

Action Step Goals

9.3.1. Conduct continued research on exposures and related disease rates to other exposures such as biological organisms, chemicals, and particulate matter.

9.3.2. Test and evaluate interventions that lead to implementation of best practices and behavioral change.

Special Note on Fatigue

Given the complexities of vessel operations, a systematic approach to fatigue mitigation and prevention is widely considered to be the most effective approach to manage the adverse effects of fatigue on the performance of vessel personnel. The fundamental parameters of such an approach include (1) proper scheduling and effective hours of service rules, (2) operator education, and (3) diagnosis and treatment of sleep disorders.

Rules governing rest and duty periods for some classes of commercial vessels limit work hours (hours of service) so that individuals have a minimum of 10 hours of rest within any 24-hour period. On a tanker, a licensed individual or seaman may not be permitted to work more than 15 hours in any 24-hour period or more than 36 hours in any 72-hour period, except in an emergency or a drill. International standards applicable to commercial vessels require most to have 77 hours in any week for rest. In addition, most commercial vessels have requirements for minimum crew size to ensure adequate crew to prevent fatigue.

For another class of commercial vessels without rules on service hours, uninspected towing vessels, the Coast Guard addressed the issue of operator education with its voluntary Crew Endurance Management System (CEMS). This program identified practices and methods to reduce crew fatigue that companies could use.

Licensed individuals are required to undergo periodic physical examination to determine medical suitability for service. Included are tools for medical personnel to alert them to risk factors for identifying sleep disorders. Sleep disorders that are discovered must be adequately addressed, as a precursor to obtaining a license.

By contrast, within the commercial fishing industry, unlicensed crew members are entitled to a share of the proceeds of the catch rather than a wage; compensation is a direct function of productivity and crew size. This encourages smaller crew sizes. Additionally, there is no incentive to fish fewer hours since compensation is based on the catch size. Therefore, most vessels/fishermen operate for extended periods, with minimal crew that have not been screened for medical suitability and with no exposure to methods of crew fatigue mitigation. It is easy to see that the risk of fatigue within the commercial fishing industry has not been addressed. To the contrary, exhaustive work for extended times is a measure of success and is the cultural norm.

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EXHIBIT

11

DAIRY WORKERS

The Public Health Service Act provides the definition of migratory and seasonal agricultural workers for health center grantees, and includes those working in aquaculture and animal production provided the patient meets the guidelines for being a migratory or seasonal worker. The Uniform Data System Manual, the reporting mechanism for all health centers, states "For both [migratory and seasonal] categories of workers, the term agriculture means farming in all its branches as defined by the OMB-developed North American Industry Classification System (NAICS), and includes seasonal workers included in the following codes and all sub-codes within: 111, 112, 1151, and 1152", removing a previous exclusion of animal productions workers.[1]

This change increases the potential number of agricultural worker patients a Health Center may serve, and this subpopulation of agricultural workers has a unique set of social, economic, and occupational health risks and disparities. While many dairy workers would not be classified as agricultural workers because their work is year-round, some may hold seasonal or temporary jobs and will thus need to be classified as agricultural workers. Temporary dairy farm jobs may be more common in areas where dairy production is unstable due to market forces and in regions where dairy production slows during the summer months.[2]

WORKER DEMOGRAPHICS

- According to Bureau of Labor Statistics, there were 94,327 workers in 6,813 dairy cattle and milk production establishments (NAICS code 11212) reported in 2012 throughout the U.S. An additional 14,355 worked in 1,081 cattle feedlots during 2012 (NAICS code 112112).[3]
- A survey of 2,000 dairy farms in 2009 found that of the 138,000 full-time workers, 41% were foreign-born.[4]
- Dairy cattle and milk production workers earned an average of $554 per week in 2012, and cattle feedlot workers earned an average of $743 per week. This is higher than the average pay of $522 per week for crop production workers during the same year.[5]
- Dairy workers are often recent immigrants and have limited English proficiency. A survey of 111 Hispanic dairy workers in New York indicated that one-fourth of workers emigrated from Guatemala, and three-fourths from Mexico, with the majority of workers being young, male, and uneducated.[6] A 2009 survey of the rapidly growing southern Idaho dairy industry found that the majority of workers were Hispanic, and were often males travelling alone.[7]
- Many dairy workers migrate for work and hold temporary jobs. Migration and length of employment is often dependent on the region and the family structure of the worker. A Migrant Education study in Vermont found that of 413 migratory students who worked and travelled on their own, the average length of employment at a single establishment was 12.3 months. Dairy worker parents of migratory students remained at a single place of establishment for an average of 22.5 months, indicating that families migrate less frequently than those migrating without families.[8] In addition, 60% of Migrant Education students in Vermont originated from Mexico, with the largest percentage (39%) emigrating from the state of Chiapas.

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- Dairy production is becoming increasingly concentrated and large-scale globally. The European Union produces the most dairy of any region, but the U.S. has the largest dairy production establishments.[9]

The map below is a heat map demonstrating the concentrations of dairy farm locations in the USA, with red areas possessing greater numbers of dairy farm employees.[10]

LABOR CONDITIONS

- Dairy workers labor long hours for low wages. A survey of 111 Hispanic dairy workers in New York found that dairy workers worked an average of 62 hours per week, with an average hourly wage of $7.51.[11]
- Dirty working conditions coupled with long hours, no overtime pay, and physically demanding work create an environment that creates un-empowered workers, and labor organization is often difficult.[12]
- A survey of 60 dairy workers in New Mexico in 2012 found that 85% worked six or more days per week, half worked more than eight hours a day, and a third of workers never received lunch breaks.[13]
- Unventilated establishments expose workers to manure dust, bacteria, and other particulates that can damage respiratory passages and lead to airway obstruction.[14]

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- The non-fatal injury rate among workers in dairy cattle and milk production in 2012 was 5.6 injuries per 100 full-time workers and 14.6 illnesses per 100,000 full-time workers. The total injury and illness rate was 5.7 per 100 full-time workers, compared to the private industry average of 3.4.[15] Thirty-five workers in this industry died due to work-related incidents in 2012.
- Workers regularly exposed to cattle infected with tuberculosis have been shown to be at higher risk for contracting latent and active tuberculosis, as bovine tuberculosis can also infect humans. A study conducted in 2013 demonstrated that dairy workers had more than twice the risk of testing positive for tuberculosis as compared to non-dairy workers, and that over half of the 311 dairy workers tested positive for latent tuberculosis.[16]
- Dairy workers with tasks in the milking parlor had more than five times risk of carpal tunnel syndrome as compared to dairy workers with non-milking tasks, indicating that occupational risks and exposures vary greatly in the dairy industry, even with the same establishment.[17]

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- Musculoskeletal injuries are common among dairy parlor workers. A cross-sectional study of 452 dairy parlor workers found that 76% had at least one body part affected by an occupationally related musculoskeletal injury, most commonly in an upper extremity.[18]
- A survey of 120 Hispanic dairy workers in Vermont found that fear of immigration enforcement was the greatest barrier to receiving health care, and workers reported that musculoskeletal pain and oral and mental health were major health concerns.[19]
- Among 60 dairy workers surveyed in New Mexico, 88% did not have any form of health insurance, and 20% of those who experienced a work-related injury and needed medical care reported never receiving any medical attention.[20]
- Employers may struggle with implementing general health and safety training in a largely Spanish-speaking workforce and many dairy farms are located in rural areas with few professional interpreters. However, implementation of limited community-based participatory training programs and community health worker programs have been shown to improve worker health and safety knowledge.[21]

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EXHIBIT

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MMWR Weekly

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Heat-Related Deaths Among Crop Workers --- United States, 1992--2006

Workers employed in outdoor occupations such as farming are exposed to hot and humid environments that put them at risk for heat-related illness or death. This report describes one such death and summarizes heat-related fatalities among crop production workers in the United States during 1992--2006. During this 15-year period, 423 workers in agricultural and nonagricultural industries were reported to have died from exposure to environmental heat; 68 (16%) of these workers were engaged in crop production or support activities for crop production. The heat-related average annual death rate for these crop workers was 0.39 per 100,000 workers, compared with 0.02 for all U.S. civilian workers. Data aggregated into 5-year periods indicated that heat-related death rates among crop workers might be increasing; however, trend analysis did not indicate a statistically significant increase. Prevention of heat-related deaths among crop workers requires educating employers and workers on the hazards of working in hot environments, including recognition of heat-related illness symptoms, and implementing appropriate heat stress management measures.

Information for the illustrative case described in this report was collected by the Agricultural Safety and Health Bureau of the North Carolina Department of Labor. For the nationwide analysis, fatality data were obtained from the Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries (CFOI) (*1*).* A heat-related death was identified in CFOI as an exposure to environmental heat (BLS Occupational Injury and Illness Classification System [OIICS] event/exposure code 321), with the nature of injury attributed to effects of heat and light (OIICS nature code 072). A crop worker death was indicated where the industry in which the decedent worked was crop production or support activities for crop production.† Fatality rates were calculated as an average annualized rate per 100,000 workers during the 15-year study period for civilian noninstitutionalized workers aged ≥15 years. The numerator was the total of all fatalities during the 15-year period; the denominator was the total of the annual average worker population during the same period. Estimates of the number of workers employed were derived from the U.S. Current Population Survey (CPS) (*2*).§ To examine trends in fatality rates during the study period, data were aggregated in 5-year periods because the numbers of fatalities for several individual years in the study period were too low to meet BLS publishing criteria. Poisson regression was used to estimate confidence intervals for these aggregate rates.

Case Report

In mid-July 2005, a male Hispanic worker with an H-2A work visa (i.e., a temporary, nonimmigrant foreign

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worker hired under contract to perform farm work) aged 56 years was hand-harvesting ripe tobacco leaves on a North Carolina farm. He had arrived from Mexico 4 days earlier and was on his third day on the job. The man began work at approximately 6:00 a.m. and took a short mid-morning break and a 90-minute lunch break. At approximately 2:45 p.m., the employer's son observed the man working slowly and reportedly instructed him to rest, but the man continued working. Shortly thereafter, the man's coworkers noticed that he appeared confused. Although the man was combative, his coworkers carried him to the shade and tried unsuccessfully to get him to drink water. At approximately 3:50 p.m., coworkers notified the employer of the man's condition. At 4:25 p.m., the man was taken by ambulance to an emergency department, where his core body temperature was recorded at 108°F (42°C) and, despite treatment, he died. The cause of death was heat stroke. On the day of the incident, the local high temperature was approximately 93°F (34°C) with 44% relative humidity and clear skies. The heat index was in the range of 86°--101°F (30°--38°C) at mid-morning and 97°--112°F (36°--44°C) at mid-afternoon.¶ Similar conditions had occurred during the preceding 2 days.

The man had been given safety and health training on pesticides but nothing that addressed the hazards and prevention of heat-related stress. He reportedly only spoke Spanish. Fluids, such as water and soda, were always available to the workers in the field; however, whether the man drank any of these fluids is unknown.

Heat-Related Fatalities, 1992--2006

During 1992--2006, a total of 423 worker deaths from exposure to environmental heat were reported in the United States, resulting in an average annual fatality rate of 0.02 deaths per 100,000 workers. Of these 423 deaths, 102 (24%) occurred in workers employed in the agriculture, forestry, fishing, and hunting industries (rate: 0.16 per 100,000 workers), and of these, 68 (67%) occurred in workers employed in the crop production or support activities for crop production sectors, resulting in an average annual fatality rate of 0.39 deaths per 100,000 crop workers (Table). Analysis of fatality rates by 5-year periods suggests an increase in rates over time; however, those rates were based on small numbers of deaths, and the increase over time was not statistically significant (Figure).

During 1992--2006, nearly all deceased crop workers were male,** and 78% were aged 20--54 years (Table). During 1992--2006, the birth country was unknown for 46% of the decedents; however, during 2003--2006, approximately 20 (71%) of the 28 deceased crop workers were from Mexico or Central and South America. Nearly 60% of all heat-related deaths among crop workers occurred in July, and most deaths occurred in the afternoon. Although 21 states reported heat-related deaths among crop workers, California, Florida, and North Carolina accounted for 57% of all deaths, with North Carolina having the highest annualized rate.

Reported by: *RC Luginbuhl, MS, North Carolina Dept of Labor. LL Jackson, PhD, DN Castillo, MPH, Div of Safety Research, National Institute for Occupational Safety and Health; KA Loringer, ND, EIS Officer, CDC.*

Editorial Note:

During 1992--2006, a total of 68 crop workers died from heat stroke, representing a rate nearly 20 times greater than for all U.S. civilian workers. The majority of these deaths were in adults aged 20--54 years, a population not typically considered to be at high risk for heat illnesses (3). In addition, the majority of these deaths were among foreign-born workers.

Persons who work outside in hot and humid conditions are at risk for heat-related mortality and morbidity. Heat-related illnesses range from minor heat cramps or rash to heat exhaustion, which is more serious and

can lead to heat stroke, which can result in death if medical attention is not provided immediately. Heat stroke is characterized by a body temperature of >103°F (>39°C); red, hot, and dry skin (with no sweating); rapid, strong pulse; throbbing headache; dizziness; nausea; confusion; and unconsciousness. Crop workers might be at increased risk for heat stroke because they often wear extra clothing and personal protective equipment to protect against pesticide poisoning or green tobacco illness (transdermal nicotine poisoning). Employers and workers must be aware that heat-related illness, which can have symptoms similar to pesticide poisoning and green tobacco illness, requires immediate attention. The high proportion of heat-related deaths among foreign-born workers indicates that training and communications regarding the risk for heat-related illnesses should be provided in the workers' native language.

Guidance to help agricultural employers establish a heat-illness prevention program is available from CDC and the U.S. Environmental Protection Agency (*4,5*). In addition, the Department of the Army and Air Force has published a technical bulletin that provides strategies for employers to control heat stress (*6*). Heat-related safety materials in English and Spanish are available from several other sources, including the California Division of Occupational Safety and Health[††] and the North Carolina Department of Labor.[§§] California and Washington state have recently enacted regulations requiring that employers take action to prevent heat-related illnesses and deaths among their workers, including providing training to supervisors and workers and ensuring the availability of fluids (*7,8*). These regulations were prompted by deaths and illnesses in both states in recent years.

The findings in this report are subject to at least four limitations. First, certain fatality rates had to be calculated as average annualized rates for the entire 15-year study period because small numbers prevented publication according to BLS publishing criteria. This aggregation obscured variability between years. Second, CPS estimates likely underestimated the number of crop workers because of the seasonal nature of the work and because the CPS relies on stable residences for sequential interviews. An underestimate of the worker population would have resulted in an overestimation of the fatality rates. Third, heat-related deaths were likely underreported because heat stroke was not recognized at the time of death, was not indicated as a contributing factor on the death certificate (*3*), or was not recognized by the state agencies as meeting the case definition for an injury-related death in CFOI. Finally, the fatality rates for 5-year periods were based on small numbers with large confidence intervals, and the data do not allow an assessment of whether increased numbers over time might be a reflection of increased awareness and reporting.

The illustrative case described in this report and another case previously reported by CDC (*9*) suggest that some employers might not have heat stress management programs in place. Agricultural employers should develop and implement heat stress management measures that include 1) training for field supervisors and employees to prevent, recognize, and treat heat illness, 2) implementing a heat acclimatization program, 3) encouraging proper hydration with proper amounts and types of fluids, 4) establishing work/rest schedules appropriate for the current heat indices, 5) ensuring access to shade or cooling areas, 6) monitoring the environment and workers during hot conditions, and 7) providing prompt medical attention to workers who show signs of heat illness (*5,6,10*). Employers and workers should be vigilant for signs of heat illness, not only in themselves but in their coworkers, and be prepared to provide and seek medical assistance.

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* For this report, CDC used a CFOI research file provided by BLS, which excluded deaths in New York City. Because of confidentiality restrictions, individual case information from the CFOI data cannot be reported; information for the case described in this report was obtained solely from the North Carolina Department of Labor field investigation.

† Because of changes to the industry classification system in 2003, two comparable, though not identical, classification systems were used: the Standard Industrial Classification (major group 01 and 07, excluding industry group 078) for 1992--2002 and the North American Industry Classification System (NAICS) (industry codes 111 and 11511) for 2003--2006.

§ CPS labor counts included workers in crop production industries (NAICS code 111) and support activities for agriculture and forestry (code 115). The latter industry category includes some workers who do not specifically support crop production activities. However, the inclusion of a small number of animal production and forestry support workers in the denominator value should have little influence on the crop worker fatality rate.

¶ The heat index, an indicator of the combined physiologic effect of air temperature and relative humidity, is presented in this report as a range, which is estimated by using the temperature and humidity to calculate the minimum value and then adding 15°F. This method better reflects exposure conditions in the field under clear skies. Additional information available at http://www.nws.noaa.gov/om/heat/heat_wave.shtml.

** Data are not reported by sex because they do not meet BLS publication criteria.

†† Available at http://www.dir.ca.gov/dosh/heatillnessinfo.html.

§§ Available at http://www.nclabor.com/pubs.htm.

Table

TABLE. Number, percentage, and estimated average annualized rate* of occupational heat-related deaths among crop workers, by selected characteristics — United States, 1992–2006

Characteristic	No.	(%)†	Total no. of workers§	Rate
Total	**68**	**(100)**	**17,227,000**	**0.39**
Industry category				
Crop production	52	(76)	14,454,000	0.36
Vegetable and melon farming	15	(22)	—¶	—
Fruit and tree nut farming	11	(16)	—	—
Other crops**	19	(28)	—	—
Other/Unspecified	7	(10)	—	—
Support activities	16	(24)	2,716,000	0.59
Age group (yrs)				
20–34	16	(24)	4,616,000	0.35
35–54	37	(54)	6,907,000	0.54
≥55	15	(22)	4,589,000	0.33
Region of birth				
Mexico/Central and South America	27	(40)	—	—
Other regions outside United States	10	(15)	—	—
Unknown	31	(46)	—	—
Month of injury				
June	11	(16)	19,487,000	0.06
July	40	(59)	20,143,000	0.20
August	12	(18)	19,964,000	0.06
Other months	5	(7)	—	—
Time of incident				
Before 1:00 p.m.	13	(19)	17,227,000	0.08
After 1:00 p.m.	46	(68)	17,227,000	0.27
Unknown	9	(13)	—	—
State of injury				
California	20	(29)	4,041,000	0.49
Florida	6	(9)	809,000	0.74
North Carolina	13	(19)	551,000	2.36
Other states	29	(43)	—	—

* Per 100,000 workers.
† Percentages for certain characteristics might not add to 100 because of rounding.
§ Annual national average estimates (totaled for 15 years) of employed civilians aged ≥15 years, based on the Current Population Survey. Monthly total number of workers are monthly national average estimates. State total number of workers are annual state average estimates. Numbers are rounded to thousands.
¶ Labor force data not available.
** Includes crops such as cotton, tobacco, sugarcane, and hay; excludes oilseeds and grains.

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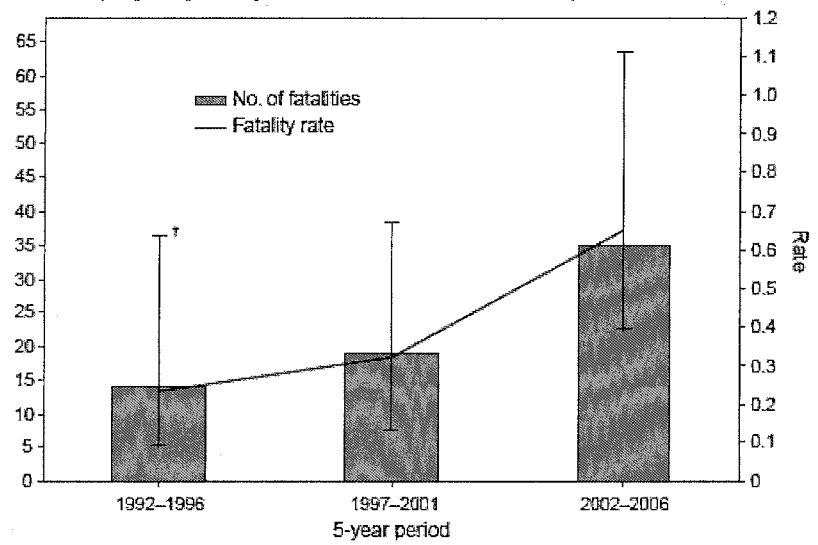
Figure

FIGURE. Number and rate* of heat-related deaths among crop workers, by 5-year period — United States, 1992–2006



*Per 100,000 workers. Rates calculated using annual national average estimates of employed civilians aged ≥15 years based on the Current Population Survey.

†95% confidence interval for fatality rate.

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The Washington Post

National

Deaths of farmworkers in cow manure ponds put oversight of dairy farms into question

By Tim Craig September 24, 2017

JEROME, Idaho — Alberto Navarro Munoz had been working on the farm for only two weeks when he encountered one of the most gruesome hazards that a dairy worker can face. His tractor tipped over into a pit of cow manure, submerging the Mexican native under several feet of a "loose thick somewhat liquid-like substance," according to the police report documenting his death in southern Idaho.

Another immigrant laborer jumped in to try to save Munoz, but told authorities "there was nothing he could do." Munoz, whose body was later retrieved by the fire department, died of traumatic asphyxiation.

Munoz's death, which occurred in the nearby town of Shelley last September, was one of two fatal accidents last year involving dairymen who either choked or drowned in pits of cow manure. Another laborer from Mexico died last month after he was crushed by a skid loader, used to move feed and manure.

The deaths have rattled Idaho's dairy industry as well as local immigrant communities that do the bulk of the work producing nearly 15 billion pounds of milk annually on the industrial-sized farms in the state's southern prairie. As farms have transitioned from family operations into big businesses involving thousands of cows and massive machinery, new safety concerns have emerged.

Agricultural workers suffer fatal on-the-job injuries at a very high rate — far higher than police officers and more than twice the rate of construction workers in 2015, the last year for which comprehensive records are available.

Farms have become increasingly reliant on immigrant workers, who often have minimal training or experience dealing with dangerous equipment and large animals. That has left farm laborers especially vulnerable to workplace deaths, such as being electrocuted, crushed by tractors, kicked by a heifer or beat up by a bull.

Despite injury rates far exceeding other industries, the agriculture industry receives relatively light federal oversight of worker safety. Regulations established when farms were more likely to be small, family operations haven't kept up with the rapidly consolidating industry. Historically, the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) has taken a hands-off approach, conducting inspections when there is only a report of a serious accident or fatality.

The agency imposed fines of about $5,000 on the farms involved in the manure pond deaths. Most farms with fewer than 11 employees don't have to report such incidents.

Particularly on dairy farms, where workers care for 1,500-pound animals that together generate more waste in a day than a medium-sized city, this creates an underclass of workers who spend hours hauling excrement but are largely unprotected by labor safety standards.

There were 6,700 injuries on dairy farms with more than 11 employees in 2015 — a rate more than double the average for private industries. On those farms, 43 laborers died.

"Workers are extremely worried, and there is a consensus that government is not doing enough, and neither are employers, in ensuring safety precautions," said Benjamin Reed, who hosts a Spanish call-in radio program aimed at local agricultural workers in Idaho. "Some of these farms are dirty, nasty and full of flies and there are a lot of these manure ponds filled with fecal matter and urine."

Seeking solutions

In Idaho, dairy industry leaders are rushing to implement new statewide training protocols aimed largely at its Spanish-speaking workforce. About 90 percent of the state's 8,100 dairy farmworkers were born outside the United States. Nationwide, a little more than half of the dairy farms' 150,000 employees are immigrants, according to the National Milk Producers Federation.

"We won't shy away from the fact that those fatalities provided a wake-up call . . . that we need to be more robust in safety training," said Rick Naerebout, director of operations for the Idaho Dairymen's Association. "Many employees now didn't grow up in the industry, either in the U.S. or Mexico, so they don't have the same exposure to working with animals or working with machinery that employees had in the past."

The Idaho Dairymen's Association has budgeted $250,000 to train the state's dairy workforce. The initiative began earlier this month when Westpoint Farms here in Jerome, Idaho, used an iPad to give workers a tutorial in Spanish outlining best practices for working with cows and navigating common hazards on a farm.

Owner Tony Vander Hulst needs 65 employees to make sure his 5,500 Holstein cattle are fed and milked twice a day, so they can keep producing their daily 500,000 pounds of milk — enough to fill six tanker trucks.

But a big chunk of his staff's job is dealing with waste from the animals. Multiple times a day, trucks equipped with suction equipment pass through barns to collect it. Solids are heaped into piles to be dried and used as fertilizer. The liquid remains are diverted into a smelly, 15-acre, 10-foot deep pond.

Farmers refer to these pits as "green lagoons," and at Vander Hulst's farm, seagulls and cranes were landing on it to feast on the proteins.

The lagoons pose a major danger for employees who must work around them.

At another farm in February 2016, Ruperto Vazquez-Carrera died after he drove a truck into a manure pond at a farm near Twin Falls, Idaho, according to the Jerome County Sheriff's report. Snowmelt had flooded the lagoon, making it difficult for the 37-year-old to distinguish the road from a steep drop off.

Although they remain relatively rare, similar accidents have been reported from coast to coast. Some involved multiple deaths during failed rescue attempts.

Five people, including four members of a family, also died while working on a manure pit in 2007 in Rockingham County, Va. They were overcome by methane gas.

"Drowning usually doesn't come because they can't swim," said Jessica Culpepper, an attorney at Public Justice, a law firm that advocates for workers and consumers. "Instead, they hit that level where gases are so noxious, it renders them unconscious."

Indira Trejo, global impact coordinator for the United Farm Workers, said the danger of manure lagoons is just one of numerous threats facing dairy workers in Idaho. She said her organization has received scores of complaints from dairymen who say they are overworked and have limited access to safety training and bathrooms.

"All they want is our work and don't care if we get training or not," one immigrant dairy worker said through an interpreter. He asked not to be identified because he feared employer retribution.

"We know if you fall into a lagoon, the moment you step in, you disappear," he said.

Federal oversight

In 2012, OSHA launched unannounced inspections and more rigorous reviews of licensed dairy farms in Wisconsin. Two years later, the agency revealed a similar program in New York.

But dairy operators said there has been little difference.

"It's not even on our radar," said John Holevoet, director of government affairs for Wisconsin's Dairy Business Association. "They were not very frequent, even at their peak, and now it has really fallen off. I don't think there has been a visit in six or nine months."

When asked how it plans to monitor conditions for farmworkers, OSHA responded in a written statement: "OSHA is dedicated to enforcing safety and health laws that apply to agricultural operations, and when a fatality or serious incident occurs, or when OSHA receives a referral or a worker complaint, it will conduct rigorous inspections and take appropriate measures."

William E. Field, a professor of agricultural and biological engineering at Purdue University, said farmers are well-reasoned to be skittish about increased government oversight. In recent years, many have felt under siege amid blowback from regulators and consumers over issues such as genetically modified food, pesticide application and nutrient runoff.

"OSHA is almost adversarial to most businesses, so it's not really welcomed," said Field, who has extensively studied the safety challenges posed by manure pits and grain silos. "It has become so hostile between OSHA leadership and the business world, there is very little room for collaboration."

Culpepper, the Public Justice attorney who has extensively studied the dairy industry, said OSHA and other federal regulators should treat large diaries as any other industrial, polluting business. She notes a 2004 Environmental Protection Agency study that estimated 2,500 dairy cows generate the same daily waste as a city with 411,000 residents.

"Think how a paint manufacturer or a coal manufacturer is required to deal with their waste," Culpepper said. "The sooner we start treating dairies as almost like an industrial waste, the safer people will be."

If oversight were to expand, Idaho dairy farmers and their lobbyists say they'd want to work closely with regulators to limit the financial impact on an industry already battered by fluctuating markets and expensive machinery.

"OSHA would be a brand new thing for them," said Bob Naerebout, Rick's father and executive director of the Idaho Dairymen's Association. "It's fear of the unknown, which is why we want to get them prepared."

181 Comments

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EXHIBIT

14

ORIGINAL ARTICLE

The impact of overtime and long work hours on occupational injuries and illnesses: new evidence from the United States

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Aims: To analyse the impact of overtime and extended working hours on the risk of occupational injuries and illnesses among a nationally representative sample of working adults from the United States.
Methods: Responses from 10 793 Americans participating in the National Longitudinal Survey of Youth (NLSY) were used to evaluate workers' job histories, work schedules, and occurrence of occupational injury and illness between 1987 and 2000. A total of 110 236 job records were analysed, encompassing 89 729 person-years of accumulated working time. Aggregated incidence rates in each of five exposure categories were calculated for each NLSY survey period. Multivariate analytical techniques were used to estimate the relative risk of long working hours per day, extended hours per week, long commute times, and overtime schedules on reporting a work related injury or illness, after adjusting for age, gender, occupation, industry, and region.
Results: After adjusting for those factors, working in jobs with overtime schedules was associated with a 61% higher injury hazard rate compared to jobs without overtime. Working at least 12 hours per day was associated with a 37% increased hazard rate and working at least 60 hours per week was associated with a 23% increased hazard rate. A strong dose-response effect was observed, with the injury rate (per 100 accumulated worker-years in a particular schedule) increasing in correspondence to the number of hours per day (or per week) in the workers' customary schedule.
Conclusions: Results suggest that job schedules with long working hours are not more risky merely because they are concentrated in inherently hazardous industries or occupations, or because people working long hours spend more total time "at risk" for a work injury. Strategies to prevent work injuries should consider changes in scheduling practices, job redesign, and health protection programmes for people working in jobs involving overtime and extended hours.

A growing body of evidence suggests that long working hours adversely affect the health and wellbeing of workers. Studies have associated overtime and extended work schedules with an increased risk of hypertension,[1 2] cardiovascular disease,[3–9] fatigue,[1 10–13] stress,[14–17] depression,[12 18–20] musculoskeletal disorders,[21–23] chronic infections,[24] diabetes,[25] general health complaints,[26–28] and all-cause mortality.[29] Several reviews and meta-analyses have been published summarising these research findings.[30–38] Systematic reviews generally have concluded that long working hours are potentially dangerous to workers' health. However, existing research is sparse and inconsistent in many areas.

Comparatively few studies have examined the impact of long work hours on workers' risk for occupational injuries and illnesses. Some studies have detected evidence of a relation between long working hours and an increased risk of occupational injuries among workers in specific occupations and industries, including construction workers,[39] nurses,[40] anaesthetists,[41] veterinarians,[42] other healthcare professionals,[43 44] miners,[45] bus drivers,[46] long distance truck drivers,[47] fire-fighters,[48] and nuclear power plant workers.[49] In one of the only studies involving the manufacturing sector, an increased risk of severe hand injuries was found for Hong Kong factory workers working more than 11.5 hours per day.[50] A large scale cross-industry study of 1.2 million German workers' compensation records found that the risks of non-fatal and fatal workplace accidents increase during the latter portion (after the eighth hour) of a long work shift.[51 52] Similar findings of an increased risk of work injuries during the latter portion of long shifts has also been observed in studies from Scandinavia and the United Kingdom.[53 54] Other researchers have investigated the affect of successive long shifts and the length of rest breaks between shifts as possible risk determinants for industrial accidents.[55]

Nevertheless, researchers' understanding of the impact of long working hours on workplace injuries remains incomplete and equivocal. Several investigations have found no evidence of an association,[56–59] or have observed a protective effect.[60 61] Authorities have noted that many existing studies have serious methodological shortcomings, including small sample sizes, unique industry specific circumstances that limit generalisability of the findings, and the failure to account for potential confounding factors. For example, jobs performed during long working shifts might be inherently more dangerous, or people working in extended-hour schedules might have different personal characteristics (for example, age, gender, or underlying health status) that affect their injury risk. Additionally, the vast majority of existing studies have been performed in Europe, Asia, and Scandinavia. Only a handful of studies have been conducted in the United States, and none of them have involved large sample sizes or study populations representing a mix of industries and occupations.

This article reports on a study of the impact of overtime and extended working hours on the risk of occupational injuries and illnesses among a nationally representative sample of working adults from the United States. The study spans 13 years and draws on information contained in 110 236 job records. Multivariate analyses are employed to

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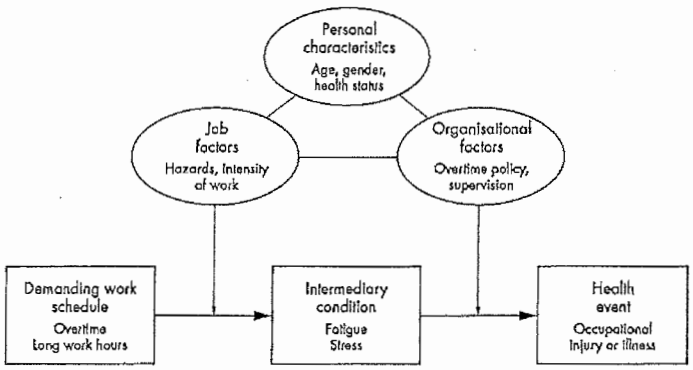

Figure 1 Conceptual model of the relationship between demanding work schedules and occupational injuries and illnesses (adopted from Schuster and Rhodes[62]).

control for the influence of workers' age and gender, region, industry sector, and occupation. The study is based on the hypothesis that working overtime or an extended work schedule increases the likelihood of reporting an occupational injury or illness compared to workers having less demanding schedules. Moreover, we hypothesise that the risk of injury increases with increasing volume of work performed in the demanding schedule.

The conceptual basis for this study is adapted from a theoretical model proposed by Michel Shuster and Susan Rhodes in 1985.[62] In this model, overtime and long hours of work are presumed to affect the risk of workplace accidents by precipitating various intermediary conditions in affected workers, such as fatigue, stress, and drowsiness. The pathway linking a demanding work schedule to the intermediary condition and ultimately to a workplace accident can be mediated by a variety of individual and environmental factors, including personal characteristics (for example, age, gender, health status, job experience), job factors (for example, intensity of work, exposure to hazards), and organisational factors (for example, overtime policy, supervision) (see fig 1). Our study analyses the association between exposure to overtime and extended work schedules and the incidence of reported work related injuries and illnesses, adjusting for the influence of several mediating factors, including age, gender, occupation, industry sector, and geographical region. The specific mechanisms by which fatigue, stress, or other intermediary conditions bring about a workplace accident are not investigated in this report.

METHODS

Data for this study comes from the National Longitudinal Survey of Youth (NLSY), which is sponsored by the US Bureau of Labor Statistics and administered by the Ohio State University Center for Human Resource Research.[63] The NLSY cohort is comprised of 12 686 men and women who were 14–22 years of age when first surveyed in 1979. Follow up interviews with NLSY respondents have been conducted annually from 1979 to 1994, and biannually since 1996. Because of NLSY funding restraints, no questions concerning work related incidents were included in the 1991 survey and therefore this year of data was excluded.

The NLSY collects information on respondents' sociodemographic characteristics, household composition, education, training, detailed work histories, job and employer characteristics, income and assets, health insurance status, incidence of work related injuries and illnesses, episodes of work disability, and respondents' social and domestic functioning. The survey's sampling strategy was designed to be representative of the non-institutionalised civilian segment of young people living in the United States in 1979 and born between 1 January 1957 and 31 December 1964.[64] Additionally, NLSY over-sampled civilian Hispanic, black, and economically disadvantaged white youth to help detect variations in employment and health conditions according to respondents' race, ethnicity, and socioeconomic status. Subjects for the survey were selected based on the results of 57 000 household screening interviews conducted by the National Opinion Research Center (NORC) at the University of Chicago.[65] NLSY provides sampling weights for each response to reflect the national distribution of Americans in this age range.

This study examined the experience of these individuals between 1987 and 2000. Attempts were made to re-interview every remaining cohort member at each survey. Survey response rates for those years (excluding deceased respondents) ranged from 91.0% for the 1988 survey to a high of 92.5% in 1989 and a low of 83.4% in 2000. During that period, 10 793 members of the cohort reported working in at least one job. Among employed cohort members, 52.2% were male, 13.2% were black, and 6.7% were of Hispanic ethnicity (weighted percentages). A job record was created for each position held by an individual during each survey period, with a "job" defined as a cohort member being employed in a particular position for a specific employer with a position start date and (if applicable) end date provided. If an individual held more than one position at a time (for example, for different employers), another job record was created to reflect the individual's experiences in the positions held concurrently. Changes occurring within a position (for example, changes in job activities) did not result in the creation of a new job history record, but a new record was created when a worker changed positions (for example, a machinist becoming a supervisor). A total of 110 236 job records were available for analysis, encompassing a total of 89 729 person-years of accumulated working time. Each job record contained extensive self-reported information about the characteristics of the job including the date of beginning work in the job, the end date (if applicable), job responsibilities and activities, occupational category, employer's industry sector, job location, customary work schedule, usual daily job starting and ending times, commuting time, and

Table 1 Characteristics of the workers reporting work related injuries and illnesses, weighted data

Characteristics of the workers reporting a work related injury or illness	Work related injuries and illnesses reported in all jobs n = 5139	Work related injuries and illnesses in jobs with an exposure* n = 2799
Male (%)	61.1	67.7
Age (mean years)	31.7	32.3
Black race (%)	11.2	11.2
Hispanic ethnicity (%)	6.8	7.0
Family income (mean dollars)	$33419	$35502
Schooling completed (mean years)	12.6	12.6
Region (%)		
Northeast	16.6	16.9
North Central	31.0	31.6
South	31.8	32.4
West	20.6	19.1
Urban residence (%)	27.4	29.5
Occupation classification (%)		
Professional and technical	11.0	9.7
Managers, officials, proprietors	9.8	10.5
Sales workers	2.4	2.5
Clerical	11.1	9.4
Craftsmen, foremen	19.6	17.6
Machine operators	20.0	22.6
Labourers, except farm	9.3	9.0
Service workers	15.1	16.5
Other	1.7	2.2
Industry classification (%)		
Agriculture, forestry, and fisheries	3.7	3.7
Mining	1.1	1.7
Construction	11.6	9.8
Manufacturing	23.3	25.5
Transportation and communication	7.7	8.6
Wholesale and retail trade	18.5	18.7
Finance, insurance, real estate	2.2	1.7
Business and repair services	6.3	6.9
Personal services	3.1	2.8
Entertainment and recreational	1.5	1.9
Professional and related services	14.6	11.6
Public administration	6.3	7.0
Worker covered by union contract	20.8	23.0
Worker dislikes the job	15.8	16.1
Annual wages (mean dollars)	$21265	$23439

Some individual workers reported more than one injury and thus their characteristics are counted more than once in this table.
*Jobs with any of the four types of exposures.

information about overtime work and the receipt of overtime pay.

For the purposes of this study, five exposure categories were specified:

- *Extended hours per week*: Jobs in which the respondent reported regularly working 60 or more hours per week were considered to have this exposure.
- *Extended hours per day*: Jobs in which the respondent reported regularly working 12 or more hours per day were considered to have this exposure.
- *Overtime*: For the 1988–93 survey years, the individual's job was considered to have this exposure if the worker responded "yes" to the question: "Did you work overtime at this job?". The NLSY survey did not define the meaning of "overtime"; interpretation of that term was left up to the discretion of the respondent. Owing to changes in the NLSY questionnaire, from the 1994 to 2000 survey years, the individual's job was considered to have this exposure if the worker responded "yes" to the question: "At this job, did you usually receive overtime pay?".
- *Extended commute time*: Jobs in which the respondent reported regularly commuting two or more hours per day to and from the workplace were considered to have this exposure.
- *Overtime or extended hours*: This was a derived summary exposure variable. A worker's job was considered to have this exposure if it contained any of the preceding four exposures.

The exposure categories were not mutually exclusive and so a particular job potentially could have one or more exposures.

The primary outcome of interest in this study was the self-reported incidence of a work related injury or illness. This was based on a respondent's affirmative response to the following question:

> "I would like to ask you a few questions about any injuries or illnesses you might have received or gotten while you were working on a job. Since [date of last interview] have you had an incident at any job that resulted in an injury or illness to you?"

