

# Lessons Learned from the Heat Dome and Climate Change



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# Question for the Viewers

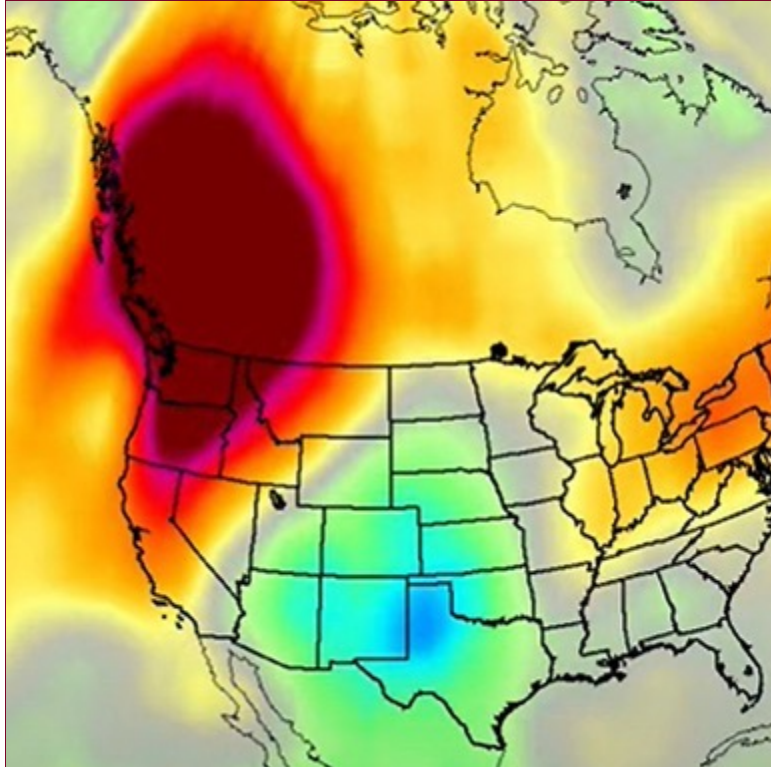


*Do you know the role your local health jurisdiction has when responding to heat events?*

- A. Yes, definitely
- B. Yes, but I don't have a complete picture
- C. Not at all
- D. Other (please type in chat)

