

# Session 1: Overview on Applying the Safe System Approach for Rural

Applying the Safe System Approach for Rural

½ Day Virtual, Mini-Conference

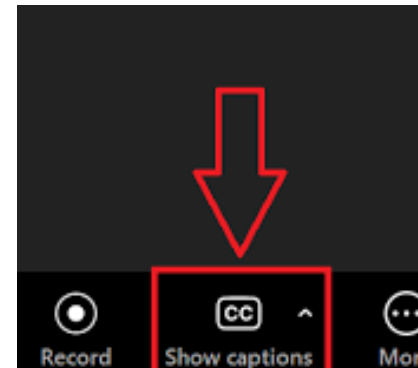
January 28, 2026





# Webinar Logistics

- Duration is 1.5 hours
- To activate closed captioning for the webinar:
  - Click on the “Show Captions” button at the bottom of your screen.
  - You may adjust captions under Caption Settings (same button).
- Recording webinar for website archival
  - <https://ruralsafetycenter.org/webinar-archive/>
- Q&A pod to ask questions of presenters and alert organizers of technical difficulties
- Handouts are available for download
- Please complete feedback form at the end of the webinar
- Certificates of Completion/Application for CEUs will be provided





# Session 1 Presenters



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# Please Reach Out!

- [info@ruralsafetycenter.org](mailto:info@ruralsafetycenter.org)
- [www.ruralsafetycenter.org](http://www.ruralsafetycenter.org)