During the 13 year study period, 5139 work related injuries and illnesses were reported. Of those, 2799 occurred in jobs having exposure to at least one of the four exposure categories. Table 1 summarises characteristics of the effected workers and their injuries. For the purposes of this analysis, we assumed that the reported injuries were independent

Table 2 Job records with reported work related injuries or illnesses that were included in the regression analysis compared to those that were excluded, weighted data

Variable	Job records included n = 4765	Job records excluded* n = 374	p value
Gender (% male)	62.6	61.8	0.78
Race (e.g. % black)	23.4	19.8	0.44
Marital status (% married)	53.2	48.7	0.08
Region (e.g. % Southern)	33.5	35.6	0.30
Urban (%)	24.2	24.3	0.94
Occupation (e.g. operatives)	22.1	21.3	0.74
Industry (e.g. % manufacturing)	23.2	24.4	0.46
Injury (e.g. % musculoskeletal)	34.0	35.6	0.16
Satisfaction (% likes job)	83.3	84.2	0.66
Age (mean)	29.3	31.3	<0.01
Family income (mean $1000s)	30.4	30.5	0.97
Family size (mean)	3.20	3.03	0.29
Education (mean years)	12.1	12.4	0.05
Salary (mean $1000s)	15.5	20.2	<0.01

*An additional 174 excluded job records containing a second or subsequent injury have not been included in this comparison because they are a subset of the included jobs.

from one another. Also, we assumed that a distinct worker may suffer more than one injury, and in that circumstance, the worker's characteristics (in table 1 and the subsequent analyses) would be counted more than once. These presumptions reflect typical patterns of acute injury occurrence and accident reporting in industrial settings. For example, it would not be uncommon for a particular worker to fall and sprain an ankle on one occasion and then subsequently (perhaps even in the same year) suffer a different injury (for example, a cut finger) without there being a specific causal connection between the two events.

Crude (unadjusted) occupational injury and illnesses incidence rates for each of the five exposure categories (for each survey period) were calculated by dividing the total number of work related injuries and illnesses reported in jobs having each type of exposure by the total accumulated person-time worked in those jobs. The crude incidence rates for each exposure category were plotted graphically for every NLSY survey year from 1988 to 2000 to depict trends over time and to visually portray the relative difference in rates between jobs with and without each type of exposure (that is, the relative rate ratio). Information about commuting time was only collected in NLSY survey years 1988, 1993, and 1994, and thus trend lines for that exposure category were not graphed.

Rate ratios, reflecting the relative risk of reporting the occurrence of an occupational injury or illness, were calculated by dividing the incidence rate for the accumulated person-time in jobs with an exposure by the incidence rate for accumulated person-time in jobs without that exposure. So, for example, in a particular survey period, if 300 injuries were reported to have occurred in jobs containing a total of 3000 person-years with an exposure and 200 injuries were reported to have occurred in jobs containing a total of 4000 person-years without that exposure, then the crude rate ratio would be 2.0, calculated as follows:

- (300 injuries/3000 exposed person-years) ÷ (200 injuries/4000 unexposed person-years) = 10.0 injuries per 100 exposed person-years ÷ 5.0 injuries per 100 unexposed person-years = rate ratio of 2.0

To adjust for the influence of selected covariates, multivariate analyses were performed to calculate hazard ratios for each exposure category using Cox proportional hazards regression techniques, which are used to analyse the effect of multiple risk factors over the time preceding the occurrence of an event. The multivariate analyses included all accumulated person-time of exposure preceding the first injury in a particular job during a survey period, disregarding subsequent injuries and associated exposure time in that job during the period. Of the total number of work related injuries reported (5313), only 174 (3.3%) were the second or subsequent injury in a job during a survey period and thus were excluded from the analyses. Other job records were excluded because of insufficient information about the specific date of injury or time spent on a job, resulting in the exclusion of an additional 370 injuries, and the absence in some records of sample weights, resulting in the exclusion of an additional four injuries (and the associated exposure time). We performed a comparison of the job records with injuries used in the regression analysis (4765) to the 374 records with missing data to determine if those included and excluded were significantly different. The 174 "subsequent injury" records were not included in this comparison because by definition they had the same job characteristics as those included in the 4765 job records with first injuries. Our comparison showed that the records excluded from the analysis were very similar to those included (table 2).

As a result of these methodological considerations, there was a total of 109 087 job records and 4765 injuries used in the Cox proportional regression analyses of hazard ratios compared to 110 236 job records and 5313 injuries used in the crude analyses of incidence rates and rate ratios. Sample weights were applied to derive nationally representative estimates for individuals in the NLSY age range (14–22 years old as of 1979; 22–43 years old during the study period from 1987 to 2000).

Each regression model included the accumulated person-time for one of the five exposure categories as the primary independent variable, the reporting of a work related injury or illness as the dependent variable, and age (continuous variable), gender (M/F), region (Northeast, South, North Central, West), occupational grouping (high risk/low risk), and industry grouping (high risk/low risk) included as covariates. "High risk" occupations included US Census (1970) Occupation Classification Codes 401–575, 601–715, and 740–785 (craftsmen, foremen, operatives, and labourers), and "high risk" industries included US Census (1970) Industrial Classification Codes 067–077 and 107–398 (construction and manufacturing sectors).[65] The occupation and industry codes selected for inclusion in the "high risk" categories have traditionally higher than average occupational injury and illness incidence rates as reported by the US Bureau of Labor Statistics.[66] We tested the proportional hazards assumption and it held for every variable used in the regression model with the sole exception of region. However,

Table 3 Types of injuries and illnesses reported by workers in jobs with and without exposure, percent distribution, weighted data

Type of injury or illness	Injuries and illnesses in jobs with an exposure n=2799	Injuries and illnesses in jobs without exposure n=2339
Musculoskeletal conditions	34.9	34.4
Fractures	7.8	7.4
Cuts and bruises	25.0	24.9
Burns	3.3	3.3
Other traumatic injuries	12.2	11.6
Peripheral nervous system diseases	2.8	2.7
Other occupational diseases	9.2	10.2
Miscellaneous	4.8	5.5

In our analysis, region was considered only as a potential confounder. We did not draw or report any conclusions in this study about the effect of region on the propensity for injury. Thus, based on the general applicability of the assumption for all of the primary exposure variables and the main outcomes variable (injury) used in the analyses, we applied the Cox proportional approach and reported the results accordingly.

Crude incidence rates and rate ratios were calculated with SAS (version 8.0) statistical software.[67] The ProQuest software system was used to create a database of jobs and person-time exposure records,[68] and Cox proportional regression analyses were performed on that database using Stata SE (version 7) statistical software.[69] Because the hazard ratio calculations were based on a sample rather than the NLSY's entire target universe (Americans aged 14–22 as of 1979), the results were subject to sampling error. To account for sampling effect, 95% confidence intervals around the hazard ratios were estimated by applying Taylor approximation techniques using SUDAAN (version 7.5) analytical software.[71]

RESULTS

Table 3 summarises the types of injuries and illnesses reported, among people working in jobs with and without exposure. Most reported work related conditions were either musculoskeletal disorders (34.7% of all reported injuries) or cuts and bruises (25.0%).

The unadjusted incidence rate for the entire duration of the study was 7.50 reported injuries per 100 worker-years for people in jobs with exposure to extended hours per week, 29% higher than the rate among those in jobs without exposure to extended hours per week (5.81 reported injuries per 100 worker-years). Similarly those in jobs with exposure to extended hours per day had an incidence rate 38% higher than those in jobs without that exposure (7.97 *v* 5.77 injuries per 100 worker-years), those in jobs with exposure to overtime had an incidence rate 84% higher than those in jobs without that exposure (7.49 *v* 4.06 injuries per 100 worker-years), and those in jobs with exposure to extended commute time had an incidence rate 7% lower than those in jobs without that exposure (6.90 *v* 7.46 injuries per 100 worker-years).

Incidence rates for each type of exposure varied by survey year, with a general downward trend in injury rates observed from 1988 to 2000 for all exposed and non-exposed groups (fig 2). Between 1988 and 2000, rates among the various exposure categories decreased by 54–69%. There were some fluctuations observed in the relative gap between exposed and unexposed groups during the study period, but no notable trends in the relative difference between groups over time were detected.

There was a strong positive relation observed between the magnitude of exposure for extended hours per week and extended hours per day and the corresponding injury incidence rate (fig 3). For extended hours per day, every additional five hours per week over 40 was associated with an average increase of approximately 0.7 injuries per 100 worker-hours. For extended hours per day, every additional 2 hours per day over 8 was associated with an average increase of approximately 1.2 injuries per 100 worker-hours.

Table 4 summarises the unadjusted rate ratios and 95% confidence intervals for each exposure category and the unadjusted hazard ratios calculated using first injuries only through the Cox proportional method. The ratios and confidence intervals calculated by each method were generally quite similar. The final adjusted hazard ratios calculated by the Cox proportional methods, after adjusting for age, gender, occupation, industry, and region, are presented in table 5. The results of the adjusted analysis indicates that the association between exposure and the risk of injury was only slightly affected by the influence of those covariates. This analysis found that, after adjusting for those factors, jobs with extended hours per day have a 37% higher injury hazard rate compared to jobs without that exposure. Similarly, working in a job with extended hours per week was associated with a 23% higher injury hazard rate, working in a job with overtime was associated with a 61% higher injury hazard rate, and working in a job with any overtime or extended hours schedule was associated with a 38% higher injury hazard rate. No association was detected between working in a job with extended commute time and the injury hazard rate.

DISCUSSION

This study of nationally representative data from the United States adds to the growing body of evidence indicating that work schedules involving long hours or overtime substantially increases the risk for occupational injuries and injuries. Unlike previous studies, our investigation had the advantage of covering a large variety of jobs, and controlling for the potential confounding affect of age, gender, occupation, industry, and region. We analysed nearly 100 000 job records extending over a 13 year period, and employed several statistical techniques for quantifying the extent of risk. The results of this study suggest that jobs with long working hours are not more risky merely because they are concentrated in inherently hazardous industries or occupations, or because of the demographic characteristics of employees working those schedules. Our findings are consistent with the hypothesis that long working hours indirectly precipitate workplace accidents through a causal process, for instance, by inducing fatigue or stress in affected workers. However, our findings are also consistent with other hypotheses and thus we cannot be certain of a causal connection based on this study alone.

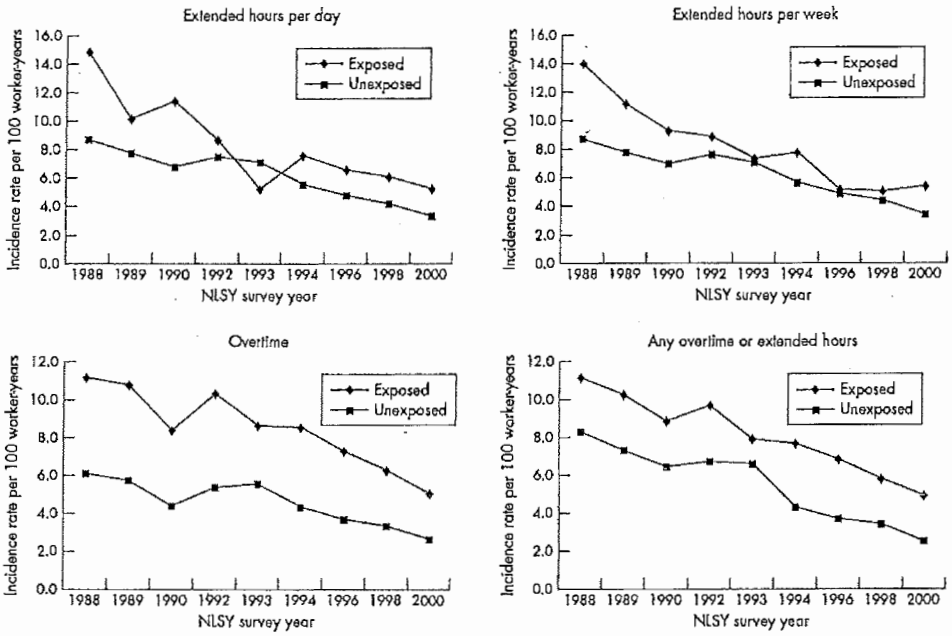

Figure 2 Trends in incidence rates of reported work related injuries and illnesses in jobs with and without exposure, by exposure category. NLSY survey periods 1988, 1989, 1990, 1992, 1993, 1994, 1996, 1998, and 2000. Note: NLSY changed the wording for the question regarding overtime in 1994, thereby potentially affecting the trend lines for "overtime" and "any overtime or extended hours".

Our comparison of injury incidence rates for workers in jobs with and without exposure was normalised by using a common denominator of 100 worker-years, thus avoiding a common methodological flaw that has afflicted some previous studies in this field. For example, workers who, on average, work longer hours (for example, 2500 hours per year) can be expected to experience more injuries than those who work shorter hours (for example, 2000 hours per year), even if the underlying risks to both groups are actually the same, because the former group spends more time "at risk" for injury. Many studies that have observed more injuries among persons who work longer hours have failed to take

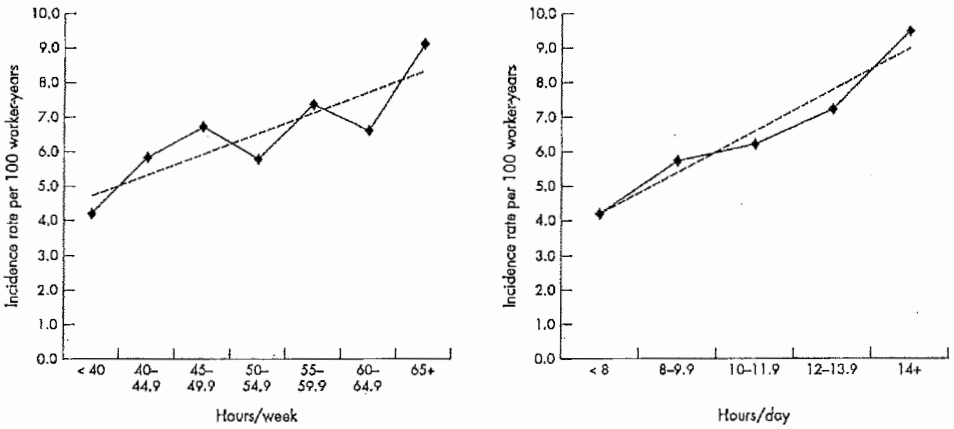

Figure 3 Trends in incidence rates of reported work related injuries and illnesses in jobs with and without exposure, for two exposure categories (hours/week and hours per day), by amount of exposure. NLSY aggregated data covering 1987–2000.

Table 4 Unadjusted rate ratios, hazard ratios, and 95% confidence intervals for injuries or illnesses reported in jobs with exposure to overtime and extended hour schedules

Exposure category	Unadjusted rate ratio	95% CI	Unadjusted hazard ratio	95% CI
Extended hours/week (≥60)	1.29	1.18 to 1.42	1.29	1.15 to 1.46
Extended hours/day (≥12)	1.38	1.26 to 1.51	1.46	1.30 to 1.63
Overtime	1.84	1.75 to 1.94	1.84	1.70 to 2.00
Extended commute time (≥2 hours)	0.93	0.75 to 1.14	0.94	0.72 to 1.22
Any type of overtime or extended hours	1.41	1.35 to 1.48	1.48	1.38 to 1.59

NLSY data, 1987–2000. n=110 236 job records for rate ratios, 109 087 for hazard ratios.

this consideration into account (as would happen, for instance, if incidence rates were to be calculated on the basis of number of injuries per 100 full-time workers). This study controls for that effect by deriving rate ratios (and hazard ratios) which compare the propensity to suffer injuries in each group during a standardised period of "at risk" time.

A notable result of our analysis was the detection of a clear dose-response effect, in which the number of hours worked per week (over 40) and the number of hours worked per day (over 8) were positively associated with an increasing risk of injury (per 100 worker-years). This finding lends support to the idea that there may be a causal process linking long work schedules with occupational injury. In this respect, our study is consistent with others[51–52 54 70] that have shown increasingly greater level of injury risk in the latter portions (for example, beyond 9 hours) of long work shifts.

To some extent, the decline in incidence rates between 1988 and 2000 observed in our study reflects the general decline in occupational injury and illness rates reported nationally during that period. Data from the US Bureau of Labor Statistics (BLS) indicate that occupational injury and illness rates (all case, private industry) decreased by 29% during that period, from an average of 8.6 to 6.1 reportable cases per 100 workers.[72] That decline has been attributed to various possible causes, including safer workplaces and a shift from manufacturing to service oriented jobs, which typically have lower average incidence rates.[73] Another factor that may help to explain the relatively larger (54–69%) rate decreases observed in our study is the aging of our cohort, who were 23–31 years old in 1988 and 35–43 years old as of 2000. Younger workers generally have higher incidence rates than older ones, in part because workers tend to move into lower risk occupations (for example, managerial and administrative) as they age.

Our study found that overtime schedules had the greatest incremental risk of injury, with overtime workers having a 61% higher injury hazard rate compared to workers in jobs without overtime, after controlling for age, gender, occupation, industry, and region. This finding is consistent with other studies that have identified overtime work as particularly hazardous.[22 29 39 74] But few previous studies have compared the relative risk of "overtime" schedules to other schedules with long working hours per day or per week. Indeed, the meaning of "overtime" is not precise, and thus the term might be used differently in different contexts and locations. Prior to 1994, no specific definition of "overtime" was provided to NLSY respondents, and so the term could have been interpreted in a variety of ways: referring, for example, to long work hours, work that exceeds the respondent's conventional work schedule, unusual or unexpected hours of work, or work that qualifies the worker for overtime pay. To help clarify this issue, the wording of the "overtime" question in NLSY was changed in 1994 to refer specifically to work that qualifies for overtime pay.

Under the US Fair Labor Standards Act of 1938 (FLSA), employees covered under the act are entitled to receive overtime pay equalling at least 150% of their regular pay rate for all work time exceeding 40 hours per week. It was estimated that the FLSA covered 74 million American workers in 2000, about 79% of the US civilian labour force.[75 76] On average, approximately 20% of covered workers receive overtime pay in any week.[77] During the 1990s, the average weekly overtime hours put in by manufacturing workers covered by FLSA grew by 25%.[78] Workers exempt from FLSA coverage include most administrative, professional, executive, supervisory, and outside sales personnel who are paid on a salaried basis. New regulations recently promulgated by the US Department of Labor have extended the FLSA exemptions to an additional 8 million white-collar workers.[79]

In the USA, approximately 19–33% of overtime work is mandatory (also called "compulsory", "forced", or "involuntary").[75 80] Mandatory overtime is overtime work required by employers, often under the threat of job loss or other penalty if the worker fails to comply. Several studies have suggested that mandatory overtime is especially hazardous with respect to its affect on worker fatigue, stress, impaired performance, and the potential for accidents, especially in the nursing and healthcare professions.[75] The NLSY did not differentiate between mandatory and voluntary overtime, and it is not currently addressed or regulated by the FLSA.

Our study also found greater injury risks associated with work schedules exceeding 60 hours per week and 12 hours per day. These specific values for identifying "extended hours" were chosen based on previous research studies which had detected increased risks at those levels.[6 11 23 30 81 82]

Table 5 Adjusted hazard ratios and 95% confidence intervals for injuries or illnesses reported in jobs with exposure to overtime and extended hour schedules, after controlling for age, gender, occupation, industry, and region

Exposure category	Adjusted hazard ratio	95% CI
Extended hours/week (≥60)	1.23	1.05 to 1.45
Extended hours/day (≥12)	1.37	1.16 to 1.59
Overtime	1.61	1.43 to 1.79
Extended commute time (≥2 hours)	0.87	0.59 to 1.23
Any type of overtime or extended hours	1.38	1.25 to 1.51

NLSY data, 1987–2000, n=109 087 job records.

Main messages

- Working in jobs with schedules that routinely involve overtime work or extended hours increases the risk of suffering an occupational injury or illness.
- Overtime schedules had the greatest relative risk of occupational injury or illness, followed by schedules with extended (≥12) hours per day and extended (≥60) hours per week.
- The risk of injury was found to increase with the increasing length of the work schedule, even after controlling for the entire amount of working time spent "at risk" for injury.
- Multivariate analyses indicated that the increased injury risks are not merely the result of the demanding work schedules being concentrated in riskier occupations or industries.
- These results are consistent with the hypothesis that long working hours indirectly precipitate workplace accidents by inducing fatigue or stress in affected workers.

Policy implications

- This study supports initiatives of the European Union and other governments to regulate the length of working schedules.
- Proposals in the United States to modify the Fair Labor Standards Act should examine the impact of those proposed changes on the injury risks associated with overtime work.
- Strategies for preventing workplace injuries and illnesses should consider changes in work organisation and job design addressing the length of work schedules and the performance of overtime work.

However, increased risks also have been detected at other work-hour levels by a variety of researchers and there is as yet no consensus criterion for the precise amount of work that is considered to be hazardous. In an attempt to create uniform labour standards, the European Union issued a Working Time Directive in 1993 that limited normal working hours to no more than 48 per week (averaged over a four month period) and specified other requirements related to rest breaks, shift work, and overtime. Some European nations (for example, the UK) have introduced provisions for workers to voluntarily opt out of these requirements or to otherwise provide flexibility in their implementation.

Study limitations

This study was based on self-reported information from NLSY cohort members regarding their employment and injury/illnesses experiences. Respondents were asked to recall information from the time of the previous interview, which in most cases was one year (for the 1988–1994 surveys) or two years (for the 1996–2000 surveys). There were no means to externally validate their responses. Our results, therefore, may be subject to potential inaccuracies related to the inability of respondents to recall information correctly. At the same time, the NLSY has advantages in this regard compared to other self-reported surveys in that the cohort had been surveyed regularly since 1979 and thus was quite familiar with the questionnaire, the response process, and the information required. Also, the NLSY was not designed to be a survey about work related injuries and illnesses or demanding work schedules—its primary objective was to evaluate participants' long term labour market transitions and wage history. The survey thus avoids problems of information bias that typically plague attempts to ask injured workers about their working conditions and job exposures. Unlike data sources related specifically to the field of occupational safety and health, it is unlikely that respondents to the NLSY will intentionally or unintentionally be attempting to justify the legitimacy of a work related disorder, establish its compensability under workers' compensation laws, or establish the employer's culpability for the injury. All of those issues are unrelated to the main concerns of NLSY and thus the data obtained presumably will be less susceptible to contamination by such considerations.

A strength of the study is its ability to control for the potential confounding affects of age, gender, occupation, industry, and region. However, many other potential covariates—such as workers' education and income levels, family composition, and health status—were not considered in the analysis, and thus their influence was not assessed. Our methods for considering the risks imposed by workers' occupation and the employer's industry classification may have masked more subtle differences related to particular job assignments within a broader occupational classification or specific industry group.

Because the study was based on secondary analysis of existing national data, we were also limited in our ability to evaluate other potentially important aspects of the dynamics underlying the risks of long working hours. For example, we did not have information available on the time of day the injury occurred, the kinds of job activities being performed, or the specific cause of the injury. However, information was available about the type of shift generally worked on each job (day, night, evening, split, or rotating shift) and thus we were able to consider the influence of shift work on injury risk and the combination affect of working both an unconventional shift schedule and long working hours. Those results will be reported in a separate publication.

Policy implications

The ultimate reason for conducting this research is to prevent occupational injuries and illnesses, promote overall worker health, and minimise the adverse consequences to affected workers. Most authorities believe that effective prevention of workplace injuries and illnesses requires a multifaceted approach that combines comprehensive hazard identification and control, ergonomic job design, worker training, medical surveillance, competent supervision, and a workplace culture and organisation that promotes optimal safety and health.

The results of this study suggest that special attention needs to be paid to establishing protective measures for people working overtime. For example, intensive accident hazard identification and control procedures (for example, periodic safety inspections) could be focused towards jobs in which employees work overtime schedules. Other protective approaches might include changes in work organisation (for example, periodic rest brakes, redesigning processes to avoid the need for overtime assignments, and employing more people to work fewer hours each), employer sponsored health promotion programmes (for example, counselling and education about the risks of long work schedules, periodic medical surveillance examinations for "at risk" workers, and ergonomic redesign to decrease job demands), and individual coping and behavioural practices (for example, maintaining good sleep and nutrition, getting daily physical exercise and regular medical care, avoiding drugs and alcohol, and seeking

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supportive services when needed). Our study was not aimed at assessing the effectiveness of these interventions in decreasing the risk of injury, and additional research is needed in this regard.

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Answers to questions on *Genetic screening and occupational and environmental exposures* by P Vineis *et al*, on pages 657–662

(1) c; (2) a and b; (3) b and d; (4) c and d; (5) d

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EXHIBIT

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OVERTIME AND EXTENDED WORK SHIFTS:

Recent Findings on Illnesses, Injuries, and Health Behaviors

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Overtime and Extended Work Shifts: Recent Findings on Illnesses, Injuries, and Health Behaviors

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Foreword

The average number of hours worked annually by workers in the United States has increased steadily over the past several decades and currently surpasses that of Japan and most of Western Europe. The influence of overtime and extended work shifts on worker health and safety, as well as on worker errors, is gaining increased attention from the scientific community, labor representatives, and industry. U.S. hours of service limits have been regulated for the transportation sector for many years. In recent years, a number of states have been considering legislation to limit mandatory overtime for health care workers. The volume of legislative activity seen nationwide indicates a heightened level of societal concern and the timeliness of the issue.

This document summarizes recent scientific findings concerning the relationship between overtime and extended work shifts on worker health and safety. The number of studies increased dramatically over the past few years, but important research questions remain. I am confident that this document will contribute to an informed discussion of these issues and provide a basis for further research and analysis.

John Howard, M.D.
Director,
National Institute for Occupational Safety and Health

Executive Summary

PURPOSE

This report provides an integrative review of 52 recently published research reports that examine the associations between long working hours and illnesses, injuries, health behaviors, and performance. The report is restricted to a description of the findings and methods and is not intended as an exhaustive discussion of all important issues related to long working hours. Findings and methods are summarized as reported by the original authors, and the study methods are not critically evaluated for quality.

SUMMARY

In 16 of 22 studies addressing general health effects, overtime was associated with poorer perceived general health, increased injury rates, more illnesses, or increased mortality. One meta-analysis of long work hours suggested a possible weak relationship with preterm birth. Overtime was associated with unhealthy weight gain in two studies, increased alcohol use in two of three studies, increased smoking in one of two studies, and poorer neuropsychological test performance in one study. Some reports did not support this trend, finding no relationship between long work hours and leisure-time physical activity (two of three studies) and no relationship with drug abuse (one study).

A pattern of deteriorating performance on psychophysiological tests as well as injuries while working long hours was observed across study findings, particularly with very long shifts and when 12-hour shifts combined with more than 40 hours of work a week. Four studies that focused on effects during extended shifts reported that the 9th to 12th hours of work were associated with feelings of decreased alertness and increased fatigue, lower cognitive function, declines in vigilance on task measures, and increased injuries. Two studies examining physicians who worked very long shifts reported deterioration on various measures of cognitive performance.

When 12-hour shifts combined with other work-related demands, a pattern of more adverse findings was detected across studies. Six studies examining 12-hour shifts combined with more than 40 hours of work per week reported increases in health complaints, deterioration in performance, or slower pace of work. Two studies comparing 8- and 12-hour schedules during day and night shifts reported that 12-hour night shifts were associated with more physical fatigue, smoking, or alcohol use. Two studies examining start times for 12-hour shifts reported that decrements in alertness or more health complaints were associated with early 6:00 a.m. start times. One study examining 12-hour shifts in hot work environments reported a slower pace of work as compared with shorter shifts. Another study examining high workloads during 12-hour shifts showed increased discomfort and deterioration in performance as compared with shorter shifts.

More definitive statements about differences between 8-hour and 12-hour shifts are difficult because of the inconsistencies in the types of work schedules examined across studies. Work schedules differed by the time of day (i.e., day, evening, night), fixed versus rotating schedules, speed of rotation, direction of rotation, number of hours worked per week, number of consecutive days worked, number of rest days, and number of weekends off. All of these factors could have interacted with overtime and influenced study results. Also, some studies did not report how many hours participants worked per week or other details about the work shifts, which complicated the assessment of their results. The many

differences in the 8- and 12-hour shift schedules studied may have accounted for their contradictory findings.

Few studies have examined related topics, such as the combined influence of shift work and overtime, or how worker control over their work time and mandatory overtime might influence their health.

Some studies examined functional abilities or injuries during the 1st to 12th hours of work, but little has been reported about effects after the 12th hour. Few studies have investigated the influence of long working hours on the health and safety of women or older workers. Few studies have explored how long working hours influence workers with pre-existing health problems, or how the hours relate to symptom management and the course of common chronic diseases. Little data are available regarding the influence of occupational exposures (i.e., chemical, heat, noise, lifting) in combination with long working hours on health and safety.

Although the number of published studies examining long working hours appears to be increasing, many research questions remain on how overtime and extended work shifts influence worker health and safety.

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Abbreviations

ANOVA	analysis of variance
ANOCOVA	analysis of covariance
BMI	body mass index
BP	blood pressure
CI	confidence interval
CIR	cumulative incidence ratio
D	day
DART	Division of Applied Research and Technology
E	evening
h	hour
M	mean
N	night
NIOSH	National Institute for Occupational Safety and Health
NS	not significant
OR	odds ratio
OSHA	Occupational Safety and Health Administration
PR	prevalence risk ratio
R	range
RR	relative risk ratio
wk	week
y	years

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> The annual number of hours worked per person in the United States surpasses Japan and most of Western Europe.
>
> *[International Labour Office 2002]*

1. Introduction

Overtime is common in the United States and has increased steadily from 1970 through the 1990s [Hetrick 2000; Rones et al. 1997]. According to the International Labour Office [2002], the annual number of hours worked per person in the United States surpasses Japan and most of Western Europe. Figure 1 displays the average annual work hours for the locations of studies discussed in this document [International Labour Office 2003]. As illustrated, work hours in the United States are only surpassed by Thailand, Hong Kong, and South Korea.

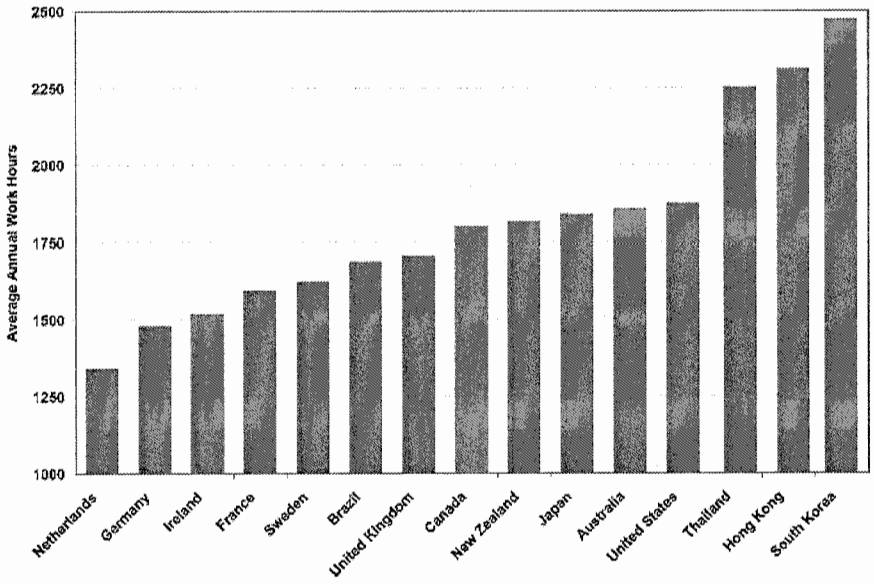
This document provides an integrative review of selected health and safety issues associated with overtime and extended work shifts. Findings are summarized as reported by the original authors, and the study methods are described, but not critically evaluated. For this document, *overtime* is defined as more than 40 hours per week and *extended work shifts* are defined as shifts longer than 8 hours.

Seventy-five research reports, including one meta-analysis, were identified according to the following criteria:

1. Focused on overtime or extended work shifts
2. Published from 1995 through 2002
3. Peer-reviewed publication
4. Published in the English language

The information retrieval databases used to identify reports include *Medline*, *Current Contents*, *PsycINFO*, and *ScienceDirect*. Keywords used in the search were *overtime*, *extended work shifts*,

Figure 1. Average Annual Work Hours by Country *[International Labour Office 2003]*



work hours, *work schedule tolerance*, *12-hour shifts*, *10-hour shifts*. Additionally, the references cited in the retrieved reports were examined for any relevant research reports. The studies examined a variety of health and safety issues, ranging from illnesses and injuries to social life and job satisfaction. The present report is limited to a summary of those studies that addressed associations between long working hours and illnesses, injuries, health behaviors, and performance. The health behaviors include physical activity, smoking, alcohol use, and body weight. Performance measures include automobile crashes, tests of cognitive functioning, executive functioning, subjective alertness, cardiovascular fatigue, and muscle fatigue. Of the 75* reports examined, 51 studies and one meta-analysis addressed these outcomes and are summarized below. The summary of findings does not include the remaining 23 reports that did not examine illnesses, injuries, health behaviors, or performance.

*Note: The papers not discussed in this document are indicated in the Reference section by ‡.

2. Description of the Work Schedules and the Samples

To examine the relationship of overtime and extended work shifts on health and safety, 52 research studies were classified under four categories, based on the information contained in the reports:

1. *Overtime*: most studies compared the number of hours worked by full-time participants and reported no other work schedule details.

2. *Extended work shifts:* 10- or 12-hour shifts were compared with 8-hour shifts in most studies and used a standard 40-hour work week. Some studies, however, did not clearly report the number of hours worked per week. Some studies, however, did not clearly report the number of hours worked per week.

3. *Extended work shifts combined with more than 40 hours per week*: 12-hour shifts compared with 8-hour shifts in most studies.

4. *Very long shifts* (e.g., resident physician on 32-hour call schedule and 48-hour taxi driver schedule).

The process of classifying the studies into these categories often was hampered by lack of a complete and clear description of the work schedules. For example, the studies examining 12-hour work shifts did not always clearly report the number of hours worked per week. Thus, some misclassification of studies is possible in this summary document. In addition, the complexity and wide variety of work schedules studied made it difficult to compare and synthesize findings across the 52 reports.

Work schedules differ in many ways, and more than 10,000 schedules are in use worldwide [Knauth 1998]. Time of work (day, evening, night), fixed or rotating shift, the degree of worker control over work times, number of hours worked per day, number of consecutive workdays before rest days, number of hours worked per week, number of rest days, and number of weekends off were all factors that combined in a variety of ways across these field studies. An individual study's finding for shift length or number of hours worked per week may have been influenced by time of work or other characteristics of the work schedule. Thus, some caution should be exercised in characterizing some of these studies or interpreting their findings solely in terms of long hours of work or extended shifts.

Tables 1 and 2 list the country where the studies were conducted and the type of work. Approximately 20% of the studies were conducted in the United States, 28% in Asia, and 35% in Europe. The studies were conducted in field settings, except for three laboratory investigations. The most frequent types of work studied were health care, *white collar*, and manufacturing. The age groups studied ranged from young adults to older workers in their 60s, but only two studies specifically addressed the relationship of age to health effects. Men were examined exclusively in 40% of the studies, as compared with 10% of studies that examined only women.

Work schedules differ in many ways, and more than 10,000 schedules are in use worldwide.
[Knauth 1998]

Table 1.
Countries Where Studies Were Conducted

Location	N
Asia	21
Australia	7
Canada	3
Europe	26
South America	1
United States	14
United States and Canada	1
United States and Europe	1
More than Two Locations	1

Note. Table covers all 75 publications examined.

Table 2.
Types of Work Investigated

Type of Work	N
Construction	2
Health Care	19
Manufacturing	21
Mining	2
Public Administration and Services	11
Transportation	3
Utilities	5
White Collar Work	24
Not Specified	12

Note. Table covers all 75 publications examined. Frequency counts will not sum to total number of publications, as some publications used multiple work types.

3. Health and Safety Findings

A summary of the findings for cardiovascular diseases and other illnesses, injuries, health behaviors, and performance effects are listed below. Findings are discussed for each of the four work schedule categories listed earlier.

3.1 FINDINGS ASSOCIATED WITH OVERTIME

Twenty-nine studies and one meta-analysis examined associations between overtime and the outcomes targeted for this report. The studies were conducted in Japan (10), United States (5), Sweden (5), Germany (2), South Korea (2), Canada (1), Hong Kong (1), Netherlands (1), Thailand (1), and United Kingdom (1). The studies used a variety of criteria to group participants based on the number of hours worked. For example, the criterion used to define the group with the lowest number of hours worked ranged widely from 35 to 60 hours per week across studies.

3.1a Overtime and Cardiovascular Findings

Table 3 displays the methods and results for the studies examining overtime and cardiovascular findings. Two case-control studies of Japanese workers reported that overtime during the previous month was associated with an increased risk for acute myocardial infarction. Liu et al. [2002] reported that 61 or more hours of work per week and less than 2 days off a month increased the odds by two-fold or more. Sokejima and Kagamimori [1998] observed a U-shaped relationship: as compared with 7 to 9 hours of work per day, higher risk was associated with both shorter hours (less than 7 hours a day) and longer hours (more than 11 hours a day).

Findings for hypertension were inconsistent across four studies. Iwasaki et al. [1998] reported significantly *elevated* systolic blood pressure in older salesmen (ages 50 – 60) whose combined commute and work hours exceeded 61 hours per week as compared with older salesmen working 57 hours or less. No differences were reported in younger workers (ages 20 – 49 years). Hayashi et al. [1996] observed *increased* blood pressure in groups of *white collar* employees working 84 to 96 mean hours of overtime per month as compared with those working 25 to 43 mean hours of overtime. Nakanishi et al. [2001b], however, published the opposite results: *white collar* workers reporting 10 or more hours of work per day had a *lower* risk for developing hypertension when compared with workers reporting less than 8 hours of work per day. Lastly, Park et al. [2001a] reported no correlation between blood pressure and work hours in Korean engineers whose work hours during the previous month ranged from an average of 52 hours to 89 hours per week. No participants in this study worked less than 52 hours on average per week.

