

## *Friends of Toppenish Creek*

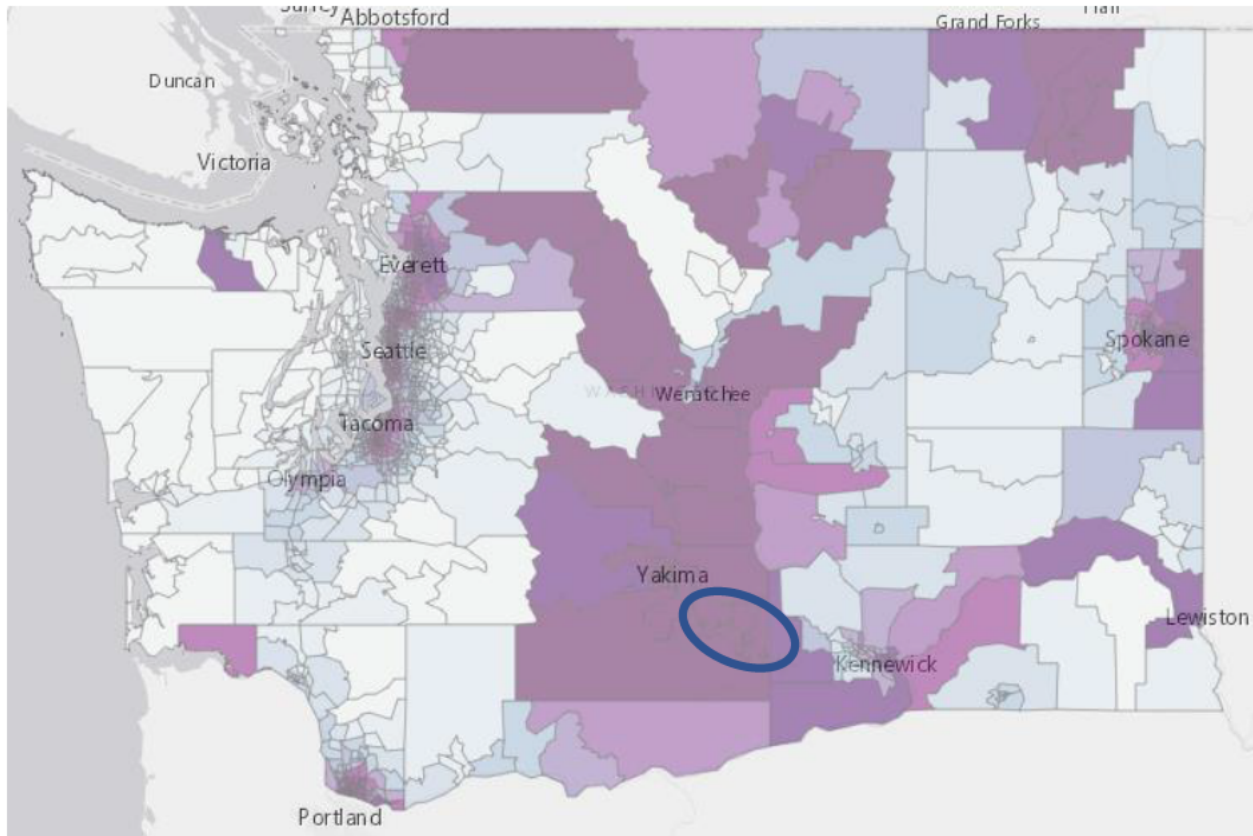


Sept. 6, 2022

Dear Washington Leaders:

This is a note to remind WA State agencies, councils and commissions of air quality issues facing Yakima County and especially the approximately 65,000 people who live in the 273 square mile Lower Yakima Valley Groundwater Management Area (LYV GWMA) along with approximately 90,000 milk cows (1/3 of the Washington inventory) and at least that many support animals.

In light of the recently passed HEAL Act and the Climate Commitment Act (CCA), the Friends of Toppenish Creek (FOTC) hope that responsible groups will consider the available air studies, conduct further air studies, and address the disproportionate impact of air pollution on the people of the LYV, most of whom are people of color, and many with low incomes.



