

**MARION COUNTY  
SOLID WASTE MANAGEMENT ADVISORY COUNCIL**

**MEETING MINUTES**

Date: Tuesday, March 23, 2021  
Time: 5:30 p.m. -7:30 p.m.  
Logistics: WebEx meeting with limited “in person” attendance due to COVID-19

PRESENT: **Members:** Julie Jackson, Brian Sund, Bonnie Sullivan, Ryan Zink, Will Posegate, Kevin Hines, Judy Skinner, Kyle Elwood, Kurt Tackman  
**Staff:** Brian May, Elizabeth Parker, Rachel VanWoert, Dakota Tangredi  
**Guests:** Taylor Munro, Carroll Johnson, Mark Caillier, (Keizer Chamber of Commerce), KJ Lewis  
**Commissioner Liaison:** Commissioner Willis

ABSENT: Joe Fowler, Keith Bondaug-Winn, Matt Marler, Tim Rice

**OPEN MEETING**

Kaileigh called meeting to order at 5:33pm. Welcome and introductions made by SWMAC members, guests, and Public Works staff.

**APPROVE MINUTES**

MOTION: Julie moved to approve the February 23, 2021 meeting minutes. Kevin H seconds motion.

DISCUSSION: Judy changed wording to “into high risk.” Modification noted as condition of approval.

RESULTS: Voice vote unanimous – motion passes

**ADMINISTRATIVE: INFORMATION & DISCUSSION**

PUBLIC INPUT: None

AGENDA REVIEW: Bonnie asked to add “Holiday Dinner” to agenda. (find as bullet point under Future Topics/Emerging Issues/Other Business - Discussion)

## **MARION COUNTY FOOD INDUSTRY STUDY – REUSABLE GUIDE PROJECT**

Taylor Munro presented her project – a copy has been attached to these meeting minutes for the record.

## **SOLID WASTE LEGISLATIVE UPDATE**

Brian May provided a legislative update on legislation Marion County is following. Kaileigh provided an update on her attendance at the City of Salem's Climate Action Plan Update meeting.

## **SUB-COMMITTEE UPDATES**

### **Unsheltered Waste Management Sub-Committee:**

Ryan shared an update with the group on recent activity.

### **Nomination Sub-Committee:**

Brian May provided an update on the recent application to fill the open Chamber of Commerce position.

## **FUTURE TOPICS/EMERGING ISSUES/OTHER BUSINESS (Information/Discussion)**

**Staff Updates:** Brian May gave a brief update on Marion County's progress with FEMA funding, saying Marion County is currently in the stages of preparing the paperwork and damage assessments that will be submitted to FEMA for consideration. Brian May also updated the group that Brown's Island is currently still accepting Ice-Storm debris.

Judy Skinner inquired as to if there are any food waste drop-off sites in Silverton.

**Meeting Review:** None

**Motion to adjourn meeting:** Bonnie moved to adjourn meeting; Ryan seconded the motion. Voice vote was unanimous – motion passes. Meeting adjourned at 7:15pm.

**Next meeting:** Tuesday, April 27, 2021

# Assessing Community Member Risk Perceptions of Using Reusable Serving Ware During COVID-19 in Marion County, Oregon

Taylor Munro

Oregon State University

Master of Public Health: Environmental and Occupational Health



Oregon State University  
College of Public Health  
and Human Sciences



# Introduction

- Completed my Master's in Public Health in March of 2021
  - Option in Environmental and Occupational Health
- Graduate Internship
  - Marion County Public Works Department in their Environmental Services unit
  - Summer of 2020, remotely
  - Internship preceptors: Alan Pennington and Rachel Vanwoert
- My internship projects focused on:
  - Waste reduction
  - Safety and risk perceptions of using reusable serving ware in restaurants during COVID-19
- Some of my internship products involved creating resource documents for businesses within EarthWISE



**Oregon State University**  
College of Public Health  
and Human Sciences







# Learning Objectives

- Implement effective programs and create effective material by collaborating on different professional teams
- Examine different perspectives on the safety of using reusables in the food industry
- Develop training materials for businesses and effectively communicate them in writing and oral presentations
- Assemble proper training materials for workers on how to use reusables safely and identify the risks perceived
- Examine public perception for using reusables and implement a strategic business plan to create a safe workplace



## **Community Member Survey**



# Community Member Survey

- Objective: to assess community member risk perceptions about reusable serving ware during COVID-19 in Marion County



## Marion County Risk Perception and Reusables Survey for Community Members

This survey is an attempt to understand how our community feels about the use of reusable items in restaurants and coffee shops. This would include items that a customer might bring in, such as reusable mugs, utensils, to-go tupperware, etc. Also, it includes items that the business might use, such as utensils, cups, mugs, plates, etc.