Table 3. Studies Examining Overtime and Cardiovascular Outcomes: Methods and Findings

Author, Date	Sample	Measure of Overtime	Cardiovascular Measure	Statistical Methods Controls	Results Reported By Authors
Hayashi et al.1996	Compared three groups of male *white collar* workers at one electronics plant: • Group sizes: 10 – 19 • Group M ages 36 – 47 • Japan	One month daily diary of work hours (overtime hours/month by group): • Comparison 1 with normal BP: ° High overtime: 88 +/- 42 ° Low overtime: 25 +/- 7 • Comparison 2 with elevated BP: ° High overtime: 84 +/- 42 ° Low overtime: 26 +/- 7 • Comparison 3 with workers examined twice during busy and slow season: ° High overtime: 96 +/- 28 ° Low overtime: 43 +/- 18	24-h blood pressure and heart rate measured every hour with portable monitor: • Normal BP: systolic < 140; diastolic < 85 • Elevated BP: systolic >140 to <160; diastolic > 90 to < 105	• t-test for independent samples tested the repeated measures of BP and pulse readings • Paired t-test tested seasonal group	• In Comparison 1 with normal BP, high overtime showed: ° Higher average systolic and diastolic BP ° Heart rate NS • In Comparison 2 with elevated BP, high overtime showed: ° Higher average diastolic BP and heart rate ° Systolic BP NS • In Comparison 3, workers during busy season showed: ° Higher average systolic and diastolic BP ° Higher heart rates
Iwasaki et al.1998	71 salesmen: • Age R 22 – 60 • Japan	One-time survey*: • Short work hours—57 h/wk • Long work hours—61 to 68 h/wk **Work hours* defined as hours in office plus commute time during last month.	During one evening measured mean of two blood pressure readings.	t-test	Mean systolic blood pressure elevated for long-hour group as compared with short-hour group for ages 50 – 60, and no difference noted for ages 20 – 49.
Liu et al.2001	• 260 men with acute myocardial infarction (AMI) • 445 male controls • Age R 40 – 79 • *White collar* and *blue collar* workers • Japan	One-time interview: • Work h/wk: ≤ 40; 41 – 60; ≥ 61 • Days off/month: < 2; 2 – 7; ≥ 8 • Rotating shifts yes/no • Interactions: work hours and sleep length; work hours and days off/month	• Hospital records identified cases with AMI who survived to receive rehabilitation from 1996 to 1998. • Controls free of AMI: resident registers used to match for age, sex, residence. • Other measures: ° Workday sleep hours: ≤ 5; 6 – 8; ≥ 9 ° Days off sleep hours: ≤ 5; 6 – 8; ≥ 9 h ° Days/wk with < 5h sleep	• ANOVA • ANACOVA • Logistic regression analysis: interaction of sleep with working hours assessed with likelihood ratio test. • Covariates: hypertension, diabetes, hyperlipidaemia, overweight, cigarette smoking, parental coronary heart disease, *blue collar/white collar* job, sedentary job	• Working > 61 h/wk increased risk by two fold for AMI compared with ≤ 40 h (CI 1.1 – 3.5). • < 2 days off in previous month increased risk (OR 2.9; CI 1.3 – 6.5). • Categories of longer work and less days off or short sleep time showed trend for increase in the OR, but none of interactions were significant.
Nakanishi et al. 2001b	941 male *white collar* workers from one building contractor: • No history of hypertension (HTN) Age R 35 – 54 • Japan	Interview in 1994: work h/day < 8.0; 8.0 – 8.9; 9. – 9.9; 10.0 – 10.9; ≥ 11.0	• BP measurements during annual health exam from 1994 to 1999 • World Health Organization criteria for HTN: ° Systolic blood pressure ≥ 160 mm Hg ° Diastolic blood pressure ≥ 95 mm Hg ° Taking BP medication	• ANOVA • Cox proportional hazard method: covariates (measured 1994): age, occupation, position, BMI, alcohol intake, commute time, vegetable and salt intake, eating breakfast, smoking, exercise, sleep length.	• 336 men developed borderline HTN or definite HTN. • 88 men developed definite HTN. • Relative risk for borderline HTN or definite HTN (reference category < 8 h/day): ° 10 – 10.9 h/day .63 (CI .43 – .91) ° >11.0 h/day .48 (CI .31 – .74) • Relative Risk for definite HTN: >11h/day .33 (CI .11 – .95)
Park et al. 2001a	238 male engineers from 3 electronics manufacturing plants: • Age M 32, R 22 – 46 • South Korea	One-time questionnaire: M h/wk during previous month (R 52 – 89 h/wk)	Blood pressure on afternoon of the survey day	• Correlation coefficients • Multiple linear regression • Covariates: age and hours of sleep	Weekly working hours showed no significant correlation with blood pressure.

Table 3. Studies Examining Overtime and Cardiovascular Outcomes: Methods and Findings (Continued)

Author, Date	Sample	Measure of Overtime	Cardiovascular Measure	Statistical Methods Controls	Results Reported By Authors
Sokejima and Kagaminori 1998	195 men (age M 55) with first acute myocardial infarction (AMI) and 331 controls (age M 54): • 51% managers • 49% other occupations • Japan	Self-administered survey: • M work h/day for each of 2 months before AMI from cases or before enrollment into study from controls • M work h/day for the months with the shortest and longest mean work hours during previous year	• AMI cases established from hospital records • Control cases with no coronary artery disease from workplace medical exam • Matched for age and occupation	• Logistic regression • Covariates: age, occupation category, hypertension, hypercholesterolaemia, diabetes, body mass index, smoking habits, proportion of sedentary work, and burnout index	Hours worked during previous month showed U-shaped relationship. Higher risk for AMI associated with shorter hours (≤ 7h/day; OR 2.8, CI 1.5 – 5.3) and longer hours (>11h/day; OR 2.9, CI 1.4 – 6.3) as compared with the reference category of (>7 – 9 h/day).

Note. Abbreviations used: BMI = body mass index; BP = blood pressure; CI = 95% confidence interval; CIR = cumulative incidence ratio; D = day; E = evening; h = hours; M = mean; N = night; NS = not significant; OR = odds ratio; PR = prevalence risk ratio; R = range; RR = relative risk ratio; wk = week; y = years.

3.1b Overtime and Other Illnesses

Table 4 displays the methods and results for the studies examining overtime and other illnesses. Overtime was associated with poorer perceived general health in three of four studies [Ettner and Grzywacz 2001; Kirkcaldy et al. 2000; Siu and Donald 1995; Worrall and Cooper 1999], increased neck or musculoskeletal discomfort in two studies [Bergqvist et al. 1995; Fredriksson et al. 1999], increased mortality in one study [Nylén et al. 2001], and subfecundity in one study [Tuntiseranee et al. 1998].

Mozurkewich et al. [2000] conducted a meta-analysis of 10 studies published between 1987 and 1997 and reported no association between long work hours and preterm birth. Further analysis of the six higher quality studies suggested a weak relationship between long working hours and preterm birth (Odd Ratio = 1.24 with a 95% Confidence Interval of 1.04 to 1.48). In contrast, Voss et al. [2001] reported that more than 50 hours of overtime during the previous year was associated with *less* sick time in a Swedish study.

Associations with diabetes mellitus in two Japanese prospective health studies were contradictory. Kawakami et al. [1999] reported that 50 or more hours of overtime per month *increased* the risk for development of diabetes mellitus as compared with 25 hours or less. In contrast, Nakanishi et al. [2001a] reported that 11 hours or more a day was associated with a *reduced* risk as compared with less than 8 hours. Both studies collected work hour data at the initial contact and did not examine the influence of working long hours over the course of several years.

In summary, overtime was associated with increased morbidity and mortality in 8 of 12 studies, and one meta-analysis suggested a possible weak relationship between overtime and preterm birth.

Combined relationship of pressure to work overtime and rewards in Dutch postal workers was examined by van der Hulst et al. [2001]. Rewards included salary, job security, and career opportunities. They reported that high pressure to work overtime in combination with low rewards was associated with a 3-fold increase in the odds for somatic complaints as compared with a reference category of low overtime pressure in combination with high rewards. In contrast, high pressure in combination with high rewards did not differ from the reference category. Ninety-five percent of the sample worked less than 50 hours per week.

Siu and Donald [1995] also reported a relationship with overtime pay. Men from Hong Kong who received no payment for overtime reported more health complaints when compared with men who received payment.

Mizoue et al. [2001] examined the relationship of overtime and sick building syndrome among Japanese municipal employees working in an environment with few workplace smoking restrictions. Thirty hours of overtime or more during the previous month was associated with a 2.6-fold increased risk for symptoms of general malaise and irritation of the mucous membranes and skin.

Fredriksson et al. [1999] examined the combined influence of domestic workload and overtime in workers from a broad range of occupations in Sweden. Additional domestic workload increased the cumulative incidence or prevalence risk for disorders of the neck in men and women who were working overtime.

Table 4. Studies Examining Overtime and Other Illnesses: Methods and Findings

Author, Date	Sample	Measure of Overtime	Other Illness Measure	Statistical Methods Controls	Results Reported By Authors
Bergquvist et al. 1995	260 visual display terminal workers: • Women 76% • Sweden	One-time questionnaire: frequent overtime yes/no	One-time *Nordic Survey of Musculoskeletal Symptoms* and physiotherapeutic examination identified discomfort of arm/hand, neck/shoulder, back	• Multivariate logistic regression • Covariates: age, activities, attitudes, eye conditions, organization type, time planning, work load, ergonomic factors	Arm/hand discomforts associated with extensive overtime (OR 2.2, CI 1.2 – 4.4)
Ettner and Grzywacz 2001	Data from the 1995 mid-life study of 2,048 residents: • Age R 25 – 74, M 42 • Women 51% • United States	One-time questionnaire: average h/wk working at all jobs < 35, 35 – 45, >45	Combined responses from two questions asking effect of job on physical or emotional/mental health: 1 = negative; 2 = mixed; 3 = positive	• Ordinal logistic regression • Covariates: demographics, personality type, job characteristics	Working >45 h/wk increased by 25% likelihood of reporting negative effects of work on health
Fredriksson et al. 1999	484 *white collar* and *blue collar* workers from broad range of occupations without musculoskeletal diagnoses in 1969: • Age M 48, R 42 – 59 • Women 52% • Sweden	Interview in 1969: • Overtime yes/no (work hour criteria not specified) • Day versus night or shift work • Interactions: overtime and domestic workload	• Medical exam recorded neck disorders in 1969 • In 1993, 17 questions from 1969 interview used for follow-up structured medical interview to record neck, shoulders, hands and wrists disorders	• PR in 1969 and 1993 • CIR for 1970 – 1992: • Analysis adjusted for age • Cox proportional hazards models for multivariate analysis	• For neck disorders in women in 1993: ° Overtime associated with PR of 2.3 (CI 1.0 – 5.0; age adjusted) ° Combination of both overtime and additional domestic workload associated with PR of 3.3 (CI 1.3 – 8.6; age adjusted), with 0.6 excess risk due to the interaction • For neck disorders in men from 1970 to 1992: ° Combination of both overtime and additional domestic workload associated with CIR of 3.0 (CI 1.1 – 8.6), with 0.6 excess risk due to the interaction • For shoulder disorders in women in 1993: ° Overtime associated with PR of 2.7 (CI = 1.1 – 6.9; multivariate analysis)
Kawakami et al. 1999	2,194 male managers, clerks, mechanics, machine operators at one electrical plant who did not have diabetes or cardiovascular disease: • Age R 18 – 60 • Japan	Questionnaire in 1984 and 1985: • Overtime h/month: ° < 25 h (8 – 9 h/day, 40 – 46 h/wk) ° 26 – 50 h (9 – 10 h/day, 47 – 52 h/wk) ° > 50 h (10+ h/day 53+ h/wk) • Schedules were day shift or rotating 2 – 3 shifts, including nights with weekly forward rotation	• Urine/blood glucose measured annually from 1984 to 1992 • Glucose tolerance test as needed • Diagnosis based on WHO criteria	• Cox's proportional hazard model • Covariates: age, education, BMI, alcohol consumption, smoking, physical activity, family history, shift work, occupation, job strain, social support at work, new technology at work	Increased risk (RR = 3.73, CI 1.4 – 9.9) associated with > 50 h overtime as compared with < 25 h while controlling for covariates
Kirkaldy et al. 2000	262 public and private managers: • Women 66% • Age R 18 – 65 • Germany	Source not clearly reported: work h/wk < 48; > 48	One-time physical symptom subscale, created from *Pressure Management Indicator*, a 120 item survey	Multiple one-way ANOVA	Physical symptoms not significant

Table 4. Studies Examining Overtime and Other Illnesses: Methods and Findings (Continued)

Author, Date	Sample	Measure of Overtime	Other Illness Measure	Statistical Methods Controls	Results Reported By Authors
Mizoue et al. 2001[a]	1,281 municipal employees: • Age not reported • Men 72% • Japan	One-time questionnaire (overtime hours during previous month 0 – < 10; 10 < 30; ≥ 30)	One-time questionnaire: • Sick building syndrome symptoms • Environmental tobacco smoke (ETS)	• Multivariate logistic regression • Covariates: age, gender, position type, asthma or hay fever, VDT use, work interest, work overload, work control, colleague support, distress, sports activity, sleep hours	• Percent of workers active in sports by overtime group: < 10h = 17%; 10 < 30h = 16%; ≥ 30 h = 8% • Percent of workers in overtime groups with ETS: < 10h = 49%; 10 < 30h = 59%; ≥ 30 h = 62% • Working overtime ≥ 30 h/month increased risk of at least one sick building syndrome symptom (OR 2.6, CI 1.4 – 4.5; adjusted for some covariates) • OR 2.96 for ≥ 30 h when adjusting for fixed covariates (age, etc) • Addition to model of lifestyle and stress-related covariates reduced OR to 2.5
Nakanishi et al. 2001a	1,266 male office workers free of impaired fasting glucose (IFG), type 2 diabetes mellitus (DM2), or history in 1994: • Age M 46, R 35 – 59 • Japan	Interview in 1994: work h/wk < 8.0; 8.0 – 8.9; 9.0 – 9.9; 10.0 – 10.9; ≥11.0	• Questionnaires and medical measurements during an annual health examination from 1994 to 1999 • American Diabetes Association guidelines used to define IFG and DM2 by fasting plasma glucose	• Cox's proportional hazards model • Covariates: age, BMI, occupation, position, smoking, alcohol, eating habits, physical activity, family history of diabetes, blood pressure, fasting glucose, total cholesterol, high density lipoprotein	• Risk of developing IFG or DM2 decreased in a dose-dependent manner with an increase in work h/day. • Reference group: < 8 h/day. • Adjusted relative risk for ≥ 11h/day was 0.50 (CI .25 – .98).
Nylén et al. 2001	20,632 workers with job titles from Swedish twin registry: • Men 54% • Sweden	Survey in 1973: • Overtime h/wk: ≤ 5, >5 • Extra work h/wk (e.g., outside normal employment): ≤ 5, >5	*Swedish Cause of Death Registry* over a 24-y period 1973 – 1996: mortality analyzed at 5 y and 24 y in the final models	• Cox's proportional hazards model: separate models for men and women • Covariates in 1973: age, marital status, smoking, alcohol use, tranquilizer use, extraversion and serious illness	• In women when controlling for other factors, > 5-h/wk overtime increased mortality at 24 y follow-up (RR = 1.92, CI 1.13 – 3.25). • In men when controlling for other factors, ≤ 5-h/wk overtime reduced mortality at 24-y follow-up (RR 0.58, CI 0.43 – 0.80), while > 5 h/wk increased mortality at 5-y follow-up (RR 2.0, CI 1.02 – 3.95), and extra work hours increased mortality at 5-y follow-up (RR 2.57, CI 1.2 – 5.52).
Siu and Donald 1995	332 workers from broad range of occupations: • Women 57% • Age R 18 – 55 • Hong Kong	One-time interview: • Overtime: yes/no • Paid for overtime: yes/no • Night or rotating: yes/no	One-time interview: Health complaints scale of 14 psychological, physical, medical symptoms	• Multiple regression • Covariates: gender, environmental conditions, and relationship with supervisor and coworkers	• Overtime associated with more health complaints ($\beta = 0.149$, $p < 0.001$). • Payment for overtime decreased health complaints in men ($\beta = -0.13$, $p > 0.05$).

Table 4. Studies Examining Overtime and Other Illnesses: Methods and Findings (Continued)

Author, Date	Sample	Measure of Overtime	Other Illness Measure	Statistical Methods Controls	Results Reported By Authors
Tuntiseranee et al. 1998	907 pregnant women and male partners who planned pregnancy and worked for pay before pregnancy: • Thailand	One-time questionnaire and clinic interview during pregnancy: • Work h/wk: < 60, 61 – 70, 71 • Shift work: yes/no	• Sub-fecundity from antenatal clinic records for length of unprotected intercourse • Months to pregnancy categories tested: > 7.8; > 9.5; > 12	• Kaplan-Meier survival analysis curve • Logistic regression controlled for age, education, BMI, menstrual regularity, medical history, coital frequency, exposure to toxic agents, birth control injection, breast feeding	• Working > 71 h/wk increased risk (OR 2.3, CI 1.0 – 5.0) in primigravid and in all pregnant women (OR 1.6, CI 1.0 – 2.7) for > 9.5 months to pregnancy. • When both men and women worked > 70 h/wk, the odds ratio increased to 4.1 (CI 1.3 – 13.4) in primigravid and 2.0 (CI 1.1 – 3.8) for > 9.5 months to pregnancy for all pregnant women. • In men, work hours showed no association.
van der Hulst and Geurts 2001	535 full-time* postal workers and managers: • Age M 43.6 y • Men 95% • Netherlands **Full time* = 38 h/wk	One-time questionnaire: • Overtime h/wk dichotomized: no overtime versus ≥ 1 h/wk • Interaction 1: pressure to work overtime (low/high) and rewards (low/high) • Interaction 2: overtime (no/yes) and rewards (low/high)	One-time questionnaire dichotomized items: • Pressure to work overtime • Job and career awards • Recovery time • Burn-out • Work-home interference • "Psychomatic" health complaint scale of 13 items	• Multivariate logistic regression • Covariates: age, gender, executive position, partner status, and parental status	• Overtime with low reward associated with poor recovery, burnout, negative work-home interference (risks increased 2.2 – 3.4 times over group with no overtime high reward). "Psychosomatic" complaints NS. • Low reward with no overtime showed similar risks. • Low rewards and high pressure to work overtime was associated with adverse "psychosomatic" complaints, burnout, poor recovery, negative work-home interference (risks increased 2.6 to 8.1 times over group with no overtime and high rewards).
Voss et al. 2001	2,628 postal workers: • Men 54% • Age M men 39.5 y • Age M women 42.9 y • Sweden	One-time questionnaire asked about workplace in 1993: • > 50 h overtime (yes/no) • Other dichotomized work schedule features: full time/part time, shift work, flexible hours, desired hours	*Sweden Post's* register of absenteeism for 1993 established: • low incidence: < two events/y • high incidence: ≥ two events/y	• Multivariate logistic regression • Covariates: 150 physical, psychosocial and organizational factors tested	> 50 h overtime/y associated with lower incidence of sickness absence while controlling for other factors (men OR 0.70, CI 0.53 – 0.91; women OR 0.58, CI 0.43 – 0.79)
Worrall and Cooper 1999	1,312 managers: • Gender/age—not specified • United Kingdom	One-time questionnaire: work h/wk < 35 to > 60	One-time questionnaire: perception of health	Percent by managerial type	Report that long work hours adversely affect health: • 59% of all managers • 75% working > 60 h/wk • 21% working < 35 h/wk

Note. Abbreviations used: BMI = body mass index; BP = blood pressure; CI = 95% confidence interval; CIR = cumulative incidence ratio; D = day; E = evening; h = hours; M = mean; N = night; NS = not significant; OR = odds ratio; PR = prevalence risk ratio; R = range; RR = relative risk ratio; wk = week; y = years.
[a] Mizoue reference appears also in Table 6.

3.1c Overtime and Injuries

Table 5 displays the methods and results for the studies examining overtime and injuries. Two studies reported that overtime was associated with higher on-the-job injury rates in construction workers or health care workers [Lowery et al. 1998; Simpson and Severson 2000]. Åkerstedt et al. [2002], however, reported no relationship between more than 50 hours of work per week and work-related fatalities in a 20-year prospective Swedish study.

3.1d Overtime and Health Behaviors

Table 6 displays the methods and results for the studies examining overtime and health behaviors. Studies by Nakamura et al. [1998] and Shields [1999] reported that overtime was associated with increased odds for unhealthy weight gain in men. Shields also reported that changing from a 40-hour workweek to longer working hours raised the odds for smoking in both men and women. In contrast, Park et al. [2001b] found no difference in smoking across three groups of engineers whose work hours ranged from a minimum of 52 hours per week to a maximum of 89 hours.

Differences in alcohol consumption also varied among studies. Shields [1999] reported a U-shaped relationship: women who either reduced or increased their average hours worked per week during the previous two years increased their odds for higher alcohol consumption. Trinkoff and Storr [1998] reported higher alcohol consumption in nurses was associated with working more overtime shifts per month. Park et al. [2001b] reported no differences in alcohol use among engineers whose work hours ranged from minimum of 52 hours per week to a maximum of 89 hours.

Mizoue et al. [2001] found a significant decrease in the percentage of workers who participated in regular sports activity as overtime hours increased. Studies by Shields [1999] and Kageyama et al. [1998], however, reported no significant relationship between long working hours and leisure-time physical activity.

3.1e Overtime and Performance

Table 6 displays the methods and results for the studies examining overtime and performance. Proctor et al. [1996] investigated 248 United Auto Workers working day and evening shifts. The researchers reported poorer performance on tests of cognitive function (e.g., Trail-making Test, Wisconsin Card Sort Task, Symbol Digit Substitution Task, Visual Reproduction, Pattern Memory, Vocabulary Task) and executive function (the ability to prioritize and plan tasks) for those individuals who worked overtime as compared with those who did not. Kirkcaldy et al. [1997] reported that as work hours increased in health care workers, automobile crashes and on the job "accidents" increased.

3.2 FINDINGS ASSOCIATED WITH EXTENDED WORK SHIFTS

Twelve field studies and three laboratory studies examined associations between extended work shifts and the outcomes targeted for this report. The field studies were conducted in United States (4), Australia (2), Sweden (2), United Kingdom (2), France (1), and Germany (1). The studies compared a variety of extended shift schedules: 12-hour day shifts and 12-hour night shifts; 8-hour rotations and 12-hour rotations; 8-hour and 10-hour rotations. Injuries and performance across the 1st hour through the 12th hour of long shifts were also examined. Table 7 displays the methods and results for studies that examined extended work shifts.

Table 5. Studies Examining Overtime and Injuries: Methods and Findings

Author, Date	Sample	Measure of Overtime	Health or Safety Measure	Statistical Methods Controls	Results Reported By Authors
Åkerstedt et al. 2002	47,680 employed men and women beginning at age 16 (total cohort): • Sweden	Interviewed regularly for 20 y: work h/wk < 50 or > 50	Occupational fatality from *Swedish Cause of Death Registry* across 20 y	• Cox regression survival analysis • Covariates: demographics, sleep, other work characteristics	No significant relationship reported between >50 h/wk and occupational fatality.
Lowery et al. 1998	2,140 airport construction contracts involving approximately 32,000 workers (men 95%): • Employed 12/1990 to 8/1994. • Age R 15 – 60+ • United States	Percent of payroll that was overtime by contract: 0%, >0% – 20%, >20%	4,634 paid workers' compensation claims to determine: • Non-lost work time (non-LWT) injury rate • Lost work time (LWT) injury rate	Poisson regression	• Numbers of LWT injuries were small and NS. • Rate ratio for non-LWT injuries increased to 1.57 (CI 1.13 – 2.17) for contracts with > 20% overtime.
Simpson and Severson 2000	2,247 workers from one hospital: • 155 injured and 2,092 non-injured • Age not reported • Women 81% • United States	From 1997 hospital records: hours worked < 2000; ≥ 2000	Hospital injury records in 1997: cut, fracture, sprain, amputation, etc.	• Logistic regression • Covariates: age, gender, ethnicity, job title, physical demand rating, work hours obtained from hospital records	Working ≥ 2000 h/y increased risk for injury (OR 1.71, CI = 1.22 – 2.38).

Note. Abbreviations used: BMI = body mass index; BP = blood pressure; CI = 95% confidence interval; CIR = cumulative incidence ratio; D = day; E = evening; h = hours; M = mean; N = night; NS = not significant; OR = odds ratio; PR = prevalence risk ratio; R = range; RR = relative risk ratio; wk = week; y = years

Table 6. Studies Examining Overtime Health Behaviors, and Performance Outcomes: Methods and Findings

Author, Date	Sample	Measure of Overtime	Health or Safety Measure	Statistical Methods Controls	Results Reported By Authors
Kageyama et al. 1998	223 male *white collar* workers: • Age M 30.8 • Japan	One-time questionnaire and interview (overtime h/month < 20; 20 – 59; >60)	One-time questionnaire and interview measured exercise: rarely, 1 – 2/month, 1 wk, ≥ 2/wk	• General linear models • Covariates: age, body mass index, smoking and alcohol intake, commute time • Kendall's rank correlation	Frequency of exercise not correlated with overtime
Kirkcaldy et al. 1997	2,500 health care workers: • Women 87% • Age M 33, R 15 – 86 • Germany	One-time questionnaire: work h/wk	One-time questionnaire: driving crashes and job-related "accidents"	• Multiple regression • Covariates: age, gender, work climate, commute distance, job stress, children	As work hours increased, job-related "accidents" and driving crashes increased ($p < .05$)
Mizoue et al. 2001[a]	1,281 municipal employees: • Age not reported • Men 72% • Japan	One-time questionnaire (overtime hours during previous month 0 – < 10; 10 < 30; ≥ 30)	One-time questionnaire: • Sick building syndrome symptoms • Environmental tobacco smoke (ETS)	• Multivariate logistic regression • Covariates: age, gender, position type, asthma or hay fever, VDT use, work interest, work overload, work control, colleague support, distress, sports activity, sleep hours	• Percent of workers active in sports by overtime group: < 10h = 17%; 10 < 30h = 16%; ≥ 30 h = 8% • Percent of workers in overtime groups with ETS: < 10h = 49%; 10 < 30h = 59%; ≥ 30 h = 62% • Working overtime ≥ 30 h/month increased risk of at least one sick building syndrome symptom (OR 2.6, CI 1.4 – 4.5; adjusted for some covariates) • OR 2.96 for ≥ 30 h when adjusting for fixed covariates (age, etc) • Addition to model of lifestyle and stress-related covariates reduced OR to 2.5
Nakamura et al. 1998	248 male non-management *white collar* workers: • Age M 31, R 21 – 56 • Japan	• From time clocks between 1990 and 1993 • Overtime: average monthly work hours beyond 40 h/wk	1990 and 1993 measured height, weight, abdominal and hip circumference, skin-fold thickness, serum cholesterol/ triglycerides.	• Pearson, Spearman Correlation • Multiple linear regression with stepwise procedures • Covariates: age, gender, marital status, education and lifestyle (e.g., eating habits, exercise, smoking, alcohol use)	• Increased overtime correlated with an increase in BMI ($r = .172$, $p < .01$) and waist circumference ($r = .218$, $p < 0.01$) from 1990 to 1993, but not with 1993 measurements alone. • While controlling for late dinner, overtime associated with an increase in BMI ($\beta = 0.0103$, $p < 0.05$). • While controlling for age, overtime associated with an increase in waist circumference ($\beta = 0.0405$, $p < 0.05$).
Park et al. 2001b	238 male engineers from 3 electronics manufacturing plants: • Age M 32 • South Korea	One-time questionnaire (M h/wk during previous month):* < 60; > 60 < 70; > 70 *R 52 – 89 h/wk	One-time questionnaire: • Number of cigarettes per day • Number of alcoholic drinks per week	• Analysis of covariance adjusting for age • Duncan's multiple comparison procedure	No significant differences in mean number of daily cigarettes smoked or mean number of weekly alcohol drinks across the three working hour groups

Table 6. Studies Examining Overtime, Health Behaviors, and Perfomance Outcomes: Methods and Findings (Continued)

Author, Date	Sample	Measure of Overtime	Health or Safety Measure	Statistical Methods Controls	Results Reported By Authors
Proctor et al. 1996	248 hourly paid automotive workers: • Age M 36 • Men 64% • United States	Overtime calculated from payroll records week before test day: • Overtime defined as hours > 8 per shift or > 5 days per week • Shifts were fixed days or evenings	One-time neuro-psychological test battery: Trail-making Test, Wisconsin Card Sort Task, Symbol-digit, Visual Reproduction, Recognition Test, Pattern Memory, Vocabulary Test	• Pearson's correlation • Student's t-test • Multiple linear stepwise regression models • Covariates: age, education, gender, alcohol use, repeated school grade, petroleum naphtha exposure, shift, job type, number consecutive days worked before testing, and number work hours on test day	• Mean test performance for overtime group tended to be worse than comparison group for 15 of 24 tasks (primarily areas of attention and executive function). • Three reached statistical significance: ° Time to complete Trails B ($\beta = 1.6$, CI 0.66 – 2.5) ° 2-min recall on Delayed Recognition Span Test ° The Vocabulary Test (Student's t test, $p < 0.05$) • In final models, overtime predicted impaired performance on Trails A, Trails B, Wisconsin Card Sorting, and Vocabulary tests.
Sheilds 1999	• Randomly selected sample of 2,181 men, 1,649 women in the *National Population Health Survey* from various occupations: • Work ≥ 35 h/week entire year before 1994/1995 • Age R 25 – 54 • Canada	Phone interviews in 1994/95 and 1996/97: • Work h/wk: 35 – 40 (standard); ≥ 41 (long). • Shift type: day versus all types of shift work.	Phone interviews in 1994/95 and 1996/97: • Alcohol: number of drinks/day during week before interview • Smoking: number of cigarettes/day • Weight: BMI, underweight BMI < 20; acceptable BMI, 20 – 24.9; some excess BMI, 25 – 27; overweight BMI > 27. • Physical activity: number of times ≥ 15 minutes during last 3 months	• Multiple logistic regression models run separately for men and women • Covariates: age, marital status, household income, presence of children < 12 at home, education, stress occupation, shift work, self-employment, multiple jobs, high job strain, job insecurity, low supervisor support	• Alcohol consumption: ° Women who either increased (standard to long hours) or reduced hours (long hours to standard) showed increased risk (2.0, CI: 1.1 – 3.4; 1.6, CI: 1.0 – 2.6 respectively) for higher alcohol consumption ° Men who increased weekly hours were not associated with more alcohol consumption, and reduction in their work hours decreased odds of increasing consumption (0.5, CI: 0.3 – 0.9) • BMI: ° Men who moved from standard hours to long hours showed increase odds (2.2, CI: 1.2 – 4.0) for weight gain compared to men who continued to work standard hours ° Men who worked long hours increased odds for excess weight by 1.4 ° No significant changes for women • Smoking: ° Men who changed from standard to long working hours increased the odds (2.2, CI: 1.1 – 4.5) of smoking more ° Women increased their odds even more (4.1, CI: 1.4 – 11.6) • Exercise showed no significant changes.

Table 6. Studies Examining Overtime, Health Behaviors, and Performance Outcomes: Methods and Findings (Continued)

Author, Date	Sample	Measure of Overtime	Health or Safety Measure	Statistical Methods Controls	Results Reported By Authors
Trinkoff and Storr 1998[b]	National random sample of 3,917 registered nurses employed full- or part-time: • Age M 43 • 95% women • United States	One-time questionnaire: • Number h/day: > 8; ≤ 8 • Overtime days/month 0, 1 – 3, 4 – 7, ≥ 8 • Shift type: day, evening, night • Rotation: yes/no • Interaction: shift by hours worked/day	One-time questionnaire: • Drug use in past year yes/no: marijuana, cocaine, prescription drug use without prescription • Alcohol use: 5 or more drinks on one occasion • Smoking: > 10 cigarettes /day	Logistic regression adjusted for demographics	• Overtime and shift length NS for drug use. • Risk for smoking increased with > 8-h night shifts (OR 1.62; CI 1.14 – 2.31). • Risk for alcohol increased: ° > 8-h (OR 1.44; CI 1.2 – 1.72) versus ≤ 8-h ° 1 to 7 days overtime/month (OR 1.44 - 1.49) ° > 8-h night (OR 1.4; CI 1 – 1.98) and > 8-h rotating shifts (OR 1.52; CI 1.04 – 2.22)

Note. Abbreviations used: β = beta; BMI = body mass index; BP = blood pressure; CI = 95% confidence interval; CIR = cumulative incidence ratio; D = day; E = evening; h = hours; M = mean; N = night; NS = not significant; OR = odds ratio; PR = prevalence risk ratio; R = range; RR = relative risk ratio; wk = week; y = years.
[a] Mizoue reference appears also in Table 4. [b] Trinkoff and Storr reference appears also in Table 7.

3.2a Extended Work Shifts and Illnesses

Lipscomb et al. [2002] reported that working 12 or more hours per shift was associated with increased risk for back disorders in nurses when compared with an 8-hour shift. Prunier-Poulmaire et al. [1998] reported that a 12-hour fast rotation (shift change more than once a week) was associated with increased leg pain, and visual complaints, as compared with day shift. In addition, the 8-hour 3-shift rotation showed increased risk for more leg pain, as well as more cardiovascular and gastrointestinal complaints, when compared with day shift. In contrast, Johnson and Sharit [2001] reported that a 12-hour fast rotation was associated with better perceived general health and fewer gastrointestinal complaints when compared with a fast 8-hour 3-shift rotation.

Smith et al. [1998] compared 12-hour day-night rotations with flexible start times and 12-hour rotations with rigid start times, but found no differences in cardiovascular, gastrointestinal, or pain symptoms.

3.2b Extended Work Shifts and Injuries

Hänecke et al. [1998] analyzed 1.2 million injury reports from two national databases in Germany and reported a higher risk for injury after the 8th or 9th hour at work for all shifts. The report indicated more pronounced risk for evening and night shifts as compared to days. Macias et al. [1996] examined hospital incident reports for a 30-month period at one university hospital in the United States and reported that needlestick and biological fluid exposure rates increased during the last 2 hours of 12-hour shifts, whereas no increase occurred during the last 2 hours of 8-hour shifts. Johnson and Sharit [2001], however, reported that production workers who changed from an 8-hour to a 12-hour shift did not show an increase in recordable injuries or lost-time incidents after the change.

3.2c Extended Work Shifts and Health Behaviors

Trinkoff and Storr [1998] reported increased odds for higher alcohol use in nurses who worked longer rotating or night shifts and increased odds for smoking in nurses who worked extended night shifts. No relationship was reported between working hours and drug abuse.

3.2d Extended Work Shifts and Performance

Two laboratory studies reported deterioration in performance with extended shifts. Rosa et al. [1998] compared a 2-week 12-hour day/night rotation and a 2-week 8-hour day-night rotation using a simulated manual assembly task at three repetition rates and three torque loads. They reported that upper extremity fatigue increased more quickly with increasing time on shift and occurred more quickly during night shifts. The highest fatigue levels were found during 12-hour night shifts. Macdonald and Bendak [2000] compared a 12-hour shift to a more standard workday (7.2 hours) in a laboratory study and reported that the longer workday was associated with deterioration in grammatical reasoning and alertness.

In contrast, four field studies reported no differences in their performance measures during extended shifts. Schroeder et al. [1998] reported that air traffic control personnel working four 10-hour shifts did not significantly differ from personnel working five 8-hour shifts on tests of grammatical reasoning, reaction time, and digit addition although performance of both groups declined across the workweek. Similarly, Smith et al. [1995] reported no significant declines in alertness or cognitive performance between 8-hour and 12-hour shifts in nuclear power plant shift workers. Axelsson et al. [1998] reported no significant difference in simple reaction time and vigilance task measures between 8- and 12-hour shifts in Swedish power plant workers. Also, Lowden et al. [1998] reported no consistent

Table 7. Studies Examining Extended Work Shifts: Methods and Findings

Author, Date	Sample	Description of Work Schedule	Health or Safety Measure	Statistical Methods Controls	Results Reported By Authors
Axelsson et al. 1998	28 power plant workers: • Gender/age not clearly reported for performance testing • Sweden	3-shift fast forward rotation with 8-h shifts Monday to Thursday, 12-h shifts Friday to Sunday (4 – 7 on, 2 – 10 off), M 35 h/wk	Simple reaction time and 10 minute vigilance tests compared 8-h and 12-h shifts at the beginning and end of 3 day shifts and 3 night shifts	Repeated measures ANOVA with Huynh-Feldt epsilon correction method	No significant performance differences between 8-h and 12-h shifts on simple reaction time tests and vigilance tasks.
Brake and Bates 2001	• 45 male underground miners acclimatized to hot work environment • 15 controls in sedentary thermoneutral conditions • Australia	• First summer worked 6-h shifts • Intervention during next summer was self-paced 10-h, 12-h, or 12.5-h shifts • Data collected during day and night shifts, but did not report time-of-day effects • Work h/wk not reported	Pre- and post-intervention at shift start, middle, and end for several shifts collected continuous heart rate: • Polar ECG-type recorders • Cycle ergometer heart rates with pedal rate = 50 rpm at 100 Watts.	Student's t-test.	• No significant changes in full shift continuous heart rate reported between 6-h shifts and self-paced extended shifts. • Cycle ergometer heart rate showed significant increase between start and end of shift ($p < .01$). • In 24 workers measured at start, middle, and end of extended shifts, ergometer heart rate showed significant increase between shift start and mid-shift ($P=0.001$), followed by significant decrease between mid-shift and shift end ($p=0.04$).
Hänecke et al. 1998	1.2 million workers' compensation records for "accidents" at work: • Gender/age not reported • Germany	1994 Workers' compensation records: • Hour at work when "accident" occurred: 1st to 12th hour, > 12th hour • Time of day "accident" occurred • Interaction: time of day by hour at work	• 1994 workers' compensation records of "accident" at work leading to > 3 days absence • Used two German work hour surveys in 1992 and 1993 to estimate population exposed (the denominator)	• Chi Square • Relative risk	• Relative risk for "accident" increased exponentially beyond the 9th hour at work. • Interaction for time of day by hour at work (Chi-square = 71484, df = 264; $p < 0.0001$) suggests "accident" risk beyond 8th or 9th hour was greater for evening and night shifts as compared with days.
Johnson and Sharit 2001	Production workers at one manufacturing site: • One division (n = 350, 90% male) that changed shift length was compared with other divisions (n = about 7700, 84% male) • Age groups: > 30, 30 – 39, 40 – 49, >50 • United States	• 8-h 3-shift rotation changed to 12-h day/night rotation • Work h/wk not available	• OSHA work-related injury/illness records examined over 10 years (2 y before schedule change, 8 y after change) • *Hours of Work Questionnaire* measured overall health and digestive symptoms while on 8-h shifts, 11 months after change to 12-h shifts, and 8 y after change	• Z-scores adjusted for age and gender • Tested standardized incident/illness rate, lost time case rate, lost workday rate • Chi Square for independence tested digestive symptoms	• Significant increases found only in control group for injury rates, lost time case rates, lost workday rates (all $p < .05$). • Digestive symptoms and overall perceived health showed improvement after changing to 12-h schedule ($p < 0.001$).
Lipscomb et al. 2002[a]	1,163 working nurses randomly selected from two states: • Age M 45 • Women 95% • United States	One-time questionnaire: • Work h/day: ≤ 8; 9 – 11; ≥12 • Work h/wk: ≤40; 41 – 49; ≥50 • Work days/wk: 1 – 5; 6 – 7 • Day shift versus other • Interactions: h/shift by h/wk	One-time *Nordic Survey of Musculoskeletal Symptoms*	Logistic regression adjusted for age	• Compared to 8-h shift, ≥ 12-h/day increased risk for back disorders (OR 1.61, CI 1.05 – 2.48). • Interactions suggested that ≥ 12-h/day combined with ≥ 40-h/week elevated risk for disorders of neck (OR 2.30, CI 1.03 – 5.11), shoulder (OR 2.48, CI 1.07 – 5.77), and back (OR 2.67, CI 1.26 – 5.66).
Lowden et al. 1998	14 shift workers, 9 day workers at a chemical plant: • Gender age not reported for subsample • Sweden	8-h 3-shift backward fast rotation with M 40 h/wk changed to 12-h day/night fast rotation (2N, 5 off, 2D, 2 off, 3N) with M 36 h/wk	Before shift change and 10 months after tested simple visual reaction time at beginning and end of shift	• ANOVA • Chi square • Newman-Keuls post hoc procedures	Simple visual reaction-time results showed no differences in performance with the change from an 8-h 3-shift rotation to a 12-h day/night rotation.