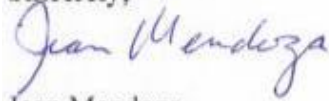
PM 2.5 Concentration – Washington Health Disparities Map. Available at <https://fortress.wa.gov/doh/wtnibl/WTNIBL/>

1. In 2015 the WA State Dept. of Ecology completed the Yakima Air Winter Nitrate Study (YAWNS) that looked at high levels of fine particulate nitrate in the area.<sup>1</sup> Ammonia levels are so high in Yakima County that all nitrogen oxide (NO<sub>x</sub>) in the air is converted to ammonium nitrate.
2. In 2019 the Friends of Toppenish Creek completed a study that found ammonia levels in the LYV were 63 times higher than ammonia levels in the Upper Yakima Valley (UYV).<sup>2</sup>
3. The American Lung Association currently ranks Yakima, WA as the ninth most polluted city nationwide for daily particulate matter.<sup>3</sup>
4. Studies by the University of Washington School of Public Health document adverse impacts and increased symptoms for asthmatic children in the LYV when air quality worsens.<sup>4, 5, 6</sup>
5. A 2010 National Air Emissions Monitoring Study<sup>7</sup> looked at air emissions from two LYV freestall dairy barns and found:
  - a. Ammonia emissions of 39 to 52 lbs. per cow per year  
(Extrapolate: 90,000 milk cows in the LYV ≈ 1,755 to 2,340 tons per year)
  - b. Hydrogen sulfide emissions of 0.74 to 1.07 lbs. per cow per year  
(Extrapolate: 90,000 milk cows in the LYV ≈ 33 to 48 tons per year)
  - c. Total suspended particulate emissions of 25.16 to 44.31 lbs. per cow per year  
(Extrapolate: 90,000 milk cows in the LYV ≈ 1,132 to 1,994 tons per year)
  - d. Volatile organic compound (VOC) emissions of 70 to 96 lbs. per cow per year  
(Extrapolate: 90,000 milk cows in the LYV ≈ 3,150 to 4,320 tons per year)
6. The U.S. EPA State Inventory and Projection Tool that Washington State uses to estimate annual greenhouse gas emissions<sup>8</sup> estimates that Washington dairy cows produce 3.91 metric tons or 3,910 kg of CO<sub>2</sub> equivalents from methane per milk cow per year from manure management.<sup>9</sup> The same tool estimates emission of 3.77 metric tons or 3,770 kg of CO<sub>2</sub> equivalents from methane per milk cow per year from enteric fermentation (belching and farting). Methane from manure management can theoretically be captured and refined to renewable natural gas. Methane from enteric fermentation cannot.
7. With approximately 90,000 milk cows the numbers from 6 above translate to emission of 691,527 metric tons of CO<sub>2</sub> equivalents of methane per year in the 273 square mile area in the LYV, just from the dairy cows and excluding support animals and beef cattle.
8. Dairy research from Idaho finds methane emissions from manure lagoons range from 30 to 126 kg/hectare per day.<sup>10</sup> There are about 500 acres or 200 hectares of manure lagoons in the LYV. These lagoons alone produce between 2,190 and 9,198 metric tons of methane per year or between 61,320 and 257,544 metric tons of CO<sub>2</sub> equivalents from methane per year. These lagoons also emit ammonia, hydrogen sulfide, volatile organ compounds, and nitrous oxide.
9. The WA State Dept. of Agriculture estimates that 35% of the nitrogen compounds (ammonia, nitrous oxide, NO<sub>x</sub>) from the dairy production areas are volatilized.<sup>11</sup>
10. NO<sub>x</sub>, VOCs, and methane are precursors to the criteria pollutant ozone. Hydrogen sulfide is a precursor to the criteria pollutant sulfur dioxide. The YRCAA only tests air for fine particulate matter.