## Warming Up: Preparing for Climate Hazards

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## Cooling Down: Responding to the Heat Dome

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## Impacts and Lessons Learned

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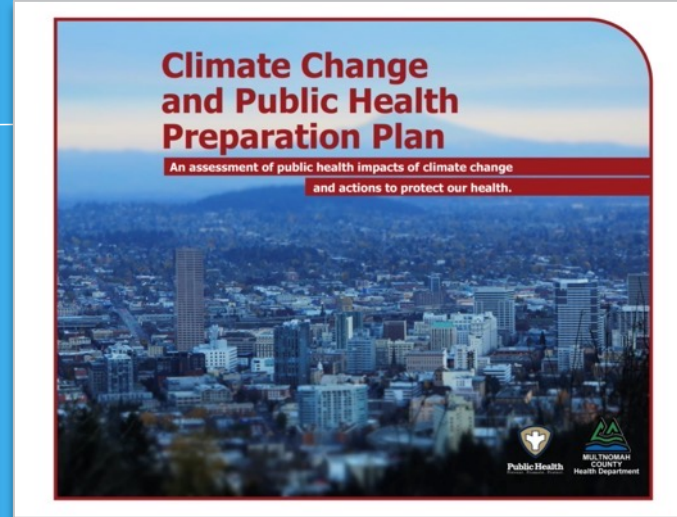
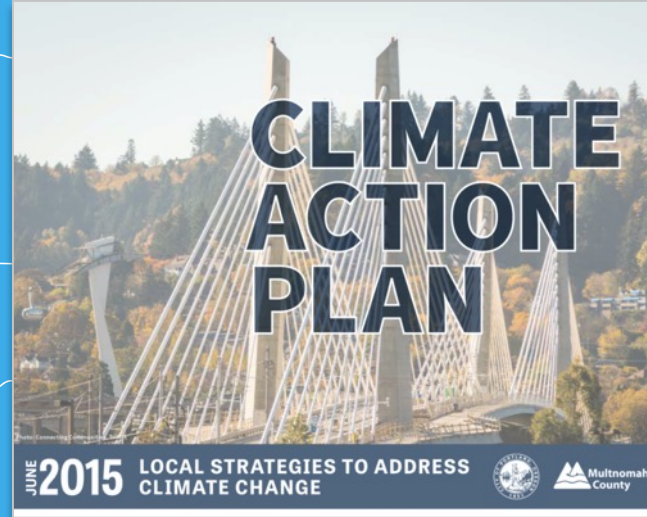
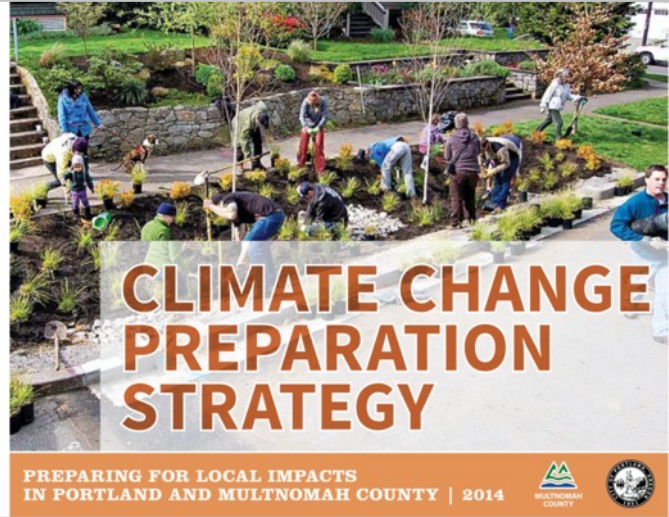
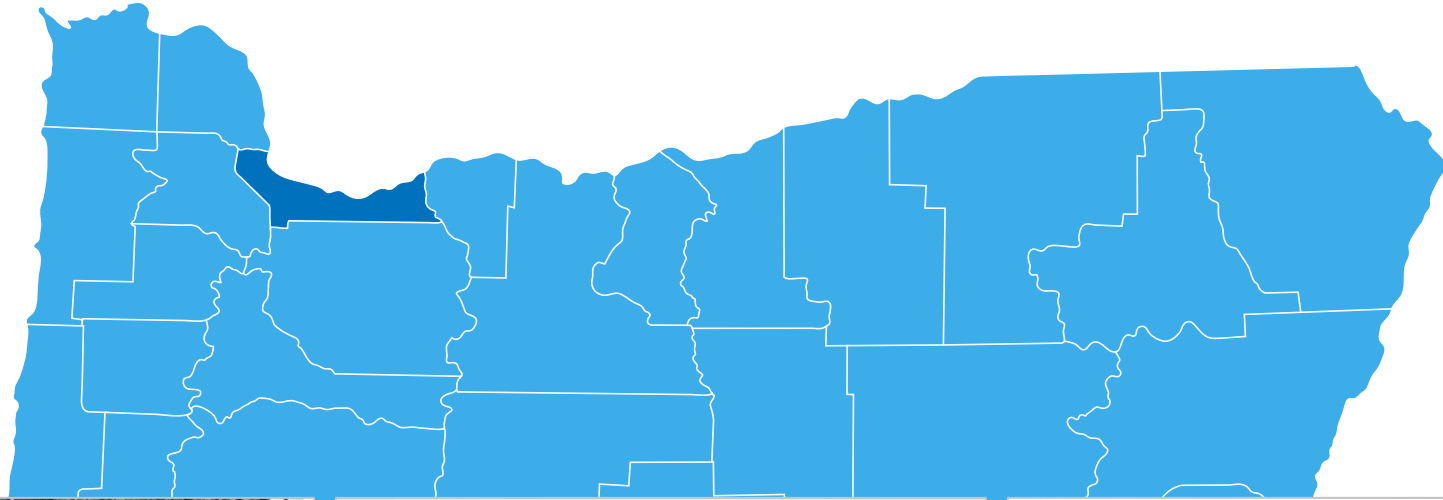