Table 7. Studies Examining Extended Work Shifts: Methods and Findings (Continued)

Author, Date	Sample	Description of Work Schedule	Health or Safety Measure	Statistical Methods Controls	Results Reported By Authors
Macdonald and Bendak 2000	• Two laboratory studies: ° 2 men and 2 women performing cognitive tasks; ° 2 men and 2 women performing high physical work ° age M 29.5 • Field study ° production operators at one plant: 12-h shift n = 17 men; 8-h shift n = 17; 76% male ° Age R 21 – 61 • Australia	• Laboratory study: ° High physical work lab study compared 7.2-h 5-day week with 12-h 3-day week ° Cognitive task lab study compared 7.2-h days during 1 wk at high workload, 1 wk at low workload, and 12-h days during 1 wk at high workload, 1 wk at low workload • Field study: ° Plant schedules: 8-h fixed day or day/evening weekly rotation; 12-h day/night biweekly rotation (2 – 3 on, 2 – 3 off); h/wk not reported ° Interactions: workday duration and workload	• Lab study assessment battery items: bodily discomfort chart with rating scales, alertness ratings, workload ratings, hand steadiness, Critical Flicker Fusion, Grammatical Reasoning, dual task (Grammatical Reasoning and auditory choice reaction time), simultaneous pattern comparison, tapping • Field study measures: job analysis, workload measurement, personal characteristics questionnaire, assessment battery at start, middle, end of 3 day shifts	• Repeated measures ANOVA • Regression analysis • Other factors in the analysis: demographics, health, commute time, job coping skills, alertness rating, bodily discomfort score	• In laboratory study, 12-h shift showed decreased self-rated alertness ($F=10.65$, $p < 0.05$), increased grammatical reasoning errors ($F=11.83$, $p < 0.05$), higher perceived physical workload ratings ($F=10.14$, $p < 0.05$). 12-h shifts with high cognitive tasks showed slightly more errors than 7.2-h shifts while 12-h shifts with low cognitive tasks showed marginally better performance. • In field study, increases in workloads on 12-h shifts showed increased discomfort and grammatical reasoning errors, and deterioration in alertness and hand steadiness.
Macias et al. 1996	393 biological hazard exposure incidents to health care workers in one hospital: • Age gender not reported • United States	Retrospective record review of work schedule data over 30 months: • Hour into workday when incident occurred • 8-h shift versus 12-h (> 12-h shifts excluded)	• Biological hazardous exposure obtained from hospital records over 30 months • Number of workers exposed, number of hazardous procedures obtained from records or estimated	• Kolmogorov-Smirnov one sample test • ANOVA with Tukey procedure	• Exposures per worker increased last 2 hours of 12-h shift ($F = 5.75$, $p < 0.01$). • Exposures per procedure increased risk during first hour into shift ($F=5.62$, $p < 0.01$) and last 2 hours of 12-h shift ($F=5.75$, $p< 0.01$). • No increased risk during last hours of 8-h shift.
Prunier-Poulmaire et al. 1998	302 customs service workers from 44 national units: • Age/gender distribution not clearly reported • France	• Types of schedules: ° Day shift reference group ° 6-h 4-shift fast rotation ° 8-h 3-shift fast rotation ° 12-h day/night fast rotation • Work h/wk not specified	One-time questionnaire measured gastrointestinal and cardiovascular complaints, medications, eating habits, caffeine and smoking consumption, sleep difficulties.	• Logistic regression • Covariates: age, gender, physically demanding job, boring job, conflicts with travelers	• 12-h day/night rotation was associated with visual problems (OR 3.0, CI 1.14 – 7.77), and pain in the legs (OR 3.4, CI 1.36 – 8.26) compared with the day shift reference group. • 8-h 3-shift rotation and 6-h 4-shift rotation had 3-fold or more increase in cardiovascular, gastrointestinal, sleeping, and leg complaints compared with the day-shift reference group.
Reid and Dawson 2001	32 participants in laboratory study divided into two age groups: • Younger group of 4 women and 12 men, M age 21, R 18 – 30 • Older group of 3 women and 13 men, M age 44, R 35 – 56; • Australia	Simulated 12-h shift schedule: • DDNN • Interaction: age by shift	Every hour carried out three 1-minute compensatory tracking tests of the *Occupational Safety Performance Assessment Test* (OPSAT).	• Repeated measures ANOVA • Bonferroni tests • Simple regression analyses	• Performance consistently lower in older workers, including baseline ($p < .002$) and each shift (Day shift 1, $p < .0001$; Day shift 2, $p < .0001$; Night shift 1, $p < .0001$; Night shift 2, $p < .0001$). • Performance significantly increased across day shifts and decreased across nights in the older group, but remained stable in the younger group.
Rosa et al. 1998	16 participants in laboratory study assigned randomly to one of four simulated shift schedules: • 50% male • Age R 21 – 40 • United States	• Simulated shift schedules: ° 8-h: 5D, 2 off, 5N ° 8-h: 5N, 2 off, 5D ° 12-h: 4D, 3 off, 4N ° 12-h: 4N, 3 off, 4D • Interaction: shift length by shift time of day (day versus night)	Simulated manual assembly work tasks that manipulated load and repetition rates: • Upper extremity fatigue using the Borg CR-10 scale • *Yoshitake Questionnaire for Subjective Symptoms of Fatigue*	Repeated measures ANOVA: 2 schedules (8-h versus12-h) X 4 days X 2 shifts (day versus night) X 4 work sessions X 3 load levels X 3 repetition rates	• Highest fatigue observed during 12-h night shifts. Similar fatigue levels reached at end of both weeks of 8-h night shifts and 12-h day shifts. • Fatigue observed more quickly with increasing time on shifts and with night shifts compared with day shifts.

Table 7. Studies Examining Extended Work Shifts: Methods and Findings (Continued)

Author, Date	Sample	Description of Work Schedule	Health or Safety Measure	Statistical Methods Controls	Results Reported By Authors
Schroeder et al. 1998	52 air traffic controllers: • Age M 37.9, R 28 – 50 • Men 86% • United States	Compared 8-h fast backward rotation (EEDDN) and 10-h fast rotation (EEDD)	Cognitive performance using the NIOSH fatigue test battery (choice reaction time, digit addition, grammatical reasoning), administered three times each workday for 3 weeks.	• Least squares regression • Repeated measures ANOVA • Newman-Keuls tests to determine significant mean differences across day of work week and test session	• Test battery performance on the 10-h rotation no different from 8-h rotation when the initial 4 days of the work week were compared • Poorer performance for night shift • For both schedules, decrements were observed on some of the NIOSH performance measures at the end of the workday and at the end of the workweek.
Smith et al. 1995	22 male nuclear power plant workers: • Divided into two groups: ° 11 engineer + reactor operators (EROP) ° 11craftsmen + maintenance (CMOP) • Age M 42 • United Kingdom	• Both groups worked 8-h 3-shift backward rotation, but the EROP group also worked two 12-h day shifts and two 12-h night shifts in their 35-day cycle • Work h/wk not specified	Obtained every 2 hours during 8 selected shifts: • Computerized test battery (choice reaction time, memory search task [SAM-5]) • 20 pt. visual analog scale to subjectively assess alertness	• Repeated measures ANOVA and Turkey's tests used for post hoc comparisons • Two types of analysis for entire group: outcome measures x shift type (e.g., day, evening, night) and outcome measures x 2-h time intervals during work shift	• No significant difference between 8-h and 12-h shifts on alertness or cognitive performance • No major group by shift type or time on shift interaction effects were found.
Smith et al. 1998	92 police officers at four sites: • Age M 42.4 • Gender not reported • United Kingdom	• Two control sites on 8-h 3-shift fast backward rotation, M 42 h/wk, n = 44 • Two trial sites on 8-h rotation changed to 12-h day/night fast forward rotation (2D, 2N, 3 off), M 39 h/wk, n = 48 ° Flexible start times at one site ° Rigid 6 a.m. start time at other site	Data collection pre- and 6 months post-work schedule change at all four sites: alertness and physical symptoms in *Standard Shiftwork Index*.	• ANOVA • ANCOVA • Covariates: demographics, work and shift work experience, workload, job pacing, morningness, sleep flexibility, chronic fatigue	• 12-h day shift with flexible start time showed improvements in alertness versus rigid start time. • Cardiovascular, gastrointestinal, pain symptoms NS. • Differences in shift work experience between control and trial sites prevented comparison of 8-h and 12-h shifts.
Trinkoff and Storr 1998[b]	National random sample of 3,917 registered nurses employed full- or part-time: • Age M 43 • 95% women • United States	One-time questionnaire: • Number h/day: > 8; ≤ 8 • Overtime days/month 0, 1 – 3, 4 – 7, ≥ 8 • Shift type: day, evening, night • Rotation: yes/no • Interaction: shift by hours worked/day	One-time questionnaire: • Drug use in past year yes/no: marijuana, cocaine, prescription drug use without prescription • Alcohol use: 5 or more drinks on one occasion • Smoking: > 10 cigarettes /day	Logistic regression adjusted for demographics	• Overtime and shift length NS for drug use • Risk for smoking increased with > 8-h night shifts (OR 1.62; CI 1.14 – 2.31). • Risk for alcohol increased: ° > 8-h (OR 1.44; CI 1.2 – 1.72) versus ≤ 8-h ° 1 to 7 days overtime/month (OR 1.44 – 1.49) ° > 8-h night (OR 1.4; CI 1 – 1.98) and > 8-h rotating shifts (OR 1.52; CI 1.04 – 2.22)

Note. Abbreviations used: BMI = body mass index; BP = blood pressure; CI = 95% confidence interval; CIR = cumulative incidence ratio; D = day; E = evening; h = hours; M = mean; N = night; NS = not significant; OR = odds ratio; OSHA = Occupational Safety and Health Administration; PR = prevalence risk ratio; R = range; RR = relative risk ratio; wk = week; y = years.
[a] Lipscomb reference appears also in Table 8. [b] Trinkoff Storr reference appears also in Table 6.

differences on simple performance measures, such as reaction time, in shift workers who switched from an 8-hour to a 12-hour schedule.

The way other features of work schedules, work tasks, and work environment influenced the relationship of shift length and performance were examined by three studies. Smith et al. [1998] reported improvements in alertness in 12-hour day/night rotations with flexible start times when compared with 12-hour rotations with rigid start times. The field study by Macdonald and Bendak [2000] reported that a combination of high workload and 12-hour shifts was associated more consistently with increased errors on grammatical reasoning, greater deterioration in hand steadiness and alertness, and more discomfort when compared to high workload during 8-hour shifts.

Brake and Bates [2001] examined extended shifts in combination with heat stress in Australian underground miners. Cardiovascular fatigue assessed by continuous heart rate monitoring showed no difference between 6-hour shifts and self-paced extended shifts (10-hour to 12.5-hour shifts). Additional heart rate monitoring while riding cycle ergometers showed increases during the first half of long shifts, but decreases during the second half of the shift. Based on these results, the authors suggested that the miners had reduced their effort and were pacing themselves in the latter part of the extended shifts.

One study examined the influence of age. Reid and Dawson [2001] conducted a laboratory study of simulated 12-hour shifts and neurobehavioral performance in younger and older participants. Older laboratory subjects were less able than younger subjects to maintain performance across 12-hour shifts.

3.3 FINDINGS ASSOCIATED WITH EXTENDED WORK SHIFTS, COMBINED WITH MORE THAN 40-HOURS WORK PER WEEK

Six field studies examined extended work shifts which also had more than 40-hours of work per week. The studies in this section clearly reported that participants worked on average more than 40 hours per week over the course of several weeks. The studies were conducted in the United States (2), Australia (1), Brazil (1), Canada (1), and United Kingdom (1). A variety of 8-hour and 12-hour schedules were compared across the studies. Table 8 shows the methods and results for studies that examined extended work shifts when combined with more than 40 hours per week.

3.3a Extended Work Shifts Combined with More than 40-Hours Work per Week and Illnesses

Lipscomb et al. [2002] reported that the combination of 12-hour shifts and 40 or more hours of work a week was associated with elevated risk for neck, shoulder, and back disorders as compared to five 8-hour shifts per week. In contrast, Mitchell and Williamson [2000] reported *fewer* health complaints during a 12-hour day/night fast forward rotation when compared with an 8-hour 3-shift weekly backward rotation.

Tucker et al. [1998a] examined early and late start times in workers on 12-hour shift rotations and 8-hour 3-shift rotations. Both work schedules changed shifts more than once a week. The 12-hour shift was associated with more cardiovascular and musculoskeletal complaints than the 8-hour shift. Workers on 12-hour shifts, having early changeover time, reported the most cardiovascular and musculoskeletal complaints.

Table 8. Studies Examining Extended Work Shifts Combined with More than 40 Hours per Week: Methods and Findings

Author, Date	Sample	Description of Work Schedule	Health or Safety Measure	Statistical Methods Controls	Results Reported By Authors
Duchon et al. 1997	30 underground male miners: • Age not reported • Canada	• 8-h 3-shift rotation with M 41 h/wk changed to experimental 12-h day/night rotation (4 on, 4 off) with M 48 h/wk • Control group: 8-h day shift, 40 h/wk	• Tested pre-, mid-, post-shift for a week: ° 8-h rotation ° After 12-h rotation for 10 months • Submaximal exercise testing • Continuous heart rate monitoring • Computerized test battery tested pursuit tracking, grammatical reasoning, choice reaction time, finger tapping	• Three-way mixed design ANOVA • Kruskal-Wallis one-way ANOVA	• No significant main effects between 8- and 12-h shifts on neurobehavioral performance measures. • Continuous heart rate findings showed pacing of work effort on 12-h shifts relative to 8-h shifts. The 12-h workers appeared to pace their work at a slower rate than the 8-h workers.
Fischer et al. 2000	22 male workers at a petrochemical plant: • Age M 32.6; • Brazil	• 12-h day/night rapid rotation (2 – 3D, 2 – 3 N, 4 – 5 off) • 48 M h/wk	For 30 days, recorded subjective alertness at 2nd, 6th, 10th hour of day and night shifts using visual analog scale (10cm) from *not at all alert* to *very alert*.	• Repeated measures ANOVA • Tukey tests for post hoc comparisons	Significant reduction in alertness ($p < 0.001$): • Days, from 2nd hour to 10th hour. • Nights, 10th hour reduced from 2nd and 6th hour. • No reduction seen across successive night shifts.
Lipscomb et al. 2002[a]	1,163 working nurses randomly selected from two states: • Age M 45 • Women 95% • United States	One-time questionnaire: • Work h/day: ≤ 8; 9 – 11; ≥12 • Work h/wk: ≤40; 41 – 49; ≥50 • Work days/wk: 1 – 5; 6 – 7 • Day shift versus other • Interactions: h/shift by h/wk	One-time *Nordic Survey of Musculoskeletal Symptoms*	Logistic regression adjusted for age	• Compared to 8-h shift, ≥ 12-h/day increased risk for back disorders (OR 1.61, CI 1.05 – 2.48). • Interactions suggested that ≥ 12-h/day combined with ≥ 40-h/week elevated risk for disorders of neck (OR 2.30, CI 1.03 – 5.11), shoulder (OR 2.48,CI 1.07 – 5.77), and back (OR 2.67,CI 1.26 – 5.66).

Table 8. Studies Examining Extended Work Shifts Combined with More than 40 Hours per Week: Methods and Findings (Continued)

Author, Date	Sample	Description of Work Schedule	Health or Safety Measure	Statistical Methods Controls	Results Reported By Authors
Mitchell and Williamson 2000	27 male electrical power station employees: • Age M 44 • Australia	8-h 3-shift backward weekly rotation with M 40-h/wk changed to 12-h fast forward rotation (4 on, 3 off, 5 on, 7 off, 5 on, 2 off) with M 42 h/wk	• Data collected before and 10 months after schedule change: sick leave records, workplace accident records • *Standard Shiftwork Index* to measure physical health, well-being, alcohol use • *Information and Performance Test System* for neurobehavioral performance	Multivariate ANOVA and Bonferroni correction methods with post-hoc comparisons	• More health complaints during 8-h rotation than 12-h rotation. • Alcohol/cigarette use: ° 47% on 8-h rotation reported using alcohol as a sleep aid between night shifts compared to 17% on 12-h rotation ° 40% on 8-h rotation smoked versus 25% on 12-h • Two "accidents" occurred during the 8-h rotation and one during the 12-h (not statistically analyzed). • On vigilance test 12-h workers made more errors on infrequent stimuli ($t = -2.43$, $p < 0.02$) at the end of both day and night shifts. • Significant improvements observed for simple reaction time and grammatical reasoning test at the end of the 12-h shift compared with the beginning. • No increase in vigilance task errors was found for the 8-h shift, but similar improvements reported at end of shift compared with beginning. • No differences reported for the critical tracking task.
Novak and Auvil-Novack 1996	45 intensive care unit nurses from 1 hospital • 96% women • Age M 34.4 • United States	• Focus groups during 1 night shift worked 48 h/wk: (four 10-h shifts/wk) • Type of schedule: 12-h fixed night or 12-h day/night rotation	Focus groups during 1 night shift discussed automobile crash or near miss and job performance	Transcript evaluations	• 95.5% reported crash or near-miss during past year while driving home after night shift. • No job performance effects reported with consistent sleep and wake patterns. • Many nurses reported that changing from night work to day activities was fatiguing and affected performance.
Tucker et al. 1998a	862 workers from 17 manufacturing companies divided into four groups depending on start time and shift length: • 98% male • Age M 41.4 • United Kingdom	• One-time administration of *Survey of Shiftwork* (SOS): ° 12-h day starting at 6 a.m. ° 8-h day starting at 6 a.m. ° 12-h day starting at 7 a.m. ° 8-h day starting at 7 a.m. • All rapid forward or backward rotations • Work about 45 h/wk	One-time administration: *Survey of Shiftwork* (SOS) to measure cardiovascular disease, musculoskeletal pain, fatigue	• ANCOVA • Covariates: age; dependents; years on shift work; time on present system; work hours; workload; control of work pacing; sleep need	• Compared to 8-h shifts, 12-h shifts showed less symptoms of chronic fatigue ($p < 0.05$), more cardiovascular symptoms ($p < 0.05$), and more symptoms of musculosketal pain ($p < 0.001$) • 12-h shifts with early changeover showed more cardiovascular problems ($p < 0.01$) and musculoskeletal pain ($p < 0.001$); fatigue symptoms were NS. • 8-h rotation with late changeover showed fewest physical symptoms.

Abbreviations used: BMI = body mass index; BP = blood pressure; CI = 95% confidence interval; CIR = cumulative incidence ratio; D = day; E = evening; h = hours; M = mean; N = night; NS significant; OR = odds ratio; PR = prevalence risk ratio; R = range; RR = relative risk ratio; wk = week; y = years.
:omb reference appears also in Table 7.

3.3b Extended Work Shifts Combined with More than 40-Hours Work per Week and Injuries

Mitchell and Williamson [2000] reported that injury data from Australian electrical power station workers were similar after changing from an 8-hour shift to a 12-hour shift; two injuries occurred during the 8-hour schedule, and one occurred during the 12-hour schedule.

3.3c Extended Work Shifts Combined with More than 40-Hours Work per Week and Health Behaviors

Mitchell and Williamson [2000] reported that 47% of workers on an 8-hour 3-shift weekly rotation reported using alcohol as a sleep aid when compared with 17% of workers on a 12-hour fast rotation. The 8-hour shifts also had a higher percentage of workers smoking.

3.3d Extended Work Shifts Combined with More than 40-Hours Work per Week and Performance

Four studies reported some deterioration in performance when 12-hour shifts were combined with more than 40 hours work per week. Novak and Auvil-Novak [1996] reported an unexpected outcome from the focus groups of nurses who worked four 12-hour night shifts per week: nearly all nurses reported an automobile crash or near-miss during the previous 12 months while driving home after working a 12-hour night shift. The nurses reported no job performance effects when they maintained consistent sleep and wake times, but changing from night work to day activities was fatiguing and affected performance. In a field study, Fischer et al. [2000] examined the 2nd, 6th, and 10th hours of 12-hour shifts in Brazilian petrochemical plant workers and reported a significant decline in subjective alertness at the 10th hour for both day and night shifts. Similarly, Mitchell and Williamson [2000] reported more vigilance task errors at the end of 12-hour day and night shifts when compared to the beginning of the shifts in Australian power plant workers, while no effect was reported for an 8-hour schedule. On the other hand, significant improvements were observed for simple reaction time and grammatical reasoning tests given at the end of the 12-hour shift when compared to the beginning. Although Duchon et al. [1997] reported no differences between 8- and 12-hour shifts on cognitive and psychomotor performance in Canadian mine workers, the heart rate findings suggest that the 12-hour workers slowed the pace of their work.

3.4 FINDINGS ASSOCIATED WITH VERY LONG SHIFTS

Three studies examined the relationship between very long shifts and immune function or performance. The studies were conducted in Ireland, Japan, and New Zealand. Table 9 displays the methods and results for the studies that examined very long work shifts.

3.4a Very Long Shifts and Other Illnesses

Nakano et al. [1998] reported better immune function in drivers who were allowed to work overtime as compared with drivers having work-hour restrictions. This Japanese study examined taxi drivers working 48-hour or longer shifts in 1992 and again in 1993, before and during the economic depression.

3.4b Very Long Shifts and Performance

A study in Ireland by Leonard et al. [1998] reported declines in two tests of alertness and concentration in medical residents who had worked 32-hour on-call shifts. They reported no significant declines in a test of psychomotor performance or a test of memory. A New Zealand survey of anesthesiologists linked long working hours to self-reported clinical errors [Gander et al. 2000].

Table 9. Studies Examining Very Long Work Shifts: Methods and Findings

Author, Date	Sample	Description of Very Long Work Shift	Health or Safety Measure	Statistical Methods Controls	Results Reported By Authors
Gander et al. 2000	• 301 anesthetists: ° Specialists M age 46 ° Trainees M age 33 • Gender not reported • New Zealand	One-time questionnaire (how many hours can work safely): • Maximum h/wk • Ongoing h/wk	One-time questionnaire: self-reported fatigue-related errors during last 6 months	Logistic regression	Specialists exceeding self-report limits on work hours increased the risk for fatigue-related errors in the last six months by 1.37 (CI 1.14 – 1.65) to 1.48 (CI 1.21 – 1.8).
Leonard et al. 1998	• 16 junior pre-registration medical house officers: • Men 50% • Age R 23 – 28; • Ireland	• Compared: ° Pre-call shift (8 – 10-h) ° Long, 32-h on-call shift • Randomly assigned order shifts tested	• Tests: Delayed Recall, Critical Flicker Fusion, Trail-making, Stroop Color Word Test, Grammatical Reasoning • Tested at end of one shift (4 – 6 p.m.)	Wilcoxon matched pairs	• End of 32-h on-call shift showed deterioration ($p < .05$) on median scores of alertness and concentration tests (Stroop Color Word Test, Trail-making Test). • No significant differences reported on Delayed Story Recall, Critical Flicker Fusion, or Grammatical Reasoning Tests.
Nakano et al. 1998	Random sample of 101 male taxi drivers: • Age R 40 – 59 • Japan	Examined company records in 1992 – 1993: • 48 h shifts started at 6 – 8 a.m. and ended at 2 a.m. next day with 1 day off/week. • Group A allowed to work past 2 a.m. for overtime. Group B not allowed overtime.	In 1992 and 1993 tested blood mononuclear cell proliferation assay and induction of Th1-type (IL-2) and Th2-type (IL-4) cytokines.	Student t-tests	During economic depression (1993), group B (not allowed overtime) increased IL-4 production and showed more depressed lymphocyte proliferation response than group A, who was allowed to work overtime.

Note. Abbreviations used: BMI = body mass index; BP = blood pressure; CI = 95% confidence interval; CIR = cumulative incidence ratio; D = day; E = evening; h = hours; M = mean; N = night; NS = not significant; OR = odds ratio; PR = prevalence risk ratio; R = range; RR = relative risk ratio; wk = week; y = year

Overtime was associated with poorer perceived general health, increased injury rates, more illnesses, or increased mortality in 16 of 22 studies.

4. Summary

4.1 OVERTIME

Overtime was associated with poorer perceived general health, increased injury rates, more illnesses, or increased mortality in 16 of 22 studies. One meta-analysis of long work hours suggested a possible weak relationship with preterm birth. Overtime was associated with unhealthy weight gain in two studies, increased alcohol use in two of three studies, increased smoking in one of two studies, and poorer neuropsychological test performance in one study. Some reports did not support this trend, finding no relationship between long work hours and leisure-time physical activity in two of three studies and no relationship with drug abuse in one study.

4.2 EXTENDED WORK SHIFTS

A pattern of deteriorating performance on psychophysiological tests and injuries while working long hours was observed across study findings, particularly in very long shifts and when 12-hour shifts were combined with more than 40 hours of work a week. Four studies reported that the 9th to 12th hours of work were associated with feelings of decreased alertness and increased fatigue, lower cognitive function, declines in vigilance on task measures, or increased injuries. Effects after the 12th hour of work were not examined. Two studies examining physicians working very long shifts reported deterioration in various measures of cognitive performance.

When 12-hour shifts were combined with other work-related demands, a pattern of more adverse findings was detected across studies. Six studies, examining 12-hour shifts combined with more than 40 hours of work per week, reported increases in health complaints, deterioration in performance, or slower pace of work. Two studies that compared 8- and 12-hour schedules during day and night shifts reported that 12-hour night shifts were associated with more fatigue, smoking, or alcohol use. Two studies examining start times for 12-hour shifts reported that decrements in alertness or more health complaints were associated with early 6:00 a.m. start times. One study examining 12-hour shifts in hot work environments also reported a slower pace of work as compared to shorter shifts. Another study examining high workloads during 12-hour shifts showed increased discomfort and deterioration in performance as compared to shorter shifts.

More definitive statements about differences between 8-hour and 12-hour shifts are difficult due to the inconsistencies in work schedules examined across studies. Work schedules differed by the time of day (i.e., day, evening, night), fixed versus rotating schedules, speed of rotation, direction of rotation, number of hours worked per week, number of consecutive days worked, and number of rest days on weekends. All of these factors can influence how overtime relates to health and safety. In addition, some studies of extended work shifts did not report how many hours participants worked per week or other details about their work schedules, which may have accounted for the findings. Also, some studies reported findings for groups of workers working mixed directional shift rotations and varying numbers of hours per week, details which complicated an assessment of the results.

4.3 OTHER WORK SCHEDULE CHARACTERISTICS

Few studies examined the combined influence of shift work and overtime on health. The laboratory study by Rosa et al. [1998] reported that four 12-hour night shifts per week were associated with the highest upper extremity muscle fatigue as compared to five 8-hour days and four 12-hour days. Trinkoff and Storr [1998] reported that nurses on extended night or extended rotating shifts were at increased odds for alcohol use and that extended night shifts increased the odds for smoking.

Some findings indicated that worker ability to exert control over work schedules may have influenced outcomes. For example, Smith et al. [1998] reported that 12-hour shifts having some flexibility in start times were associated with more favorable sleep quality, psychological well-being, and alertness, as compared with rigid schedules. One of the 52 summarized studies directly examined the influence of mandated or involuntary overtime. The combined influence of high pressure to work overtime and low rewards was associated by van der Hulst and Geurts [2001] with an increased risk for somatic complaints, poor recovery, burnout, and negative work-home interference. Previously published reviews of the literature did not address the influence of mandated overtime on health and safety [Rosa 1995; Sparks et al. 1997; Spurgeon et al. 1997]. Golden and Jorgensen [2002], however, cautioned that the mandated nature of overtime may limit the worker's ability to plan for sleep and recuperation, and to arrange for child care and other family responsibilities. As a result, health and safety effects associated with mandated versus voluntary overtime may differ.

4.4 COMPENSATION, VACATION TIME, COMMUTE TIME

Siu and Donald [1995] and van der Hulst and Geurts [2001] suggested that compensation may reduce adverse effects. In addition, Nakano et al. [1998] indicated that economic conditions (prosperity as compared with recession or depression) may influence the relationship between pay, overtime, and health and safety. Few studies, however, systematically examined how compensation influenced the relationship between long work hours and health and safety.

Length of vacation and commute time may also influence associations of overtime with health and safety. Higher numbers of annual leave days may allow more rest and may reduce the impact of overtime. Also, commute time to work may add to the job strain and may influence associations with overtime. Few studies have examined the influence of vacation time or commute time on long work hours and health.

4.5 GENDER AND AGE

Studies have given more attention to male workers than to female workers and less is known about how overtime and extended work shifts influence health and safety in women. Statistics Canada [2000] reported that women tend to spend more of their time away from work on child care and domestic responsibilities, which may reduce the time available for sleep and recovery from work. The study by Fredriksson et al. [1999] provided some support for increased risk for musculoskeletal disorders when long hours worked combined with additional domestic workload.

Another consideration is the influence of long work hours on reproductive outcomes. One meta-analysis reported a possible weak relationship between overtime and preterm births, and another study reported an association between long work hours and subfecundity [Mozurkewich et al. 2000; Tuntiseranee et al. 1998]. Few studies have examined the influence of overtime and extended work shifts in pregnant women, or prenatal and neonatal mortality and morbidity, as well as fertility rates.

One laboratory study examining the influence of age on extended work shifts reported that younger participants maintained better performance across extended work shifts when compared with older participants [Reid and Dawson 2001]. However, few studies have examined the effect of worker age on performance or health and safety in real-work environments. In addition, little is known about the way various work tasks and other work-related factors influence the relationship with age.

4.6 CHRONIC HEALTH PROBLEMS

Studies of long working hours have examined healthy workers for the risk of contracting an acute myocardial infarction, diabetes mellitus, hypertension, subfecundity, and preterm birth. Little data, however, are available about symptom management and disease progression in workers with pre-existing chronic conditions.

According to Yelin et al. [1999], the 1992 data from the U.S. Health and Retirement Survey indicated that 83% of all persons aged 51 to 61 years live with a self-reported chronic condition.

4.7 OCCUPATIONAL EXPOSURES

Two of the 52 summarized reports addressed occupational exposures (i.e., chemical, heat, noise, lifting) in conjunction with overtime and extended work shifts. Mizoue et al. [2001] reported that overtime was associated with more sick building syndrome symptoms, and Brake and Bates [2001] found that miners working long shifts in hot environments paced themselves, thus, reducing their effort. Little has been reported on other occupational exposures. Extended work shifts and overtime lengthen exposure times and shorten recovery times, and the health consequences are uncertain.

> Few studies have examined how long working hours influence health and safety outcomes in older workers, women, persons with pre-existing health problems, and workers with hazardous occupational exposures.

5. Concluding Remarks

The number of published studies examining overtime and extended work shifts appears to be increasing. Recent reviews that address overtime include approximately 34 research reports published over a span of about 32 years [Sparks et al. 1997; Spurgeon et al. 1997]. In comparison, the current search for reports published during the past 8 years found 75 reports that examined overtime, extended work shifts, or very long shifts. The latest review of long work hours by van der Hulst [2003] includes an additional 13 studies that have been published since 1996.

Despite the increased current interest in long working hours, research questions remain about the ways overtime and extended work shifts influence health and safety. Few studies have examined how the number of hours worked per week, shift work, shift length, the degree of control over one's work schedule, compensation for overtime, and other characteristics of work schedules interact and relate to health and safety. Few studies have examined how long working hours influence health and safety outcomes in older workers, women, persons with pre-existing health problems, and workers with hazardous occupational exposures.

Previous research indicates that the influence of overtime and extended work shifts on health and safety may involve a complex interaction of several work schedule characteristics, as well as work tasks, worker characteristics, compensation, commute time, occupational exposures, and nature of worker control over work schedules. As a consequence, future research would benefit from a clear and complete description of the work schedules and other factors mentioned in this document. Such an approach would facilitate a detailed comparison of findings across studies.

Few studies have examined how number of hours worked per week, shift work, shift length, the degree of control over one's work schedule, compensation for overtime, and other characteristics of work schedules interact and relate to health and safety.

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Review

Scand J Work Environ Health 2014;40(1):5-18

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The association between long working hours and health: A systematic review of epidemiological evidence

by Bannai A, Tamakoshi A

This is the first systematic review examining the association between long working hours and health after excluding differences in the definition of long working hours and the influence of shift work. We concluded that long working hours are associated with depression, anxiety, sleep, and coronary heart disease. Further studies dealing with long working hours and shift work appropriately are needed.

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Key terms: all-cause mortality; anxiety; circulatory disease; depression; diabetes mellitus; epidemiological evidence; health; health-related behavior; long working hour; overtime; review; shift work; sleep; systematic review; working hour; working time

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Review

Scand J Work Environ Health. 2014;40(1):5–18. doi:10.5271/sjweh.3388

The association between long working hours and health: A systematic review of epidemiological evidence

by Akira Bannai, MD,[1] Akiko Tamakoshi, MD, PhD [1]

Bannai A, Tamakoshi A. The association between long working hours and health: A systematic review of epidemiological evidence. *Scand J Work Environ Health.* 2014;40(1):5–18. doi:10.5271/sjweh.3388

Objectives Many studies have investigated the association between long working hours and health. By focusing on differences in the definition of long working hours and the influence of shift work, we attempt to explain why the results of these studies remain inconclusive.

Methods We defined long working hours as working time greater than around 40 hours per week or 8 hours per day. Since previous studies have indicated that shift work is detrimental to health, we minimized the influence of shift work in the studies. We also placed importance on the existence of reference groups since this made the results clearer. Based on these points, we analyzed previous studies to clarify the epidemiological evidence regarding the association between long working hours and health. We established inclusion criteria and carried out a systematic search for articles published in the Medline and PsycINFO databases between 1995–2012.

Results We identified a total of 17 articles and 19 studies (12 prospective cohort and 7 cross-sectional studies). The outcomes were all-cause mortality, circulatory disease, diabetes mellitus, metabolic syndrome, depressive state, anxiety, other psychological disorders, sleep condition, cognitive function, and health-related behavior. Long working hours had significant adverse effects on most health outcomes.

Conclusions We concluded that working long hours is associated with depressive state, anxiety, sleep condition, and coronary heart disease. However, further studies that appropriately deal with the definition of long working hours and shift work are needed.

Key terms all-cause mortality; anxiety; circulatory disease; depression; diabetes mellitus; health-related behavior; overtime; shift work; sleep; working time.

In Japan, long working hours is an issue that needs to be addressed promptly for the sake of workers' health. *Karoshi* (sudden death caused by cardiovascular or cerebrovascular disease due to overwork) and *karojisatsu* (suicide due to overwork) may also be related to working long hours. According to data from the Japanese Ministry of Health, Labor, and Welfare, the number of workers suffering from cardiovascular disease, cerebrovascular disease, and mental disorders due to work has increased by about threefold in the last decade (1, 2). Long working hours are common in many countries. According to statistics from the Organisation for Economic Cooperation and Development (OECD) on annual average working hours (3), Korea had the longest working hours between 1980–2007. However, in 2008, Korea dropped to second place behind Mexico. Similar to Japan, *karoshi* became recognized as a problem in Korea from the early 1990s (4) and consequently the number of working hours may deliberately have been reduced. An International Labor Organization (ILO) report (5) found that the proportion of workers working ≥49 or 50 hours/week in 2004–2005 was 49.5% in Korea, 23.6% in New Zealand, 20.4% in Australia, 18.1% in the US, and 14.7% in France. It also estimated that 22.0% of workers globally were working >48 hours/week.

Based on such data, many studies have examined the association between long working hours and health. Various outcomes such as all-cause mortality (6), disease (especially cardiovascular disease) (6, 7), biological indices [heart rate variability, blood pressure (BP),

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respiratory sinus arrhythmia, etc] (8–10), sleep (8, 9), depressive state (11), alcohol use (12), body mass index (8–10), fatigue (8–10), and general health status (13) have been investigated and positive, negative, or no association reported. The influence of long working hours on human health remains controversial, and we suggest that inconsistencies in the results are attributable to several factors such as the definition of long working hours, characteristics of participants, inclusion of shift work, measurement of outcomes, and potential covariates. In this systematic review, we mainly focused on excluding differences in the definition of long working hours and the influence of shift work.

Long working hours is recognized as working for a length of time which exceeds standard working hours. However, the definition of standard working hours may differ from country to country. For example, standard working hours are 35, 37, and 40 hours/week in France (14), Denmark (15) and the US (14), respectively. In Japan, the Labor Standards Law defines the maximum working time as 40 hours/week. The ILO Convention "Hours of Work to 40 a Week (C047)" was adopted in 1935 (16), but most countries, including Japan, have not ratified it. Under the European Union's Working Time Directive (2003/88/EC), worktime, including overtime, was limited to 48 hours/week. The difference in standard working hours might affect the definition of long working hours in studies examining the association between long working hours and health. Consequently, this might influence the results of some studies. Therefore, we recognize that standard working hours are around 40 hours/week or 8 hours/day, and long working hours are defined as working longer than this. Moreover, in a study which investigates the association between long working hours and health, we believe that the results would be clearer and easier to understand when standard working time is used as the reference category in the analysis.

There are many types of shift work schedules, for example, night, irregular, and rotating shifts. Many studies have elucidated the association between shift work and health (17–22), and shift work is considered detrimental to health. Shift work has been associated with increased risk for myocardial infarction, coronary events, ischemic stroke (17), gastrointestinal symptoms, gastric ulcers (18), and metabolic syndrome (19). Female night-shift workers have also been reported to be at increased risk of breast cancer (20). Therefore, we must be careful when interpreting the results of studies with shift workers that investigate the association between working long hours and health. We believe that the statistical analyses in studies with shift workers need to be adjusted, by either excluding the shift workers from the analysis, stratifying the data according to work schedules, or adjusting for work schedules as covariates.

The purpose of this paper was to clarify the epidemiological evidence regarding the association between long working hours and health from previous studies by excluding differences in the definition of long working hours and the detrimental effect of shift work. Accordingly, we set our inclusion criteria and reviewed previous studies.

Methods

Search procedure

We conducted a systematic search of articles published in Medline and PsycINFO between 1995–2012 using the search terms: "work hours", "workhours", "working hours", "long hours," "extended hours", "overtime", "overwork", and "extended work". Articles had to be published in English and peer-reviewed, with an abstract available. In the initial search, abstracts were checked for the inclusion criteria (see below). Next, fulltexts of the included articles were obtained and a detailed evaluation performed. The principal author conducted both the initial search and a detailed evaluation of the fulltext twice with an interval in between evaluations. Both authors analyzed those articles that finally remained.

Inclusion criteria

Study type. We included observational studies, such as prospective cohort, case–control, and cross-sectional studies. We excluded experimental and case studies, systematic reviews, meta-analyses, letters, and comments.

Participants. We included articles that did not incorporate shift workers, unless the statistical analysis was performed either by excluding shift workers, stratifying according to work schedules, or adjusting for work schedules as covariates. As described previously, we required a reference group that included participants working around 40 hours/week (8 hours/day) (ie, standard working time).

Working hours. The definition of working hours was time spent on work. Thus, we included hours of work brought home into the total working hours. The reason for this is that participants who worked outside the home but engaged in housework might go home with their work at a regular time (eg, 17:00 hours) but continue working at home. Working hours had to be described as working hours per day, week, or month. Otherwise, articles needed to indicate normal working hours (eg, working hours of contract) and the number of hours overtime. Similar to a previous review (23), we selected articles if the average working hours of participants

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exceeded 40 hours/week (8 hours/day), or average working hours plus one standard deviation (SD) were ≥40 hours/week (8 hours/day). This was because if the reference group included many participants with extremely short working hours, the effect of long working hours on health might be overestimated. Articles that covered compressed work weeks and temporarily busy periods were excluded.

Outcomes. The World Health Organization's (WHO's) definition of "health" is broad. In this review, we focused on outcomes that directly cause death or disease (eg, diagnosed diseases, sleep problems, depressive state or other psychologically disorders, and health-damaging behavior such as smoking). We excluded job satisfaction, job involvement, work–family conflict, well-being, quality of life, and work performance. We did not cover outcomes related to stress, such as the effort–reward imbalance or demand–control models and burnout. Accidents, injuries, and specific symptoms or illnesses related to work procedures were also excluded, because such outcomes might be specific to the job (eg, shoulder stiffness as a result of using visual display terminals).