11. Between 60% and 70% of the dairy manure produced in the LYV is composted to hopefully reduce leaching to groundwater.<sup>12</sup> Based on research from the San Joaquin Valley in California<sup>13</sup>, the LYV manure composting operations alone produce 877 English tons per year of VOCs and 1,444 English tons per year of ammonia. (One English ton = 2,000 lbs. One metric ton = 1,000 kg = 2,204.6 lbs)
12. After struggling with years of odor complaints in Thurston County, Ostrom's mushrooms moved to the LYV City of Sunnyside in 2019. Unlike the Olympic Regional Air Agency, the Yakima Regional Clean Air Agency (YRCAA) does not take odor complaints related to agriculture seriously.<sup>14</sup> The YRCAA has declined to investigate odor complaints regarding Ostrom's.<sup>15</sup> Most recently the WA State Attorney General has filed a civil rights lawsuit against Ostrom's for discriminating against domestic and female workers.<sup>16</sup> Is discrimination in the workplace an EJ issue? Yes, it is.
13. The Yakima Regional Clean Air Agency recently selected a new Air Pollution Control Officer (APCO)/Executive Director (ED) with no input from the residents of the LYV where air pollution is most serious.<sup>17</sup> FOTC believes this failure to engage impacted people is a violation of the principles of Environmental Justice.

This note is simply a reminder so that important people with serious concerns of your own, do not forget a small community with somewhat different and unique problems. We understand that you cannot feel our pain. You cannot do your jobs and simultaneously suffer with us as we see children struggling to breath or mourn with us when valued elders die too soon. But please acknowledge our humanity and the fact that our concerns are real.

Sincerely,



Jean Mendoza

Executive Director, Friends of Toppenish Creek  
3142 Signal Peak Road  
White Swan, WA 98952

References:

- <sup>1</sup> WA State Dept of Ecology (2015) Yakima Air Winter Nitrate Study. Available at <https://ecology.wa.gov/DOE/files/a6/a67789dd-aed4-461e-b138-e77537dd1952.pdf>
- <sup>2</sup> Friends of Toppenish Creek (2019) Ammonia Study in the Lower Yakima Valley. Available at <http://www.friendsoftoppenishcreek.org/cabinet/data/EPA%20Air%20Attachment%2019%20Ammonia%20Levels%20in%20Yakima%20County%20FOTC.pdf>
- <sup>3</sup> American Lung Association (2022) State of the Air. Available at <https://www.lung.org/research/sota/key-findings/short-term-particle-pollution>
- <sup>4</sup> Loftus, C., Yost, M., Sampson, P., Arias, G., Torres, E., Vasquez, V. B., ... & Karr, C. (2015). Regional PM<sub>2.5</sub> and asthma morbidity in an agricultural community: a panel study. *Environmental Research*, 136, 505-512. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4425279/>
- <sup>5</sup> Loftus, C., Afsharinejad, Z., Sampson, P., Vedal, S., Torres, E., Arias, G., ... & Karr, C. (2020). Estimated time-varying exposures to air emissions from animal feeding operations and childhood asthma. *International journal of hygiene and environmental health*, 223(1), 187-198. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7020853/>
- <sup>6</sup> Loftus, C., Yost, M., Sampson, P., Torres, E., Arias, G., Vasquez, V. B., ... & Karr, C. (2015). Ambient ammonia exposures in an agricultural community and pediatric asthma morbidity. *Epidemiology (Cambridge, Mass.)*, 26(6), 794. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4587379/>
- <sup>7</sup> Ramirez-Dorransoro, J.C., H.S. Joo, P. Ndegwa, and A.J. Heber. 2010. National Air Emissions Monitoring Study: Data from Two Dairy Freestall Barns in Washington WA5B, Final Report. Purdue University, West Lafayette, IN, July 30. Available at <https://archive.epa.gov/airquality/afo2012/web/pdf/wa5bsummaryreport.pdf>
- <sup>8</sup> U.S. Environmental Protection Agency (2022) State Inventory and Projection Tools. Available at <https://www.epa.gov/statelocalenergy/download-state-inventory-and-projection-tool?token=1mhSTPA1Mvx1MNc4unb0TfZsvGKUxetvWPPfmMSezpm>
- <sup>9</sup> See Attachment A
- <sup>10</sup> Leytem, A. B., Bjorneberg, D. L., Koehn, A. C., Moraes, L. E., Kebreab, E., & Dungan, R. S. (2017). Methane emissions from dairy lagoons in the western United States. *Journal of dairy science*, 100(8), 6785-6803. Available at <https://www.sciencedirect.com/science/article/pii/S0022030217305799>