@ruralroadsafety



# National Center for Rural Road Safety

*A Federal Highway Administration Center for Excellence*



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# **APPLYING THE SAFE SYSTEM APPROACH IN RURAL COMMUNITIES**

David J. Ederer, PhD

January 28, 2026





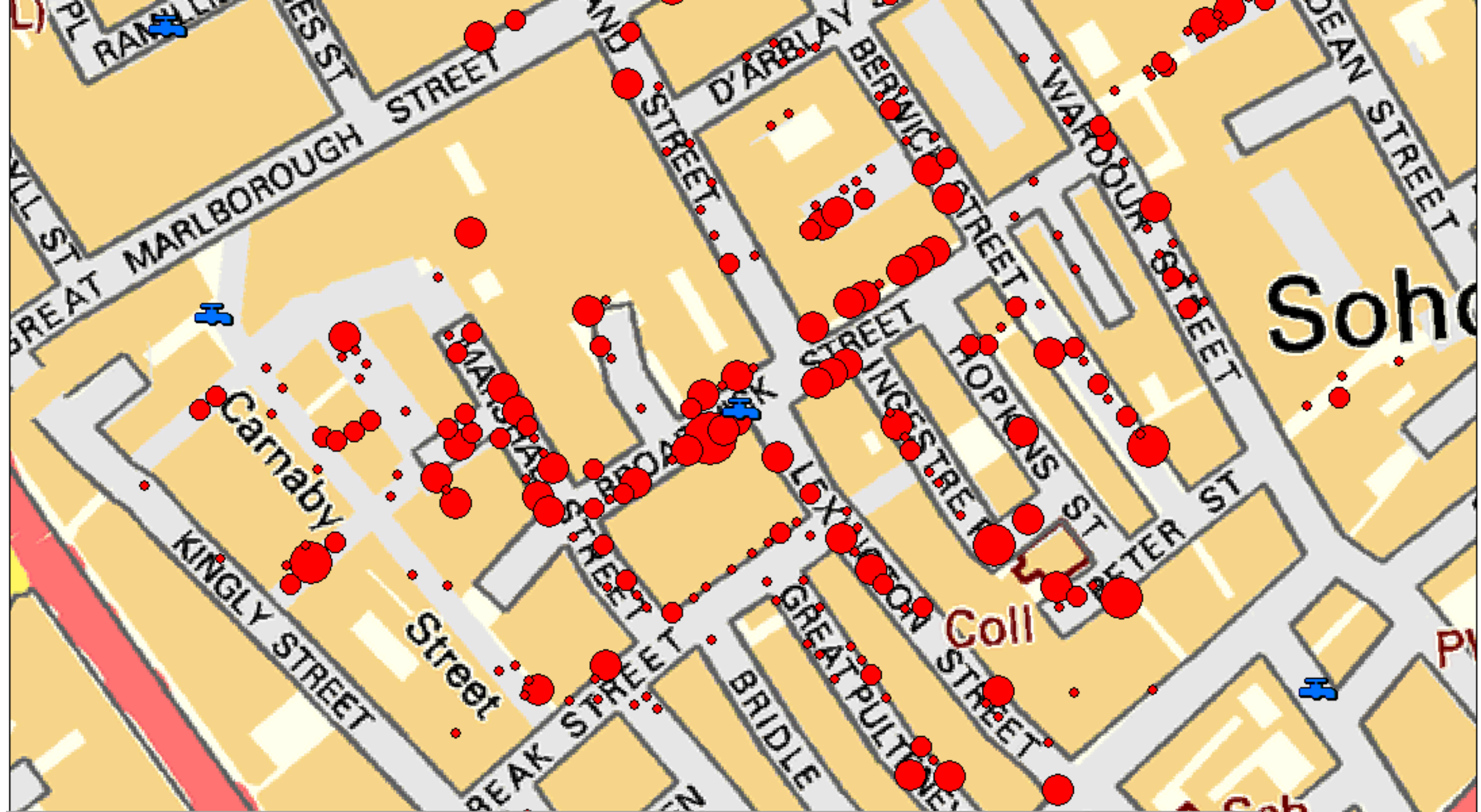
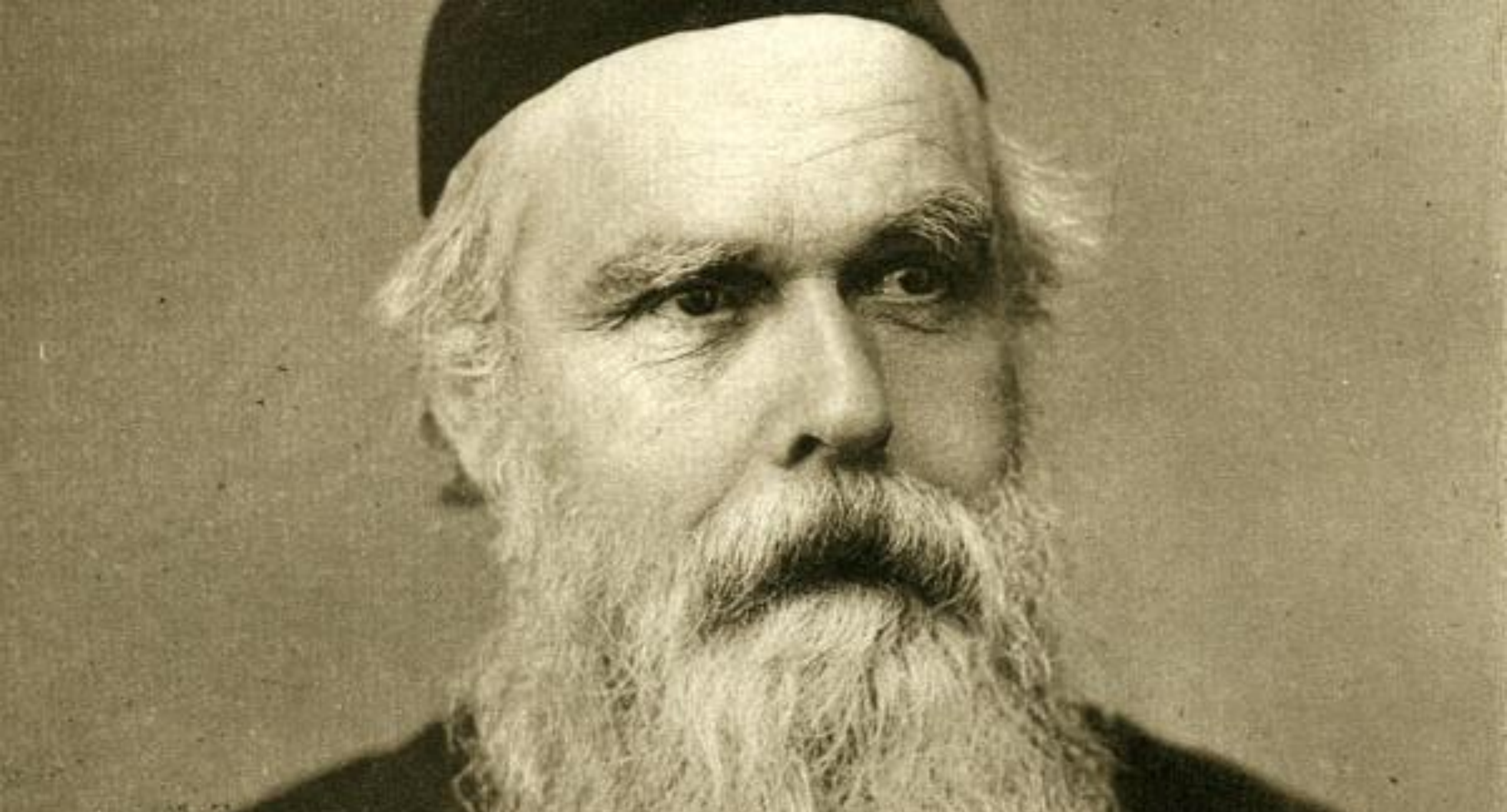


Image source: <https://blog.rtwilson.com/john-snows-cholera-data-in-more-formats/>