Results

We identified a total of 5088 articles published in English and peer-reviewed with abstracts (figure 1). After excluding duplicates and reviewing abstracts, a detailed evaluation of the fulltext of 149 articles was performed. Finally, after taking inclusion criteria into consideration, 17 articles remained. Both authors examined these articles for details such as study design, characteristics of participants, working hours, definition and measurement of outcomes, statistical analysis, covariates, and results. Any disagreements were solved through discus-

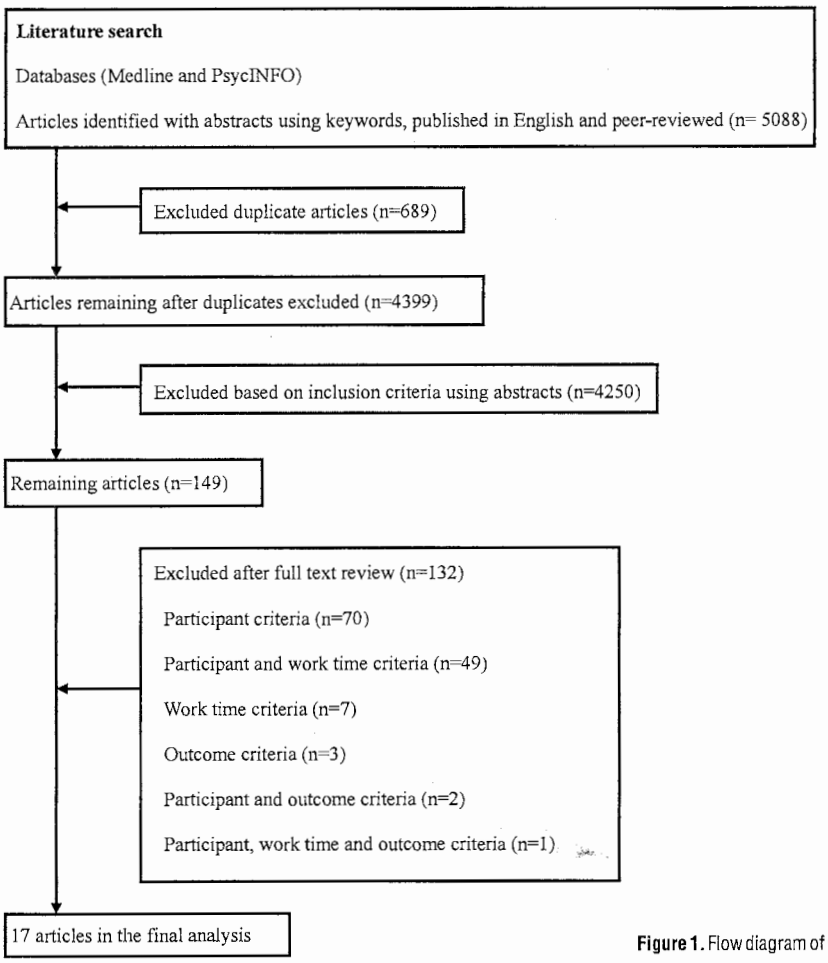

Figure 1. Flow diagram of search procedures.

Table 1. Category and number of outcomes from the final 17 remaining articles based on inclusion criteria. [BP=blood pressure; IFG=impaired fasting glucose]

Category	Outcomes
All-cause mortality	1
Circulatory disease (including change of BP)	6
Diabetes mellitus (including IFG)	4
Metabolic syndrome	1
Mental state	9
Depressive state	5
Anxiety	2
Others	2
Sleep	5
Cognitive function	1
Behavior	5
Alcohol	2
Physical activity	1
Smoking	1
Weight gain	1

sion. When necessary, the authors of the articles were contacted.

In total, 19 studies (12 prospective cohort and 7 cross-sectional studies) were identified from the 17 articles, and a total of 32 outcomes are presented in table 1. The 19 studies are summarized briefly in tables 2 and 3. They are described in more detail in online Appendices A and B (http://www.sjweh.fi/data_repository.php).

Prospective cohort design

Nakamura et al (24) investigated the association between long working hours and one-year change in systolic and diastolic blood pressure (BP) among workers from the manufacturing industry. The average monthly hours of overtime were calculated from recorded timecards. Significant results were observed only among assembly-line workers. The one-year change in diastolic BP in the group working ≥80.0 hours/month of overtime was 5.3 mm Hg [95% confidence interval (95% CI) 2.7–7.9], which was significantly increased compared to that of the reference group [1.5 mm Hg (95% CI 0.8–2.2)].

Virtanen et al reported five articles (and six studies) (25–29) based on data from the Whitehall II study in the UK, which was established in 1985 with participants recruited from 20 London-based Civil Service departments. For convenience, we labeled the articles: Study A, 2012 (25), Study B, 2011 (26), Study C, 2010 (27), Studies D and E, June 2009 (28), and Study F, March 2009 (29). Since the article published in June 2009 (28) reported one cohort study with two different measurements for working hours, we treated this as two different studies (studies D and E). The measurement point of working hours was only at baseline in study D but twice in study E.

Study A (25) investigated the association between long working hours and the onset of major depressive episode (MDE) in the preceding 12-month period. Participants were followed for an average of 5.8 [standard deviation (SD) 0.4] years. MDE was evaluated using the University of Michigan's version of the Composite International Diagnostic Interview (UM-CIDI), and the incidence was 3.1%. Participants in the group working 11–12 hours/day had a significantly increased risk of MDE [adjusted odds ratio (OR_{adj}) 2.52 (95% CI 1.12–5.65)] compared to the group working 7–8 hours/day.

Study B (26) evaluated the effect of long working hours on mental health (depressive and anxiety symptoms). The mean follow-up period was 5.3 (SD 0.9) years for depressive symptoms and 5.2 (SD 0.9) years for anxiety symptoms. Outcomes were evaluated by subscales of the General Health Questionnaire (GHQ). The incidence was 2.0/100 person-years for depressive symptoms and 2.3/100 person-years for anxiety symptoms. The adjusted hazard ratio (HR_{adj}) of participants in the group working >55 hours/week was significantly increased at 1.66 (95% CI 1.06–2.61) for depressive symptoms and 1.74 (95% CI 1.15–2.61) for anxiety symptoms compared to the group working 35–40 hours/week. Stratified analysis by gender was also conducted because of a significant interaction between working hours and gender. The significant results were one-sided for women.

Study C (27) was performed to investigate the association between long working hours and incidence of coronary heart disease (CHD) and all-cause mortality. The incidence of CHD included coronary death, incidence of non-fatal myocardial infarction, or incidence of definite angina pectoris. Participants were followed for an average of 11.2 (SD 2.7) years. The incidence of CHD was 5.46/1000 person-years. Participants in the group working 11–12 hours/day had a significantly increased risk [HR_{adj} 1.56 (95% CI 1.11–2.19)] of developing CHD compared to the reference group. A similar increased risk was found for the outcome limited to coronary death or incidence of non-fatal myocardial infarction in the same group [HR_{adj} 1.67 (95% CI 1.02–2.76)]. Long working hours were not significantly associated with all-cause mortality.

Studies D (28) and E (28) evaluated the association between long working hours and sleep condition. In study E, working hours were measured twice in 1991–1994 (before baseline) and 1997–1999 (baseline), and mean working hours were used in the statistical analysis. Outcomes were short sleeping hours, difficulty in falling asleep, frequent waking during the night, early waking, and waking without feeling refreshed. Participants in the group working >55 hours/week were at significantly increased risk for having difficulty in falling asleep: OR_{adj} 4.12 (95% CI 1.71–9.94) and OR_{adj} 7.94 (95% CI 2.97–21.25) in studies D and E, respectively. There were more significant associations in study E compared to D.

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Table 2. Characteristics of 12 prospective cohort studies. [ADA=American Diabetes Association; ANCOVA=analysis of covariance; ANOVA=analysis of variance; CHD=coronary heart disease; CIDI=Composite International Diagnostic Interview; CoxPH=Cox proportional hazard analysis; dBP=diastolic blood pressure; DM=diabetes mellitus; GHQ=General Health Questionnaire; h/d=hours per day; h/m=hours per month; h/w=hours per week; ICD-10=International Statistical Classification of Diseases and Related Health Behavior, tenth revision; IFG=impaired fasting glucose; LogRA=logistic regression analysis; MANCOVA=multiple analysis of covariance; MDE=major depressive episode; MI=myocardial infarction; ns=no association; sBP=systolic blood pressure; SD=standard deviation; Sig=significant; UM-CIDI=University of Michigan's version of the Composite International Diagnostic Interview; WHO=World Health Organization; (+)=positive association; (-)=negative association]

Author	Participants	Baseline –> Follow-up	Outcomes (measures), Statistical analysis	Working hours	Results
Nakamura et al, 2012 (24)	N=1235, Japan, 611 assembly-line workers, 315 clerks and 309 engineers/ special technicians in light metal products manufacturing factory, all male, age 39.3 (SD=10.2, range 20–59) years old	2004 –> 2005	1-year change of sBP and dBP (automatic manometer), ANCOVA, multiple post-hoc comparison (Bonferroni correction)	Number of overtime <40.0 [a], 40.0–79.9, ≥80.0 h/m (scheduled working hours; 40 h/w)	Assembly-line workers: sBP: ns, dBP: Sig, 1.5 mm Hg (reference), 2.3 mm Hg (overtime 40.0–79.9 h/m), 5.3 mm Hg (overtime ≥80.0 h/m, Sig (+) compared with reference) Clerks: sBP and dBP: ns Engineers/special technicians: sBP and dBP: ns
Virtanen et al, 2012 (25): study A	N=2123, UK, civil servants, male 77%, mean age 46.7 years old	1991–1993 (phase 3) –> 1997–1999 (phase 5)	Major depressive episode (UM-CIDI), LogRA	Working 7–8[a], 9, 10, 11–12 h/d	Sig (+): 2.52-fold (working 11–12 h/d)
Virtanen et al, 2011 (26): study B	Basic participants: N=2960, UK, civil servants, male 76%, mean age 55.3 years old, eligible for depressive symptoms: N=2549, anxiety symptoms: N=2618	1997–1999 (phase 5) –> 2001 (phase 6) and 2002–2004 (phase 7)	Depressive symptoms, anxiety symptoms (questions derived from GHQ), CoxPH	Working 35–40 [a], 41–55, >55 h/w	Total analysis Depressive symptoms: Sig (+): 1.66-fold (working >55 h/w) (linear trend[b] Sig (+): 1.17-fold) Anxiety symptoms: Sig (+): 1.74-fold (working >55 h/w) (linear trend[b] Sig (+): 1.22-fold) Men only Depressive symptoms: ns (linear trend[b] ns) Anxiety symptoms: ns (linear trend[b] Sig (+): 1.19-fold) Women only Depressive symptoms: Sig (+): 2.15-fold (working 41–55 h/w) 2.67-fold (working >55 h/w) (linear trend[b] Sig (+): 1.40-fold) Anxiety symptoms: Sig (+): 1.69-fold (working 41–55 h/w) 2.84-fold (working >55 h/w) (linear trend[b] Sig (+): 1.31-fold)
Virtanen et al, 2010 (27): study C	N=6014, UK, civil servants, male 71%, mean age 48.7 years old (range 39–61)	1991–1994 (phase 3) –> 2002–2004 (phase 7)	CHD, coronary death or incidence of non-fatal MI, all-cause mortality (death certificate, electrocardiograms and cardiac enzymes etc, clinical records and use of nitrate medication), CoxPH	Working 7–8[a], 9, 10, 11–12 h/d	CHD: Sig (+): 1.56-fold (working 11–12 h/d) Incidence of coronary death or non-fatal myocardial infarction: Sig(+): 1.67-fold (working 11–12 h/d) All-cause mortality: ns
Virtanen et al, June 2009 (28): study D	N=937–1594, UK, civil servants, male 76%, mean age 52.2 years old	1997–1999 (phase 5) –> 2002–2004 (phase 7)	Sleep (short sleeping hours (<7 hours/day), difficulty in falling asleep, frequent waking during the night, early waking, waking without feeling refreshed) (self-reported, Jenkins scale), LogRA	Working 35–40[a], 41–55, >55 h/w	Short sleeping hours: ns (linear trend[b] Sig (+): 1.30-fold) Difficulty falling asleep: Sig (+): 4.12-fold (working >55 h/w) (linear trend[b] Sig(+): 1.57-fold) Frequent waking: ns (linear trend[b] ns) Early waking: ns (linear trend[b] ns) Waking unrefreshed: ns (linear trend[b] ns)
Virtanen et al, June 2009 (28): study E	N=886–1510, U.K., civil servants, male 76%, mean age 52.2 years old	1997–1999 (phase 5) –> 2002–2004 (phase 7)	Sleep (short sleeping hours (<7 hours/day), difficulty in falling asleep, frequent waking during the night, early waking, waking without feeling refreshed) (self-reported, Jenkins scale), LogRA (working hours were measured in 1991–1994 and 1997–1999)	Working 35–40[a], 41–55, >55 h/w	Short sleeping hours: Sig (+): 1.55-fold (working 41-55 h/w), 2.80-fold (working >55 h/w) (linear trend[b] Sig (+): 1.56-fold) Difficulty in falling asleep: Sig (+): 7.94-fold (working >55 h/w) (linear trend[b] Sig(+): 2.06-fold) Frequent waking: ns (linear trend[b] ns) Early waking: Sig (+): 2.03-fold (working >55 h/w) (linear trend[b] ns) Waking unrefreshed: ns (linear trend[b] ns)

Continued

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Table 2. Continued

Author	Participants	Baseline –> Follow-up	Outcomes (measures), Statistical analysis	Working hours	Results
Virtanen et al, March 2009 (29): study F	N=2214, UK, civil servants, male 77%, mean age 52.1 (SD=4.2, range 45–66) years old	1997–1999 (phase 5)–> 2002–2004 (phase 7)	Cognitive function: high scores represent good cognitive function (short-term memory test, Alice Heim 4-I test (reasoning test), Mill Hill vocabulary test, phonemic fluency test, semantic fluency test), MANCOVA, ANOVA	Working 35–40[a], 41–55, >55 h/w	Scores at baseline Mill Hill vocabulary test: Sig (-): working 41–55 h/w, >55 h/w (linear trend[c] Sig (-)) Phonemic fluency test: ns (linear trend[c] Sig(+)) Other three tests: ns Scores at follow-up Alice Heim 4-I test score: Sig (-): working >55 h/w (linear trend[c] Sig (-)) Mill Hill vocabulary test: Sig (-): working 41–55 h/w, >55 h/w (linear trend[c] Sig (-)) Other three tests: ns Change in Alice Heim 4-I test score between baseline and follow-up: Sig (-): reference (-1.77), working 41–55 h/w (-2.23), working >55 h/w (-2.90) (linear trend[c] Sig (-))
Tarumi et al, 2003 (30)	N=867 (mental disorders) and 824 (circulatory disorders), Japan, white-collar office workers in manufacturing company, age 20-60 years old	1997-2000–>2001	Mental disorders (ICD-10: F00-F99, G90), circulatory disorders (ICD-10: I00-99) (medical insurance claim records), CoxPH	Working <45[a], ≥45 h/w	Mental disorders: ns Circulatory disorders: ns
Nakanishi et al, September 2001 (31)	N=1266, Japan, office workers, all male, age 35-59 years old	1994–>1999	IFG or type 2 DM, IFG, type 2 DM (ADA criteria (1997): IFG: fasting plasma glucose concentration of 6.1-6.9 mmol/l, type 2 DM: fasting plasma glucose concentration of ≥7.0 mmol/l or taking hypoglycemic medication), CoxPH	Working <8.0[a], 8.0–8.9, 9.0–9.9, 10.0–10.9, ≥11.0 h/d	IFG or type 2 DM: Sig (-): 0.50-fold (working ≥11.0 h/d) (linear trend[d]; Sig (-)) IFG: ns Type 2 DM: Sig (-): 0.30-fold (working ≥11.0 h/d) (linear trend[d] Sig (-))
Nakanishi et al, May 2001 (32)	N=941, Japan, white-collar workers, all male, age 35–54 years old	1994–>1999	Hypertension (WHO criteria (1978): sBP ≥160 mm Hg and/or dBP ≥95 mm Hg or taking antihypertensive medications), borderline hypertension (sphygmomanometer), CoxPH	Working <8.0[a], 8.0–8.9, 9.0–9.9, 10.0–10.9, ≥11.0 h/d	Hypertension: Sig (-): 0.33-fold (working ≥11.0 h/d) (linear trend[d] Sig (-)) Borderline hypertension: Sig (-) 0.63-fold (working 10.0–10.9 h/d), 0.48-fold (working ≥11.0 h/d) (linear trend[d] Sig (-))
Kawakami et al, 1999 (33)	N=2194, Japan, industrial workers in electrical company, all male, including shift workers (46.3%)	1984–>1992	Non-insulin dependent diabetes mellitus (NIDDM) (WHO criteria, 1980) – see the details in the text, CoxPH	Number of overtime 0–25[a], 26–50, >50 h/m (working hours of contract; 40 h/w)	NIDDM (type 2 DM): Sig (+) 3.73-fold (overtime >50 h/m) (linear trend[d] Sig (+))
Shields, 1999 (34)	N=3830, Canada, various job, male 57%, age 25–54 years old, including shift workers (19.7%)	1994/1995 –>1996/1997	Major depressive episode (CIDI), unhealthy weight gain, increased daily smoking, increased alcohol consumption, decreased physical activity, LogRA	Working ≥35 and <41 h/w (standard), ≥41 h/w (long) [a] standard at baseline for MDE, standard-standard pattern for other outcomes	Major depressive episode Men: ns Women: Sig (+) 2.2-fold (working ≥41 h/w) Unhealthy weight gain Men: ns (long-long) Women: ns (long-long) Increased daily smoking Men: ns (long-long) Women: ns (long-long) Increased alcohol consumption Men: ns (long-long) Women: ns (long-long) Decreased physical activity Men: ns (long-long) Women: ns (long-long)

[a] Reference working group.
[b] Linear trend=increasing 10-hour working time (per 10-hour increase).
[c] Linear trend=entering total working hours into the model as continuous variable.
[d] Linear trend=increasing categories of working hours per day or month.

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Table 3. Characteristics of seven cross-sectional studies. [AUDIT=Alcohol Use Disorders Identification Test; CFSI=Cumulative Fatigue Symptom Index; GHQ=General Health Questionnaire; h/d=hours per day; h/m=hours per month; h/w=hours per week; LogRA=logistic regression analysis; ns=no association; PSQ-I=Pittsburgh Sleep Quality Index; SDS=Self-Rating Depression Scale; Sig=significant; (+)=positive association; (-)=negative association]

Author	Participants	Survey	Outcomes (measures), Statistical analysis	Working hours	Results
Kobayashi et al, 2012 (35)	N=933, Japan, workers in manufacturing company, all male, age 19–70 years old, including shift workers (25.8%)	2009	Metabolic syndrome (Japanese criteria (2005), using blood samples, sphygmomanometer, and waist circumference was measured by medical staff), LogRA	Working ≥7 and ≤8[a], >8 and ≤9, >9 and ≤10, >10 h/d	All participants: Sig (+) 2.32-fold (working >10 h/d) Participants without shift workers: ns Age stratified analysis ≥40 years or <40 years: ≥40 group: Sig (+): 2.02-fold (working >8 ≤9 h/d), 3.14-fold (working >10 h/d) ≥45 years or <45 years: ≥45 group: Sig (+): 2.82-fold (working >8 ≤9 h/d), 5.13-fold (working >10 h/d) ≥50 years or <50 years: ≥50 group: Sig (+): 3.33-fold (working >8 ≤9 h/d), 4.86-fold (working >10 h/d)
Nakashima et al, 2011 (36)	N=1510, Japan, white-collar workers in light metal products manufacturing company, all male, mean age 42.6 years old (range 18-59)	2004	Sleep (PSQ-I; PSQ-I global score, subscales of poor sleep quality, short sleep duration (≤6 hours/day), daytime dysfunction), LogRA	Number of overtime <26 h/m[a], ≥26 and <40, ≥40 and <50, ≥50 and <63, ≥63 h/m (working hours of contract: 40 h/w)	PSQ-I global score: Sig (+) 1.67-fold (overtime ≥50 <63 h/m) 1.87-fold (overtime ≥63 h/m) Poor sleep quality: ns Short sleep duration: Sig (+) 1.43-fold (overtime ≥26 <40 h/m) 1.51-fold (overtime ≥40 <50 h/m) 1.75-fold (overtime ≥50 <63 h/m) 3.68-fold (overtime ≥63 h/m) Daytime dysfunction: Sig (+) 1.82-fold (overtime ≥26 <40 h/m) 2.06-fold (overtime ≥40 <50 h/m) 2.36-fold (overtime ≥50 <63 h/m) 2.58-fold (overtime ≥63 h/m)
Nash et al, 2010 (37)	N=2999, Australia, doctors, male 71%	2007	Psychiatric morbidity (GHQ-28), hazardous alcohol use (AUDIT), LogRA	Working <40[a], 40–49, 50–59, ≥60 h/w	Psychiatric morbidity: Sig (+) 1.41-fold (working 50-59 h/w) 1.65-fold (working ≥60 h/w) Hazardous alcohol use: Sig (-) 0.67-fold (working ≥60 h/w)
Driesen et al, 2010 (38)	N=7217, Netherlands, employees representing almost all sectors and trades of the Dutch labour force from 45 companies and organizations, male 73%, mean age 41.9 years old	1998	Depressive mood (single question "Did you feel down every day over the last two weeks?" derived from Balansmeter), LogRA	Working 36–40[a], >40 h/w	Men: Sig (-) 0.74-fold (working >40 h/w) Women: ns
Virtanen et al, 2009 (28)	N=2436–2459, UK, civil servants, male 76%, mean age 52.2 years old	1997–1999 (phase 5)	Sleep (short sleeping hours (<7 hours/day), difficulty in falling asleep, frequent waking during the night, early waking, waking without feeling refreshed) (self-reported, Jenkins scale), LogRA	Working 35–40[a], 41–55, >55 h/w	Short sleeping hours: Sig (+) 1.39-fold (working 41–55 h/w) 2.25-fold (working >55 h/w) (linear trend[b] Sig (+): 1.39-fold) Difficulty in falling asleep: ns (linear trend[b] ns) Frequent waking: ns (linear trend[b] ns) Early waking: ns (linear trend[b] ns) Waking unrefreshed: ns (linear trend[b] ns)
Nagashima et al, 2007 (39)	N=715, Japan, chemical factory workers, all male, mean age 44.1 years old	2003	Depressive state (SDS), anxiety (CFSI), LogRA	Working ≤199[a], 200–219, 220–239, 240–259, 260–279, ≥280 h/m	Depressive state: Sig (+) 2.75-fold (working 260-279 h/m) Anxiety: Sig (+) 2.28-fold (working 260-279 h/m) 2.51-fold (working ≥280 h/m)
Sekine et al, 2006 (40)	N=3556, Japan, civil servants, male 67%, mean age 42.7 (SD=10.2, range 20-65) years old, including shift workers (21%)	2003	Sleep quality (PSQ-I global score), LogRA	Working 7–9[a], 9–11, >11 h/d	All participants: Sig(+) 1.71-fold (working >11 h/d) Men only: Sig (+) 1.49-fold (working >11 h/d) Women only: Sig (+) 2.02-fold (working >11 h/d)

[a] Reference working group
[b] Linear trend = increasing 10-hour working time (per 10-hour increase)

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Study F (29) evaluated the association between long working hours and cognitive function. The study design had characteristics of both a prospective cohort and cross-sectional study. Participants were followed for a mean period of 5.5 (range 3.9–7.1) years. Five cognitive tests were conducted and high scores represented good cognitive function. At baseline, only Mill Hill vocabulary test scores of participants in the groups working 41–55 hours/week and >55 hours/week were significantly lower than those of the reference group. On the other hand, phonemic fluency test scores showed a significantly positive linear trend with working hours. At follow-up, Alice Heim 4-I test (reasoning test) scores of participants in the group working >55 hours/week and vocabulary test scores of participants in the groups working 41–55 hours/week and >55 hours/week were significantly lower compared to the reference group. Changes in reasoning test scores between baseline and follow-up showed a significant decrease among participants in the groups working 41–55 hours/week and >55 hours/week compared to the reference group.

Tarumi et al (30) surveyed the association between long working hours and mental disorders [International Statistical Classification of Diseases and Related Health Problems, tenth revision (ICD-10): F00-99, G90] and circulatory disorders (ICD-10: I00-99). Information on working hours was collected every year for four years and averaged working hours were used in the analysis. Incidence was 6.6/10 000 and 15.7/10 000 person-months for mental and circulatory disorders, respectively. After adjusting for covariates, no statistical significance was found.

Nakanishi et al conducted a cohort study, and reported two separate outcomes in articles published in September (31) and May (32) 2001. In this review, for convenience, we treated these as two separate studies.

The September article (31) evaluated the association between long working hours and impaired fasting glucose (IFG), on the one hand, and type 2 diabetes mellitus (DM), on the other hand. IFG and type 2 DM were diagnosed according to the criteria of the American Diabetes Association (1997) using blood samples or self-reported hypoglycemic medication use. Incidence was 24.1/1000 person-years for IFG or type 2 DM (15.0/1000 person-years for IFG, 9.1/1000 person-years for type 2 DM). The results showed a significantly decreased risk of IFG or type 2 DM for participants in the group working ≥11.0 hours/day [adjusted relative risk (RR_{adj}) 0.50 (95% CI 0.25–0.98)]. No statistical significance was found for IFG, but a significantly lower risk was found for type 2 DM among participants working ≥11.0 hours/day [RR_{adj} 0.30 (95% CI 0.09–0.94)].

Nakanishi et al's other article (32) investigated the association between long working hours, hypertension (HT), and borderline HT. HT was defined according to the WHO criteria (1978) as: systolic BP ≥160 mm Hg and/or diastolic BP ≥95 mm Hg or taking antihypertensive medication. Borderline HT was defined as a BP between HT and normotension (systolic BP <140 mm Hg and diastolic BP <90 mm Hg). The incidence of HT and borderline HT was 19.4/1000 and 85.3/1000 person-years, respectively. The results indicated a significantly decreased risk among participants working long hours. For HT, participants in the group working ≥11.0 hours/day had a significantly decreased risk [RR_{adj} 0.33 (95% CI 0.11–0.95)]. For borderline HT, participants in the groups working 10.0–10.9 hours/day and ≥11.0 hours/day had a significantly decreased risk [RR_{adj} 0.63 (95% CI 0.43–0.91) and RR_{adj} 0.48 (95% CI 0.31–0.74), respectively].

Kawakami et al (33) investigated the association between long working hours and non-insulin dependent DM (NIDDM, type 2 DM). NIDDM was diagnosed according to the WHO criteria (1980). An annual screening test using a urine sample was conducted for all participants. If glucosuria was found, fasting plasma glucose (FPG) was measured. Participants with high FPG (≥110 mg/dl) underwent a 75 g oral glucose tolerance test. The incidence for NIDDM was 1.95 /1000 person-years. The results indicated a significantly increased risk among participants working >50 hours/month of overtime [HR_{adj} 3.73 (95% CI 1.41–9.90)].

Shields (34) conducted a survey to investigate the association between long working hours and MDE, weight gain, smoking, alcohol consumption, and physical activity. The incidence of MDE was 3% and 5% for men and women, respectively. The Shields' study defined standard working hours as working ≥35–<41 hours/week, and long working hours as ≥41 hours/week. Results of MDE showed that only women working long hours had a significantly increased risk [OR_{adj} 2.2 (95% CI 1.1–4.4)]. For the other four outcomes, this study took changes in working hours both at baseline and follow-up into consideration. In the statistical analysis, the reference group was defined as those working standard hours both at baseline and follow-up. The incidence for unhealthy weight gain, increased daily smoking, increased alcohol consumption, and decreased physical activity was 10% for both men and women, 9% for men and 7% for women, 34% for men and 25% for women, and 43% for men and 41% for women, respectively. This study showed the results of several working patterns, however, in this review, we dealt with those results with a "long-long" working pattern (working long hours both at baseline and follow-up) similar to other cohort studies. A "long-long" working pattern was not significantly associated with these four outcomes compared to the reference group.

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Cross-sectional design

Kobayashi et al (35) investigated the association between long working hours and metabolic syndrome using Japanese criteria. Overall, prevalence was 11.8% among participants. This study conducted statistical analyses with or without shift workers (25.8%). The model without shift workers indicated no significant association with long working hours. On the other hand, the adjusted model with a shift work schedule showed a significantly increased risk among participants working >10 hours/day [OR_{adj} 2.32 (95% CI 1.04–5.16)]. Several age-stratified analyses were conducted and indicated that those in the older age group with long worktime were at increased risk for metabolic syndrome compared to those of the same age in the reference group.

Nakashima et al (36) investigated the association between long working hours and sleep condition using the Pittsburgh Sleep Quality Index (PSQ-I). Working hours were recorded by timecards, and mean overtime of hours/month was calculated from data six months previously. A total of 35.8% of workers were above the PSQ-I cut-off point (poor sleepers). Poor sleepers and subscales of PSQ-I (poor sleep quality, short sleep duration, and daytime dysfunction) were analyzed. For poor sleepers, participants who worked ≥50 hours/month overtime had a significantly increased risk. The OR_{adj} were 1.67 (95% CI 1.17–2.38) for ≥50 and <63 hours/month overtime and 1.87 (95% CI 1.30–2.68) for working ≥63 hours/month overtime. Short sleep duration and daytime dysfunction were significantly associated with long working hours. The more overtime participants worked, the greater the OR_{adj}. Poor sleep quality was not significantly associated with the number of overtime hours worked.

Nash et al (37) surveyed the relationship between long working hours and psychiatric morbidity and hazardous alcohol use. Outcomes were measured by GHQ-28 and the Alcohol Use Disorders Identification Test (AUDIT). The prevalence of psychiatric morbidity was 28% and that of hazardous alcohol use was 15%. Participants working ≥50 hours/week were significantly more likely to suffer from psychiatric morbidity. The OR_{adj} were 1.41 (95% CI 1.05–1.89) for working 50–59 hours/week and 1.65 (95% CI 1.20–2.26) for working ≥60 hours/week. For hazardous alcohol use, only the group working ≥60 hours/week had a significantly decreased risk [OR_{adj} 0.67 (95% CI 0.45–0.99)].

Driesen et al (38) reported a survey from the Maastricht Cohort Study in 1998. In this review, we describe the association between long working hours and depressive mood according to our inclusion criteria. Depressive mood was assessed by the question, "Did you feel down every day over the last 2 weeks?" This wording was derived from the Balansmeter screening questionnaire. The prevalence was 6.8% for participants working 36–40 hours/week and 5.6% for those working >40 hours/week. The results were analyzed separately by gender because of a significant interaction between working hours and gender. A significant association was only found among men working >40 hours/week [OR_{adj} 0.74 (95% CI 0.56–0.99)].

Virtanen et al (28) investigated the association between long working hours and sleep condition. This study used baseline data from the cohort study described previously (studies D and E), and outcomes were the same. Only short sleeping hours were significantly associated with long working hours. The OR_{adj} were 1.39 (95% CI 1.16–1.68) for working 41–55 hours/week and 2.25 (95% CI 1.62–3.12) for working >55 hours/week.

Nagashima et al (39) reported a survey conducted on workers in 2003. In this review, we describe the association between long working hours, depressive state, and anxiety according to our inclusion criteria. Depressive state was measured by the Self-Rating Depression Scale (SDS) and anxiety was measured by the Cumulative Fatigue Symptom Index (CFSI). For depressive state, only participants in the group working 260–279 hours/month had a significantly increased risk [OR_{adj} 2.75 (95% CI 1.39–5.46)]. For anxiety, participants working ≥260 hours/month had a significantly increased risk, OR_{adj} 2.28 (95% CI 1.20–4.35) for working 260–279 hours/month and 2.51 (95% CI 1.29–4.90) for working ≥280 hours/month.

Sekine et al (40) reported the association between long working hours and sleep condition using PSQ-I. The prevalence of poor sleepers was 21.2% among men and 31.4% among women. All participants working >11 hours/day had a significantly increased risk [OR_{adj} 1.71 (95% CI 1.28–2.29)]. Gender stratified analyses showed a significant risk among both genders: men working >11 hours/day [OR_{adj} 1.49 (95% CI 1.03–2.15)] and women working >11 hours/day [OR_{adj} 2.02 (95% CI 1.24–3.31)].

Discussion

In this review, we explored articles eligible for inclusion published between 1995–2012. We found a total of 17 articles and 19 studies and described the association between long working hours and health. We identified all types of associations (positive, negative, or none).

Outcomes

The articles included in our review dealt with various outcomes, thus, the relationship of each with long working hours was investigated.

All-cause mortality. Only one prospective cohort study

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(27) dealt with all-cause mortality. The results showed no significant association with long working hours. We could not reach any conclusion about this outcome due to the limited data available.

Circulatory disease. Four prospective cohort studies (24, 27, 30, 32) had six outcomes related to circulatory diseases. However, the results were inconsistent. Tarumi et al (30) indicated circulatory disorders including HT (ICD-10: I00-99) had no significant association with long working hours. We suspect that this result was affected by the small number of covariates (Appendix A: http://www.sjweh.fi/data_repository.php). Nakanishi et al (32) revealed that participants working long hours had a significantly decreased risk of HT and borderline HT. They described two reasons for these results: (i) whether the participants perceived overwork as stressful or not, and (ii) significantly higher 24-hour energy expenditure in the group working long hours. On the other hand, Nakamura et al (24) showed significantly increased diastolic BP in the group working ≥80.0 hours/month of overtime. We could not reach any conclusion regarding long working hours and BP.

The number of results related to CHD in our review were few and inconsistent (27, 30). However, in one meta-analysis about long working hours and CHD (41), these two articles (27, 30) were the basis for a subgroup analysis focusing on daytime workers. The results indicated an increased RR of 1.51 (95% CI 1.12–2.03) compared to those without long-term work. Thus, with the result of this meta-analysis, we concluded that working long hours is associated with CHD.

Diabetes mellitus. We found two studies (31, 33) that presented opposing results. Nakanishi et al (31) showed a significantly decreased risk associated with long working hours and the development of type 2 DM. However, Kawakami et al (33) indicated a significantly increased risk. Nakanishi et al (31) discussed the reasons for the discrepancy in great detail. They considered that it was caused by the difference in work environment and characteristics of participants, including the proportion of shift workers [0% (31) versus 46.3% (33)], the method of diagnosing DM, and high energy expenditure observed among participants working long hours (31). We agree with these suggestions, especially concerning the method of diagnosing of DM. Nakanishi et al (31) used blood samples and self-reported hypoglycemic medication use to diagnose DM, while Kawakami et al (33) used urine samples, blood samples, and 75 g OGTT. The latter would have been more accurate compared to the former. We also suspect that including shift workers among the participants made it more difficult to interpret the results. We found one meta-analysis which investigated long working hours and type 2 DM (42), but the results showed no association. Therefore, we could not reach any conclusion about the association between long working hours and DM.

Metabolic syndrome. We found one cross-sectional study (35) about metabolic syndrome. The results of the statistical analysis changed depending on whether shift workers were included or not. Only the results with shift workers showed a significantly increased risk. As mentioned in the introduction section, shift work is detrimental to health. We believe that further studies are needed with regards to this outcome.

Depressive state. We found five studies (25, 26, 34, 38, 39) about depressive state. One cross-sectional study (38) indicated that long working hours significantly decreased the risk of depressive mood. We believe that this finding resulted from the way in which the outcome was measured. In the study, depressive mood was evaluated by a simple question, similar to one of the criteria for MDE in the DSM-IV-TR (Diagnostic and Statistical Manual of Mental Disorders, fourth edition, text revision) published by the American Psychiatric Association. However, it might be insufficient for measuring depressive mood. The reason is that patients themselves may not perceive they are experiencing a psychologically ill state, especially a depressive state. The other three prospective cohort studies (25, 26, 34) and one cross-sectional study (39) showed a significantly increased risk with long working hours. Consequently, we concluded that long working hours is associated with depressive state.

Anxiety. One prospective cohort study (26) and a cross-sectional study (39) investigated anxiety. Both results showed a significant increased risk for anxiety. We concluded that long working hours are indeed associated with anxiety. The results indicated that the risk rose among participants working >55 hours/week (26), 260–279 hours/month, or ≥280 hours/month (39). We suspect the existence of a threshold for developing anxiety.

Other mental states. We surveyed mental disorders (ICD-10: F00-99) in a prospective cohort study (30) and psychiatric morbidity in a cross-sectional study (37). We could not come to any conclusion about the association with long working hours due to the lack of data.

Sleep. We found five [two prospective cohort (28) and three cross-sectional (28, 36, 40)] studies that investigated sleep condition. A significant negative effect of long working hours on sleep condition was observed in all studies. We concluded that long working hours is associated with sleep condition.

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In the two cohort studies (studies D and E) (28), study E identified more significant associations compared to study D. This might be attributable to the difference in measurement of working hours. Hence we consider that measuring working hours over a longer period is more effective to investigate the association between long working hours and health.

Two studies (36, 40) using PSQ-I to evaluate sleep condition presented similar results. This fact strongly supports the relationship between long working hours and sleep condition. All five studies had detailed subscales of sleep condition, and short sleeping hours or duration were highlighted regardless of the study design. Thus, among factors associated with sleep condition, short sleeping hours has been strongly associated with long working hours.

Cognitive function. We found one prospective cohort study (29) that evaluated cognitive function using five cognitive tests. However, one article was insufficient to enable us to reach any conclusion.

Behavior. We found one prospective cohort (34) and a cross-sectional (37) study examining behavior. Outcomes were alcohol use, physical activity, smoking, and weight gain. In the cohort study (34), no significant association was found between long working hours and the four outcomes. The cross-sectional study (37) showed a significantly decreased risk of hazardous drinking in the group working ≥60 hours/week. We inferred that the reason for this was the lack of personal time, which would in turn reduce the opportunity for drinking. From these results, we could not conclude any association between long working hours and health-related behavior.

However, one cohort study (34) revealed an important implication. In the results section, we only described the results of a long-long working pattern (working long hours both at baseline and follow-up) similar to other cohort studies. But participants with "standard-long" working patterns (working standard hours at baseline and long hours at follow-up) were at a significantly increased risk for alcohol consumption, smoking, and weight gain, compared to a "standard-standard" working pattern (working standard hours both at baseline and follow-up) (Appendix A, http://www.sjweh.fi/data_repository.php). Thus, a change in working hours from standard to long working hours could lead to an unhealthier lifestyle.

Summary and interpretation

We conclude that long working hours is associated with depressive state, anxiety, sleep condition, and CHD. Although compared to a previous review (23) we concluded that only a small number of health outcomes are associated with long working hours, we could clearly base our results on epidemiological evidence due to our strict inclusion criteria. To be more precise, due to our strict inclusion criteria, we were able to exclude differences in the definition of long working hours and the detrimental effect of shift work. By using the standard working group as the reference group, we believe we could find clearer evidence for the association between long working hours and health.

We aimed to exclude differences in the definition of long working hours and the influence of shift work for several reasons. Concerning the former, we found disparities in the definition of long working hours in previous studies and recognized this to be problematic because the results of each study were not easily comparable. Consequently, this could confuse the interpretation of the association between long working hours and health. By excluding differences in the definition of long working hours, it is easier to compare previous studies with each other. Furthermore, by comparing and unifying the results, we could reach a universal conclusion about these associations. With regards to the influence of shift work, we considered that this factor itself raised a health risk for workers (17–19). This has been implied by one meta-analysis (41) that investigated long working hours and CHD. The overall RR was 1.80 (95% CI 1.42–2.29) for long working hours. As described above, a subgroup analysis that was limited to daytime workers and did not include shift workers showed an RR of 1.51 (95% CI 1.12–2.03), lower than the overall RR. The exclusion of the influence of shift work seemed to decrease the health risk for long working hours and was, therefore, important in the studies about the association between long working hours and health.

We suspected that the health risk for long working hours in previous studies might confuse our interpretation unless appropriate consideration of the definition of long working hours and the influence of shift work was carried out. We strongly suggest future research that takes this into account when clarifying the association between long working hours and health.