<sup>11</sup> Lower Yakima Valley Groundwater Management Area (2019) Lower Yakima Valley Groundwater Management Area Program, Vol. I, page 24. Available at <https://www.yakimacounty.us/DocumentCenter/View/22177/GWMA-VolumeI-July2019>

<sup>12</sup> WA Dairy Federation (2015) Valley dairies export 60 – 70% of manure as compost. Yakima Valley Dairyland News: Volume 5, Mar/Apr 2015. Available at <https://www.wadairy.org/yakima-valley-dairyland-news-volume-5-marapr-2015/>

<sup>13</sup> Yoshimura, J. (2022) Compost Emission Factor Report. *San Joaquin Valley Air Pollution Control District*. Available at [Compost EF.pdf \(valleyair.org\)](#)

<sup>14</sup> Friends of Toppenish Creek (2021) Arguments for Dissolving the Yakima Regional Clean Air Agency (page 27) Available at <http://www.friendsoftoppenishcreek.org/cabinet/data/FOTC%20Arguments%20for%20Dissolving%20the%20YRCAA.pdf>

<sup>15</sup> See Attachment B

<sup>16</sup> WA State Office of the Attorney General (2022) AG Ferguson files civil rights lawsuit against mushroom producer Ostrom for discriminating against domestic farmworkers and women. Available at <https://www.atg.wa.gov/news/news-releases/ag-ferguson-files-civil-rights-lawsuit-against-mushroom-producer-ostrom>

<sup>17</sup> See Attachment C

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August 24, 2022

Dear Chairman Devaney,

This is an email to inform you that the Yakima Regional Clean Air Agency (YRCAA) may have violated the WA State Open Public Meetings Act, RCW 42.30.

I am notifying you pursuant to Section 2 of the YRCAA Administrative Code Part A which says:

*Any Board Member or person who suspects the Board has violated the Open Public Meeting Law is requested to advise the Chair in writing within thirty (30) days of the time that the alleged violation occurred. The Chair, upon receiving such notice, will direct the Executive Director to review the issue and provide recommendations as may be appropriate to the Board at the next available meeting of the Board which will assure the Agency maintains substantial compliance with the Open Public Meeting Law.*

This notification is outside the thirty day time limit, because I did not have the relevant information until after the time limit had passed. In addition, it takes time to compile this information and verify information. Citizens should not have to spend this amount of time and energy monitoring a public agency.

On approximately July 11, 2022, the YRCAA posted a cancellation of the agency's regular board meeting that would have convened on July 14, 2022. Then, on July 14, 2022, with approximately 24 hours' notice, the YRCAA convened a special meeting in Granger, WA for the stated purpose of introducing finalists for the position of YRCAA Air Pollution Control Officer (APCO)/Executive Director (ED) to people who live in the Lower Yakima Valley (LYV).

RCW 42.30.080 states:

- (2) Notice of a special meeting called under subsection (1) of this section shall be:*
- (a) Delivered to each local newspaper of general circulation and local radio or television station that has on file with the governing body a written request to be notified of such special meeting or of all special meetings;*
  - (b) Posted on the agency's website. An agency is not required to post a special meeting notice on its website if it does not have a website or share a website with another agency. Except in the case of a remote meeting or a meeting at which the physical attendance by some or all members of the public is limited due to a declared emergency as provided for in this chapter, an agency is not required to post a special meeting notice*

*on its website if it employs no full-time equivalent employees, or does not employ personnel whose duty, as defined by a job description or existing contract, is to maintain or update the website; and*

*(c) Prominently displayed at the main entrance of the agency's principal location and the meeting site if it is not held at the agency's principal location and is not held as a remote meeting; except that during a declared emergency which prevents a meeting from being held in-person with reasonable safety an agency that hosts a website or shares a website with another agency may instead post notice of a remote meeting without a physical location on the website hosted or shared by the agency.*