Source: Photograph by Scott and Sons, Carlisle in Rawnsley, H.D., Henry Whitehead, 1825-1896: A Memorial Sketch, James MacLehose and Sons, Glasgow, 1898



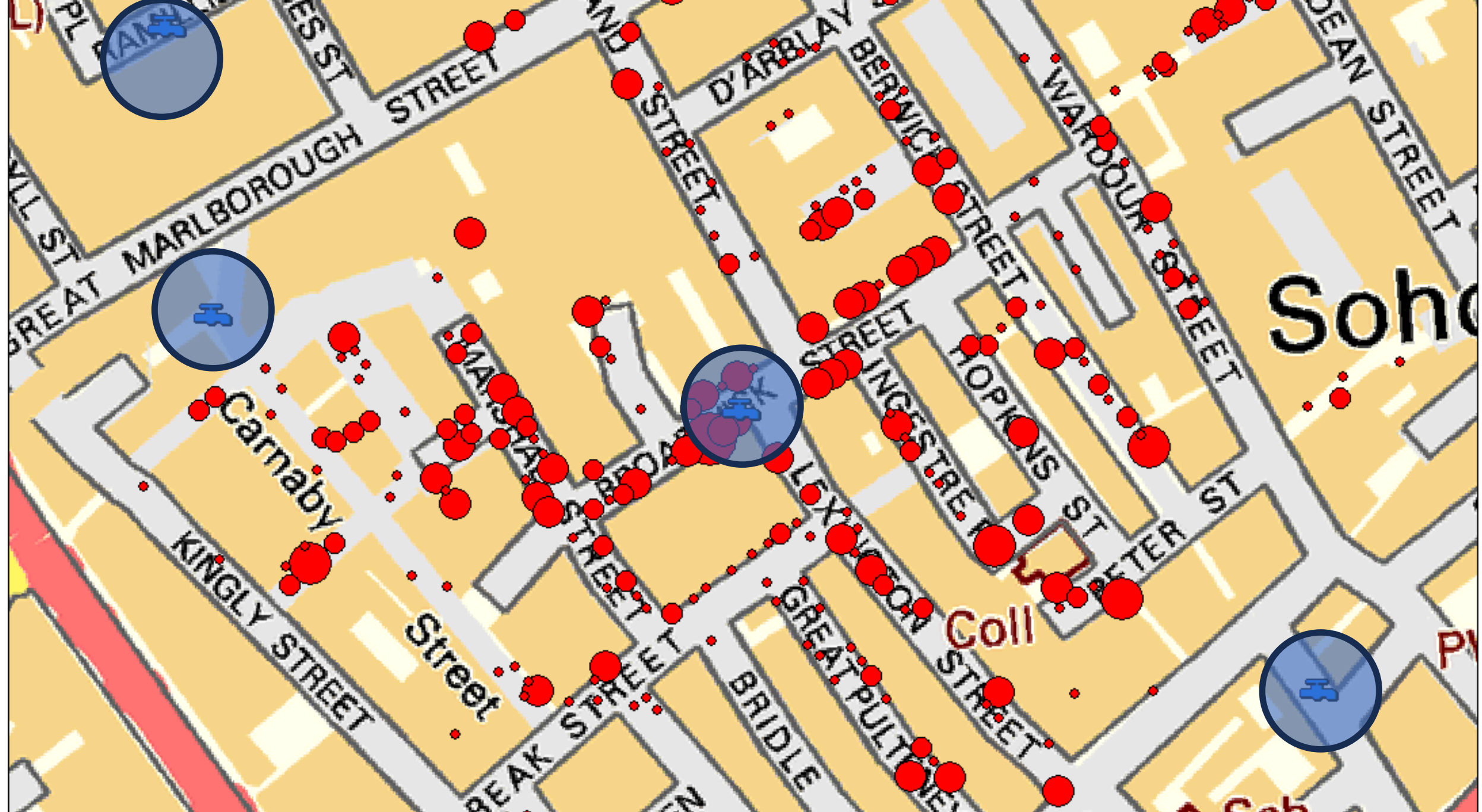


Image source: <https://blog.rtwilson.com/john-snows-cholera-data-in-more-formats/>

	Miasma	Germ
Infectious disease is <b>caused</b> by:	Infectious mists or noxious vapors emanating from filth in the towns	Tiny, undetectable microbes
Infectious disease is <b>prevented</b> by:	Sanitation to prevent garbage, sewage, and other waste	Preventing the tiny organisms from coming into contact with humans


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Public health is not just counting.

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Public health is a way of describing and solving problems.