# Warming Up: Preparing for Climate Hazards

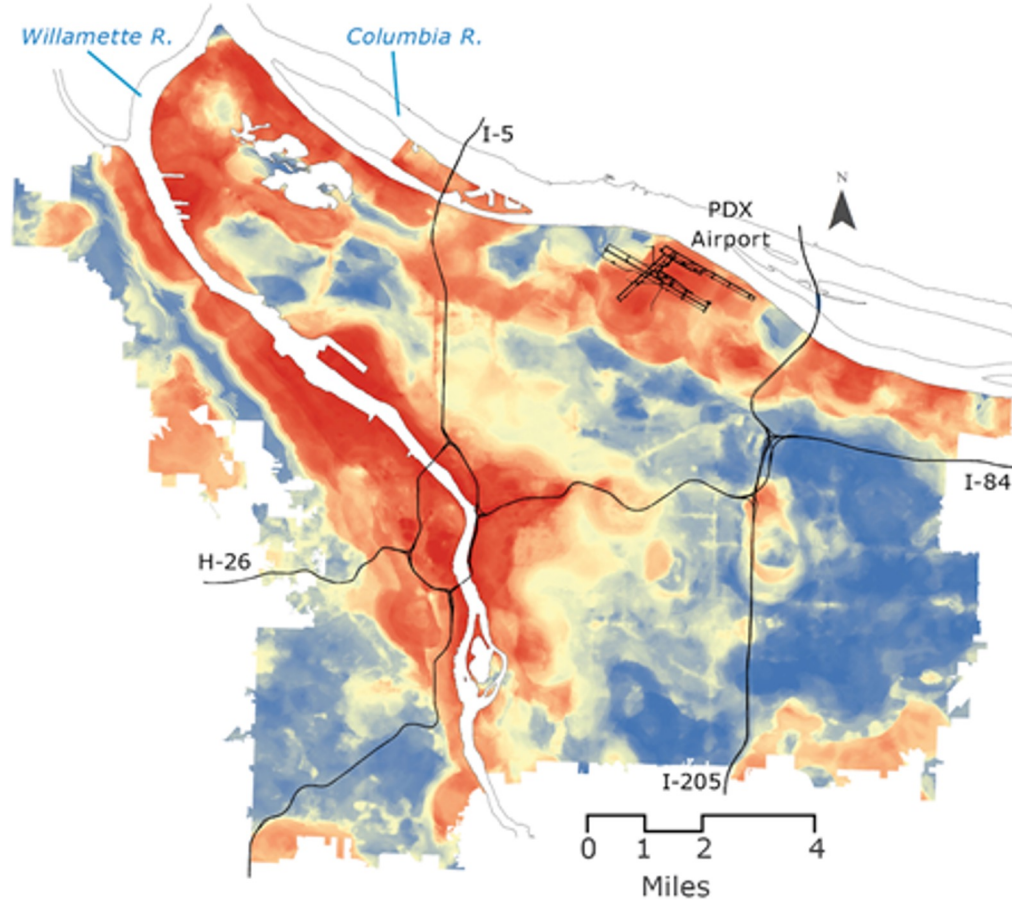


# Preparation: Multnomah County Climate Action Plans

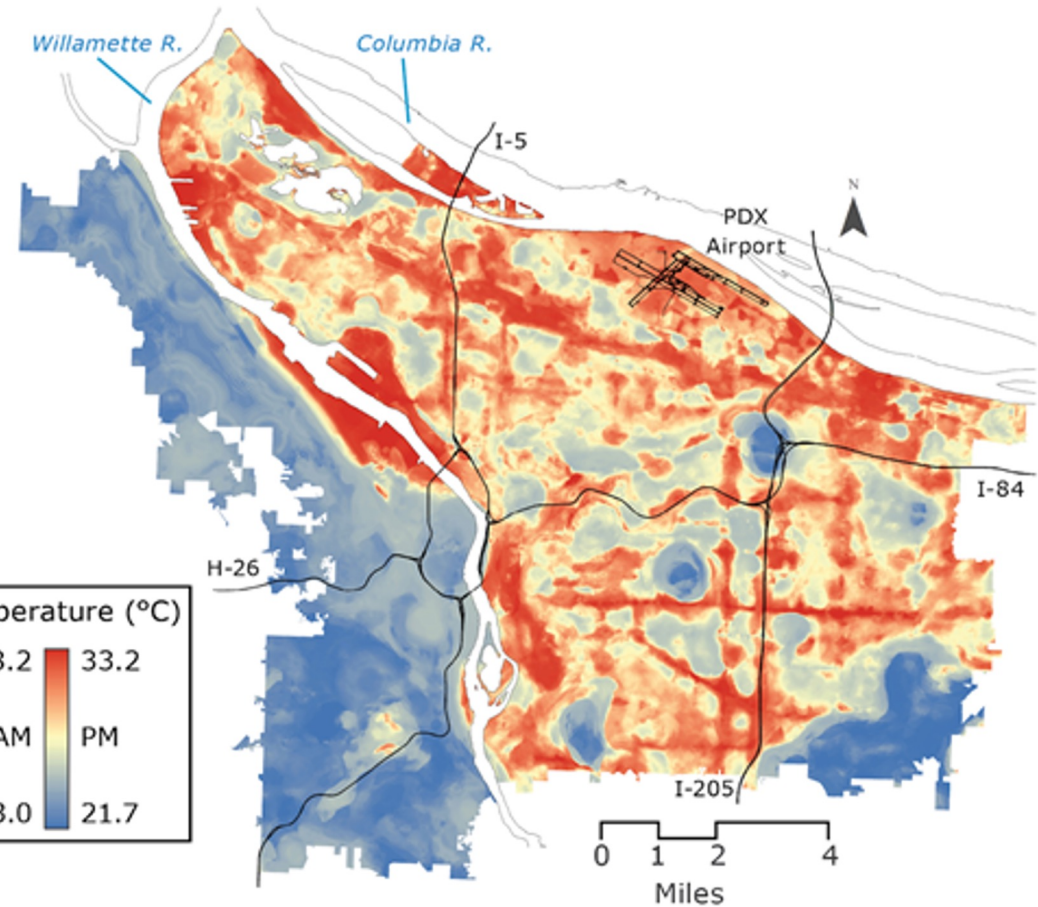


# Preparation: Gathering High-Resolution Data

**A. Urban Heat Islands in Portland, Oregon,  
at 6 AM on August 25, 2014.**



**B. Urban Heat Islands in Portland, Oregon,  
at 7 PM on August 25, 2014.**



Data Source: Sustaining Urban Places Research (SUPR) Lab, Portland State University, 2015

Voelkel J, Shandas V, Haggerty B. Developing High-Resolution Descriptions of Urban Heat Islands: A Public Health Imperative. *Prev Chronic Dis* 2016;13:160099.

# Preparation: Completing the Checklist...?

- ✓ Climate Action Plans
- ✓ High resolution data

## **Plus...**

- ✓ Early warning communications
- ✓ Standard Operating Procedure
- ✓ Surveillance