Reasons behind the exclusion criteria

We identified 149 articles after our initial search. However, after a fulltext review, only 17 articles remained. The most common reason for exclusion was "participant criteria" (N=70), which concerned shift work and the reference group. Though we understand that each study has its own purpose and survey items differ according to the purpose, due to its detrimental effect on health, we believe that shift work has to be considered in the study design when evaluating the association between long working hours and health. From our search, only Kobayashi et al (35) presented results with and without shift workers. The significant negative impact on health observed

among participants including shift workers disappeared in the results where shift workers were excluded. Even if statistical analyses are adjusted for work schedules, the influence of shift work may still partially remain.

Causal pathway

We have briefly inferred a causal pathway, which might explain why long working hours appear to increase the risk to health. Workers with long working hours need more time to recover from work (43). However, long working hours decrease the amount of private time available. Therefore, workers with long working hours do not have enough time to recover from exhaustion. The small amount of private time leads to an irregular lifestyle.

Such an irregular lifestyle may result in sleep problems and influence health-related behavior. If sleep problems, such as short sleeping hours and difficulty in falling asleep, continue for a given period, workers may develop lack of sleep, and insufficient sleep may lead to depression (44). Depression is a well-known risk factor for the development of CHD (45, 46). One meta-analysis (46) showed that subjects suffering from depression were at increased risk for developing CHD compared to non-depressed subjects. Short sleep time and frequent lack of sleep are also associated with an increased risk of acute myocardial infarction (7).

Irregular lifestyle caused by long working hours might also influence health-related behaviors such as alcohol consumption, smoking, and weight gain. From our search, we found that detrimental changes in health-related behaviors might occur when changes in working hours occur, such as changing from standard to long working hours (34). We suggest that these changes in health-related behaviors may cause a pre-morbid state, such as chronic liver or lung damage and the development of obesity, which in turn may lead to the development of diseases such as CHD and DM.

Limitations

The interpretation of our findings requires the consideration of several limitations. The first is selection bias. In our initial search, we used two databases with eight keywords. We selected peer-reviewed articles published in English with abstracts. Thus, articles that did not meet these requirements were not included in our review. The second limitation is publication bias. Although we examined many articles, there might be other studies that were not published because their results showed no significance. This might cause an overestimation about the relationship between long working hours and health. The third limitation is the measurement of working hours. Only two studies used timecards. We agree with the measurement of working hours using questionnaires or interviews because, in some cases (31, 32), participants who hold managerial positions may not record their working hours using a time clock. However, self-reported working hours may also be inaccurate.

Concluding remarks

Our systematic review concluded that long working hours is associated with depressive state, anxiety, sleep condition, and CHD. Though the number of health outcomes we ascertained was small due to our strict inclusion criteria, we were able to exclude differences in the definition of long working hours and the influence of shift work. Since both factors may influence the association between long working hours and health, further studies are necessary that deal with them appropriately.

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EXHIBIT

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WASHINGTON
POLICY CENTER
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POLICY NOTE

Agriculture: The cornerstone of Washington's economy

By Chris Cargill, Eastern Washington Director

March 2016

This Policy Note presents a brief overview of the agricultural sector in Washington, to show the critical importance of food production to the economy and people of our state.

Key Findings

1. *Agriculture accounts for $51 billion – or 13 percent – of Washington's yearly economic activity*
2. *160,000 Washington jobs are tied to agriculture – more than Microsoft and Boeing* ***combined***
3. *Washington state produces more than 300 different crops – second only to California*
4. *The number of wineries in Washington state has tripled over the past decade*
5. *State leaders must ensure agricultural productivity is a priority and considered equally with other key industries when setting tax, regulatory and economic policy*
6. *In 2014, the state exported $16 billion worth of food and agricultural products to people around the world*

Introduction

Washington state is blessed with four key ingredients that make it an agricultural production powerhouse: a diverse climate, rich soil, abundant water and hard-working people.

Throughout our state's history, agriculture has remained a key component of the state's economic success. In fact, agriculture adds $51 billion a year to the state's GDP and the agricultural sector makes up more than 13 percent of our state's economy.[1]

Washington state ranks 14th nationally in overall commodity production and is in the top five in the nation in many categories including apples (1st), hops (1st), potatoes (2nd), lentils (3rd), and wheat (4th).[2]

Background

Washington's agricultural landscape is as diverse as its topography. In fact, more than 300 different crops are grown in the state – a diversity of production second only to California.

More than 39,000 farms are located in Washington, some in the fertile valleys of Snohomish County, some in the drier areas of Eastern Washington. The counties that play the biggest role in the state's agricultural economy are Grant and Yakima, which are home to 4,700 farms and a $3.41 billion yearly economic output collectively.[3]

That economic output is a two-step process that starts with growing and concludes with processing and distribution around the world

1 Washington State Department of Agriculture, Washington State Farm Bureau, available at https://wsfb.com/agricultures-contribution-to-washingtons-economy/.

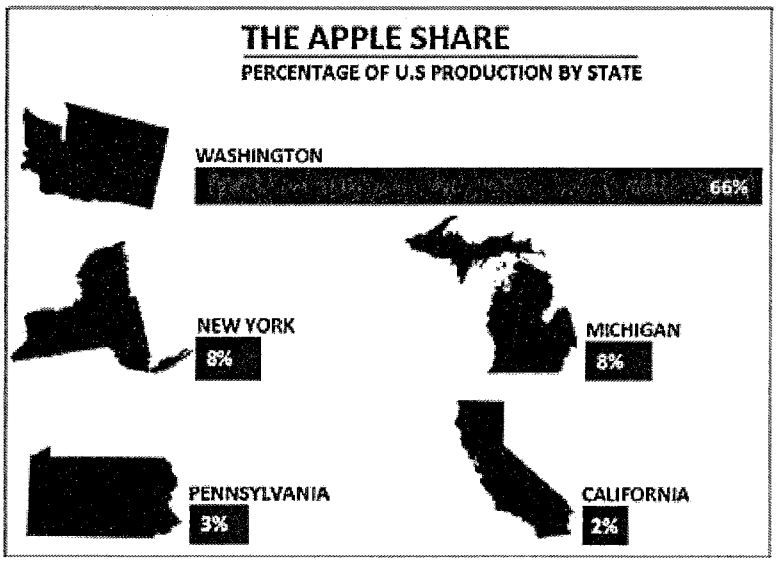
2 United States Department of Agriculture, Economic Research Service Cash Receipts by commodity, state ranking, 2014, available online at http://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/cash-receipts-by-commodity-state-ranking.aspx#P2a1d992291ae446a85aebfdb920be9ba_6_252iT0R0x113.

3 Agriculture: A Cornerstone of Washington's Economy, Washington State Department of Agriculture, available online at http://agr.wa.gov/AgInWa/docs/126-CropMap2015-ForCopier.pdf.

through our state's ports. Each region of our state, east and west, works in concert to make the agriculture economy thrive.

Crops & farming

Washington state leads the country in apple production, with a yearly value that can exceed $2 billion (2013).[4] No other state comes close to Washington's apple yield, which comprises more than 66 percent of total U.S. production. The other states among the top five – New York, Michigan, Pennsylvania and California – all lag well behind Washington.



Commodity	2013 Value of Production
Apples	$2.18 (billion)
Milk	$1.2 (billion)
Wheat	$1.01 (billion)
Potatoes	$ 792 (million)
Cattle/Calves	$ 706 (million)
Hay	$ 675 (million)
Sweet Cherries	$ 385 (million)
Grapes	$ 278 (million)
Pears	$ 225 (million)
Hops	$ 202 (million)

In fact, if the number of apples picked in Washington last year were placed side-by-side they would circle the earth 29 times.[5] And every apple is hand-picked.

While Idaho is known for famous potatoes, Washington is also a top producer. Nearly 20 percent of total U.S. production comes from the Evergreen state, compared to 24 percent from Idaho.[6]

4 Ibid.

5 Washington State Apple Commission, Crop Facts, available online at http://bestapples.com/washington-orchards/crop-facts/.

6 United States Department of Agriculture, Economic Research Service Cash Receipts by commodity, Potatoes, state ranking, 2014, available online at http://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/cash-receipts-by-commodity-state-ranking.aspx#P2a1d992291ae446a85aebfdb920be9ba_6_252iT0R0x113.

Among all agricultural commodities, the red raspberry market is where Washington state produces the largest share – more than 90 percent of the nation's production.[7]

While most of the state's crops are grown in sun-drenched Eastern Washington, dairy farms are scattered across more than two dozen counties, particularly in Yakima, but also in Western Washington.[8] The output of Washington's dairies is impressive: the state ranks 10th in total U.S. milk production and 4th highest in milk production per cow.[9]

Food processing

Though Washington state is known for advanced technology and airplane production, the number of people working in both the growing and food processing industries surpasses 160,000 – more than Microsoft and Boeing employment *combined.*

There are more than 200 food processing companies in the state.[10] Food processing companies benefit from two key ingredients in Washington – water, and inexpensive, renewable hydroelectric power.

In terms of total employment, fruit and vegetable processors are by far the largest food processors in the state, followed by seafood processors.[11] In total, more than 34,000 people work in nearly 1,000 food processing facilities around Washington.[12]

Wine production

Washington's wine production has grown rapidly over the past decade, becoming an essential part of the state's agriculture economy. In 2013, nearly five billion dollars of economic benefit was produced directly by the state's wine industry.[13] Nearly 30,000 jobs in the state – or one-percent of the state's total employment – are based on the wine industry, The state is now home to more than 850 wineries and wine

7 What's grown in Washington?, Plan Washington, Washington Business Alliance, September 25, 2014, available online at http://planwashington.org/blog/archive/whats-growing-in-washington-state/.

8 Dairy Farmers of Washington, Economic Impact, available at http://www.wadairy.com/beyond-farm/economic-impact.

9 Ibid.

10 Review of the food processing industry in Washington state, Page 7, Washington State Department of Agriculture, available online at http://agr.wa.gov/fof/docs/MajorFoodProcessing.pdf.

11 Ibid.

12 The Future of Farming – 2020 and Beyond, Strategic Plan for Washington Agriculture, Page 3, available online at http://agr.wa.gov/FoF/docs/FoFStrategicPlan.pdf.

13 Washington State Wine Commission, available online at http://www.washingtonwine.org/wine-101/state-facts/.

grape growing areas now exceed 50,000 acres. The state ranks second only to California in total wine grape production.[14]

Unlike other parts of the agricultural economy, the wine industry has the added advantage of promoting tourism across the state. In fact, wine-related tourism spending in Washington surpasses one billion dollars a year and supports more than 3,000 jobs.[15]

Exports

Without the ability to export, Washington's agricultural production would be severely limited. In 2014, the state exported more than $16 billion worth of food and agricultural products to people around the world, half of which were grown or raised in Washington.[16] This included fresh fruit, vegetables, meat, wheat, seafood and dairy.

Most of Washington's food exports are shipped to Asia. The top five markets for Washington agriculture exports are;

1. Japan
2. Canada
3. China/Hong Kong
4. Philippines
5. South Korea

The ports of Seattle and Tacoma together are the third largest container gateway in North America, demonstrating the importance of Interstate 90 and Snoqualmie Pass for transporting products from Eastern Washington.

In addition to the highways, farmers in the east are also able to move their products by barge through the Columbia-Snake River system.

The ability to move products at all came to a halt entirely in 2014 and 2015 because of the West Coast port shutdown, resulting in millions of dollars in lost revenue for state growers. Fresh fruit and vegetables rotted at the 29 ports along the west coast during the strike. Washington state apple growers alone estimated they lost nearly $100 million.[17] Other Washington farmers and growers were hurt as well, as their products became worthless while awaiting shipment.

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14 *Economic Impact of Washington State Wine and Grapes,* Stonebridge, prepared for the Washington State Wine Commission, April 2012, available online at http://www.wawgg.org/files/documents/2012_Economic_Impact_WA_Wine-Grapes.pdf.

15 Ibid.

16 Washington State Department of Agriculture Export Statistics, 2014, available online at http://agr.wa.gov/marketing/international/statistics.aspx.

17 NBC News, *Washington farmers dump millions of apples after ports dispute,* May 2015, available online at http://www.nbcnews.com/news/us-news/washington-farmers-dump-millions-apples-after-ports-dispute-n366426.

The port slowdown lasted for months without action by the state or federal government to intervene, as they had done in previous port disputes.[18] The lack of action caused even more financial losses for Washington's farm families and businesses.

According to an analysis completed for the Washington Council on International Trade, in-state businesses lost an estimated $769.5 million during the port shutdown.[19] The analysis did not take into account the global market share lost by growers, which may take years to recover.

After the dispute was resolved, Washington Congressman Dan Newhouse introduced legislation called the ECONOMICS Act (H.R.3932).[20] The bill, co-sponsored by Oregon Democrat Kurt Schrader, seeks to adopt "triggers" for when the government would begin the process of seeking to resolve a future port dispute. The criteria listed in the bill include:

- When the number of affected ports involved exceeds four
- When the number of employees involved exceeds 6,000
- When the fall in export or import vessel value exceeds 20 percent

Currently, only the President of the United States has the authority to seek an injunction to end a port labor dispute.

Policies that limit farm production

Like any industry, the action taken by lawmakers at the local, state or national level can have tremendous effect on people working in the agricultural sector.

In addition to economic output, farm families in our state contribute enormously in yearly property tax revenues to their local communities and to the state. Property taxes paid by farmers and agricultural businesses exceed $230 million per year.[21]

While farmers prefer to spend time in their fields, or tending to their livestock, their time is often tied up with bureaucratic red tape or legal action brought by activists located hundreds of miles away.

At the State Capitol, family farms and the broader agricultural community often come under intense political pressure from lawmakers, lobbyists and

18 USA Today, *Is president considering 'nuclear option' in ports dispute?*, February 18, 2015, available online at http://www.usatoday.com/story/news/2015/02/18/labor-secretary-perez-west-coast-ports-ilwu-dispute/23611117/.

19 Economic Costs of the 2014-2015 Port Slowdown on Washington Business, Page 9, Exhibit 3, prepared for the Washington Council on International Trade, by Community Attributes, Inc., February 2016.

20 U.S. Congressman Dan Newhouse, *Newhouse, Schrader introduce legislation to prevent future port slowdowns*, November 5, 2015, available online at https://newhouse.house.gov/media-center/press-releases/newhouse-schrader-introduce-legislation-prevent-future-port-slowdowns.

21 he Future of Farming – 2020 and Beyond, Strategic Plan for Washington Agriculture, Page 13, available online at http://agr.wa.gov/FoF/docs/FoFStrategicPlan.pdf.

legislation that seek to regulate everything from the amount of time they spend working in the fields to the waste their animals produce.

Occasionally, a bill is introduced to help family farms, like House Bill 2840 in the current legislative session.[22] The bi-partisan legislation would put the regulations and enforcement for water quality associated with concentrated animal feeding operations in the jurisdiction of the state Department of Ecology and state Department of Agriculture.

The law specifically directs the agencies to write rules that are clearly based on state laws. Environmental groups oppose this policy approach because the bill would limit their ability to sue farmers in court and put family dairies out of business.

In fact, in a recent newspaper article, a Sierra Club lobbyist complained that having the Department of Agriculture involved was a problem because their mission was to "promote Agriculture."[23] In 2016, the bill failed to make it out of committee and is likely dead for the year.

Other legislative bills over the years that would have hurt the agricultural sector include:

- **House Bill 2038 (2013 legislative session):**[24]
  To increase taxes on agricultural community by nearly $1 billion
- **House Bill 2201 (2014 legislative session):**[25]
  To impose a new reporting system for farmers and other businesses who benefited from tax exemptions and preferences.
- **House Bill 2484 (2016 legislative session):**[26]
  To require the Dept. of Labor and Industries to impose new training, safety rules on dairy farms

In addition, Governor Jay Inslee has proposed capping and reducing greenhouse gas emissions from refineries and manufacturers.[27] The regulations would hit fertilizer makers and food processing facilities in Eastern Washington, raising costs and reducing job opportunities with little or no environmental benefit.

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22 Washington State Legislature, House Bill 2840, 2015-16, Introduced January 28, 2015, available online at http://apps.leg.wa.gov/billinfo/summary.aspx?bill=2840&year=2015.

23 Capital Press, *Environmentalists blast House dairy bill over lawsuits,* January 29, 2015, available online at http://www.capitalpress.com/Dairy/20160129/environmentalists-blast-house-dairy-bill-over-lawsuits.

24 Washington State Legislature, House Bill 2038, 2013 Legislative Session, available online at http://lawfilesext.leg.wa.gov/biennium/2013-14/Pdf/Bill%20Reports/House/2038-S.E%20HBR%20APH%2013.pdf.

25 Washington State Legislature, House Bill 2201, 2014 Legislative Session, available online at http://lawfilesext.leg.wa.gov/biennium/2013-14/Pdf/Bill%20Reports/House/2201-S%20HBR%20APH%2014.pdf.

26 Washington State Legislature, House Bill 2484, 2016 Legislative Session, available online at http://apps.leg.wa.gov/billinfo/summary.aspx?bill=2484&year=2015.

27 Carbon cap plan would hit fertilizer, food processors, *Capital Press,* January 7th, 2016, available online at http://www.capitalpress.com/Washington/20160107/carbon-cap-plan-would-hit-fertilizer-plant-food-processors?utm_medium=social&utm_source=facebook_Capital_Press.

Chris Cargill is the Eastern Washington Director at Washington Policy Center. A sixth-generation Eastern Washingtonian, Chris grew up in Spokane and graduated from Gonzaga University with a bachelor's degree in broadcast communication studies and political science. Before joining WPC in 2009, he worked in TV news for 10 years. Chris has authored many of WPC's studies specific to Eastern Washington. He is an ex-officio for the Spokane Valley Chamber of Commerce and the Tri-City Regional Chamber of Commerce.

Under the rule, companies that exceed an arbitrary carbon level set by state regulators would have to pay a fine of up to $10,000 a day. If business owners did not want to comply with the fine, they would be required to pay for carbon reduction projects elsewhere.

Under the proposed regulation, the Department of Ecology would allow companies that suspend operations in Washington to sell credit for carbon reductions beyond the targets set in the regulation. Essentially, the state would be punishing companies for keeping jobs in the state, and paying them for sending jobs elsewhere.

Conclusion

In 2009, the Washington State Department of Agriculture sought responses from more than 2,000 people in the agricultural community about ways to keep Washington farming vibrant and profitable for generations to come.[28]

The feedback compiled in the "Future in Farming" project was consistent across the state. Respondents said lawmakers should make agriculture a priority, eliminate regulatory barriers, protect resources, strengthen support services and harness emerging opportunities.[29]

Whether policymakers are following these recommendations is a source of great debate in Olympia and across Washington's farming communities. Placing additional regulatory burdens on the state's farm families certainly does not eliminate regulatory barriers. Based on their actions, it is unclear whether state policymakers have truly made Washington agriculture a top priority, as the report recommends.

Washington's farm families and food processors do much more than provide a huge economic benefit to the state. They provide us with food security. Farmers and those who work in the agricultural community in our state are also the stewards of public lands and of public resources.

With a yearly economic contribution valued at $51 billion and 160,000 jobs, Washington farmers and agricultural businesses make up an essential and often overlooked segment of the state economy.

For that reason, state leaders should ensure that agricultural productivity is a priority and considered equally with high-tech, software, aerospace, biomedical research and other key industries when setting tax, regulatory and economic policy in Washington.

Washington Policy Center is an independent research organization in Washington state. Nothing here should be construed as an attempt to aid or hinder the passage of any legislation before any legislative body.

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206-937-9691

28 The Future of Farming – 2020 and Beyond, Strategic Plan for Washington Agriculture, available online at http://agr.wa.gov/FoF/docs/FoFStrategicPlan.pdf.

29 Ibid.

EXHIBIT

18

Department of Commerce

Washington State: Agriculture and Food Manufacturing

Washington is a leading producer of numerous fruit and vegetable crops, making our state a key supplier of food for domestic and export markets. Our growers feed people across the U.S. and around the world. The agriculture and food manufacturing sector is a cornerstone of Washington's economy in both rural communities and metropolitan areas.

Agriculture is woven into the fabric of Washington State's heritage and has been an important part of our culture since the earliest days of territorial settlement. Farmers and ranchers provide environmental stewardship that supports 15 million acres of the state's lands.

Washington State's agriculture and food manufacturing sector

Washington's 37,249 farms power a diverse agricultural economy, led by the state's apple industry that accounts for 70 percent of U.S. production. In addition to Washington's top four commodities – apples, wheat, milk and potatoes – the Evergreen State is a major producer of hops, stone fruits, farm forest products, fish, shellfish, onions and mint

MAR 0647

oils.

We're also home to a large food processing industry that supports many supply and marketing services in machinery, pesticides and fertilizers, transportation, packaging, and more. The quality and safety of Washington's agricultural products continue to raise the state's reputation around the world.

The state's $49 billion food and agriculture industry employs approximately 140,000 people. Thirteen percent of the state's economy comes from agriculture.

More than $15.1 billion in food and agricultural products were exported through Washington ports in 2013, the third largest total in the U.S.

Agriculture generates income and employment on farms in all 39 counties. The industry is an economic pillar of many rural communities.

Governor Inslee's goals to grow the agriculture sector include:

Harness emerging opportunities: organic, sustainable and local; food security; bio-digesters; climate change; multi-year farm bills passed by Congress.
Enable more efficient movement of time-sensitive agricultural goods through policy actions and infrastructure development.
Eliminate regulatory barriers.
Protect and manage scarce resources: land, water, energy, labor, capital and credit.
Strengthen support services: transportation, technology, education and marketing.

Are you interested in business opportunities in the Agriculture and Food Manufacturing sector?

Visit ChooseWashington.com to learn more.

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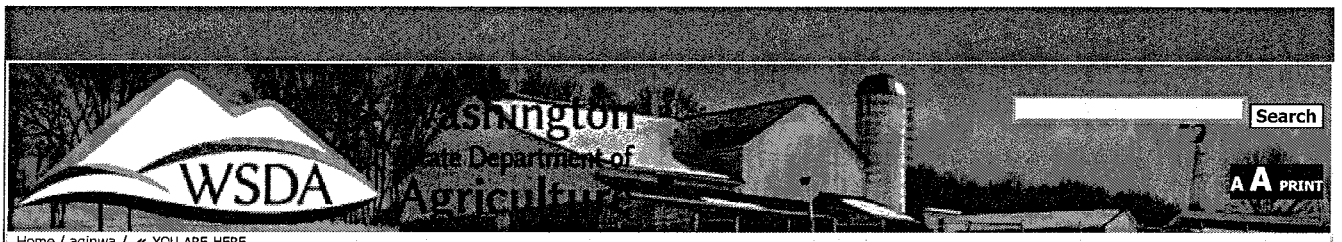
EXHIBIT

19



Page updated/verified: Nov 22, 2017

Agriculture: A Cornerstone of Washington's Economy

For more information, email **pio@agr.wa.gov** or call 360-902-1813.

Rich soils, diverse climates and large-scale irrigation make Washington one of the most productive growing regions in the world and enables farmers to produce over 300 crops each year. The state's deep-water ports and its proximity to important Asian markets also provide natural advantages for agricultural trade.

Want to know when certain crops are growing? See our "Washington Grown Seasonality Charts" for **Vegetables** [PDF 284 KB] and **Fruits, Legume and Herbs**. [PDF 218 KB]

Information on agriculture from the U.S. Department of Agriculture

Each year, the USDA updates facts and figures regarding agriculture in Washington. Find that information here:

USDA **USDA's National Agricultural Statistics for WA**

For the most recent production rates, see the USDA's October 13, 2017 press release, **"Value of Washington's 2016 Agricultural Production Totals $10.6 Billion."** [pdf 243 kb]

Visit **USDA's Washington State Field Office** for more information.

2016 Top Crops

Washington's farms power a diverse agricultural economy, led by the state's apple industry with 70 percent of U.S. production.

Top 10 Commodity	2016 Value of Production
1. Apples	$ 2.4 (billion)
2. Milk	$ 1.1 (billion)

Partners in Washington Agriculture

USDA **Washington's agricultural production is reported by USDA's National Agricultural Statistics Service (NASS), providing timely, accurate statistics in service to U.S. agriculture.** [External Site]

Department of Commerce

Choose Washington: Innovation is in our Nature: Department of Commerce supports value-added agriculture and food processing. Commerce, WSDA assisted export sales exceed target by 65% [External Site]

Commodity Commissions are industry-funded state agencies that engage primarily in crop and livestock marketing or research related to a specific agricultural commodity. [PDF]

Many other Agricultural Organizations help Washington's farmers and ranchers. [PDF]

Washington State University supports agriculture through its research, extension and academic programs. [External Site]

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3. Potatoes	$ 813 (million)
4. Cattle	$ 704 (million)
5. Wheat	$ 657 (million)
6. Cherries	$ 503 (million)
7. Hay	$ 479 (million)
8. Hops	$ 382 (million)
9. Grapes	$ 360 (million)
10. Pears	$ 233 (million)

In conjunction with Washington's top 10 crops, we are also a leading producer of many other crops nationally. See the chart below to see how Washington crops stack up against the rest of the nation in production in 2016.

WA Ranks 1st	WA Ranks 2nd	WA Ranks 3rd
Apples	Potatoes	Peppermint Oil
Hops	Niagara Grapes	Lentils
Spearamint Oil	Nectarines	Dried Peas
Wrinkled Seed Peas	Apricots	Tart Cherries
Concord Grapes	All grapes	
Sweet Cherries	Asparagus	
Pears	All Raspberries	
Raspberries*	Onions	
Blueberries		
Aquaculture		

**for processing*

View our Crop Maps and Infographics page for more information on Washington agriculture!

FRONT

BACK

MAR 0650

EXHIBIT

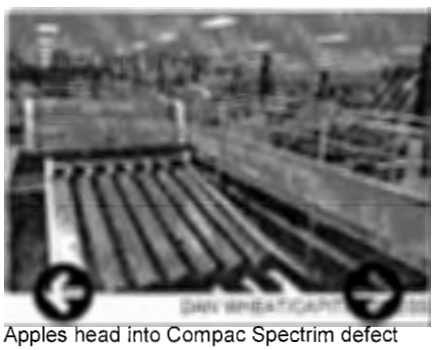
20

Capital Press
The West's Ag Website

Lenders see consolidation of WA tree fruit companies

Too much fruit and too many packing lines spells pain for the Washington tree fruit industry but consolidations will bring gains, lenders tell growers.

Dan Wheat • Capital Press
Published on December 6, 2017 9:26AM



Apples head into Compac Spectrim defect sorter-sizer that takes up to 500 high-definition images of a single piece of fruit as it passes through the machine at a rate of 12 pieces per second at Chelan Fruit Cooperative. A proliferation of new packing lines in recent years has left the industry with too many.

KENNEWICK, Wash. — Lenders are bullish on the Washington tree fruit industry for the long term but in the short term they see consolidation pain as the industry sorts through too many apples and cherries and too many packing houses.

More consolidation of companies is very likely within the next six to 24 months because new, expensive packing lines are running too far below capacity, Michael Butler, CEO of the Seattle investment bank Cascadia Capital LLC, told more than 1,000 growers at the Washington State Tree Fruit Association annual meeting in Kennewick, Dec. 4.

Apple crops likely will approach 175 million boxes in the next five years and cherries 35 million, jeopardizing profitability, Dennis Bigness, Northwest Farm Credit Services relationship manager, told growers.

"How much can we profitably market and get picked. We might be constrained to do it well, beyond 150 million boxes (of apples)," Bigness said.

This year's record crop of 27 million, 20-pound boxes of cherries was profitable on the front end but wasn't after the Fourth of July, he said.

The hope in apples lies with newer, managed varieties, the upcoming new state apple Cosmic Crisp and Honeycrisp, but older strains of Red Delicious, Gala and Fuji won't be reduced fast enough, Bigness said.

Yet, Northwest Farm Credit Services remains bullish on the industry and the $1.5 billion it has invested in it will grow to more than $2 billion in the next few years, he said.

"The industry is at an inflection point. Very powerful buyers like Kroeger, Trader Joe's and Whole Foods dictate to fruit

companies what they want and companies need to consolidate to match the power," Butler said.

Mid-size tree fruit companies of less than 1,500 acres of orchard, running at or under 30 percent packing capacity and who are not vertically integrated — meaning they don't grow, pack and sell their own fruit — are at most risk, Butler said.

The better managed ones better suited to generate the most revenue and who have the most capital to invest will end up with assets of others, he said. The industry will come through the pain better positioned, he said.

In recent years, many companies have invested millions of dollars in upgrades and new, high-tech apple and cherry defect sorting and sizing on packing lines. Many companies have substantial debt, Butler said.

They need more fruit to service that debt if they are running at 30 percent capacity so six to seven of them have approached Cascade Capital looking to borrow so they can replant into more high-density orchard, he said.

Individual companies need more fruit but collectively the industry has too much fruit and too many packing facilities, Butler said, adding not all will survive.

He said he knows of six mid-size companies that are vertically integrated, well managed and only need more acreage and volume.

"They all have potential but there's not room for all of them," he said.

Right now those companies and others are looking to borrow money to acquire more acreage, but in six months those that haven't been able to do so will start going away, he said.

Companies in a position to buy will be able to acquire assets at bargain prices, he said.

Already, Blue Road Capital, a private equity firm in New York that specializes in acquiring agricultural-focused businesses, was involved in Vanguard International's purchase last spring of 3,000-acre Pride Packing in Wapato and is looking for more acquisitions, Butler said.

Foreman Fruit Co., Wenatchee, bought Earl Brown & Sons, in Milton-Freewater, Oregon's largest grower and packer of apples. Chelan Fresh Marketing, Chelan, Wash., gained marketing agreements with Borton Fruit, Yakima, and Columbia Valley Fruit, Union Gap.

All of that is part of the consolidation and, for Chelan Fresh, gaining more fruit for bargaining power with retailers, Butler said.

"You have to control 10 percent of the sales market to be a long-term competitor," he said.

Chelan Fresh Marketing, Stemilt Growers of Wenatchee, Washington Fruit & Produce of Yakima and Zirkle-Rainier, Selah, are all in that top tier.

Investors looking to invest in tree fruit companies need to evaluate their investments on a rolling average over time, not year-to-year, Butler said. Family and pension fund investors make the best investors in tree fruit because they have the long-term view and are willing to be minority, not controlling, investors, he said.

In considering what company to invest in, Butler said, his top criteria is quality of management that is efficient, looks ahead and is open to new technology. Secondly, he said, is quality of assets of packing houses and orchards.

EXHIBIT

21

Overview of the United States Dairy Industry

ISSN:

Released September 22, 2010, by the National Agricultural Statistics Service (NASS), Agricultural Statistics Board, United States Department of Agriculture (USDA).

Large Operations Increase Share of Inventory and Milk Production

The dairy industry in the United States has undergone significant structural change over the past eight years. Total milk cow operations have declined significantly, while the number of large operations has increased. This report compares 2009 production year data to the 2001 data released in the *U.S. Dairy Herd Structure* report, published in September 2002. Changes in milk cow operation size groups will be discussed, along with trends in the all milk price and the milk-feed ratio.

The number of milk cow operations continues to decline in the United States. There were 65,000 milk cow operations in 2009 compared to 97,460 in 2001, a decline of 33 percent. Despite the large decrease in milk cow operations during this time period, both milk production and milk cow numbers have been on the rise. Milk production increased 15 percent, from 165,332 million pounds in 2001 to 189,320 million pounds in 2009. Milk cow inventory showed a smaller increase of 1 percent, from 9.10 million head in 2001 to 9.20 million head in 2009.

The milk cow operation estimates as illustrated in Graphs 1 through 3 show a break in the series from 2006 to 2007. In preparation for the 2007 Census of Agriculture, NASS exerted extensive efforts to build a comprehensive list of producers, which allowed NASS to capture more limited-resource and small farms. The break in the series reflects the fact that newer information for years prior to 2007 was not available to make revisions.

Although the overall number of milk cow operations has declined since 2001, the number of operations with 500 or more head of milk cows has increased. Since 2001, the number of operations with 500 or more head increased by 20 percent, from 2,795 to 3,350 in 2009 (Graph 1). The largest size group, places with 2,000 or more head, showed the greatest percentage change from 2001, increasing from 325 places in 2001 to 740 in 2009, a gain of 128 percent (Graph 2). While larger operations were growing in number, smaller operations declined in number. Places with less than 500 head went from 94,665 in 2001 to 61,650 in 2009, a decline of over 33,000 operations, or 35 percent (Graph 3).

As large operations have become more numerous, the share of inventory accounted for by large operations has also increased. In 2009, operations with 500 or more head accounted for 56 percent of total milk cow inventory compared with only 35 percent in 2001. Operations with 2,000 or more head accounted for 30 percent of inventory in 2009, up from only 12 percent in 2001. Places with less than 500 head accounted for 44 percent of total milk cow inventory in 2009, down from 65 percent in 2001 (Graph 4).

As with inventory, the share of milk production accounted for by large operations has steadily increased. Operations with 500 or more head accounted for nearly 60 percent of all milk produced in 2009, up from 39 percent in 2001. Production on places with 2,000 or more head has increased from only 13 percent in 2001 to 31 percent of total milk production in 2009. Smaller operations continue to produce a smaller share of production. Places with less than 500 head accounted for nearly 41 percent of milk production in 2009, down from 61 percent in 2001 (Graph 5).

Production per cow on both larger and smaller operations continues to increase as lower producing cows are culled from herds and less efficient operations exit the industry. The Cooperatives Working Together (CWT) program, which was developed by the National Milk Producers Federation (NMPF), was implemented in 2003. Since the inception of CWT, nearly a half million milk cows were removed from production and slaughtered through 2009. This program may have hastened the process of culling poorer producing cows from the dairy herd, thus helping to raise the average milk production per cow.

The annual average rate of milk production per cow for operations with more than 500 head rose from 20,342 pounds in 2001 to 22,019 pounds in 2009, an increase of 8 percent. Milk per cow for operations with less than 500 head increased 10 percent, from 16,989 pounds in 2001 to 18,769 in 2009 (Graph 6). However, despite the increase in milk per cow, total production in the less than 500 size group has declined 24 percent during this period, as milk cow operations decreased 35 percent and inventory declined 31 percent. A strong increase in milk production from operations with 500 or more head (up 74 percent) more than offset the production decline from operations with less than 500 cows, resulting in an overall production increase (Graph 7). The increased production from operations with 500 or more head is due to the increase in number of operations, greater share of inventory, and increased milk production per cow.

Milk production continues to move to the western half of the United States, primarily from the southeastern and northeastern States. Looking at 2009 production, States showing the largest increases compared to 2001 were California, Idaho and Texas (Graph 8). The only northeastern State with a production increase was New York. Production has also migrated to the upper mid-west, with Wisconsin, Michigan, and Ohio showing the largest increases in that region. States with the largest declines in production were Kentucky, Tennessee, and Missouri. The ten largest milk producing states accounted for nearly 74 percent of the total production of milk in the United States in 2009 (Graph 9).

For most States, the increase in production was due to an increase in milk cow inventory and greater milk production per cow. For example, California, the leading milk producing State, produced 39,512 million pounds in 2009, up 19 percent from 2001. The increase in production was due to a 13 percent increase in the number of milk cows and a 5 percent increase in average milk per cow. Wisconsin, the second largest milk producing State, produced 25,239 million pounds in 2009, up 14 percent from 2001. The production increase in Wisconsin was a result of a 17 percent increase in milk produced per cow, which more than offset a 3 percent decrease in milk cow numbers. The three States with the largest production increases compared to 2001 (California, Idaho, and Texas) had inventory increases of 207,000 head, 184,000 head, and 97,000 head, respectively (Graph 10).

Over the last decade, the United States average annual all milk price has fluctuated between $12.18 to $19.21 per cwt (Graph 11). Since 2005, the general trend in the annual milk-feed ratio has been down due in large part to increased feed costs, although low milk prices in 2006 and 2009 were a major factor (Graph 11). The price of corn increased by 110 percent from 2005 to 2007, while the price of alfalfa hay increased by 59 percent from 2005 to 2008 (Graph 12). Corn, alfalfa hay, and soybeans are common ingredients of a typical dairy ration. Corn and alfalfa hay are the primary feed items used to calculate the milk-feed ratio, while soybeans are a smaller component of the ratio calculation. The milk-feed ratio is the pounds of 16 percent protein mixed dairy feed equal in value to one pound of whole milk. In other words, the milk-feed ratio is an indicator of the quantity of 16 percent mixed dairy feed that can be purchased with a pound of milk. The milk-feed ratio is considered an indicator of the profitability of milk production. If the ratio is equal to 3.0 or greater, it is generally considered profitable to buy feed and produce milk. The last time the annual milk-feed ratio was at 3.0 or greater was in 2005. In 2007 and 2008, despite an all milk price that reached historically high levels, the milk-feed ratio still remained below 3.0 because of high feed prices (Graph 12). The milk-feed ratio dropped again in 2009, despite lower feed prices. The decline in the milk-feed ratio was primarily due to a 30 percent drop in the all milk price from 2008 to 2009.

Since 2001, the overall trend in the United States dairy industry has been toward more large operations (places with 500 or more head of milk cows) that have a greater share of total milk cow inventory and a greater share of total milk production. In 2009, operations with 500 or more head accounted for 5 percent of the total milk cow operations, 56 percent of the milk cows, and 60 percent of the milk production. Contrast this with 2001, when large operations only accounted for 3 percent of operations, 35 percent of milk cows, and 39 percent of production. The most dramatic increases occurred in the largest size group (places with 2000 or more head of milk cows). These operations increased from only .3 percent of the operations, 12 percent of the milk cows, and 13 percent of milk production in 2001 to 1 percent of the operations, 30 percent of the milk cows, and 31 percent of the milk production in 2009. Milk production continues to shift to the western half of the United States., although the upper mid-west region has experienced greater milk production also. The milk-feed ratio, an indicator of the profitability of milk production, has been on a general downward trend since 2005 due to a combination of higher feed prices and lower milk prices.

Statistical Methodology

Survey Procedures: The monthly *Milk Production* reports are based primarily on the monthly and quarterly milk production surveys, while the biannual *Cattle* reports are based on the January and July Cattle surveys. The milk production and cattle surveys are probability surveys. A probability survey assumes everyone in the target population has a positive probability of being selected. These probabilities do not have to be equal but they must be known and used in the sample selection and survey estimation process. Because a sample is used in the survey process, sampling errors are associated with the numbers. However, since the probabilities of selection are known, sampling errors can be calculated to determine levels of precision. In other words, it allows an objective evaluation of the reliability of a statistic.

Data collected on the milk production and cattle surveys were obtained from a sample of producers. Large producers were sampled more heavily than small operations. Individual States maintain a list of all known milk and cattle producers and information on the size of their herd. States use all known sources of producers to ensure that their lists are as complete as possible.

All known milk producers are the target population for the monthly and quarterly milk production surveys, while all known cattle producers are the target population for the January and July cattle surveys. The sampling universe for the Milk Production surveys is all operations with at least one milk cow. For the cattle surveys, the sampling universe is all operations with at least one head of cattle. To ensure complete coverage on the cattle surveys, a sample of cattle operations from the list frame maintained by NASS is supplemented by a sample of area tracts. The milk production survey is a list frame only survey.

The milk production survey is conducted on a quarterly basis in all 50 states in January, April, July, and October. In 8 states, the survey is conducted on a monthly basis. The remaining 15 states that set monthly estimates rely on administrative data in the months when a survey is not conducted. The cattle survey is conducted in 49 states in January and in 48 states in July.

Estimation Procedures: Estimates of milk production and percent of production by inventory size group are based primarily on the monthly or quarterly milk production surveys. However, in addition to survey data, state and federal administrative data are used, where feasible, to estimate milk production. Data used to determine milk cow inventory and operations estimates, operations by inventory size group, and percent of inventory by size group were obtained primarily from the January and July cattle surveys and milk production surveys. State field offices prepare these estimates by using a combination of survey indications, historic trends, and any available administrative data. Individual State estimates are reviewed by the Agricultural Statistics Board for reasonableness.