# American Journal of Public Health

and THE NATION'S HEALTH *Vol. XIII No. 10*

Volume XXI

October, 1931

Number 10

## Training for the Public Health Engineer\*

S. C. PRESCOTT, F. A. P. H. A.

*Massachusetts Institute of Technology, Cambridge, Mass.*



1098

### AMERICAN JOURNAL OF PUBLIC HEALTH

#### *Third Year*

	Hours per Week		Hours per Week
Railway & Highway Eng.	1-3	Railway & Highway Eng.	2-2
Applied Mechanics	3-6	Structures	3-5
Organic Chemistry	4-3	Hydraulics	3-5
Personal Hygiene & Nutr.	2-2	Chem. of Water & Sewage	4-1
Bacteriology	6-4	Bacteriology	6-3
Political Economy	3-3	Municipal Sanitation	4-4
General Study	4-4	Political Economy	3-3

PUBLIC HEALTH ENGINEERING  
TRAINING FOR THE PUBLIC HEALTH ENGINEER\*

DISCUSSION

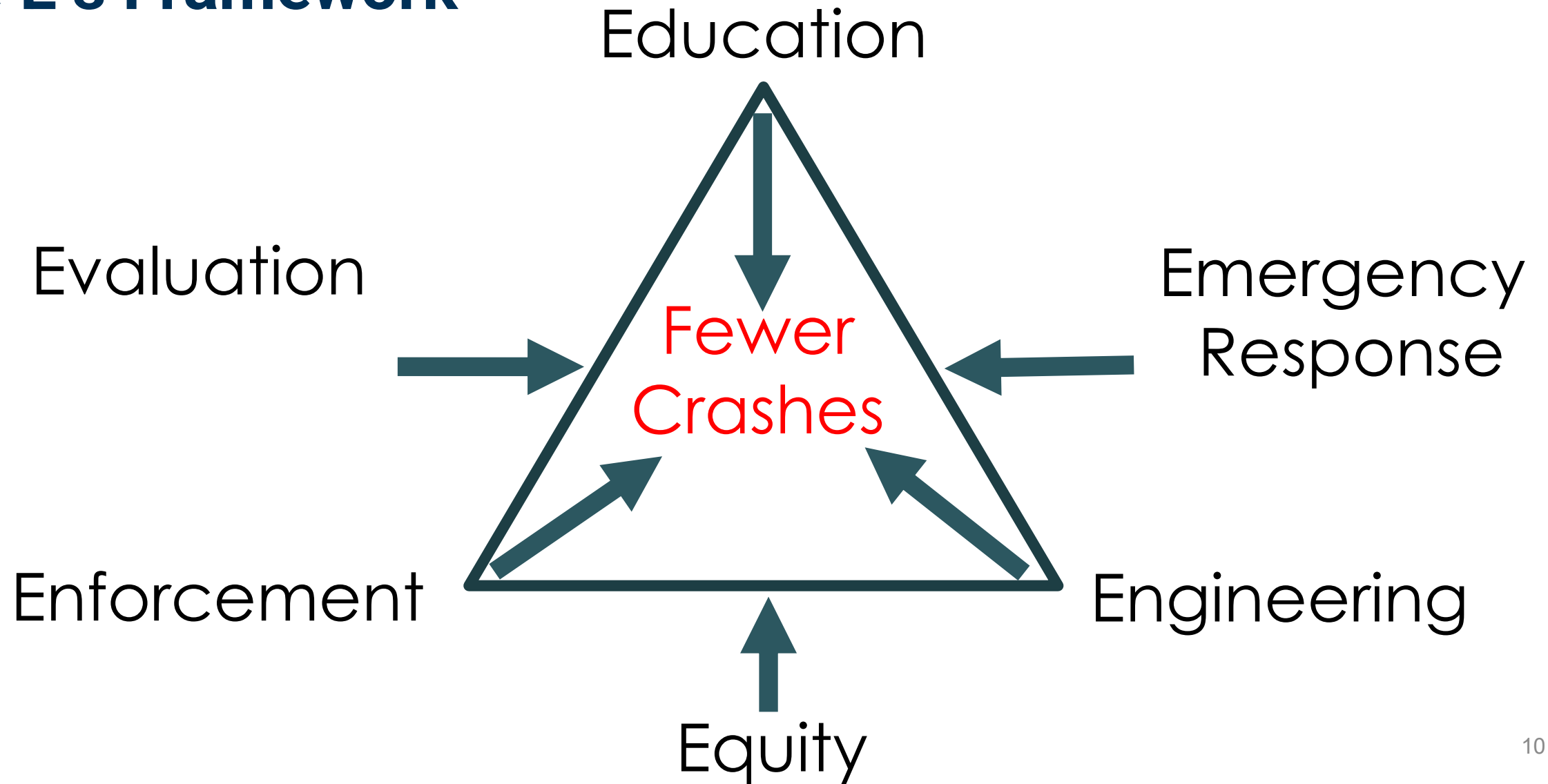
EARLE B. PHELPS

*Professor of Sanitary Science, College of Physicians and Surgeons,  
Columbia University, New York, N. Y.*