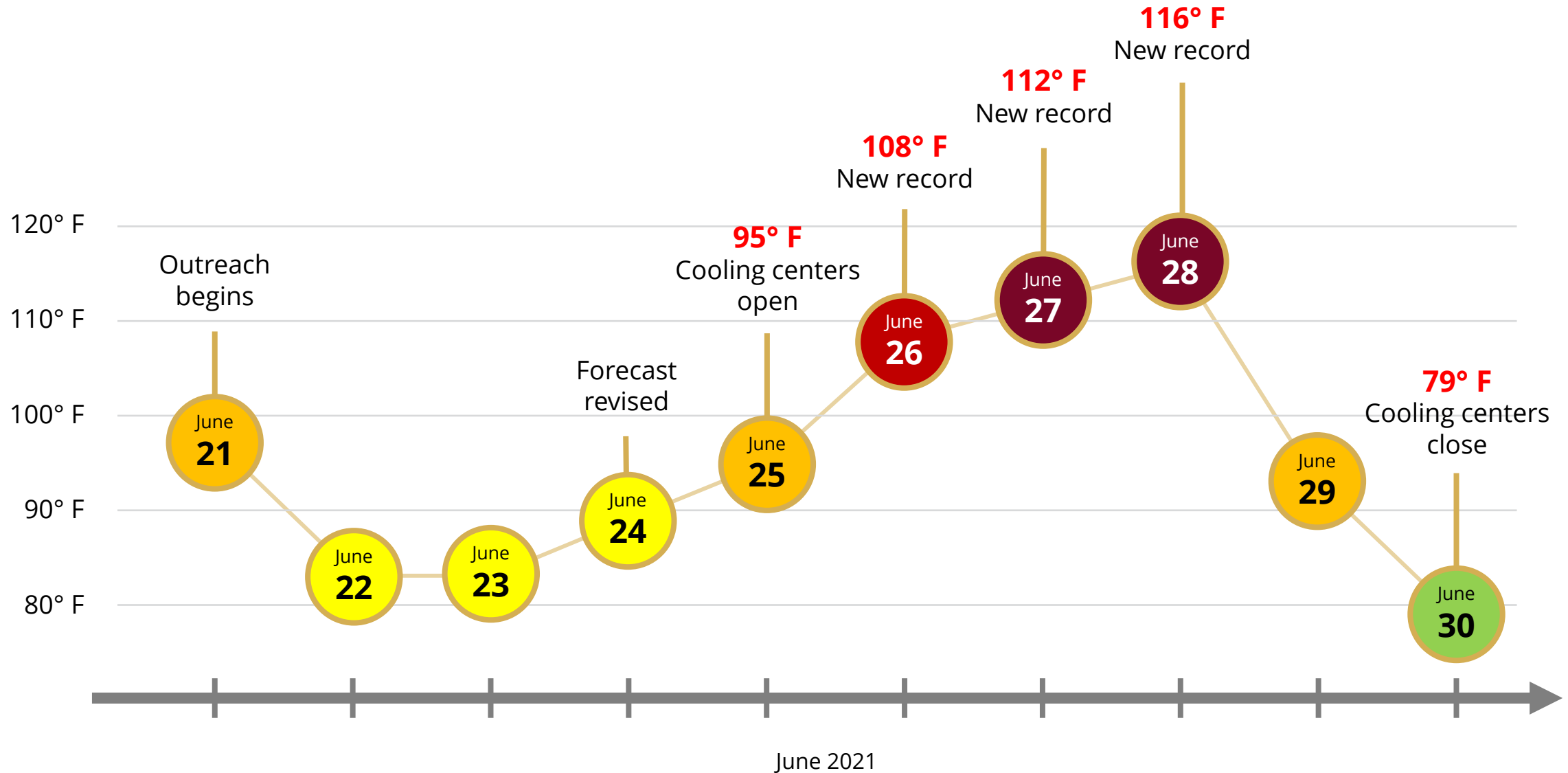


# Cooling Down: Responding to the Heat Dome

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# Timeline: June 2021







# Response

- Warning messages translated in 7 languages
- Parks permits for sporting events cancelled
- Transit fare enforcement paused

**Cuide-se cuando hace calor**

<b>Consejos para permanecer fresco</b>	<b>Agotamiento por el calor</b>	<b>Insolación</b>
<ul style="list-style-type: none"><li>• Beba más agua de lo acostumbrado, no espere hasta tener sed.</li><li>• Evite el alcohol y las bebidas azucaradas.</li><li>• Báñese o dúchese con agua fría.</li><li>• Use un ventilador para crear la ventilación cruzada.</li><li>• Use ropa ligera y holgada.</li><li>• Evite usar la estufa u horno.</li></ul>	<p>Enfermedad leve por el calor. Síntomas:</p> <ul style="list-style-type: none"><li>• Pulso rápido y respiración superficial</li><li>• Sudoración intensa</li><li>• Debilidad extrema</li><li>• Mareos</li><li>• Náusea, vómito</li></ul> <p><b>Qué hacer:</b></p> <ul style="list-style-type: none"><li>• Quitese la ropa en exceso.</li><li>• Descanse en un área fresca.</li><li>• Beba bastante agua.</li><li>• Báñese, dúchese o dese un baño de esponja con agua fría.</li></ul>	<p>El cuerpo no puede controlar la temperatura, puede dar como resultado la muerte o discapacidad. Síntomas:</p> <ul style="list-style-type: none"><li>• Temperatura de 103° F (39.4° C) o más</li><li>• Confusión</li><li>• Pulso rápido</li><li>• Pérdida de la coordinación</li><li>• Piel caliente y seca o sudoración profusa</li><li>• Dolor de cabeza punzante</li><li>• Ataques, coma</li></ul> <p><b>Qué hacer por alguien que tiene insolación:</b></p> <ul style="list-style-type: none"><li>• Llame al 911.</li><li>• Muévelo a un área fresca y con sombra.</li><li>• Ofrezcale agua.</li><li>• Ofrezcale un baño, ducha o baño de esponja con agua fría.</li></ul>

  
Para obtener más información visite [www.cdc.gov/extremeheat](http://www.cdc.gov/extremeheat)



**Chăm sóc bản thân quý vị khi trời nóng**

<b>Các Mẹo Để Luôn Giữ Mát Cơ Thể</b>	<b>Kiệt Sức Vì Nóng</b>	<b>Say Nặng</b>
<ul style="list-style-type: none"><li>• Uống nhiều nước hơn thường lệ, quý vị đừng chờ đến khi cảm thấy khát nước.</li><li>• Tránh các thức uống chứa cồn và chứa đường!</li></ul>	<p>Bệnh do nhiệt nhẹ. Các dấu hiệu nhận biết là:</p> <ul style="list-style-type: none"><li>• Nhịp tim đập nhanh và hơi thở nóng</li><li>• Ra mồ hôi nhiều</li></ul>	<p>Cơ thể không thể kiểm soát nhiệt độ, có thể dẫn đến tử vong hoặc tàn tật. Các dấu hiệu nhận biết là:</p> <ul style="list-style-type: none"><li>• Thân nhiệt từ 103 độ F (39.4 độ C)</li><li>• Rối loạn</li><li>• Mạch đập nhanh</li><li>• Mất khả năng phối hợp</li><li>• Da nóng, khô hoặc ra mồ hôi liên tục</li><li>• Đau đầu như búa bổ</li><li>• Dấu hiệu co giật, hôn mê</li></ul> <p><b>Việc cần phải làm dành cho người bị say nặng:</b></p> <ul style="list-style-type: none"><li>• Gọi 911.</li><li>• Di chuyển đến khu vực mát mẻ, có bóng râm.</li><li>• Uống nước.</li><li>• Di tản với sen, trong bồn tắm hoặc tắm với miếng bọt biển và nước mát</li></ul>