# COVID-19 Timeline

Pandemic  
started

**December  
2019**

**February  
2020**

WHO  
announced  
name of this  
coronavirus  
outbreak as  
COVID-19

WHO  
announced  
COVID-19's  
primary  
mode of  
transmission

**July  
2020**

**February  
2021**

The United  
States exceeded  
½ a million  
deaths due to  
COVID-19



# COVID-19 and Reusables

- Practices to increase sustainability have been curtailed
- COVID-19 has increased the amount of plastic waste
- Concern that reusable serving ware during has the potential to transmit the virus
- Consumer shift out of fear for contracting COVID-19 from reusables



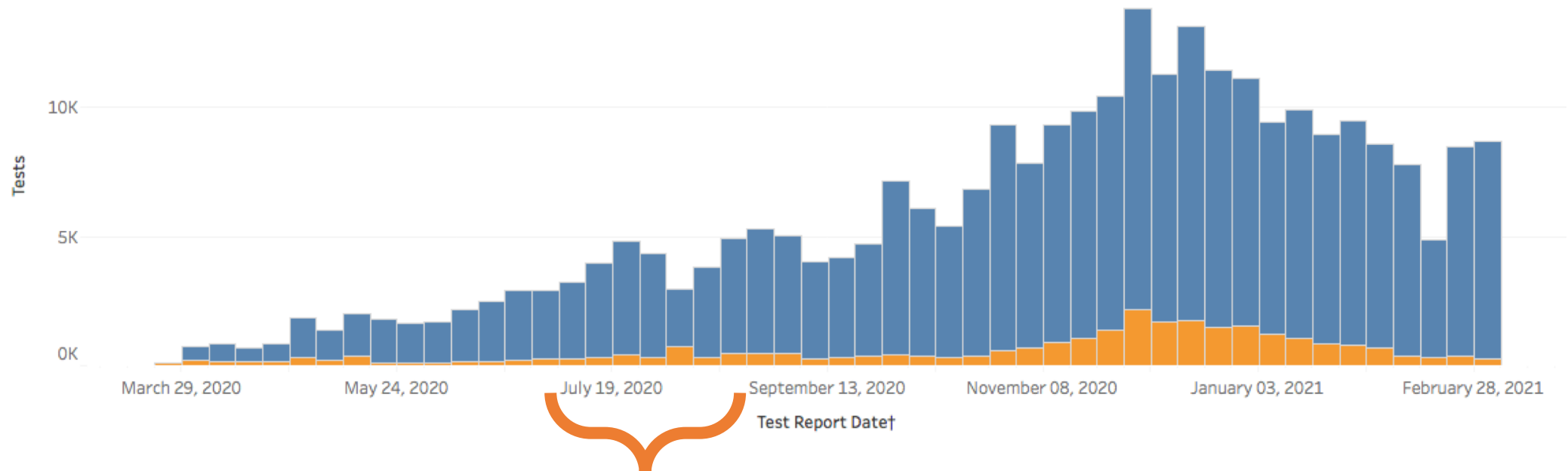
<https://frontiergroup.org/blogs/blog/fg/boxes-gloves-three-ways-waste-stream-changed-during-covid-19>



# COVID-19 and Marion County

- The survey was administered from July 7, 2020 to August 31, 2020
- On July 7th, 2020 Marion County had a 9.2% positivity rate of daily tests
- Oregon's overall positivity rate of 6.1% during that time frame

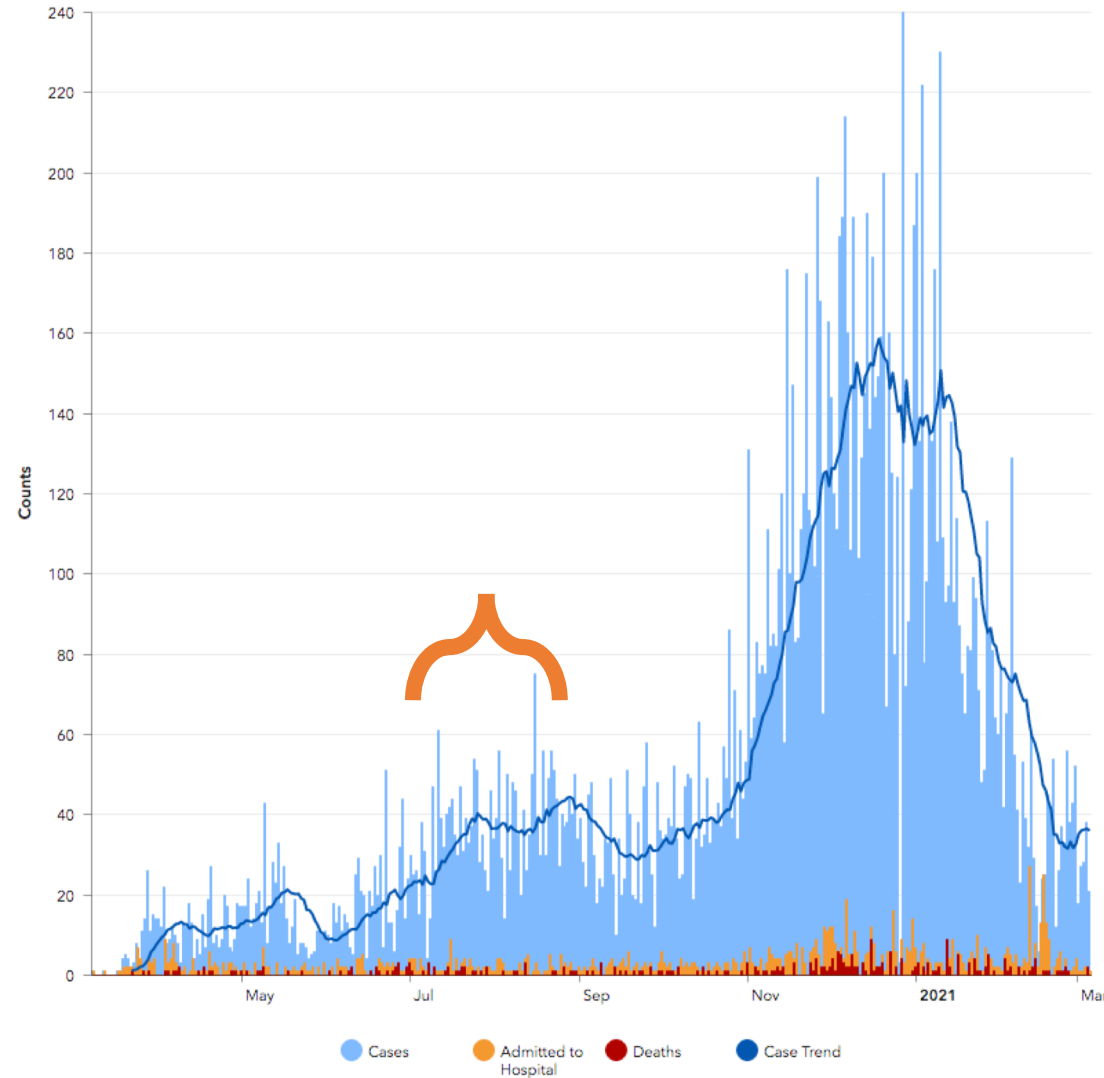
Positive and Negative COVID-19 test counts over time - Marion