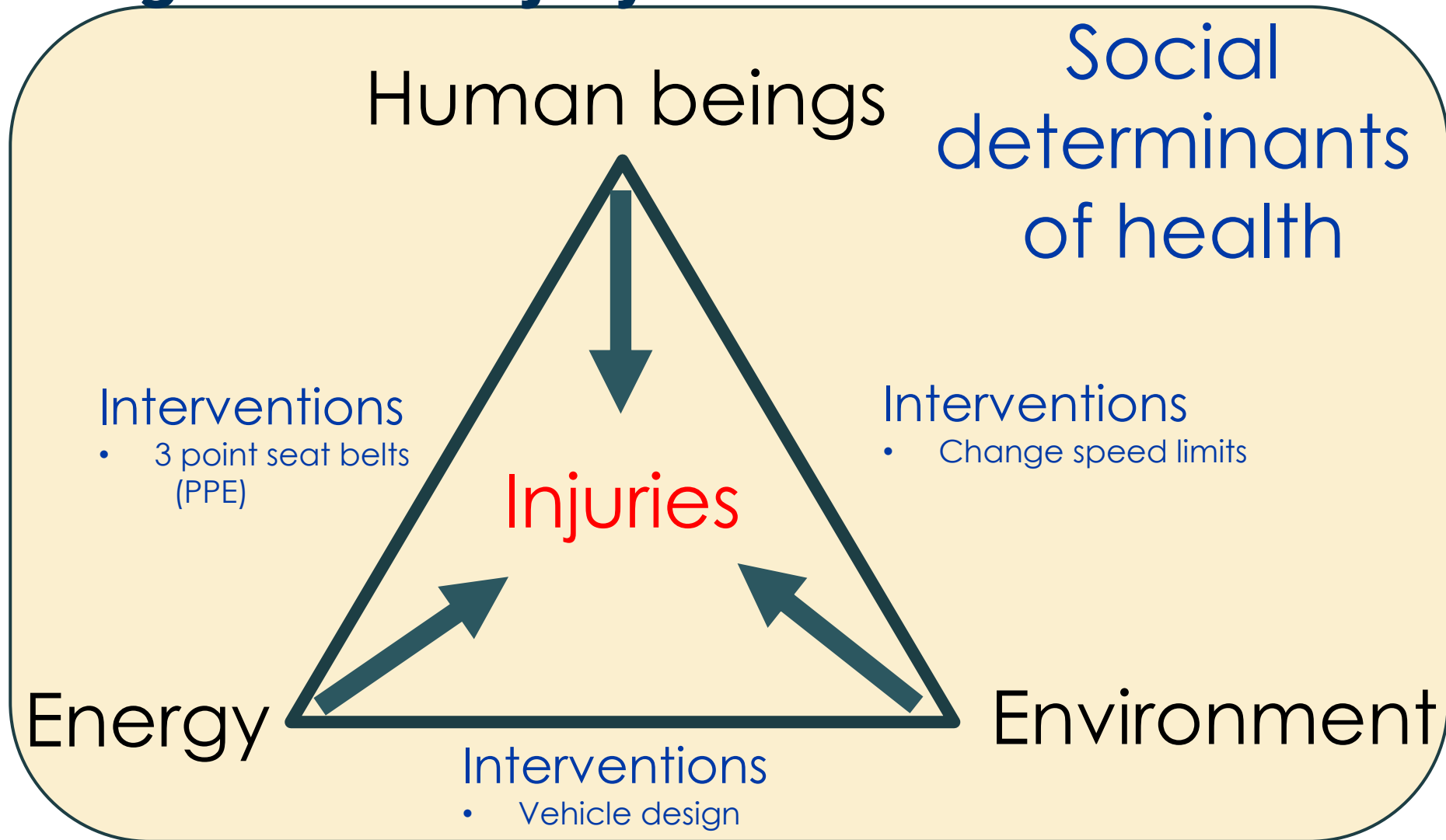
phasis. The sanitary engineer is primarily a designer or a builder. He is, in fact, a civil and hydraulic engineer specializing in a rather restricted field, confined for the most part to works relating to municipal water supply and sewerage.

The public health engineer on the other hand is primarily a student and worker in the field of public health. The range of his activities is wider, and his training and knowledge are of essentially different character. It is not so important that he know how to build a sewer as that he know why sewers are necessary and what results may be anticipated from the discharge of their contents without treatment into a body of water. Trained to think with the