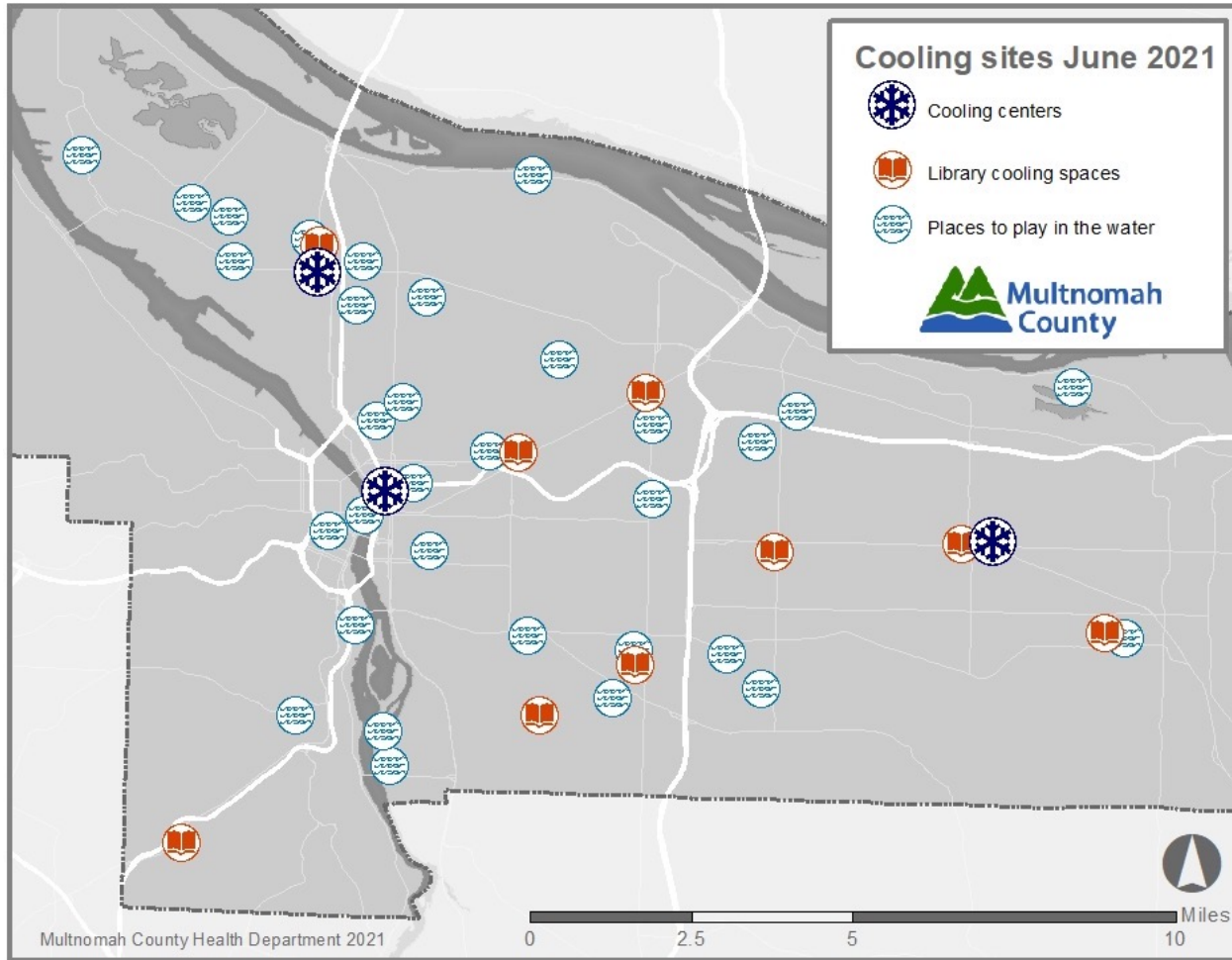
**Take care of yourself when it's hot**

<b>Tips to stay cool</b>	<b>Heat Exhaustion</b>	<b>Heat Stroke</b>
<ul style="list-style-type: none"><li>• Drink more water than usual, don't wait until you are thirsty.</li><li>• Avoid alcohol and sugary drinks.</li></ul>	<p>Mild heat illness. Signs are:</p> <ul style="list-style-type: none"><li>• Rapid heart beat and shallow breathing</li><li>• Heavy sweating</li></ul>	<p>The body cannot control temperature, can lead to death or disability. Signs are:</p> <ul style="list-style-type: none"><li>• 103 degree temperature or above</li><li>• Confusion</li><li>• Rapid pulse</li><li>• Loss of coordination</li><li>• Hot, dry skin or profuse sweating</li><li>• Throbbing headache</li><li>• Seizures, coma</li></ul> <p><b>What to do for someone with heat stroke:</b></p> <ul style="list-style-type: none"><li>• Call 911.</li><li>• Move to a cool, shaded area.</li><li>• Offer water</li><li>• Offer a cool shower, bath, or sponge bath</li></ul>





# Cooling Spaces



## Three 24-hour cooling shelters

- Behavioral health
- Meals
- Transportation
- COVID vaccination
- Pet accommodation
- Staff of 350 employees and volunteers

## Nine library daytime cooling spaces

# Direct Outreach



- 4,500 high-risk older adults and people with disabilities
- 12,000 client text messages
- Affordable housing providers
- 100 street teams
- Affordable housing providers



# Working On The Response



- Syndromic surveillance escalating the response
- Death investigations
- Vital records for a mass casualty event



# Question for the Viewers



*Has your agency changed its response strategy as a result of the heat events or climate change?*

- A. Yes
- B. No
- C. Not sure
- D. Other (please type in chat)