*Such notice must be delivered or posted, as applicable, at least 24 hours before the time of such meeting as specified in the notice.*

YRCAA Administrative Code Part A, Section 2.7 says:

*A special Board meeting may be called by the Chair or by a majority of the Board by delivering 24-hours prior written notification as follows:*

*2.7.1 Notification of the meeting by delivering written notice personally, by mail, by fax, or by electronic mail to each member of the Board;*

*2.7.2 Notification of the meeting by delivering written notice personally, by mail, by fax, or by posting on the Agency website, and to each local radio or television station;*

*2.7.3 Notification must include the time and place of the meeting and the business to be conducted . . . . .*

On July 20, 2022, I submitted a public records request for “copies of all notices to newspapers, radio stations, and television stations regarding the YRCAA Special Meeting in Granger, WA on July 14, 2022” and “names of all organizations, special interest groups, and individuals who received written or email notification of that meeting.”

On August 15, 2022, I received the YRCAA response to this request. The YRCAA sent a list of about thirty people who were notified of the meeting by email at 8:40 AM on July 13, 2022. The YRCAA notified:

- Four of the eight small cities in the LYV. Did not notify Zillah, Wapato, Grandview, or Mabton
- Two attorneys who work for the YRCAA
- The Interim Executive Director for the YRCAA
- Two EPA officials with offices out of the area
- The Directors of three other WA Clean Air Agencies
- The Yakima Herald Republic and the Yakima Public Affairs Channel (YPAC) Note: The Yakima Herald Republic is published on Wednesday, Friday, and Sunday.
- Three Yakima County employees who are contracted to find a new YRCAA Executive Director

- The WA State Attorney General's Office
- One official at the Yakama Nation
- Nine interested individuals. At least three do not live in the LYV

Perhaps there are legal loopholes that defend this failure to adequately notify the public. But remember, the YRCAA Board made informal promises to hold meetings in the Lower Valley so people who live with the county's worst air pollution could provide input. Hardly any of the thousands who live in the LYV knew about the meeting, its significance, or were able to leave work for a 2 PM meeting.

Sincerely,

Jean Mendoza



# Methane Emissions from Animal Agriculture in Washington State

(Copied from EPA Formulas)

CH <sub>4</sub> from Manure Management		2017		<input checked="" type="checkbox"/> Default Animal Data?							
	Number of Animals ('000 head)	Typical Animal Mass (TAM) (kg)	Volatile Solids (VS) [kg VS/head/gear]	Total VS (kg/yr)	Max Pot. Emissions (m <sup>3</sup> CH <sub>4</sub> / kg VS)	Weighted MCF	Emissions (m <sup>3</sup> CH <sub>4</sub> )	Emissions (Metric Tons CH <sub>4</sub> )	Emissions (MMTCH <sub>4</sub> )	Emissions (MMTCE)	Emissions (MMTCO <sub>2</sub> E)
<b>Dairy Cattle</b>											
Dairy Cows	275.0	x	2,878.5	= 791,584,687	x 0.24	x 0.335	= 63,864,019	= 43,041	= 0.043	= 0.233	= 1.076
Dairy Replacement Heifers	120.0	x	1,251.8	= 150,216,951	x 0.17	x 0.012	= 310,762	= 210	= 0.000	= 0.001	= 0.005
<b>Beef Cattle</b>											
Feedlot Heifers	52.1	x	691.1	= 36,025,919	x 0.33	x 0.013	= 154,385	= 104	= 0.000	= 0.001	= 0.003
Feedlot Steer	97.6	x	663.7	= 65,346,366	x 0.33	x 0.013	= 280,035	= 189	= 0.000	= 0.001	= 0.005
Bulls	18.0	x	1,955.7	= 35,202,332	x 0.17	x 0.010	= 59,844	= 40	= 0.000	= 0.000	= 0.001
Calves	147.0	x 123	7.7	= 50,623,205	x 0.17	x 0.010	= 86,059	= 58	= 0.000	= 0.000	= 0.001
Beef Cows	225.0	x	1,891.4	= 425,558,061	x 0.17	x 0.010	= 723,449	= 489	= 0.000	= 0.003	= 0.012
Beef Replacement Heifers	58.0	x	1,215.6	= 70,504,723	x 0.17	x 0.010	= 119,858	= 81	= 0.000	= 0.001	= 0.002
Steer Stockers	190.0	x	1,120.3	= 212,866,008	x 0.17	x 0.010	= 361,872	= 245	= 0.000	= 0.002	= 0.006
Heifer Stockers	117.0	x	1,215.6	= 142,225,045	x 0.17	x 0.010	= 241,783	= 163	= 0.000	= 0.001	= 0.004