# The E's Framework

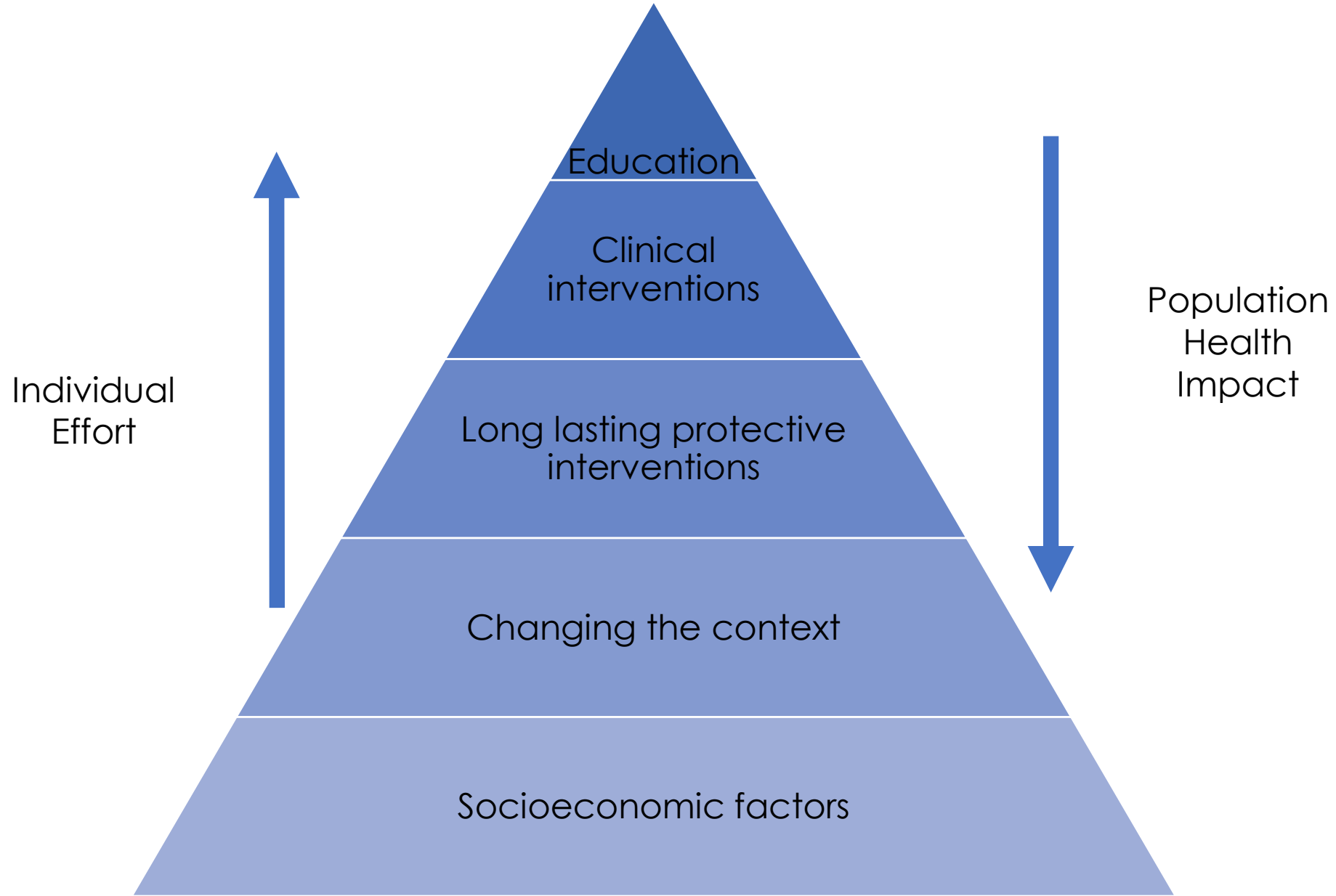


# Epidemiologic Triad-Injury