# COVID-19 and Marion County

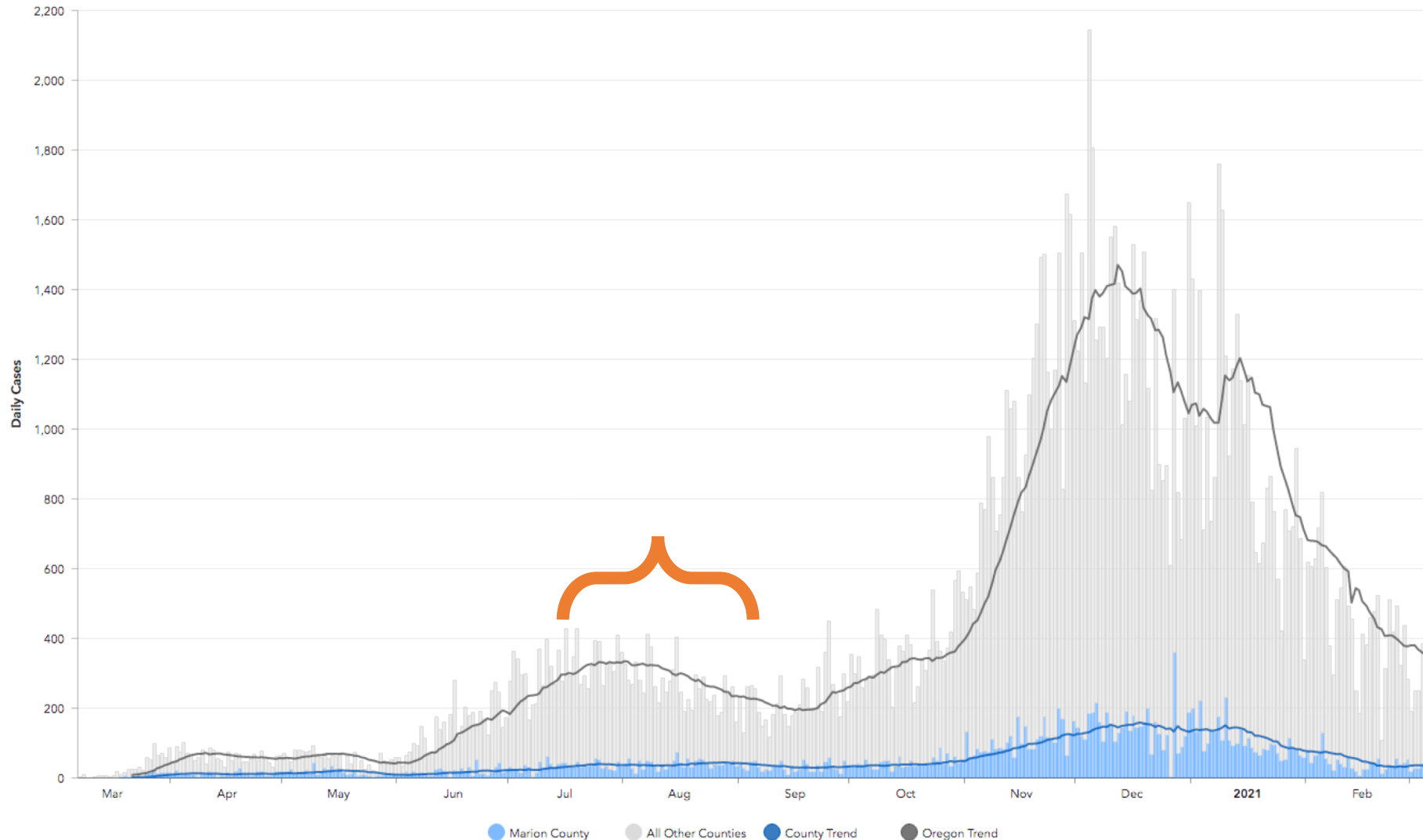
Epidemic Curve and Daily Cases Trend





# COVID-19 and Marion County

Daily Cases: Marion County v. All Other Oregon Counties







# Significance of Work

- There are many benefits to using reusable serving ware, including:
  - saving restaurants money in the long run
  - improving the restaurant's dining experience
  - reducing plastic waste and pollution
  - reducing the business's impacts on climate change
- There are also drawbacks to using reusable serving ware, including:
  - More expensive upfront
  - Take up space in a restaurant
  - Weigh more than disposable serving ware
  - Potential to be less convenient than single-use disposable serving ware
- **Due to the COVID-19 global pandemic, the concern of virus transmission has brought the use of reusables into question**