# Impact and Lessons Learned

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# Impacts

**69**

**Heat deaths**

*Zero in a typical year*

**158**

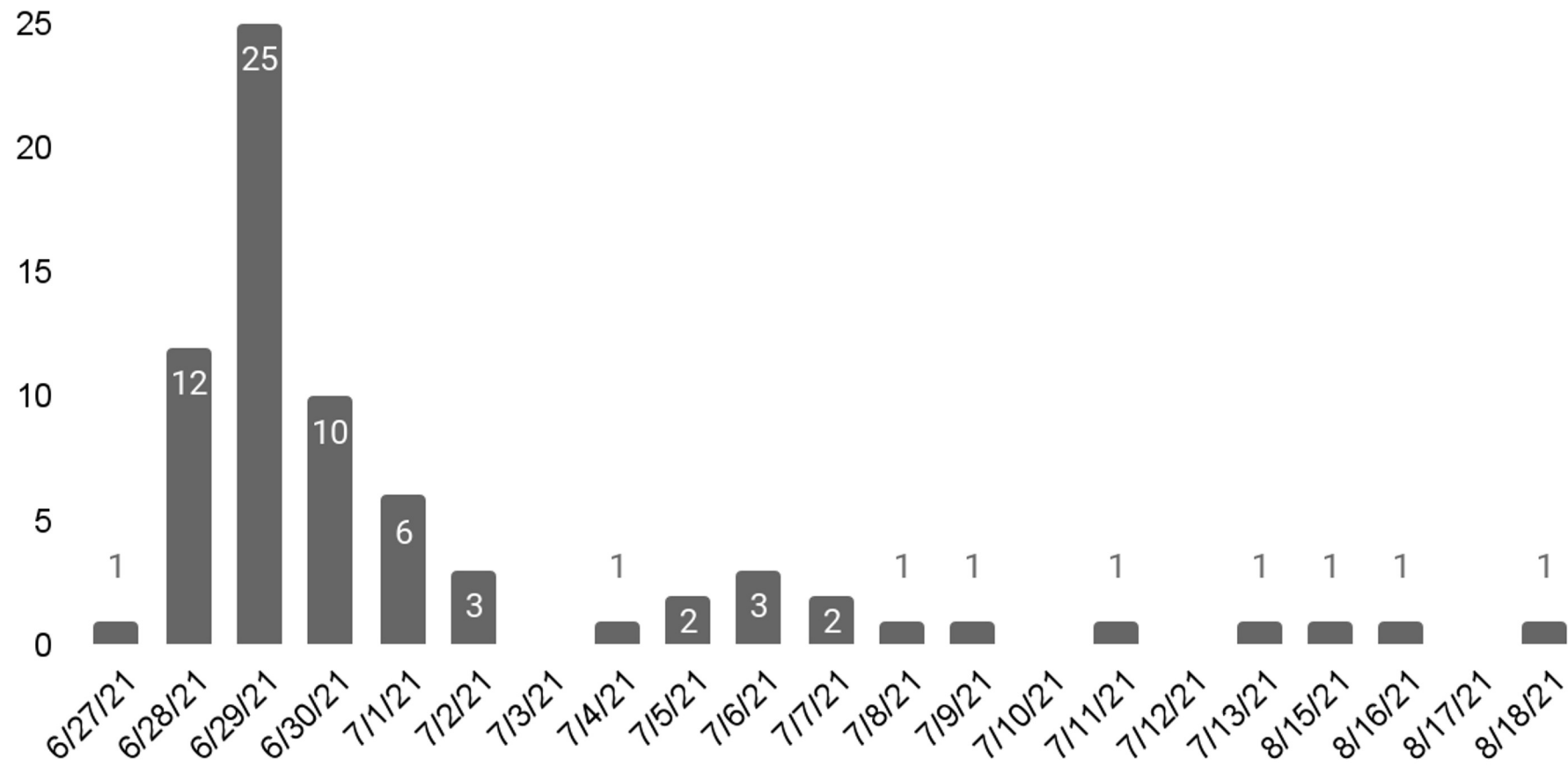
**Emergency department visits for heat illness**

*3-5 visits expected in the same time period*



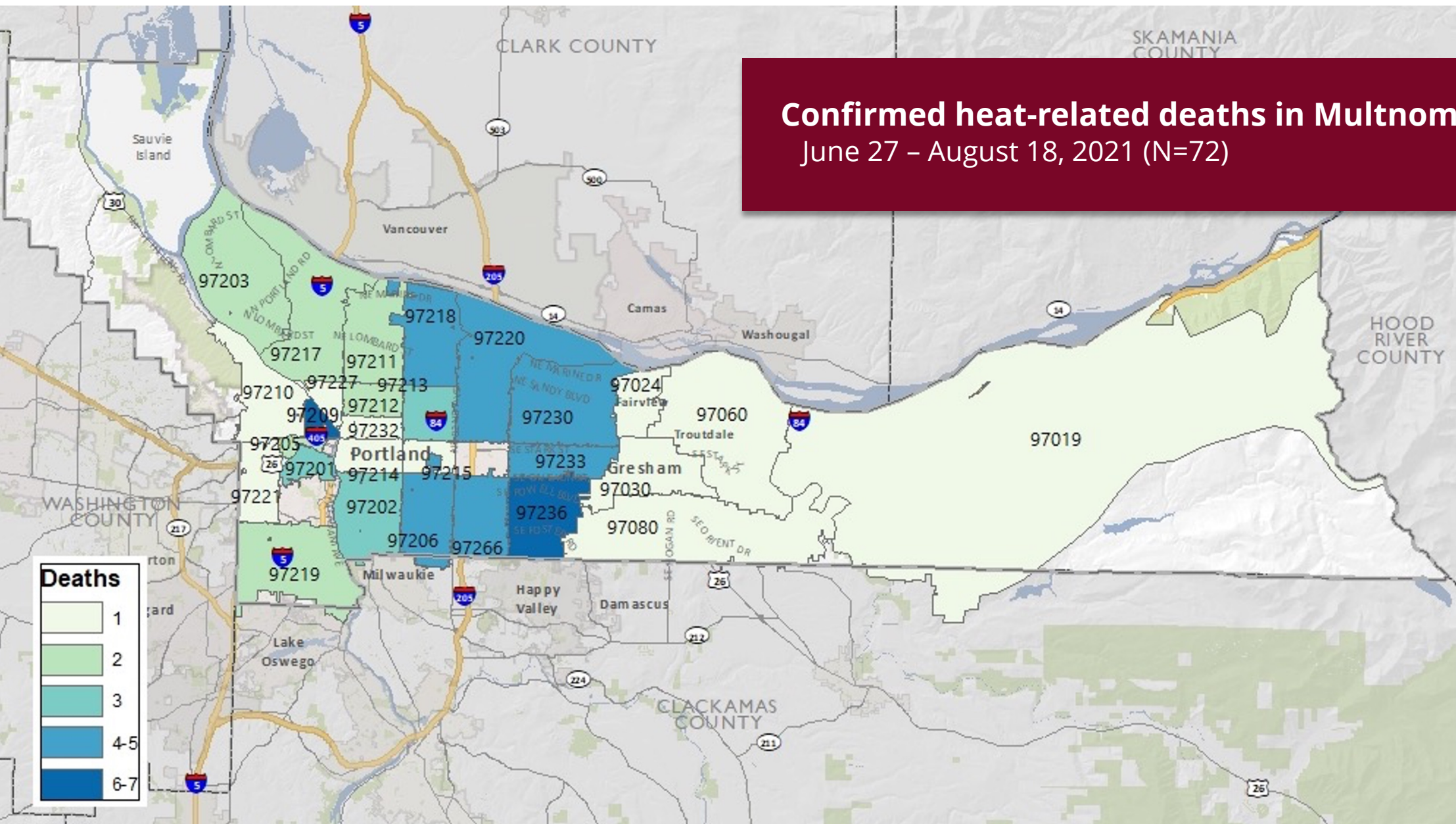
# Heat-related Deaths

Heat deaths in Multnomah County, 2021:



## Distribution of Heat-related Deaths

**Confirmed heat-related deaths in Multnomah County**  
June 27 – August 18, 2021 (N=72)



# Heat-related Deaths by Cooling Type

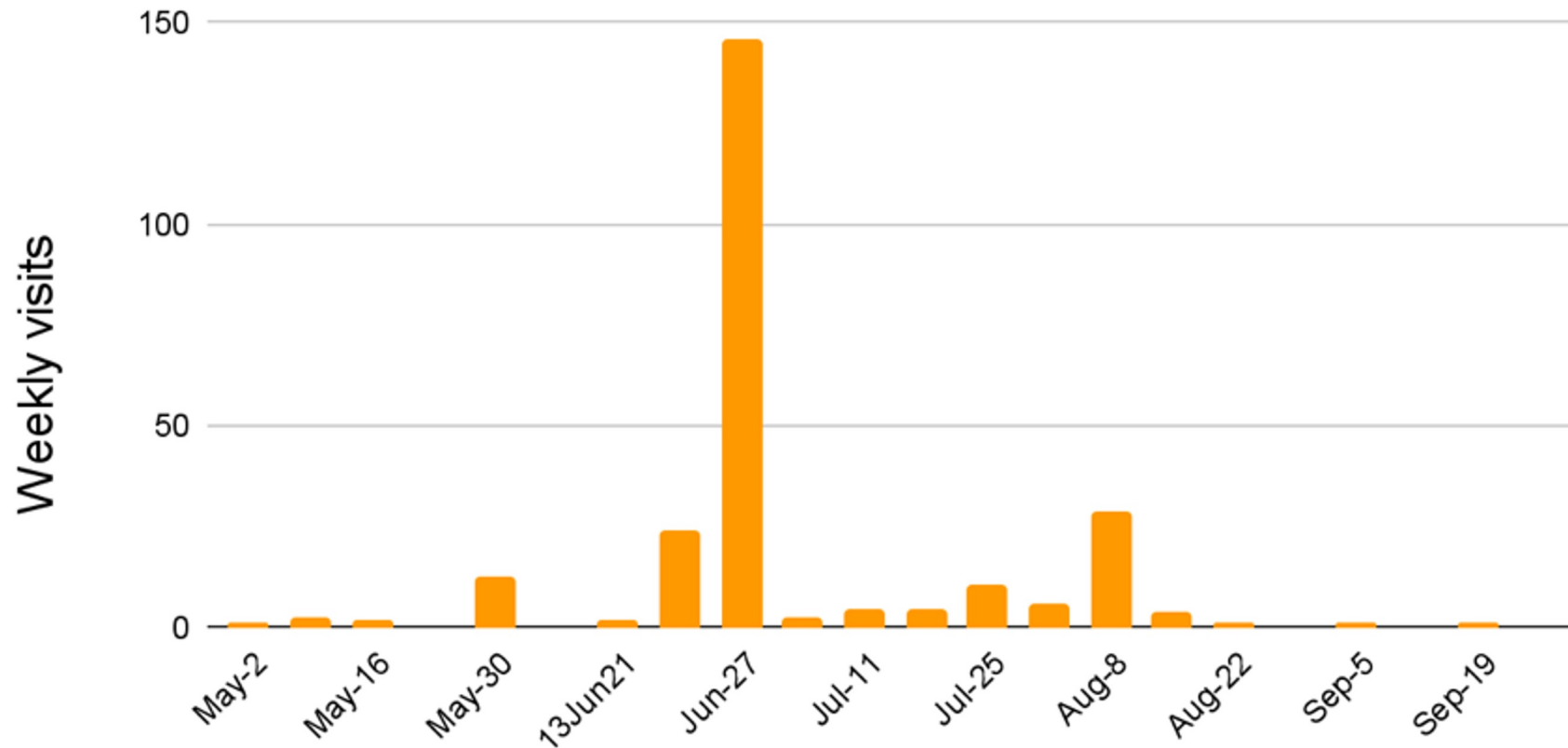
Cooling Type	Count	Percent (%)
Fan Only	36	50
None	13	18
Air Conditioning (With or without fan)	10	14
Unknown	13	18
<b>Total</b>	<b>72*</b>	<b>100</b>

*\*Includes 3 additional heat deaths from August 2021*

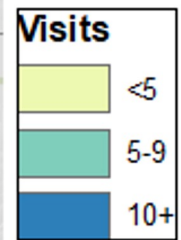
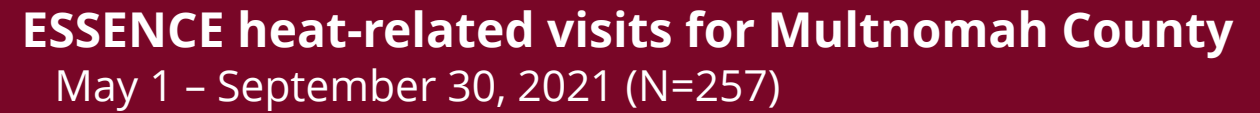


# Emergency Department and Urgent Care Visits

**Weekly emergency department and urgent care clinic visits**  
for heat illness in Multnomah County, May-September 2021:

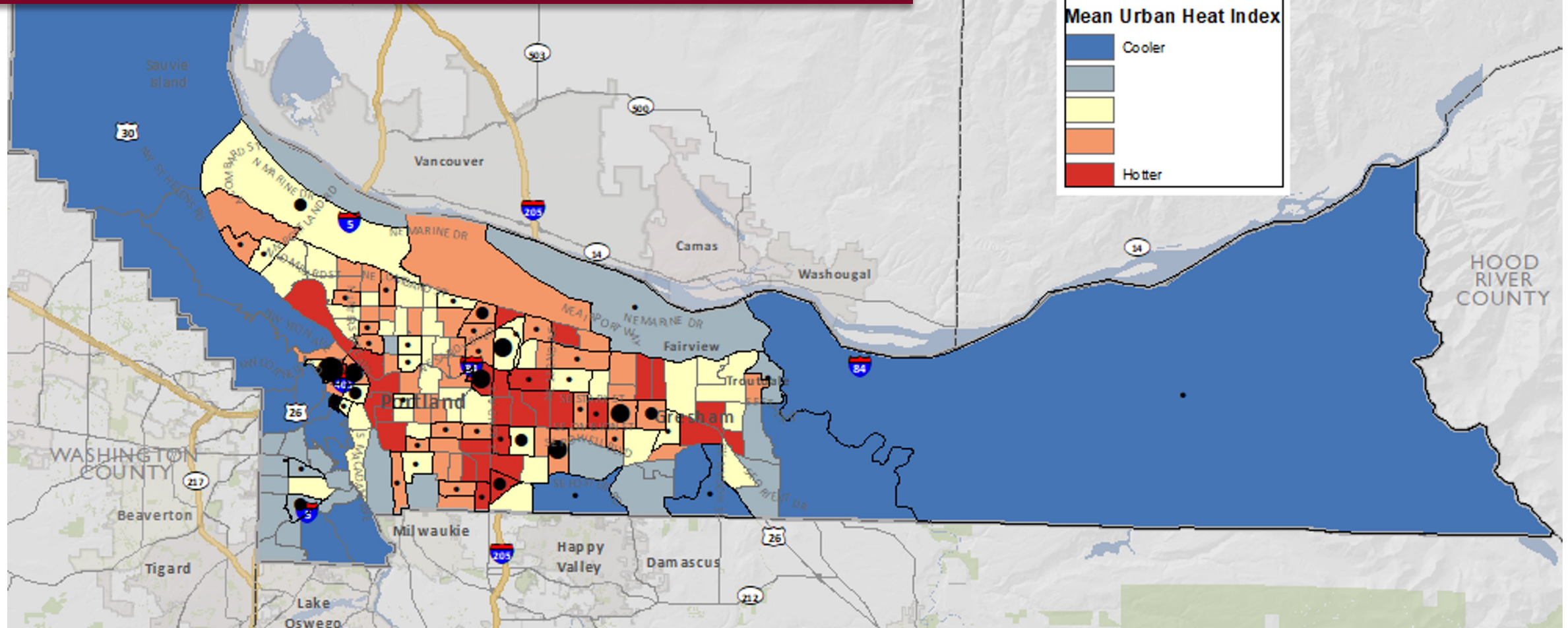


# Countywide Emergency Department Visits



# Heat-related Deaths by Temperature

**Confirmed heat-related deaths in Multnomah County**  
June 27 – August 18, 2021 (N=72)





# Disproportionately Affected Demographic Populations

## Males

**67%**  
of deaths

**60%**  
of emergency  
department  
visits

## Non-Hispanic Whites

**82%**  
of deaths

**71%**  
of emergency  
department  
visits

## Adults Aged 60+

**78%**  
of deaths

**42%**  
of emergency  
department  
visits

# Disproportionately Affected Populations by Living Situation

## People Living Alone

**71%**  
of deaths

## People Living In Multifamily Buildings

**58%**  
of deaths

## People Experiencing Homelessness

**6%**  
of deaths

**6%**  
of deaths

## People Living In Warmer Areas of the County

**58%**  
of deaths

# Lessons Learned

- Work with your local National Weather Service office to understand probability of extreme events
- Cooling shelters are only effective if people use them
- Know what to expect when reporting impacts of a mass casualty event
- Gather the data you need to implement interventions
- As climate change progresses, we're operating at the edge of scientific knowledge



# Changes

- Communications
- Cooling interventions
  - AC distribution
  - Cooling centers
  - Misting stations
- Staffing
  - Response
  - Resilience
- Laws and regulations



# Key Takeaways

- ✓ Plan for the worst-case scenario and stress test your plan
- ✓ Make a staffing plan
- ✓ Care for the most vulnerable: older, living alone,
- ✓ AC is protective

# A Chat with Brendon Haggerty



Allene Mares



Brendon Haggerty



# QUESTIONS?

To ask a question, please click the



icon in the Zoom toolbar to open your Q&A Pod.

# Connect with Multnomah County



## **Brendon Haggerty**

Multnomah County Health Department

E-mail: [brendon.haggerty@multco.us](mailto:brendon.haggerty@multco.us)

# Resources

## **Regional Climate and Health Monitoring Report**

Multnomah County, Clackamas County, and Washington County public health agencies

<https://www.multco.us/file/111710/download>

## **National Weather Service HeatRisk Tool**

National Oceanic and Atmospheric Administration

<https://www.wrh.noaa.gov/wrh/heatrisk/>

## **National Integrated Heat Health Information System**

National Oceanic and Atmospheric Administration

<https://nihhis.cpo.noaa.gov/>

## **Global Heat Health Information Network**

<https://ghhin.org/>

## **Multnomah County Report on 2021 Heat Deaths**

Multnomah County Health Department

[https://multco-web7-psh-files-usw2.s3-us-west-2.amazonaws.com/s3fs-public/20220624\\_final-heat-report-2021\\_SmallFile-2.pdf](https://multco-web7-psh-files-usw2.s3-us-west-2.amazonaws.com/s3fs-public/20220624_final-heat-report-2021_SmallFile-2.pdf)