Enteric Fermentation		2017		<input checked="" type="checkbox"/> Default Animal Data?		
	Number of Animals ('000 head)	Emission Factor (kg CH <sub>4</sub> /head)	Emissions (kg CH <sub>4</sub> )	Emissions (MMTCH <sub>4</sub> )	Emissions (MMTCE)	Emissions (MMTCO <sub>2</sub> E)
<b>Dairy Cattle</b>						
Dairy Cows	275.0	x	150.9	= 41,488,017	= 0.0415	= 1.037
Dairy Replacement Heifers	120.0	x	62.4	= 7,482,408	= 0.0075	= 0.187
Replacements 0-12 mos.	0.0	x	45.6	= -	= 0.0000	= 0.000
Replacements 12-24 mos.	0.0	x	68.7	= -	= 0.0000	= 0.000
<b>Beef Cattle</b>						
Beef Cows	225.0	x	100.5	= 22,605,440	= 0.0226	= 0.565
Beef Replacement Heifers	58.0	x	66.5	= 3,856,689	= 0.0039	= 0.096
Replacements 0-12 mos.	0.0	x	64.5	= -	= 0.0000	= 0.000
Replacements 12-24 mos.	0.0	x	74.3	= -	= 0.0000	= 0.000
Heifer Stockers	117.0	x	64.8	= 7,582,282	= 0.0076	= 0.190
Steer Stockers	190.0	x	62.3	= 11,844,552	= 0.0118	= 0.296
Feedlot Heifers	52.1	x	43.2	= 2,249,389	= 0.0022	= 0.056
Feedlot Steer	97.6	x	42.0	= 4,096,508	= 0.0041	= 0.102
Bulls	18.0	x	103.9	= 1,869,931	= 0.0019	= 0.047
<b>Other</b>						
Sheep	48.0	x	8.0	= 384,000	= 0.0004	= 0.010
Goats	29.4	x	5.0	= 146,960	= 0.0001	= 0.004
Swine	17.0	x	1.5	= 25,500	= 0.0000	= 0.001
Horses	52.7	x	18.0	= 948,492	= 0.0009	= 0.024
<b>TOTAL</b>				<b>104,580,167</b>	<b>0.1046</b>	<b>2.615</b>



# Complaint Form

complaint\_number 4488

DW AP65-01-02 Rev.

Date received	7/21/2021	Time	10:56:00 AM	Date of Destruction	
active	<input type="checkbox"/>			Investigator	Kelsey
Date occurred	7/21/2021	Time	10:56:00 AM	Investigation Date	7/22/2021
received via	phone			Investigation Time	11:00:00 AM
received by	Kelsey				

violation type	odor	Violation Address	1111 Midvale Road
		Zip Code	98944
Pictures		City	Sunnyside
AOD?		NOV?	non-disclosure D

Responsible Party	
contact_name	
contact title	
First Name	Asellus Sunnyside LLC
Last Name	Asellus Sunnyside LLC
Address	711 Capitol Way
Zip Code	98501
City	Olympia
State	WA
Home phone #	
Cellphone #	

description alleged violation	CP says that the Ostrom Mushroom facility is causing extremely bad "rotting" odors.
findings	I parked in the parking lot for about 30 minutes and did not smell any "rotting odors". Odor level: 0 - no odors present.
actions taken	RL-4 Ostrom Mushrooms is an agricultural entity and thus is exempt from odor and dust complaints as stated in RCW 70A.15.4530.
additional comments	