# Methods

# Methods: Survey Overview



## Development

- Survey sections:
  - demographics
  - COVID-19 knowledge
  - risk perceptions
  - additional information
- I created the survey with additional help from my internship preceptors



## Testing

- The survey was tested by my preceptors before advertising
- The survey was administered on Google Forms
- OSU IRB reviewed the study protocols and provided a waiver



## Advertising

- Advertised on: Marion County Environmental Services website, email listserv, Facebook, Instagram, and community groups
- The survey was posted on July 7, 2020 and closed on August 31, 2020

# Methods: Data Analysis



## Main Objective

- Investigate whether community member use of reusable serving ware changed due to COVID-19, and if it did, why?



## Main Question

- “Based on your knowledge of COVID-19, which do you think is safer to use?”
- The response options being
  1. Disposable serving ware
  2. Reusable serving ware
  3. Both are equally safe



## Comparison

- The main question was compared with:
  - Demographics
  - Attitudes and perceptions toward COVID-19
  - Confidence levels of understanding COVID-19 related topics

# Methods: Data Analysis



## Analysis

- The data was read into R Studio
- Tests used in R Studio
  - chi-squared test
  - Fisher's exact test
- For larger contingency tables ( $> 2 \times 2$ ) an approximate p-value for Fisher's exact test was estimated
- An alpha-level of 0.05 was chosen as a guide for significance



## Combining Groups

- Some categories had groups within them combined for this analysis, including:
  - Age: 6 to 5 categories
  - Gender: 9 to 3 categories
  - Education: 8 to 4 categories



**Results**



# Results: Demographics

Table 1. Demographics of Community Member Survey Respondents

Demographic	Total % (n= 682) ←
Gender	
Female	84.2% (n=574) ←
Male	12.3% (n= 84)
Non-binary	1.2% (n=8)
Transgender man	0.15% (n=1)
Transgender women	0% (n=0)
Prefer not to say	1.9% (n=13)
Gender fluid	0% (n=0)
Not listed	0% (n=0)
Missing	0.29% (n=2)
Age	
20-29	14.7% (n=100)
30-39	24 % (n=164) ←
40-49	21% (n=143)
50-59	16.9% (n=115)
60-69	15.1% (n=103)
70 and older	8.4% (n=57)
Education level	
No formal education	0% (n=0)
Less than High School	0.59% (n=4)
High School	7.6% (n=52)
Some college	25.2% (n=172) ←
Vocational/trade/technical school	6.3% (n=43)
Associates degree	10.3% (n=70)
Bachelor's degree	27.9% (n=190) ←
Advanced degree	22.1% (n=151) ←



# Results: COVID-19 Questions

*Table 2. Survey Questions about COVID-19*

Question	Answer Options and Responses n(%)
How likely do you think you are to be infected with COVID-19?	Very likely, 45(6.6) Somewhat likely, 318 (46.6) Not likely at all, 221(32.4) Unsure, 98(14.4)
How serious do you think the symptoms of COVID-19 are?	Very serious, 445(65.2) Somewhat serious, 201(29.5) Not serious at all, 16(2.3) Unsure, 20(2.9)
Do you consider yourself to be in a high risk group for COVID-19?	Yes, 315(46.2) No, 334(49) Unsure, 33(4.8)





# Results: COVID-19 Questions

*Table 2. Survey Questions about COVID-19*

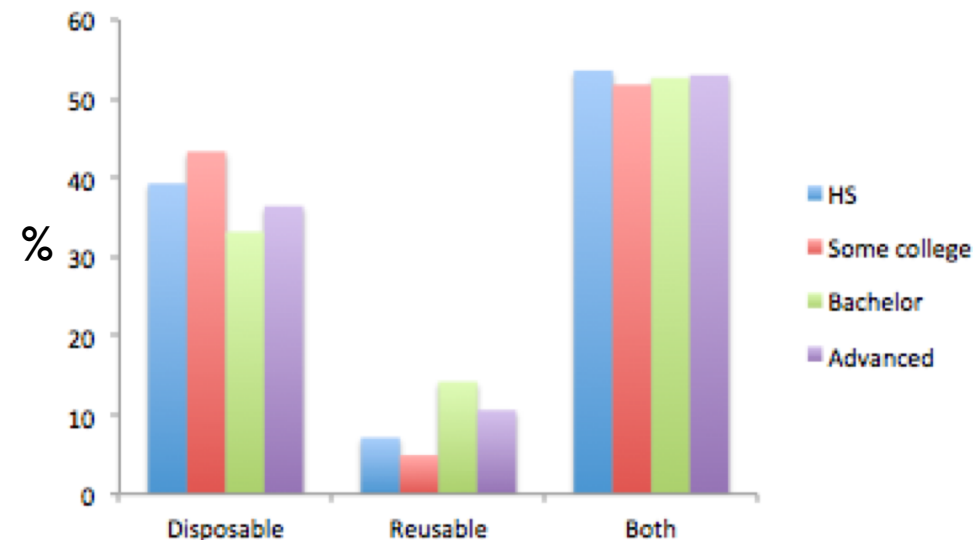
Question	Answer Options and Responses n(%)
How confident are you in understanding how to protect yourself from COVID-19?	High level of confidence, 548(80.4) Moderate level of confidence, 129(18.9) Low level of confidence, 5(0.73)
How confident are you in understanding transmission of COVID-19?	High level of confidence, 472(69.2) Moderate level of confidence, 191(28) Low level of confidence, 19(2.8)
How confident are you in understanding symptoms of COVID-19?	High level of confidence, 426(62.5) Moderate level of confidence, 233(34.2) Low level of confidence, 23(3.4)
How confident are you in understanding treatment options for COVID-19?	High level of confidence, 211(30.9) Moderate level of confidence, 314(46) Low level of confidence , 157(23)