Published Estimates: The monthly *Milk Production* report contains estimates of average milk cows, milk production, and milk produced per cow for the 23 major milk producing states and the United States. Estimates of average milk cows and milk production are published for all 50 states in the January, April, July, and October *Milk Production* reports. Annual average milk cows, annual milk production, and milk produced per cow, as well as revisions to the prior two years' monthly and quarterly milk cow and production estimates, are published in the February *Milk Production* report. January 1 and July 1 milk cow inventory estimates are published in the biannual *Cattle* reports, typically published in January and July. Estimates are published for all 50 states in the January report; United States only estimates are published in July. Estimates of milk cow operations, size groups, percent of inventory, and percent of production are published in the February *Farms, Land in Farms, and Livestock Operations* report. The milk cow operations and size group estimates are only published at the United States level.

Revision Policy: Milk production, rate per cow, and number of cows are subject to revision the following month for monthly States or the following quarter for the quarterly States. Normally, Federal Market Order sales and other administrative data are the main basis for revisions. However, data for all orders are not available in time for this revision. Estimates are again subject to revisions in February each year based on additional administrative data. In the event that additional changes are necessary, a third revision is possible in February the following year. Estimates are again reviewed after data from the five-year Census of Agriculture are available. No revisions are made after that date.

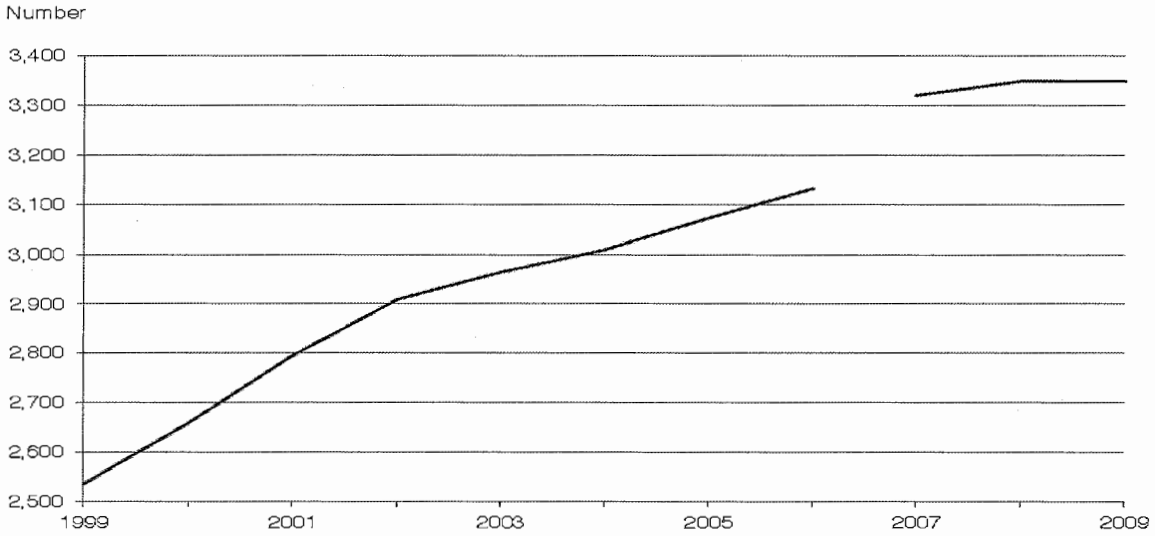
Revisions to the January 1 and July 1 milk cow inventories are made to improve year to year and item to item relationships. Estimates for the previous year are subject to revision when current estimates are made. The reviews are primarily based on livestock slaughter and additional foreign trade and survey data. Estimates will also be reviewed after data from the five-year Census of Agriculture are available. No revisions will be made after that date.

Milk cow operations, size groups, percent of inventory, and percent of production are subject to revision the following year and following review of the five-year Census of Agriculture. The basis for revision must be supported by additional data which directly affects the level of the estimate.

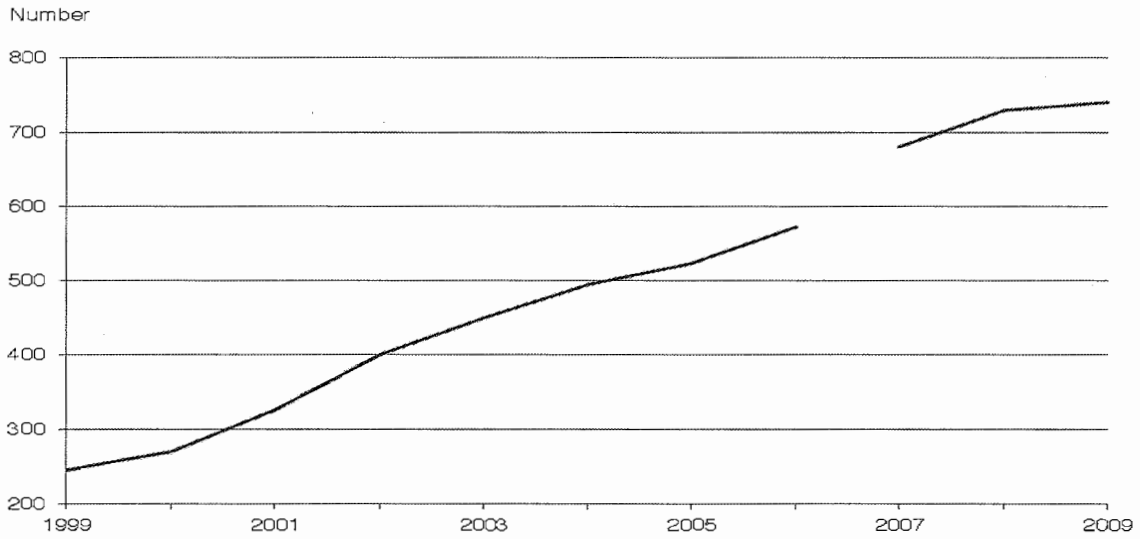
Note:

This special release is only available on the NASS website at: www.nass.usda.gov

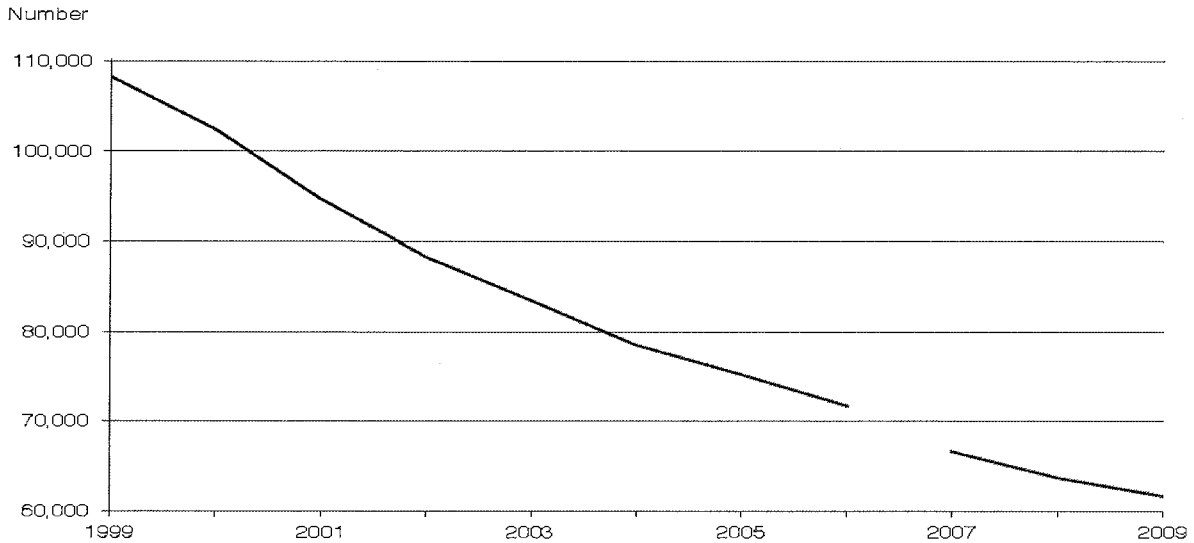
Graph 1. Dairy Operations 500+ Head - United States



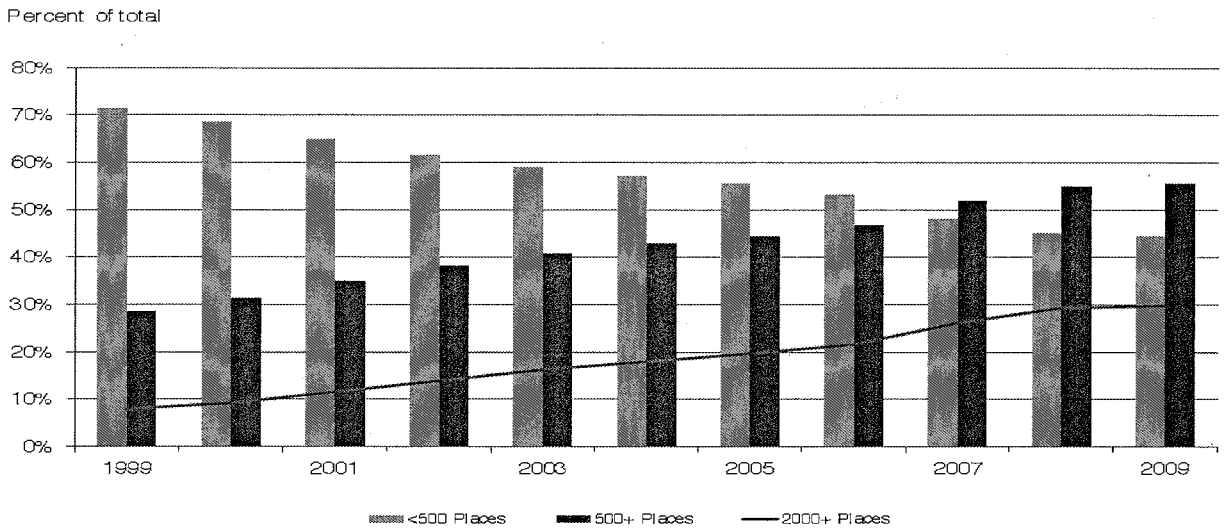
Graph 2. Dairy Operations 2000+ Head - United States



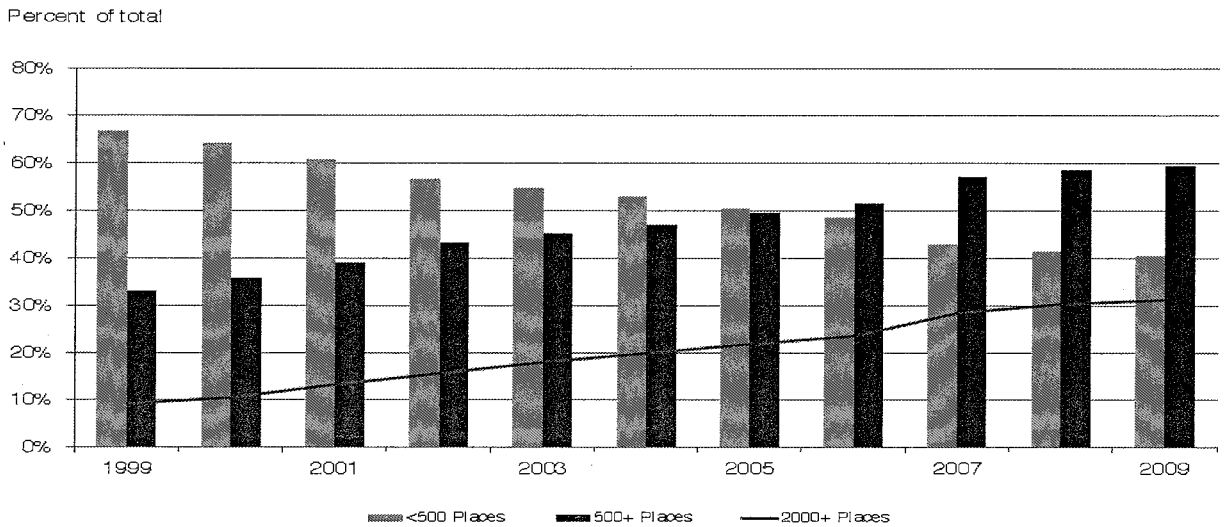
Graph 3. Dairy Operations <500 Head - United States



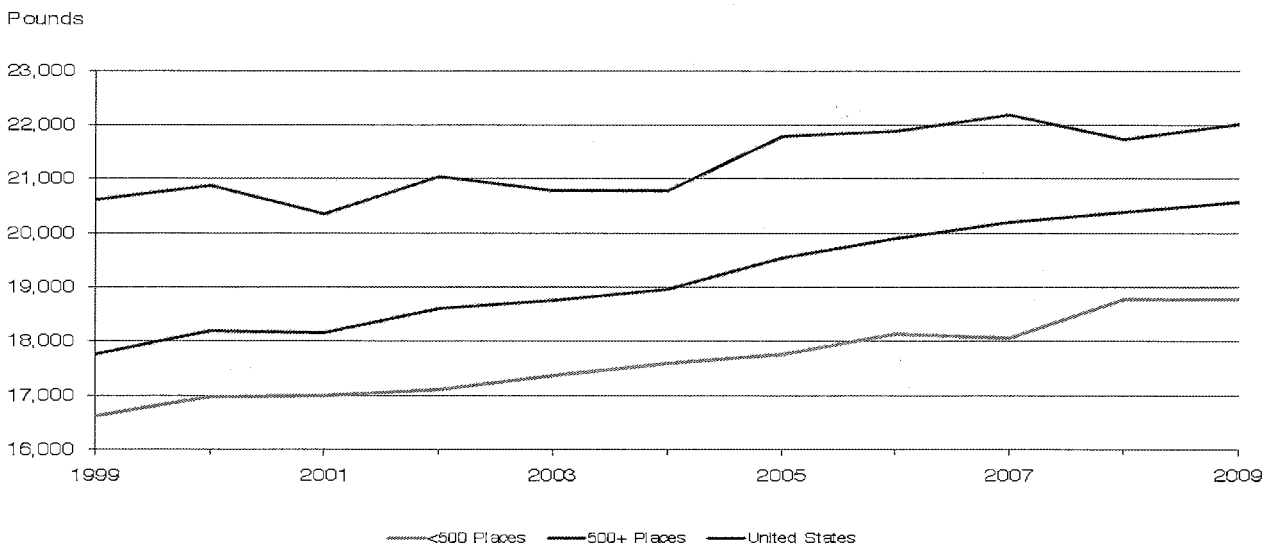
Graph 4. Milk Cow Inventory Distribution - United States



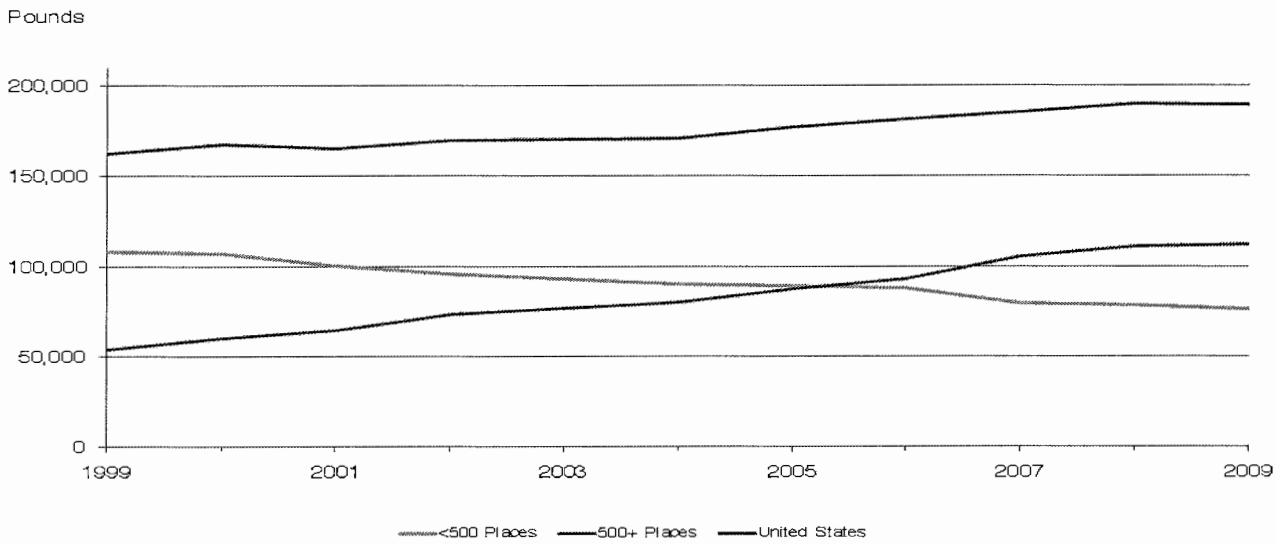
Graph 5. Milk Production Distribution - United States



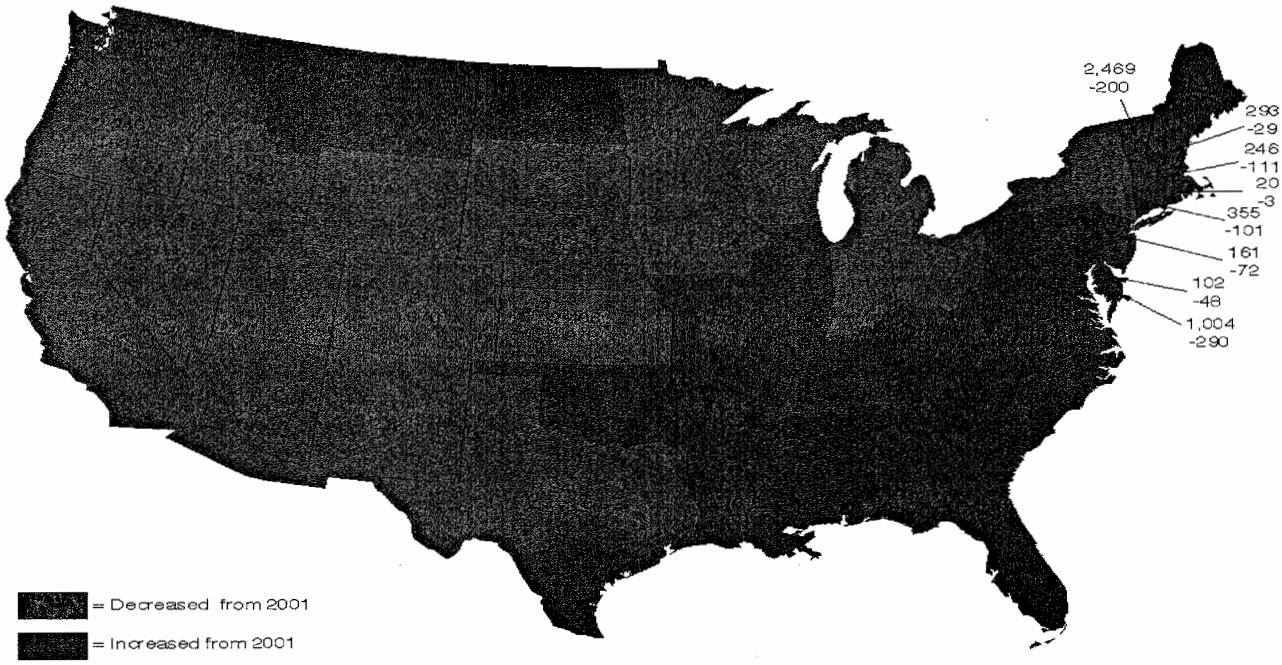
Graph 6. Milk Production Per Cow - United States



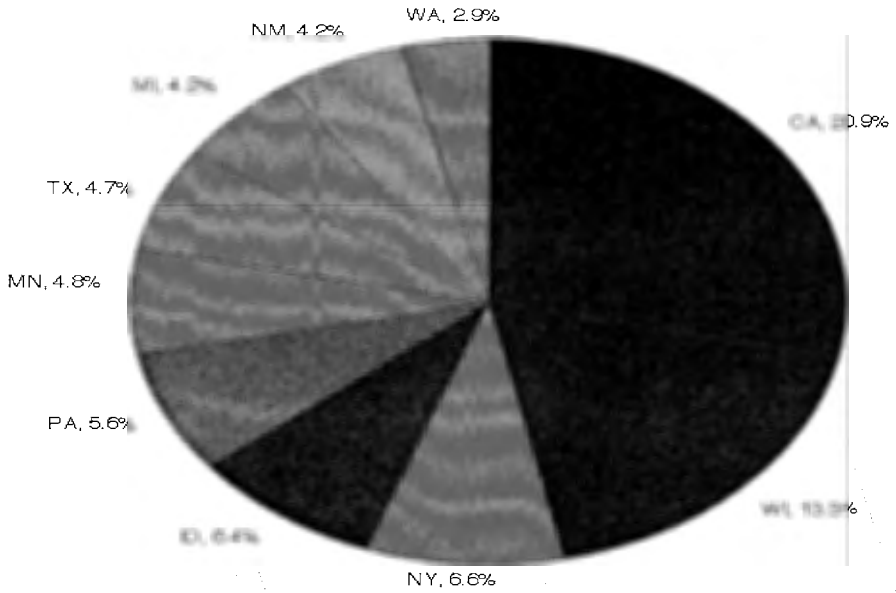
Graph 7. Milk Production - United States



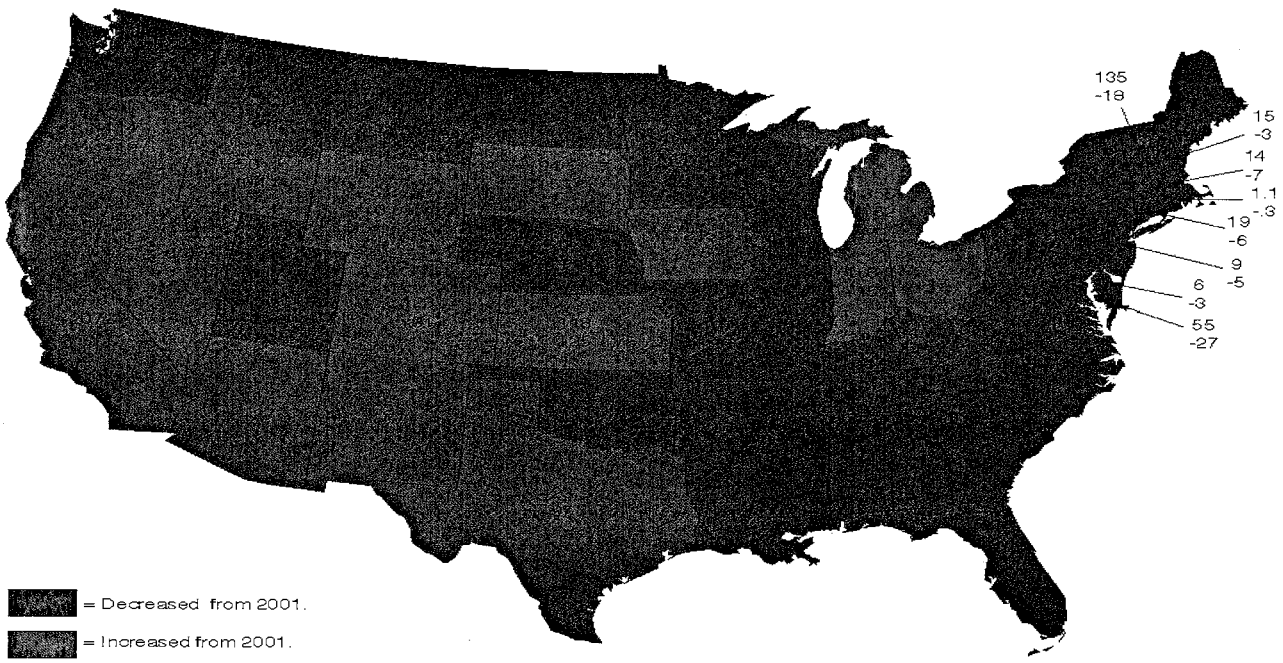
Graph 8. Milk Production - United States: 2009 and Change from 2001 (million pounds)



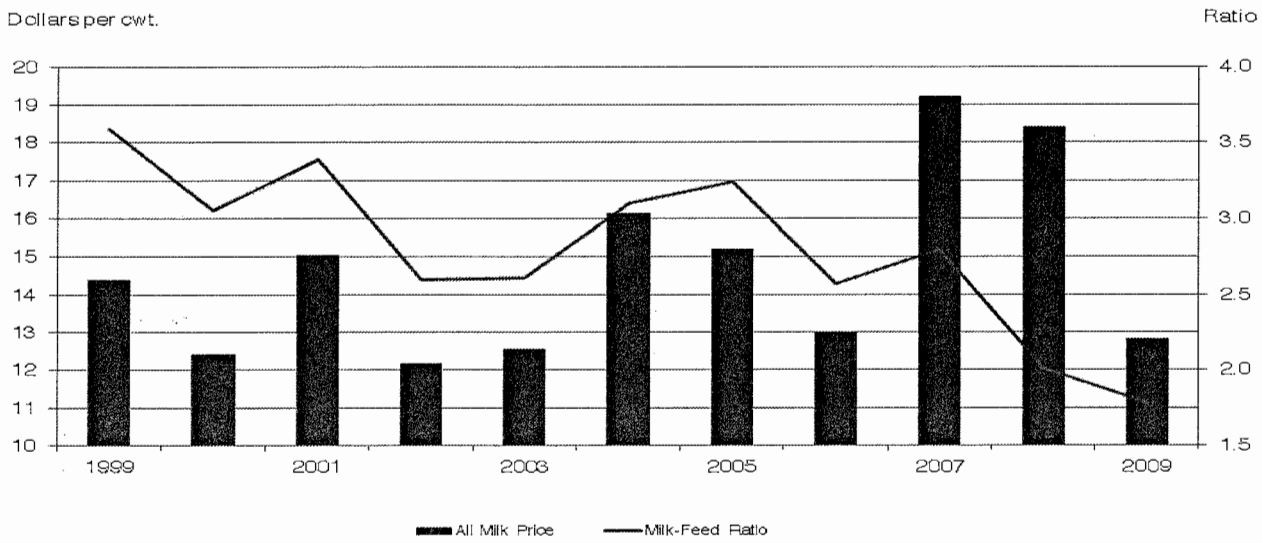
Graph 9. Percent of United States Milk Production - Top 10 States: 2009



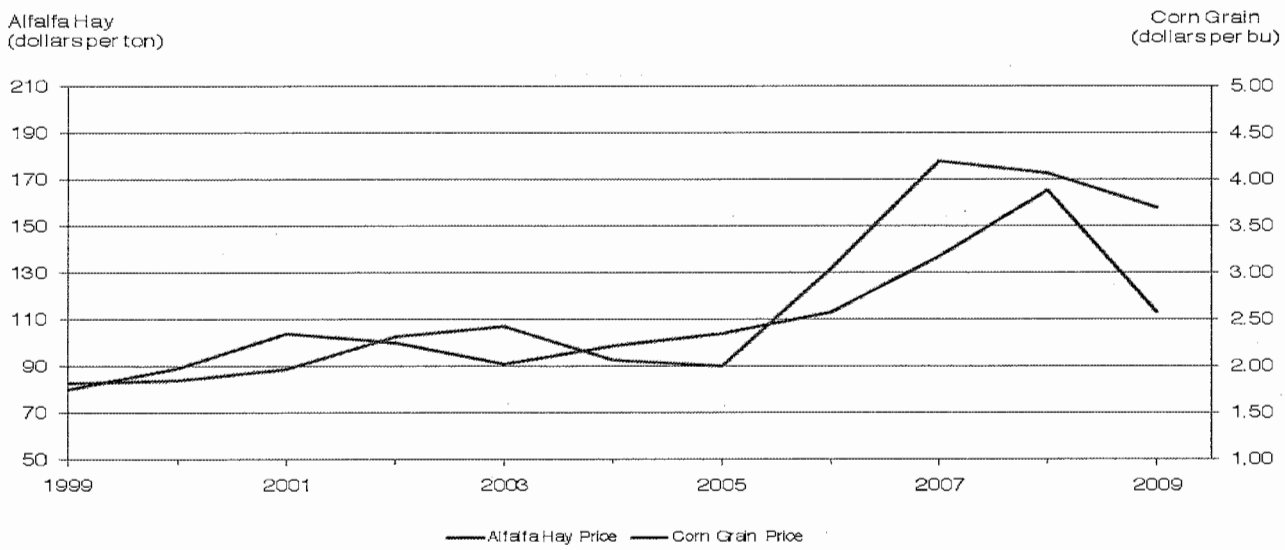
Graph 10. Milk Cow Inventory - United States: 2009 and Change from 2001 (1,000 head)



Graph 11. All Milk Price and Milk-Feed Ratio - United States



Graph 12. Alfalfa Hay and Corn Grain Prices - United States



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Information Contacts

Listed below are the commodity specialists in the Livestock Branch of the National Agricultural Statistics Service to contact for additional information. E-mail inquiries may be sent to nass@nass.usda.gov

Dan Kerestes, Chief, Livestock Branch ..... (202) 720-3570

Scott Hollis, Head, Livestock Section ..... (202) 690-2424
- Vacant – Dairy Products ..... (202) 690-3236
- Joe Gaynor – Dairy Products Prices ..... (202) 690-2168
- Jason Hardegree – Cattle, Cattle on Feed ..... (202) 720-3040
- Sherry Bertramsen – Livestock Slaughter ..... (515) 284-4340
- Everett Olbert – Sheep and Goats ..... (202) 720-4751
- Mike Miller – Milk Production and Milk Cows ..... (202) 720-3278
- Nick Streff – Hogs and Pigs ..... (202) 720-3106

Access to NASS Reports

For your convenience, you may access NASS reports and products the following ways:

- All reports are available electronically, at no cost, on the NASS web site: http://www.nass.usda.gov
- Both national and state specific reports are available via a free e-mail subscription. To set-up this free subscription, visit http://www.nass.usda.gov and in the "Receive NASS Updates" box under "Receive reports by Email," click on "National" or "State" to select the reports you would like to receive.
- Printed reports may be purchased from the National Technical Information Service (NTIS) by calling toll-free (800) 999-6779, or (703) 605-6220 if calling from outside the United States or Canada. Accepted methods of payment are Visa, MasterCard, check, or money order.

For more information on NASS surveys and reports, call the NASS Agricultural Statistics Hotline at (800) 727-9540, 7:30 a.m. to 4:00 p.m. ET, or e-mail: nass@nass.usda.gov.

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USDA Data Users' Meeting

Monday October 25, 2010

Crowne Plaza Chicago-Metro
Chicago, Illinois 60661
312-829-5000

The USDA's National Agricultural Statistics Service will be organizing an open forum for data users. The purpose will be to provide updates on pending changes in the various statistical and information programs and seek comments and input from data users. Other USDA agencies to be represented will include the Agricultural Marketing Service, the Economic Research Service, the Foreign Agricultural Service, and the World Agricultural Outlook Board. The Foreign Trade Division from the Census Bureau will also be included in the meeting.

For registration details or additional information for the Data Users' Meeting, see the NASS homepage at http://www.nass.usda.gov/meeting/ or contact Marie Jordan (NASS) at 202-690-8141 or at marie_jordan@nass.usda.gov.

This Data Users' Meeting precedes an Industry Outlook Meeting that will be held at the same location on Tuesday October 26, 2010. The Outlook meeting brings together analysts from various commodity sectors to discuss the outlook situation. For registration details or additional information for the Industry Outlook Meeting, see the Livestock and Marketing Information Center (LMIC) homepage at http://www.lcmic.info/ or contact Erica Rosa 303-236-0461 at rosa@lmic.info or Laura Lahr 303-236-0464 at lahr@lmic.info.

EXHIBIT

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Table 12. **Cattle and Calves – Inventory: 2012 and 2007**

[For meaning of abbreviations and symbols, see introductory text.]

Item	2012		2007	
	Farms	Number	Farms	Number
Cattle and calves	11,861	1,162,792	12,731	1,088,846
Farms with-				
1 to 9	6,205	26,375	6,031	27,369
10 to 19	2,137	28,484	2,375	31,838
20 to 49	1,732	52,542	2,117	63,782
50 to 99	662	44,893	783	53,069
100 to 199	430	58,955	542	75,256
200 to 499	352	107,666	485	144,031
500 to 999	167	119,082	216	150,970
1,000 to 2,499	107	160,339	130	199,380
2,500 to 4,999	39	132,377	33	109,725
5,000 or more	30	432,079	19	233,426
Cows and heifers that calved	9,816	478,841	10,595	517,133
Farms with-				
1 to 9	6,084	22,717	5,953	23,792
10 to 19	1,361	17,778	1,637	21,479
20 to 49	1,201	34,600	1,510	44,253
50 to 99	469	31,547	546	37,578
100 to 199	276	36,941	414	55,897
200 to 499	245	77,079	328	98,153
500 to 999	92	60,820	135	90,202
1,000 to 2,499	67	99,250	58	85,320
2,500 or more	21	98,109	14	60,459
Beef cows	9,285	211,852	10,065	274,001
Farms with-				
1 to 9	5,938	22,198	5,895	23,544
10 to 19	1,338	17,453	1,616	21,199
20 to 49	1,170	33,549	1,486	43,481
50 to 99	435	29,120	484	32,878
100 to 199	213	27,629	317	42,521
200 to 499	146	43,442	201	58,124
500 to 999	34	22,231	54	35,154
1,000 to 2,499	10	(D)	12	17,100
2,500 or more	1	(D)	-	-

Item	2012		2007	
	Farms	Number	Farms	Number
Cattle and calves - Con.				
Cows and heifers that calved - Con.				
Milk cows	798	266,989	817	243,132
Farms with-				
1 to 9	407	912	324	822
10 to 19	18	225	30	367
20 to 49	42	1,236	25	801
50 to 99	31	2,151	67	4,989
100 to 199	65	9,492	105	14,602
200 to 499	99	33,437	127	40,071
500 to 999	60	40,079	79	53,556
1,000 or more	76	179,457	60	127,924
1,000 to 2,499	56	84,348	46	67,465
2,500 or more	20	95,109	14	60,459
Other cattle (see text)	8,581	683,951	9,505	571,713
Farms with-				
1 to 9	5,507	21,295	5,744	22,485
10 to 19	1,228	16,010	1,552	19,811
20 to 49	871	25,759	1,084	31,767
50 to 99	362	24,939	401	27,294
100 to 199	237	31,662	299	38,759
200 to 499	190	55,971	237	69,110
500 to 999	96	64,739	106	75,588
1,000 to 2,499	58	83,142	57	81,778
2,500 or more	32	360,434	25	205,121
Cattle on feed (see text)	71	246,170	313	163,683
Farms with-				
1 to 19	21	286	254	1,015
20 to 49	23	707	21	595
50 to 99	4	285	9	677
100 to 199	7	975	8	1,031
200 to 499	5	1,609	8	2,150
500 to 999	-	-	-	-
1,000 to 2,499	1	(D)	1	(D)
2,500 or more	10	(D)	12	(D)

Table 13. **Cattle and Calves – Sales: 2012 and 2007**

[For meaning of abbreviations and symbols, see introductory text.]

Number sold	2012			2007		
	Farms	Number	Value ($1,000)	Farms	Number	Value ($1,000)
Cattle and calves	8,420	877,290	994,835	9,521	912,299	716,720
Farms by number sold-						
1 to 9	5,229	19,232	17,192	5,541	20,232	13,705
10 to 19	1,119	14,928	12,786	1,331	17,635	11,351
20 to 49	910	27,148	24,748	1,119	32,556	20,967
50 to 99	441	30,661	28,550	555	38,289	24,628
100 to 199	287	39,055	34,098	397	52,628	33,424
200 to 499	255	75,967	62,776	352	103,963	58,313
500 to 999	95	66,401	47,563	123	83,896	58,108
1,000 to 2,499	52	77,427	59,427	72	106,255	62,300
2,500 to 4,999	17	58,115	50,303	16	49,337	26,326
5,000 or more	15	468,356	657,392	15	407,508	407,597
Cattle, including calves weighing 500 pounds or more	7,588	726,174	(NA)	8,490	727,157	(NA)
Farms by number sold-						
1 to 9	4,879	17,163	(NA)	5,242	18,110	(NA)
10 to 19	947	12,666	(NA)	1,101	14,416	(NA)
20 to 49	804	24,114	(NA)	940	27,626	(NA)
50 to 99	396	27,376	(NA)	514	35,439	(NA)
100 to 199	255	34,664	(NA)	331	43,811	(NA)
200 to 499	203	58,969	(NA)	217	60,475	(NA)
500 to 999	53	33,120	(NA)	76	49,459	(NA)
1,000 to 2,499	32	48,772	(NA)	49	71,363	(NA)
2,500 to 4,999	7	25,280	(NA)	8	23,981	(NA)
5,000 or more	12	444,050	(NA)	12	382,477	(NA)
Cattle on feed (see text)	164	431,976	(NA)	871	388,785	(NA)
Farms by number sold-						
1 to 19	69	800	(NA)	763	3,248	-
20 to 49	38	1,152	(NA)	50	1,517	(NA)
50 to 99	20	1,433	(NA)	15	1,072	(NA)
100 to 199	14	2,005	(NA)	11	1,435	(NA)
200 to 499	10	3,441	(NA)	11	3,493	(NA)
500 to 999	2	(D)	(NA)	5	(D)	(NA)
1,000 to 2,499	-	-	(NA)	5	7,387	(NA)
2,500 to 4,999	2	(D)	(NA)	1	(D)	(NA)
5,000 or more	9	414,421	(NA)	10	364,851	(NA)
Calves weighing less than 500 pounds	2,632	151,116	(NA)	3,434	185,142	(NA)
Farms by number sold-						
1 to 9	1,761	5,717	(NA)	2,039	7,215	(NA)
10 to 19	273	3,420	(NA)	435	5,582	(NA)
20 to 49	228	6,696	(NA)	391	11,383	(NA)
50 to 99	126	8,130	(NA)	211	14,111	(NA)
100 to 199	95	12,355	(NA)	166	22,464	(NA)
200 to 499	84	23,960	(NA)	126	34,915	(NA)
500 to 999	35	24,465	(NA)	35	23,025	(NA)
1,000 or more	30	66,373	(NA)	31	66,447	(NA)

EXHIBIT

23

Economic Impact

Dairy is the second-largest agricultural commodity produced in Washington and an important contributor to the state's economy. Washington ranks 10th in total milk production and 4th in milk production per cow among the 50 United States. The total economic impact of dairying in Washington is valued at over $3.2 billion per year. In addition to the jobs and tax revenues dairy farms generate, more than 50% of local dairy production is exported to destinations in Asia and around the globe — a major advantage for a trade-dependent state such as Washington. Dairy farms can be found in 27 Washington counties, providing jobs and supporting other businesses in their communities. With the highest minimum wage in the industry, dairy farms create a better standard of living for farm workers and fuel increased local economic development. And milk doesn't stay on the farm — where milk goes, money goes, strengthening rural communities and benefiting Washington's entire economy along the way.