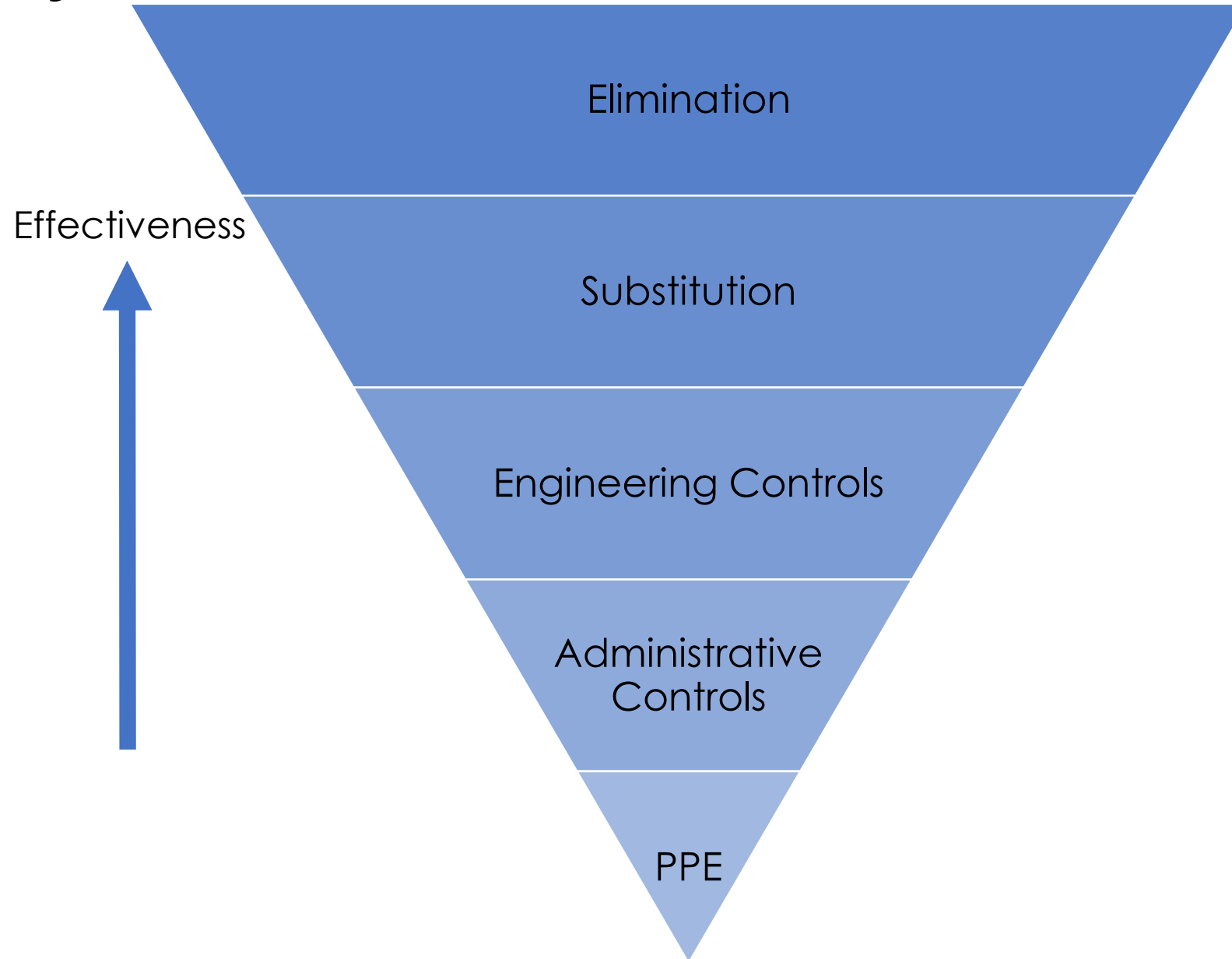




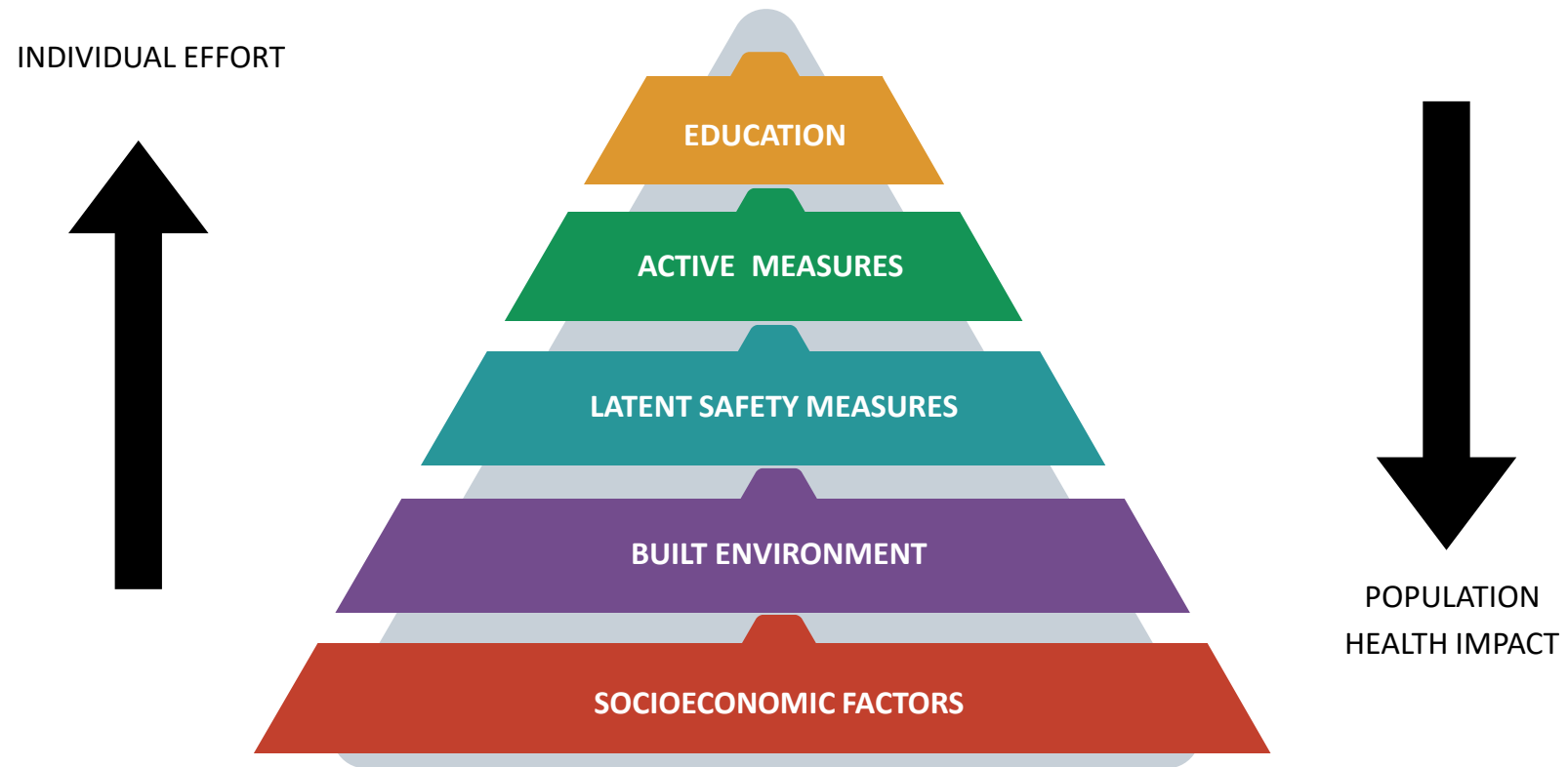
# Health Impact Pyramid (Frieden 2010)