# Results: Serving Ware Question

Table 3. Comparison of Safest Serving Ware Option with Groups Combined

	Based on your knowledge of COVID-19, which do you think is safer to use?				p-value
	All (n=682) n(%)	Disposable serving ware (n=263, 38.6%) n(%)	Reusable serving ware (n=62, 9.1%) n(%)	Both are equally safe (n=357, 52.3%) n(%)	
<b>Education Level</b>					0.027*
High school or less	56 (8.2)	22 (8.4)	4 (6.5)	30 (8.4)	
Some college/Associate degree/ Trade/vocational/technical school	285 (41.8)	123 (46.8)	15 (24.2)	147 (41.2)	
Bachelor's degree	190 (27.9)	63 (24)	27 (43.5)	100 (28)	
Advanced degree	151 (22.1)	55 (20.9)	16 (25.8)	80 (22.4)	



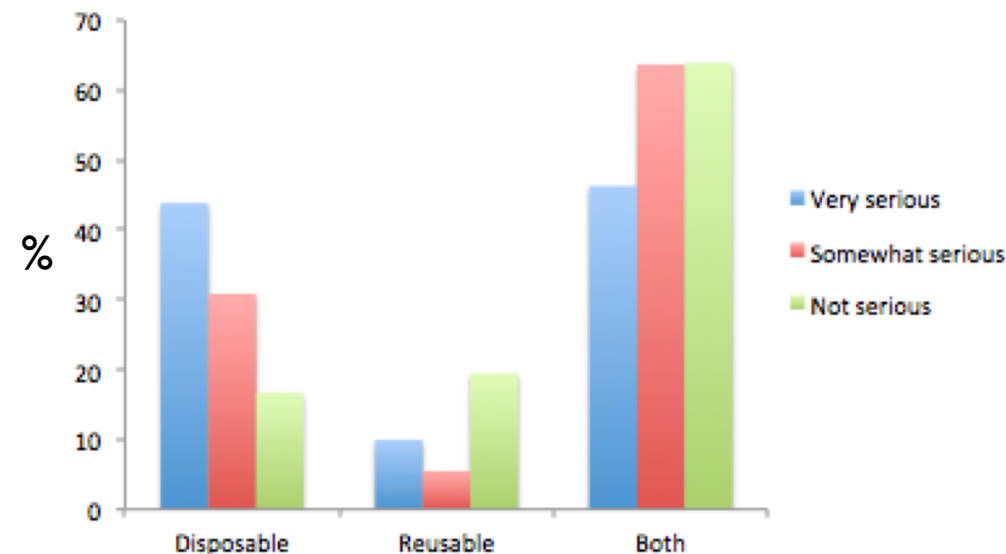


# Results: Serving Ware Question

Table 3. Comparison of Safest Serving Ware Option with Groups Combined

	Based on your knowledge of COVID-19, which do you think is safer to use?				p-value
	All (n=682) n(%)	Disposable serving ware (n=263, 38.6%) n(%)	Reusable serving ware (n=62, 9.1%) n(%)	Both are equally safe (n=357, 52.3%) n(%)	

How serious do you think the symptoms of COVID-19 are?					1.823e-05***
Very serious	445 (65.2)	195 (74.1)	44 (71)	206 (57.7)	
Somewhat serious	201 (29.5)	62 (23.6)	11 (17.7)	128 (35.9)	
Not serious at all or unsure	36 (5.3)	6 (2.3)	7 (11.3)	23 (6.4)	