EXHIBIT

24

Small Area Income and Poverty Estimate (SAIPE)
All Ages in Poverty
2016 - Selected State - All Counties

Year	ID	Name	Poverty Universe	Number in Poverty	90% Confidence Interval	Percent in Poverty	90% Confidence Interval
2016	00000	United States	315,165,470	44,268,996	44,022,086 to 44,515,906	14.0	13.9 to 14.1
2016	53000	Washington	7,156,291	808,582	791,428 to 825,736	11.3	11.1 to 11.5
2016	53001	Adams County (WA)	19,025	3,710	3,164 to 4,256	19.5	16.6 to 22.4
2016	53003	Asotin County (WA)	22,072	3,225	2,592 to 3,858	14.6	11.7 to 17.5
2016	53005	Benton County (WA)	191,998	20,153	16,910 to 23,396	10.5	8.8 to 12.2
2016	53007	Chelan County (WA)	75,476	8,665	6,801 to 10,529	11.5	9.0 to 14.0
2016	53009	Clallam County (WA)	72,831	11,110	9,587 to 12,633	15.3	13.2 to 17.4
2016	53011	Clark County (WA)	463,501	41,909	37,329 to 46,489	9.0	8.0 to 10.0
2016	53013	Columbia County (WA)	3,876	543	419 to 667	14.0	10.8 to 17.2
2016	53015	Cowlitz County (WA)	103,765	16,863	14,570 to 19,156	16.3	14.1 to 18.5
2016	53017	Douglas County (WA)	41,100	5,260	4,280 to 6,240	12.8	10.4 to 15.2
2016	53019	Ferry County (WA)	7,531	1,602	1,309 to 1,895	21.3	17.4 to 25.2
2016	53021	Franklin County (WA)	87,091	12,972	10,790 to 15,154	14.9	12.4 to 17.4
2016	53023	Garfield County (WA)	2,211	308	238 to 378	13.9	10.7 to 17.1
2016	53025	Grant County (WA)	92,327	14,842	12,539 to 17,145	16.1	13.6 to 18.6
2016	53027	Grays Harbor County (WA)	68,834	10,437	8,470 to 12,404	15.2	12.3 to 18.1
2016	53029	Island County (WA)	80,616	7,577	6,308 to 8,846	9.4	7.8 to 11.0
2016	53031	Jefferson County (WA)	30,552	3,679	2,927 to 4,431	12.0	9.5 to 14.5
2016	53033	King County (WA)	2,120,859	196,841	186,373 to 207,309	9.3	8.8 to 9.8
2016	53035	Kitsap County (WA)	255,563	25,729	22,158 to 29,300	10.1	8.7 to 11.5

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

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Small Area Income and Poverty Estimate (SAIPE)
All Ages in Poverty
2016 - Selected State - All Counties

Year	ID	Name	Poverty Universe	Number in Poverty	90% Confidence Interval	Percent in Poverty	90% Confidence Interval
2016	53037	Kittitas County (WA)	42,435	7,724	6,598 to 8,850	18.2	15.5 to 20.9
2016	53039	Klickitat County (WA)	21,157	3,269	2,648 to 3,890	15.5	12.6 to 18.4
2016	53041	Lewis County (WA)	76,036	11,155	9,156 to 13,154	14.7	12.1 to 17.3
2016	53043	Lincoln County (WA)	10,259	1,279	994 to 1,564	12.5	9.7 to 15.3
2016	53045	Mason County (WA)	59,448	8,830	7,293 to 10,367	14.9	12.3 to 17.5
2016	53047	Okanogan County (WA)	40,977	8,082	6,803 to 9,361	19.7	16.6 to 22.8
2016	53049	Pacific County (WA)	20,998	3,578	2,900 to 4,256	17.0	13.8 to 20.2
2016	53051	Pend Oreille County (WA)	12,983	2,103	1,628 to 2,578	16.2	12.5 to 19.9
2016	53053	Pierce County (WA)	844,314	102,303	94,874 to 109,732	12.1	11.2 to 13.0
2016	53055	San Juan County (WA)	16,173	1,599	1,294 to 1,904	9.9	8.0 to 11.8
2016	53057	Skagit County (WA)	122,345	13,787	11,977 to 15,597	11.3	9.8 to 12.8
2016	53059	Skamania County (WA)	11,462	1,543	1,244 to 1,842	13.5	10.9 to 16.1
2016	53061	Snohomish County (WA)	778,172	62,396	56,280 to 68,512	8.0	7.2 to 8.8
2016	53063	Spokane County (WA)	485,188	64,514	58,842 to 70,186	13.3	12.1 to 14.5
2016	53065	Stevens County (WA)	44,082	6,284	5,066 to 7,502	14.3	11.5 to 17.1
2016	53067	Thurston County (WA)	271,462	28,354	24,713 to 31,995	10.4	9.1 to 11.7
2016	53069	Wahkiakum County (WA)	4,085	523	406 to 640	12.8	9.9 to 15.7
2016	53071	Walla Walla County (WA)	55,730	7,906	6,408 to 9,404	14.2	11.5 to 16.9
2016	53073	Whatcom County (WA)	211,257	32,082	29,040 to 35,124	15.2	13.8 to 16.6

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

MAR 0669

Small Area Income and Poverty Estimate (SAIPE)
All Ages in Poverty
2016 - Selected State - All Counties

Year	ID	Name	Poverty Universe	Number in Poverty	90% Confidence Interval	Percent in Poverty	90% Confidence Interval
2016	53075	Whitman County (WA)	42,526	11,027	9,939 to 12,115	25.9	23.3 to 28.5
2016	53077	Yakima County (WA)	245,973	44,819	40,036 to 49,602	18.2	16.3 to 20.1

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

Small Area Income and Poverty Estimate (SAIPE)
Under Age 18 in Poverty
2016 - Selected State - All Counties

Year	ID	Name	Poverty Universe	Number in Poverty	90% Confidence Interval	Percent in Poverty	90% Confidence Interval
2016	00000	United States	72,452,603	14,115,713	13,976,345 to 14,255,081	19.5	19.3 to 19.7
2016	53000	Washington	1,604,605	222,292	212,495 to 232,089	13.9	13.3 to 14.5
2016	53001	Adams County (WA)	6,816	1,709	1,410 to 2,008	25.1	20.7 to 29.5
2016	53003	Asotin County (WA)	4,558	941	714 to 1,168	20.6	15.6 to 25.6
2016	53005	Benton County (WA)	51,271	7,140	5,540 to 8,740	13.9	10.8 to 17.0
2016	53007	Chelan County (WA)	17,919	2,947	2,238 to 3,656	16.4	12.4 to 20.4
2016	53009	Clallam County (WA)	12,586	2,788	2,268 to 3,308	22.2	18.1 to 26.3
2016	53011	Clark County (WA)	113,433	12,363	9,978 to 14,748	10.9	8.8 to 13.0
2016	53013	Columbia County (WA)	686	163	123 to 203	23.8	18.0 to 29.6
2016	53015	Cowlitz County (WA)	23,303	4,697	3,730 to 5,664	20.2	16.0 to 24.4
2016	53017	Douglas County (WA)	10,671	1,895	1,451 to 2,339	17.8	13.6 to 22.0
2016	53019	Ferry County (WA)	1,293	364	280 to 448	28.2	21.7 to 34.7
2016	53021	Franklin County (WA)	29,511	6,201	5,111 to 7,291	21.0	17.3 to 24.7
2016	53023	Garfield County (WA)	450	85	64 to 106	18.9	14.3 to 23.5
2016	53025	Grant County (WA)	27,475	5,750	4,648 to 6,852	20.9	16.9 to 24.9
2016	53027	Grays Harbor County (WA)	14,501	3,312	2,534 to 4,090	22.8	17.4 to 28.2
2016	53029	Island County (WA)	14,956	1,856	1,491 to 2,221	12.4	10.0 to 14.8
2016	53031	Jefferson County (WA)	3,855	795	600 to 990	20.6	15.5 to 25.7
2016	53033	King County (WA)	438,511	46,611	41,821 to 51,401	10.6	9.5 to 11.7
2016	53035	Kitsap County (WA)	53,634	6,215	5,043 to 7,387	11.6	9.4 to 13.8

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

Small Area Income and Poverty Estimate (SAIPE)
Under Age 18 in Poverty
2016 - Selected State - All Counties

Year	ID	Name	Poverty Universe	Number in Poverty	90% Confidence Interval	Percent in Poverty	90% Confidence Interval
2016	53037	Kittitas County (WA)	7,649	1,127	861 to 1,393	14.7	11.2 to 18.2
2016	53039	Klickitat County (WA)	4,071	853	644 to 1,062	21.0	15.9 to 26.1
2016	53041	Lewis County (WA)	16,211	3,212	2,452 to 3,972	19.8	15.1 to 24.5
2016	53043	Lincoln County (WA)	2,206	382	291 to 473	17.3	13.2 to 21.4
2016	53045	Mason County (WA)	11,466	2,587	2,047 to 3,127	22.6	17.9 to 27.3
2016	53047	Okanogan County (WA)	9,351	2,462	1,960 to 2,964	26.3	20.9 to 31.7
2016	53049	Pacific County (WA)	3,383	803	612 to 994	23.7	18.1 to 29.3
2016	53051	Pend Oreille County (WA)	2,472	659	495 to 823	26.7	20.1 to 33.3
2016	53053	Pierce County (WA)	200,668	30,714	27,281 to 34,147	15.3	13.6 to 17.0
2016	53055	San Juan County (WA)	2,172	332	250 to 414	15.3	11.5 to 19.1
2016	53057	Skagit County (WA)	26,590	3,199	2,361 to 4,037	12.0	8.8 to 15.2
2016	53059	Skamania County (WA)	2,234	405	311 to 499	18.1	13.9 to 22.3
2016	53061	Snohomish County (WA)	176,949	16,093	13,549 to 18,637	9.1	7.7 to 10.5
2016	53063	Spokane County (WA)	108,954	17,210	14,413 to 20,007	15.8	13.2 to 18.4
2016	53065	Stevens County (WA)	9,574	1,990	1,466 to 2,514	20.8	15.3 to 26.3
2016	53067	Thurston County (WA)	58,888	7,057	5,654 to 8,460	12.0	9.6 to 14.4
2016	53069	Wahkiakum County (WA)	718	177	133 to 221	24.7	18.6 to 30.8
2016	53071	Walla Walla County (WA)	12,709	2,164	1,652 to 2,676	17.0	13.0 to 21.0
2016	53073	Whatcom County (WA)	42,015	5,174	4,063 to 6,285	12.3	9.7 to 14.9

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

MAR 0672

Small Area Income and Poverty Estimate (SAIPE)
Under Age 18 in Poverty
2016 - Selected State - All Counties

Year	ID	Name	Poverty Universe	Number in Poverty	90% Confidence Interval	Percent in Poverty	90% Confidence Interval
2016	53075	Whitman County (WA)	7,415	1,093	856 to 1,330	14.7	11.5 to 17.9
2016	53077	Yakima County (WA)	73,481	18,766	16,274 to 21,258	25.5	22.1 to 28.9

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

Small Area Income and Poverty Estimate (SAIPE)
Ages 5 to 17 in Families in Poverty
2016 - Selected State - All Counties

Year	ID	Name	Poverty Universe	Number in Poverty	90% Confidence Interval	Percent in Poverty	90% Confidence Interval
2016	00000	United States	52,644,648	9,648,486	9,548,767 to 9,748,205	18.3	18.1 to 18.5
2016	53000	Washington	1,150,767	146,993	138,577 to 155,409	12.8	12.1 to 13.5
2016	53001	Adams County (WA)	4,875	1,187	967 to 1,407	24.3	19.8 to 28.8
2016	53003	Asotin County (WA)	3,322	610	451 to 769	18.4	13.6 to 23.2
2016	53005	Benton County (WA)	37,408	4,633	3,494 to 5,772	12.4	9.4 to 15.4
2016	53007	Chelan County (WA)	12,988	1,945	1,435 to 2,455	15.0	11.1 to 18.9
2016	53009	Clallam County (WA)	9,062	1,708	1,303 to 2,113	18.8	14.3 to 23.3
2016	53011	Clark County (WA)	84,265	7,803	6,021 to 9,585	9.3	7.2 to 11.4
2016	53013	Columbia County (WA)	514	112	83 to 141	21.8	16.1 to 27.5
2016	53015	Cowlitz County (WA)	17,094	3,144	2,421 to 3,867	18.4	14.2 to 22.6
2016	53017	Douglas County (WA)	7,890	1,242	919 to 1,565	15.7	11.6 to 19.8
2016	53019	Ferry County (WA)	895	238	177 to 299	26.6	19.8 to 33.4
2016	53021	Franklin County (WA)	21,154	4,148	3,359 to 4,937	19.6	15.9 to 23.3
2016	53023	Garfield County (WA)	326	57	42 to 72	17.5	12.9 to 22.1
2016	53025	Grant County (WA)	19,868	3,790	2,991 to 4,589	19.1	15.1 to 23.1
2016	53027	Grays Harbor County (WA)	10,552	2,245	1,674 to 2,816	21.3	15.9 to 26.7
2016	53029	Island County (WA)	10,353	1,225	972 to 1,478	11.8	9.4 to 14.2
2016	53031	Jefferson County (WA)	2,882	547	404 to 690	19.0	14.0 to 24.0
2016	53033	King County (WA)	309,484	30,923	27,375 to 34,471	10.0	8.9 to 11.1
2016	53035	Kitsap County (WA)	38,169	4,024	3,143 to 4,905	10.5	8.2 to 12.8

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

MAR 0674

Small Area Income and Poverty Estimate (SAIPE)
Ages 5 to 17 in Families in Poverty
2016 - Selected State - All Counties

Year	ID	Name	Poverty Universe	Number in Poverty	90% Confidence Interval	Percent in Poverty	90% Confidence Interval
2016	53037	Kittitas County (WA)	5,601	751	561 to 941	13.4	10.0 to 16.8
2016	53039	Klickitat County (WA)	2,996	587	433 to 741	19.6	14.5 to 24.7
2016	53041	Lewis County (WA)	11,816	2,179	1,615 to 2,743	18.4	13.6 to 23.2
2016	53043	Lincoln County (WA)	1,686	264	196 to 332	15.7	11.7 to 19.7
2016	53045	Mason County (WA)	8,318	1,802	1,413 to 2,191	21.7	17.0 to 26.4
2016	53047	Okanogan County (WA)	6,759	1,690	1,329 to 2,051	25.0	19.7 to 30.3
2016	53049	Pacific County (WA)	2,468	562	422 to 702	22.8	17.1 to 28.5
2016	53051	Pend Oreille County (WA)	1,877	454	334 to 574	24.2	17.8 to 30.6
2016	53053	Pierce County (WA)	142,283	19,879	17,250 to 22,508	14.0	12.2 to 15.8
2016	53055	San Juan County (WA)	1,693	231	169 to 293	13.6	9.9 to 17.3
2016	53057	Skagit County (WA)	19,068	2,311	1,692 to 2,930	12.1	8.9 to 15.3
2016	53059	Skamania County (WA)	1,724	272	204 to 340	15.8	11.9 to 19.7
2016	53061	Snohomish County (WA)	127,189	10,957	9,014 to 12,900	8.6	7.1 to 10.1
2016	53063	Spokane County (WA)	78,420	11,065	8,951 to 13,179	14.1	11.4 to 16.8
2016	53065	Stevens County (WA)	7,140	1,385	993 to 1,777	19.4	13.9 to 24.9
2016	53067	Thurston County (WA)	42,498	4,841	3,816 to 5,866	11.4	9.0 to 13.8
2016	53069	Wahkiakum County (WA)	549	122	89 to 155	22.2	16.2 to 28.2
2016	53071	Walla Walla County (WA)	9,260	1,452	1,088 to 1,816	15.7	11.8 to 19.6
2016	53073	Whatcom County (WA)	30,157	3,482	2,647 to 4,317	11.5	8.7 to 14.3

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

Small Area Income and Poverty Estimate (SAIPE)
Ages 5 to 17 in Families in Poverty
2016 - Selected State - All Counties

Year	ID	Name	Poverty Universe	Number in Poverty	90% Confidence Interval	Percent in Poverty	90% Confidence Interval
2016	53075	Whitman County (WA)	5,205	674	503 to 845	12.9	9.6 to 16.2
2016	53077	Yakima County (WA)	52,956	12,452	10,506 to 14,398	23.5	19.8 to 27.2

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

Small Area Income and Poverty Estimate (SAIPE)
Under Age 5 in Poverty
2016 - Selected State - All Counties

Year	ID	Name	Poverty Universe	Number in Poverty	90% Confidence Interval	Percent in Poverty	90% Confidence Interval
2016	00000	United States	19,473,767	4,156,949	4,108,397 to 4,205,501	21.3	21.1 to 21.5
2016	53000	Washington	445,044	66,692	62,035 to 71,349	15.0	14.0 to 16.0
2016	53001	Adams County (WA)	NA	NA	NA	NA	NA
2016	53003	Asotin County (WA)	NA	NA	NA	NA	NA
2016	53005	Benton County (WA)	NA	NA	NA	NA	NA
2016	53007	Chelan County (WA)	NA	NA	NA	NA	NA
2016	53009	Clallam County (WA)	NA	NA	NA	NA	NA
2016	53011	Clark County (WA)	NA	NA	NA	NA	NA
2016	53013	Columbia County (WA)	NA	NA	NA	NA	NA
2016	53015	Cowlitz County (WA)	NA	NA	NA	NA	NA
2016	53017	Douglas County (WA)	NA	NA	NA	NA	NA
2016	53019	Ferry County (WA)	NA	NA	NA	NA	NA
2016	53021	Franklin County (WA)	NA	NA	NA	NA	NA
2016	53023	Garfield County (WA)	NA	NA	NA	NA	NA
2016	53025	Grant County (WA)	NA	NA	NA	NA	NA
2016	53027	Grays Harbor County (WA)	NA	NA	NA	NA	NA
2016	53029	Island County (WA)	NA	NA	NA	NA	NA
2016	53031	Jefferson County (WA)	NA	NA	NA	NA	NA
2016	53033	King County (WA)	NA	NA	NA	NA	NA
2016	53035	Kitsap County (WA)	NA	NA	NA	NA	NA

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

Small Area Income and Poverty Estimate (SAIPE)
Under Age 5 in Poverty
2016 - Selected State - All Counties

Year	ID	Name	Poverty Universe	Number in Poverty	90% Confidence Interval	Percent in Poverty	90% Confidence Interval
2016	53037	Kittitas County (WA)	NA	NA	NA	NA	NA
2016	53039	Klickitat County (WA)	NA	NA	NA	NA	NA
2016	53041	Lewis County (WA)	NA	NA	NA	NA	NA
2016	53043	Lincoln County (WA)	NA	NA	NA	NA	NA
2016	53045	Mason County (WA)	NA	NA	NA	NA	NA
2016	53047	Okanogan County (WA)	NA	NA	NA	NA	NA
2016	53049	Pacific County (WA)	NA	NA	NA	NA	NA
2016	53051	Pend Oreille County (WA)	NA	NA	NA	NA	NA
2016	53053	Pierce County (WA)	NA	NA	NA	NA	NA
2016	53055	San Juan County (WA)	NA	NA	NA	NA	NA
2016	53057	Skagit County (WA)	NA	NA	NA	NA	NA
2016	53059	Skamania County (WA)	NA	NA	NA	NA	NA
2016	53061	Snohomish County (WA)	NA	NA	NA	NA	NA
2016	53063	Spokane County (WA)	NA	NA	NA	NA	NA
2016	53065	Stevens County (WA)	NA	NA	NA	NA	NA
2016	53067	Thurston County (WA)	NA	NA	NA	NA	NA
2016	53069	Wahkiakum County (WA)	NA	NA	NA	NA	NA
2016	53071	Walla Walla County (WA)	NA	NA	NA	NA	NA
2016	53073	Whatcom County (WA)	NA	NA	NA	NA	NA

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

Small Area Income and Poverty Estimate (SAIPE)
Under Age 5 in Poverty
2016 - Selected State - All Counties

Year	ID	Name	Poverty Universe	Number in Poverty	90% Confidence Interval	Percent in Poverty	90% Confidence Interval
2016	53075	Whitman County (WA)	NA	NA	NA	NA	NA
2016	53077	Yakima County (WA)	NA	NA	NA	NA	NA

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

Small Area Income and Poverty Estimate (SAIPE)
Median Household Income in Dollars
2016 - Selected State - All Counties

Year	ID	Name	Median Household Income	90% Confidence Interval
2016	00000	United States	$57,617	$57,502 to $57,732
2016	53000	Washington	$67,064	$66,481 to $67,647
2016	53001	Adams County (WA)	$48,698	$43,583 to $53,813
2016	53003	Asotin County (WA)	$46,121	$42,575 to $49,667
2016	53005	Benton County (WA)	$63,474	$59,794 to $67,154
2016	53007	Chelan County (WA)	$51,930	$47,133 to $56,727
2016	53009	Clallam County (WA)	$49,502	$45,637 to $53,367
2016	53011	Clark County (WA)	$68,937	$66,993 to $70,881
2016	53013	Columbia County (WA)	$47,894	$43,573 to $52,215
2016	53015	Cowlitz County (WA)	$51,772	$48,108 to $55,436
2016	53017	Douglas County (WA)	$52,363	$50,230 to $54,496
2016	53019	Ferry County (WA)	$40,581	$36,332 to $44,830
2016	53021	Franklin County (WA)	$56,940	$52,788 to $61,092
2016	53023	Garfield County (WA)	$51,922	$46,737 to $57,107
2016	53025	Grant County (WA)	$48,997	$46,084 to $51,910
2016	53027	Grays Harbor County (WA)	$48,210	$45,206 to $51,214
2016	53029	Island County (WA)	$64,475	$61,446 to $67,504
2016	53031	Jefferson County (WA)	$53,345	$48,947 to $57,743
2016	53033	King County (WA)	$85,907	$84,463 to $87,351
2016	53035	Kitsap County (WA)	$68,706	$65,327 to $72,085

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

Small Area Income and Poverty Estimate (SAIPE)
Median Household Income in Dollars
2016 - Selected State - All Counties

Year	ID	Name	Median Household Income	90% Confidence Interval
2016	53037	Kittitas County (WA)	$50,410	$45,855 to $54,965
2016	53039	Klickitat County (WA)	$50,691	$46,074 to $55,308
2016	53041	Lewis County (WA)	$47,127	$43,330 to $50,924
2016	53043	Lincoln County (WA)	$53,886	$49,015 to $58,757
2016	53045	Mason County (WA)	$52,758	$49,449 to $56,067
2016	53047	Okanogan County (WA)	$41,726	$38,424 to $45,028
2016	53049	Pacific County (WA)	$43,168	$38,853 to $47,483
2016	53051	Pend Oreille County (WA)	$48,706	$45,398 to $52,014
2016	53053	Pierce County (WA)	$64,312	$62,550 to $66,074
2016	53055	San Juan County (WA)	$59,658	$54,671 to $64,645
2016	53057	Skagit County (WA)	$60,442	$57,321 to $63,563
2016	53059	Skamania County (WA)	$55,802	$49,932 to $61,672
2016	53061	Snohomish County (WA)	$78,582	$77,008 to $80,156
2016	53063	Spokane County (WA)	$52,933	$51,148 to $54,718
2016	53065	Stevens County (WA)	$51,303	$48,308 to $54,298
2016	53067	Thurston County (WA)	$65,684	$63,246 to $68,122
2016	53069	Wahkiakum County (WA)	$54,162	$49,156 to $59,168
2016	53071	Walla Walla County (WA)	$53,598	$49,599 to $57,597
2016	53073	Whatcom County (WA)	$56,636	$52,790 to $60,482

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

Small Area Income and Poverty Estimate (SAIPE)
Median Household Income in Dollars
2016 - Selected State - All Counties

Year	ID	Name	Median Household Income	90% Confidence Interval
2016	53075	Whitman County (WA)	$42,693	$38,860 to $46,526
2016	53077	Yakima County (WA)	$48,232	$45,644 to $50,820

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program.

MODEL BASED ESTIMATES: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error.

MAR 0682

EXHIBIT

25

A Sustainable Bounty:
Investing In Our Agricultural Future

Washington State Farmworker Housing Trust

The Washington State Farmworker Survey

A SUSTAINABLE BOUNTY:
INVESTING IN OUR AGRICULTURAL FUTURE
Washington State Farmworker Survey

July 2008

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Copies of this report can be downloaded at our website.
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The Trust's work to fund safe, affordable housing for farm workers is providing homes for families, helping growers and supporting rural communities across Washington.

Washington State Farmworker Housing Trust is a nonprofit organization founded in 2003 through the leadership of U.S. Senator Patty Murray. The mission of the Trust is to create a better and more sustainable agricultural community in Washington State by securing and investing resources to address the full spectrum of housing and related needs of farmworkers in our state.

Our Board of Directors is a unique assembly of leaders representing growers, farmworker advocates, rural housing providers and other community stakeholders who have united to address the severe shortage of farmworker housing in Washington.

The Trust works to develop new resources for farmworker housing, supports the work of local housing organizations, engages in research and collaborates with many partners to advocate for improved housing conditions for Washington farmworkers who work so hard to feed us and make agriculture the economic engine of our state and rural communities.

Acknowledgements

The Washington State Farmworker Survey has benefited from the generous contributions of many individuals and organizations. The Washington State Farmworker Housing Trust wishes to acknowledge and thank the founder of the Trust, U.S. Senator Patty Murray, and our Board of Directors for their extensive support. We thank Peter Connery of Applied Survey Research who directed the survey and Alice C. Larson, Ph.D., for her invaluable data analysis. We are grateful to the Office of Rural and Farmworker Housing who shared their time-tested survey tools and practices, from which we benefited greatly. We appreciate the assistance of Cedar River Group which was essential throughout the survey. A special thanks to Rosalinda Guillen, State Field Coordinator, and all of the interviewers for their outreach efforts throughout the state of Washington. Also, thank you to Joseph K. Byers, Daniel J. Cowan, Skagitonians to Preserve Farmland, Washington Growers League, United Farm Workers and the Seattle Post-Intelligencer for sharing their graphics and photographs with the Trust.

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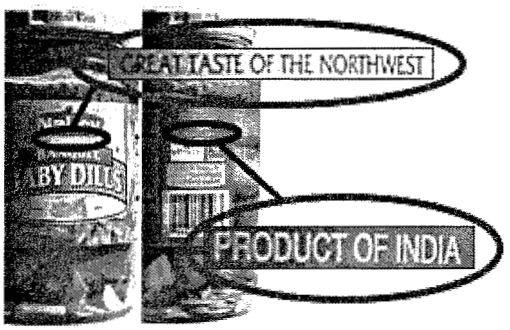
Washington Association of Migrant and Community Health Centers
Washington Mutual Bank
Washington State Department of Community, Trade and Economic Development
Washington State Housing Finance Commission

Executive Summary

MAR 0687

Introduction

Agricultural production contributes $6.4 billion per year to Washington State's economy,[1] with over one third of the state's crops intended for the export market.[2] The diversity of crops grown is second only to California.[3] Washington's farmers face growing competition domestically for labor and globally for price and market.



Graphic courtesy of the Seattle Post-Intelligencer

As many as 187,000 farmworkers are employed in the state, playing an indispensable role in the agricultural economy.[4] The seasonal nature of agricultural employment, however, provides these workers with limited resources for securing housing and addressing other needs. The lack of safe, affordable housing for farmworkers is a key issue in attracting and retaining skilled workers. To help retain experienced workers and stabilize the workforce, Washington's growers have extended the work season through innovation, technology and new crop varieties. Yet the demanding nature of farm work, seasonal income and competition from other sectors of the economy have made this increasingly difficult. Headline stories in recent years have cited labor shortages and cases in which crops have spoiled in the field as a result.[5]

To address this challenge, in 2003, U.S. Senator Patty Murray convened leaders representing growers, farmworker advocates, rural housing developers and other community stakeholders to create the Washington State Farmworker Housing Trust (The Trust). The Trust took on the mission of securing resources to meet the full spectrum of housing and related needs of those who labor in the fields and orchards of Washington.

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[1] Washington State Employment Security Department, "2006 Agricultural Workforce in Washington State," (2007), 1.
[2] Washington State Employment Security Department, "2007 Agricultural Workforce in Washington State," (2008), 48.
[3] Washington State Employment Security Department (2007), 70.
[4] Alice C. Larson, *Migrant and Seasonal Farmworker Enumeration Profiles Study: Washington*, (U.S. Department of Health and Human Services, 2000).
[5] Hal Bernton, "With shortage of workers, apple crop falls on rotten times," *The Seattle Times* on the Web, October 25, 2006, <http://community.seattletimes.nwsource.com/archive/?date=20061025&slug=applepickers25m>.

The lack of safe, affordable housing for farmworkers has been documented journalistically and in a number of local studies, but there is limited statewide or national data available. The Trust commissioned this survey to address the lack of statewide data on farmworkers' housing needs and gather information from their perspectives. Partnerships were formed with other organizations interested in farmworkers' access to healthcare, child care and participation in community affairs. The Trust hopes to expand on these partnerships in the future to gain a more comprehensive understanding of the full spectrum of farmworkers' needs and aspirations and their relationship with housing conditions.

Over the course of the 2006 growing season 2,845 one-on-one interviews were conducted in the 14 principal agricultural counties that employ 95% of Washington's farmworkers. This is the largest direct survey of farmworkers undertaken in Washington State history and the survey interviews included questions about household composition, work history, income, housing conditions, access to health care, community engagement and use of public services. A completely randomized sample was beyond the scope of this survey. This places limits on the ability to generalize the characteristics of the entire farmworker population from the study results. Nevertheless, the study findings provide extensive information about the respondents and their needs.

The importance of adequate affordable housing for the agricultural workforce is revealed by these findings:

- Although half of the survey respondents are uncertain how much longer they will continue working in agriculture or plan to find other employment within a year, 91% said that more and better housing would encourage them to continue working in Washington agriculture.
- More than three-quarters of the farmworkers surveyed live with their families and nearly 60% have children in their home.
- Seventy-nine percent are permanent Washington residents and 70% don't travel away from home for work.
- Forty-four percent pay more than 30% of their income for housing costs, 36% report housing problems, 32% are overcrowded and 6% are homeless.

The results of this survey will guide the work of the Trust and its many partners to address the housing and related needs of farmworkers and their families. It is also intended to better inform public policy decisions affecting the lives of those whose labors sustain the state's agricultural economy.

Major Findings

Demographics, Family Composition and Place of Residence

Of those interviewed:

- 77% lived with family members, 23% lived independently.
- 58% of the accompanied households included children.
- The median household size was 4.34 persons.
- Accompanied households had an average of 2.57 farmworkers.
- 79% stated that their permanent residence is in Washington.
- 70% did not leave their local area for work.
- 30% traveled and stayed away from home overnight to work.

According to the 2000 Census, 33% percent of households in Washington are non-family households (individuals living alone or with non-relatives with whom they do not share finances), compared to 23% of survey respondents. This is contrary to a common perception that the majority of farmworkers are single or not living with their families. The median household size of 4.34 persons is close to the median farmworker household size of 5 reported in a national survey conducted in 2000.[6] A 2000 enumeration of farmworkers in Washington estimated that 35% travel away from home overnight for work and 65% do not.[7]

Employment

Of those interviewed:

- 59% have worked in Washington agriculture for five years or more.
- 27% have worked in Washington agriculture for more than ten years.
- 31% work for the same employer(s) every year.
- 35% intend to work in agriculture in Washington for at least five more years.
- 40% are uncertain how long they will continue to work in agriculture in Washington.
- 91% said more or better housing would encourage them to continue working in agriculture.
- Over 93% of those who travel and stay away from their home overnight for work said more or better housing would encourage them to continue coming to Washington to work.

The challenge of maintaining a stable agricultural workforce is illustrated by the large number of respondents who are uncertain how much longer they will work in agriculture. Ten percent of

[6] Housing Assistance Council, *No Refuge from the Fields: Findings from a Survey of Farmworker Housing Conditons in the United States,* (2001), 13.
[7] Larson.

respondents plan to leave agricultural work in a year or less. On the other hand, better housing is clearly an important incentive to remain in agriculture to the vast majority of respondents.

Income

- The average *household* income earned last year by those surveyed was $17,596, only 88% of the 2006 federal poverty level for a family of four ($20,000).
- 78% were very low-income with household incomes at or below 50% of the 2006 state median income of $49,900 for a family of four.[8]
- 19% had household incomes of 51% to 80% of the state median income.
- Household income varied across regions, with Region 3 (North Central Washington) households earning an average of just $12,791 last year, while those in Region 5 (Benton, Franklin and Walla Walla Counties) earned $21,425 on average.

The data regarding income illustrates the difficulty most farmworkers face in seeking affordable housing. According to federal standards, with an average income of $17,596 a family can afford to spend just $440 per month for both housing and utilities (30% of average monthly income). The 2006 statewide Nonmetro Fair Market Rent for a 2-bedroom unit was $646. The gap between farmworker income and housing affordability appears to be most severe in western Washington, where housing prices are the highest and the average income for respondent families from farm labor was reported to be lower than in other regions.

[8] Area Median Incomes (AMI) are established annually by the U.S. Department of Housing and Urban Development and are used by many affordable housing programs.

Housing Conditions

Of those interviewed:

- 6% were living outdoors, in a shed or in a car.
  - 15% of non-local workers were living in these conditions.
- 36% cited problems with their current housing conditions.
- 32% lived in overcrowded units.
- 42% of the renters were cost-burdened, paying more than the federal standard of 30% of income for housing costs.
  - 19% paid more than 50% of their income for housing and utilities.
- 11% lived in a home they own in Washington.

If the proportion of respondents living outdoors, in a shed or a car are representative of the estimated 187,000 farmworkers in the state, approximately 11,000 farmworkers may be living in places not meant for human habitation (living outdoors does not include cherry harvest tent facilities). In January 2006, a statewide point in time count found a total of 20,222 people to be homeless in the state of Washington.[9] Although this point in time count does not include everyone who is homeless during the year and homelessness varies seasonally, in comparison to this figure, it appears that a disproportionate number of farmworkers may be homeless.

The 36% who reported problems in their housing can be compared to the national survey of farmworker housing in 2000 that found 30.5% of farmworkers in Washington lived in severely substandard housing and an additional 9.6% lived in moderately substandard housing.[10] Housing conditions for respondents reporting problems included rodent infestations (23%), lack of heat (17%), poor water quality (12.5%) and electrical problems (15.8%).

In examining survey responses, only housing units with bedrooms separate from common areas were included in calculating overcrowding (32%). The national survey finding that 58% of Washington's farmworker housing is overcrowded also included those living in motels.[11] Both figures are significantly higher than the 5% of rural Washington housing units reported by the 2000 Census as overcrowded.

[9] Washington State Department of Community, Trade and Economic Development Housing Division, "Washington State: Ten-Year Homeless Plan," (2006), 6.
[10] Housing Assistance Council, 46.
[11] Housing Assistance Council, 44.

Housing Preferences

- If costs were the same to live in town or on-farm, 53% of respondents would prefer to live in town, while 39% would prefer to live on-farm. 8% did not express a preference.
- 38% stated they have faced difficulty in finding housing.
  - The major barriers cited by these respondents were:
    - No housing available (45%)
    - Didn't have money for required deposits (44%)
    - Available housing was not affordable (27%)
    - Landlord required a lease for longer than housing was needed (18%)
    - Discrimination (15%)
- 62% of those who do not own their home in Washington would like to own a home.
- 93% of those who are actively planning to buy a home in the next year stated they would be interested in helping to build their own home if it would lower the cost.

The question of where farmworker housing should be located, on farms or in established communities, has been debated by many people for years. This issue has been used by some to oppose housing in either location. For the 39% of respondents who prefer living in on-farm housing, being close to work was the most important factor (84%), while being close to community amenities (67%) was the primary reason for those who preferred off-farm housing. These results appear to validate the Trust's policy of working to develop a spectrum of housing opportunities that reflects the valid perspectives of both groups and recognizes regional needs and differences.

Health Care

Of respondents interviewed:

- 80% of the workers surveyed did not have health insurance for themselves.
- 67% did not have health insurance for any member of their family.
- 85% did not have dental insurance.
- 37% needed medical or dental attention in the past year.
- 29% of the respondents reported they had never seen a dentist or hygienist.
- 56% wanted more information on health insurance eligibility.
- 69% normally receive health care from a community or migrant health clinic.
- 13% normally go to a hospital emergency room with health problems.
- 59% wanted more information on dental health.
- 5.4% reported that they or a family member had been unable to receive necessary medical or dental care during the past 12 months due to cost or other causes.

The percentage of farmworkers without health insurance (80%) is similar to that found by the Kaiser Commission on Medicaid and Uninsured (85%) in 2000, and is significantly higher than the number of low-income adults nationally who are without health insurance (37%).[12] The 2006 Washington State Population Survey found only 10.4% of non-elderly Washington residents was uninsured.[13]

Child Care

- 21% of the respondents indicated they have young children in the household who need child care.
    - Of those respondents, 20% said they were not able to secure child care.
- Respondents cited cost (35%), lack of knowledge about where to find child care (11%), existing child care centers are full (10%) and hours the child center is open (10%) as barriers to securing child care.

Civic Engagement

- 30% of the farmworkers surveyed reported that they had donated money to an organization that helps people or improves local conditions.
- 16% had donated time.
- 12% had attended a public meeting or rally that addressed local issues.

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[12]The Kaiser Commission on Medicaid and the Uninsured, "Migrant and Seasonal Farmworkers: Health Insurance Coverage and Access to Care," (2005), 1.

[13] Washington State Office of Financial Management, "Characteristics of the Uninsured: 2006." *Washington State Population Survey* (December 2006), 5.

- Time constraints (72%) were cited as the major reason for lack of involvement in community affairs.

Of those who had engaged in organized community improvement efforts (422 respondents), the largest numbers worked on political campaigns or issues (75%), school-related issues (64%), sports (61%) and housing issues (60%), followed by neighborhood cleanup (57%) and celebrations (57%), crime prevention (56%), and health issues (56%).

When asked whether their efforts to improve conditions had been successful, the response varied dramatically by issue. Almost 65% of those who had worked on neighborhood cleanups said they had been at least somewhat successful, followed by housing issues (62%), health issues (54%) and sports (53%). Those who had been involved in crime prevention reported the least success (37%).

Use of Public Services

A substantial majority (66%) of those surveyed reported that neither they nor their family are receiving any form of public assistance or social services. Of those who do participate in such programs, the highest rates of participation are in the Women Infants Children program (WIC) (15%), which provides health and nutritional support for pregnant women and young children, and food stamps (12%). Only 3% reported participating in Temporary Assistance for Needy Families (TANF), the program most closely associated with public assistance or "welfare." According to the Department of Health and Social Services, 3.8% of all Washington residents received TANF in 2006.

Conclusions and Recommendations

The high incidence of cost-burden, substandard housing conditions, overcrowding and homelessness among farmworkers interviewed for this survey clearly indicates a need for a significant number of new housing units, rehabilitation of existing units and rent subsidies. This is a critical issue for our state's economy as well as the health of our communities as illustrated by the fact that half of those interviewed don't know how much longer they plan to continue working in agriculture or plan to leave agricultural work within a year or less, yet 91% of respondents said more and better housing would encourage them to continue working in agriculture.

These conditions and respondents' housing preferences reinforce the Washington State Farmworker Housing Trust's commitment to supporting housing programs that address the full spectrum of housing types with access to related needs including:

- Emergency short-term shelter;
- Seasonal-occupancy housing on and in close proximity to farms;
- Seasonal-occupancy housing located in established communities near schools, medical and other services;
- Year-round rental housing for local workers; and
- Homeownership assistance for workers seeking to purchase homes.

The Trust has previously estimated that approximately 39,000 additional homes are needed; 12,000 seasonal-occupancy units for non-local workers and 27,000 for local workers. Additional research is needed at the local level to assess the existing housing supply and agricultural trends in order to refine estimates of the housing units needed. Toward this end, the Trust intends to further analyze regional and demographic data from this survey.

In order to address housing needs of this magnitude the Washington State Farmworker Housing Trust is working to:

- Expand housing development and management capacity;
- Develop additional financing tools to increase both private and public investment in housing and infrastructure; and
- ***Most importantly, support local communities in their efforts to partner with agricultural businesses, farmworker advocates and affordable housing providers to plan and take action on local strategies to create a better and more sustainable agricultural community.***

CHAPTER ONE
Farmworker Profile

- Household Composition
- Ethnicity
- Language and Literacy
- Permanent Place of Residence
- Local/Non-Local Workers
- Employment
- Income

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