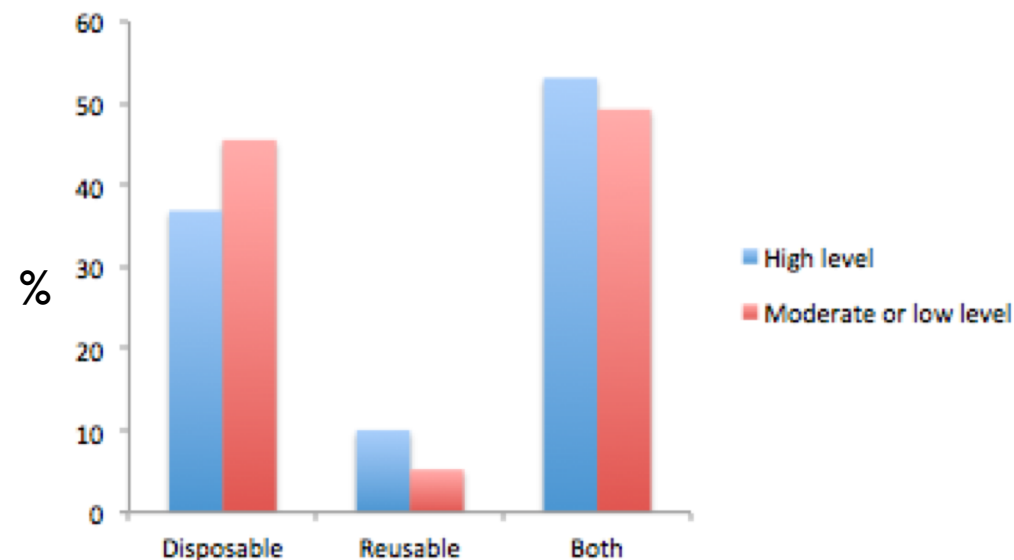




# Results: Serving Ware Question

Table 3. Comparison of Safest Serving Ware Option with Groups Combined

	Based on your knowledge of COVID-19, which do you think is safer to use?				p-value
	All (n=682) n(%)	Disposable serving ware (n=263, 38.6%) n(%)	Reusable serving ware (n=62, 9.1%) n(%)	Both are equally safe (n=357, 52.3%) n(%)	
<b>How confident are you in understanding how to protect yourself from COVID-19?</b>					0.076
High level of confidence	548 (80.4)	202 (76.8)	55 (88.7)	291 (81.5)	
Moderate or low level of confidence	134 (19.6)	61 (23.2)	7 (11.3)	66 (18.5)	





# **Discussion**



# Conclusions

- Reusable serving ware can bring both benefits and drawbacks to restaurants
- During a global pandemic, the risk of virus transmission gives rise to concerns about using reusable serving ware
- Significant trends were observed in the respondent's:
  - Education level
  - How serious people thought the symptoms of COVID-19 were
  - How confident people were in understanding how to protect themselves from COVID-19
- Although only 9.1% of respondents think reusables alone are the safest option to use, over half think they are just as safe as disposables

# Lessons Learned and Limitations



## Lessons Learned

- Challenges in creating a survey from scratch in a short amount of time
- Spend more time researching how to phrase questions and answers and which questions need to be added
- Have a larger team working on the survey process



## Limitations

- Continuity errors in response options
- Race/ethnicity was not included
- There is potential for response bias based on where the survey was posted
- We were not able to determine if the responses were unique
- The survey was administered from July-August of 2020



## **Resource Guides**





# Reusable Serving Ware Guide

- Reusable Serving Ware Guide
- A guide to using reusable serving ware in restaurants (12 pages)
- Resource guide had an emphasis on COVID-19 topics and hazards



Last Updated: August 2020

## REUSABLE SERVING WARE: A RESOURCE GUIDE FOR MARION COUNTY RESTAURANTS

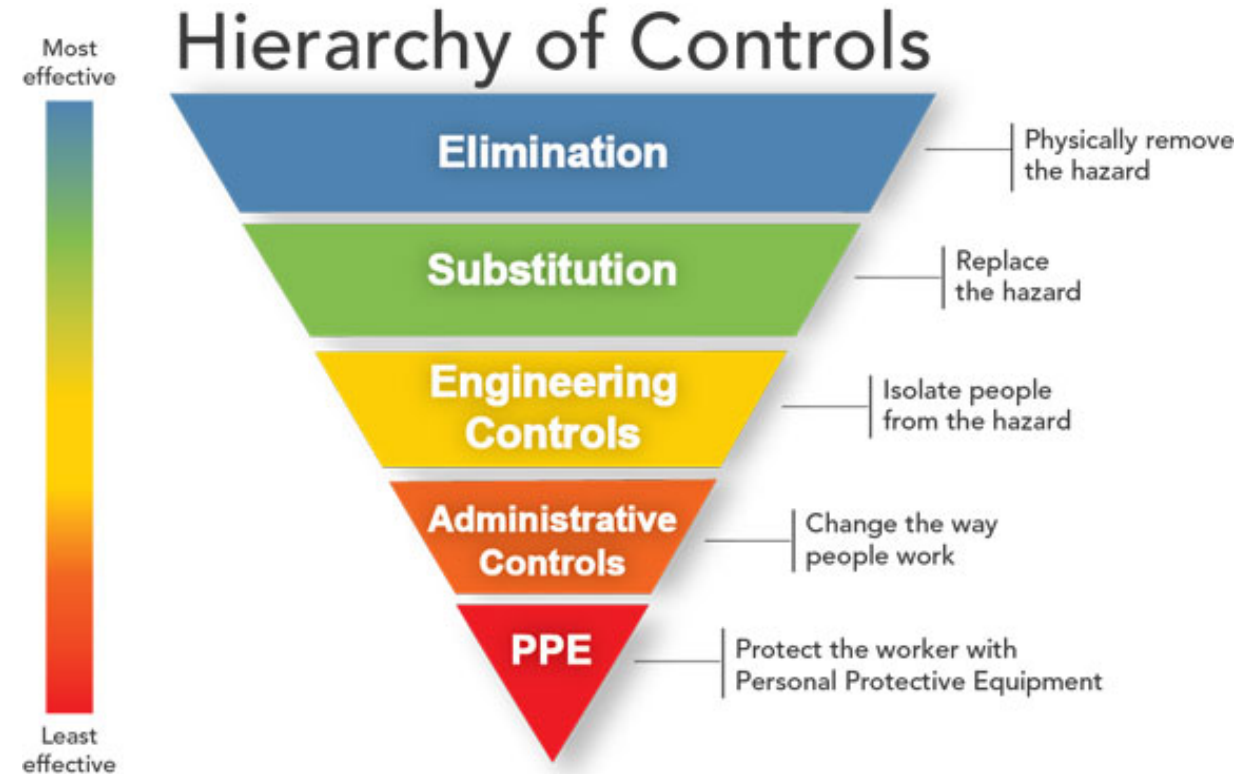


MARION COUNTY PUBLIC WORKS: ENVIRONMENTAL SERVICES  
5155 Silverton Road NE Salem, OR 97305



# Worker Safety and Reusable Serving Ware Resource Guide

- Worker Safety and Reusable Serving Ware Resource Guide
- A guide for worker safety when handling reusable serving ware (10 pages)
- Resource guide had an emphasis on COVID-19 topics and hazards



<https://www.cdc.gov/niosh/topics/hierarchy/default.html>



# References

- Marion County, Oregon. (2012). Food sanitation rules. Retrieved January 24, 2021 from: <https://www.co.marion.or.us/HLT/PH/EHS/Documents/foodsanitationrulesweb1.pdf>
- EPA. Environmental Protection Agency. (2021). Sustainable marketplace: Greener products and services. Retrieved January 24, 2021 from: <https://www.epa.gov/greenerproducts/identifying-greener-foodservice-and-foodservice-ware>
- EPA. Environmental Protection Agency. (2001). Environmentally preferable purchasing guide greening your purchase of food service ware. National Service Center for Environmental Publications. Retrieved January 24, 2021 from: <https://nepis.epa.gov/Exe/ZyPDF.cgi/20000U7Z.PDF?Dockey=20000U7Z.PDF>
- Vanapalli, K. R., Sharma, H. B., Ranjan, V. P., Samal, B., Bhattacharya, J., Dubey, B. K., & Goel, S. (2021). Challenges and strategies for effective plastic waste management during and post COVID-19 pandemic. *Science of The Total Environment*, 750, 141514. <https://doi.org/10.1016/j.scitotenv.2020.141514>
- ReThink Disposable. (2015). Reusable food serviceware guide. Retrieved January 24, 2021 from: <https://www.rethinkdisposable.org/file/222/download?token=tOUNmSN4>
- Trafialek, J., Czarniecka-Skubina, E., Kulaitienė, J., & Vaitkevičienė, N. (2019). Restaurant's Multidimensional Evaluation Concerning Food Quality, Service, and Sustainable Practices: A Cross-National Case Study of Poland and Lithuania. *Sustainability*, 12(1), 234. <https://doi.org/10.3390/su12010234>
- Kim, M. J., & Hall, C. M. (2020). Can sustainable restaurant practices enhance customer loyalty? The roles of value theory and environmental concerns. *Journal of Hospitality and Tourism Management*, 43, 127–138. <https://doi.org/10.1016/j.jhtm.2020.03.004>
- Marazzi, L., Loisel, S., Anderson, L. G., Roccliffe, S., & Winton, D. J. (2020). Consumer-based actions to reduce plastic pollution in rivers: A multi-criteria decision analysis approach. *PLOS ONE*, 15(8), e0236410. <https://doi.org/10.1371/journal.pone.0236410>
- Blanca-Alcubilla, G., Bala, A., de Castro, N., Colomé, R., & Fullana-i-Palmer, P. (2020). Is the reusable tableware the best option? Analysis of the aviation catering sector with a life cycle approach. *Science of The Total Environment*, 708, 135121. <https://doi.org/10.1016/j.scitotenv.2019.135121>
- Loschelder, D. D., Siepmeyer, H., Fischer, D., & Rubel, J. A. (2019). Dynamic norms drive sustainable consumption: Norm-based nudging helps café customers to avoid disposable to-go-cups. *Journal of Economic Psychology*, 75, 102146. <https://doi.org/10.1016/j.joep.2019.02.002>
- CDC. Centers for Disease Control and Prevention. (2020). About COVID-19. Retrieved January 25, 2021 from: <https://www.cdc.gov/coronavirus/2019-ncov/cdcresponse/about-COVID-19.html>
- CDC. Centers for Disease Control and Prevention. (2021). Things to know about the COVID-19 pandemic. Retrieved January 31, 2021 from: <https://www.cdc.gov/coronavirus/2019-ncov/your-health/need-to-know.html>
- CDC. Centers for Disease Control and Prevention. (2020). How COVID-19 spreads. Retrieved January 31, 2021 from: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html>
- WHO. World Health Organization. (2020). Transmission of SARS-CoV-2: implications for infection prevention precautions. Retrieved February 1, 2021 from: <https://www.who.int/news-room/commentaries/detail/transmission-of-sars-cov-2-implications-for-infection-prevention-precautions>
- OHA. Oregon Health Authority. (2020). OHA announces new mask requirements website. Retrieved February 2, 2021 from: <https://www.oregon.gov/oha/ERD/Pages/OHA-Announces-New-Mask-Requirements-Website.aspx>
- Prata, J. C., Silva, A. L. P., Walker, T. R., Duarte, A. C., & Rocha-Santos, T. (2020). COVID-19 Pandemic Repercussions on the Use and Management of Plastics. *Environmental Science & Technology*, 54(13), 7760–7765. <https://doi.org/10.1021/acs.est.0c02178>
- Marion County Environmental Services. (2021). EarthWISE business assistance. Retrieved February 2, 2021 from: <https://www.co.marion.or.us/PW/ES/disposal/programs/earthwise>
- OSU IRB. Oregon State University Human Research Protection Program and Institutional Review Board. (2020). Study number: IRB-2020-0727. Oregon State University.
- OHA. Oregon Health Authority. (2020). Oregonian tested for COVID-19. Retrieved February 2, 2021 from: [https://public.tableau.com/profile/oregon.health.authority.covid.19#v/visualizations/OregonHealthAuthorityCOVID19DataDashboard/COVID19EPICases?display\\_count=y&toolbar=n&origin=viz\\_share\\_link&showShareOptions=false](https://public.tableau.com/profile/oregon.health.authority.covid.19#v/visualizations/OregonHealthAuthorityCOVID19DataDashboard/COVID19EPICases?display_count=y&toolbar=n&origin=viz_share_link&showShareOptions=false)

# THANK YOU!



**Oregon State University**  
College of Public Health  
and Human Sciences



# Additional Tables

Table 4. Comparison of Safest Serving Ware Option (with non-combined groups)

	Based on your knowledge of COVID-19, which do you think is safer to use?				p-value
	All (n=682) n(%)	Disposable serving ware (n=263, 38.6%) n(%)	Reusable serving ware (n=62, 9.1%) n(%)	Both are equally safe (n=357, 52.3%) n(%)	
<b>Age</b>					0.04*
20-29	100 (14.7)	45 (17.1)	8 (12.9)	47 (13.2)	
30-39	164 (24)	55 (20.9)	11 (17.7)	98 (27.5)	
40-49	143 (21)	54 (20.5)	11 (17.7)	78 (21.8)	
50-59	115 (16.9)	40 (15.2)	16 (25.8)	59 (16.5)	
60-69	103 (15.1)	36 (13.7)	11 (17.7)	56 (15.7)	
70 and older	57 (8.4)	33 (12.5)	5 (8.1)	19 (5.3)	
<b>How likely do you think you are to be infected with COVID-19?</b>					0.05*
Very likely	45 (6.6)	18 (6.8)	8 (12.9)	19 (5.3)	
Somewhat likely	318 (46.6)	130 (49.4)	27 (43.5)	161 (45.1)	
Not likely at all	221 (32.4)	70 (26.6)	21 (33.9)	130 (36.4)	
Unsure	98 (14.4)	45 (17.1)	6 (9.7)	47 (13.2)	
<b>How serious do you think the symptoms of COVID-19 are?</b>					0.00050***
Very serious	445 (65.2)	195 (74.2)	44 (71)	206 (57.7)	
Somewhat serious	201 (29.5)	62 (23.6)	11 (17.7)	128 (35.9)	
Not serious at all	16 (2.3)	0 (0)	5 (8.1)	11 (3.1)	
Unsure	20 (2.9)	6 (2.3)	2 (3.2)	12 (3.4)	
<b>How confident are you in understanding how to protect yourself from COVID-19?</b>					0.03*
High level of confidence	548 (80.4)	202 (76.8)	55 (88.7)	291 (81.5)	
Moderate level of confidence	129 (18.9)	56 (21.3)	7 (11.3)	66 (18.5)	
Low level of confidence	5 (0.73)	5 (1.9)	0 (0)	0 (0)	



# Additional Tables

Table 5. P-values of COVID-19 Survey Questions Compared with Demographics

	Gender (3 categories)	Age (5 categories)	Education Level (4 categories)
How likely do you think you are to be infected with COVID-19?	0.10	0.005**	0.15
How serious do you think the symptoms of COVID-19 are?	0.09	0.002**	0.28
Do you consider yourself to be in a high risk group for COVID-19?	0.21	2.2e-16***	0.03*
How confident are you in understanding how to protect yourself from COVID-19?	0.79	0.16	0.56
How confident are you in understanding transmission of COVID-19?	0.62	0.02*	0.20
How confident are you in understanding symptoms of COVID-19?	0.03*	0.09	0.36
How confident are you in understanding treatment options for COVID-19?	0.95	0.02*	0.20
Do you wear a face covering at the grocery store/other stores?	0.95	0.17	0.85
Do you wear a face covering in general public areas?	0.61	0.62	0.14
Do you wear a face covering at restaurants/ bars/ coffee shops?	0.79	0.10	0.12
Do you wear a face covering at work?	0.78	0.67	0.12

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001



## Additional Tables

*Table 6. P-values of Serving Ware Survey Questions Compared with Demographics*

	Gender (3 categories)	Age (5 categories)	Education Level (4 categories)
Based on your knowledge of COVID-19, which do you think is safer to use?	0.28	0.18	0.03* ←
How worried are you that you will get COVID-19 if you bring your own reusable to a restaurant?	0.96	0.18	0.88
How worried are you that you will get COVID-19 if you use reusable serving ware from a restaurant?	0.52	0.42	0.99
How likely were you to bring your own reusable to a restaurant before COVID-19?	0.16	0.0002*** ←	0.03* ←
How likely are you to bring your own reusable to a restaurant now?	0.34	0.19	0.64

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001