# Hierarchy of Controls

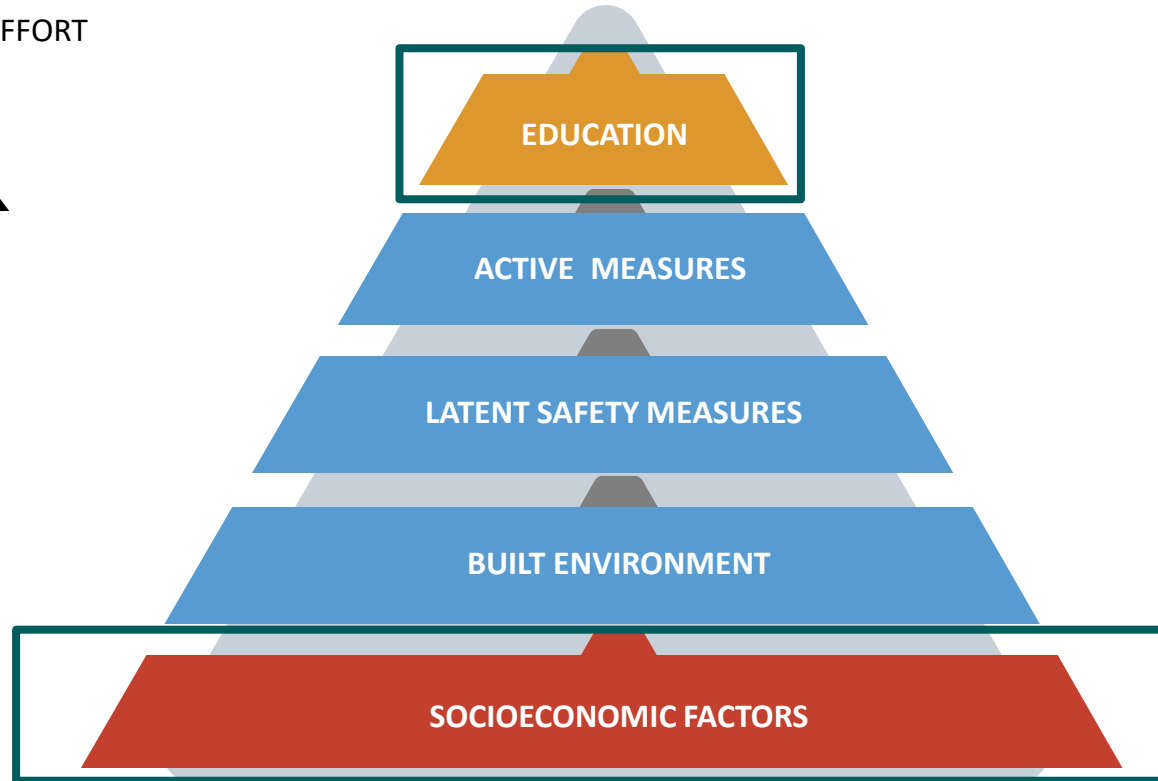
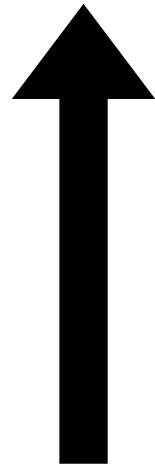


# SAFE SYSTEMS PYRAMID



# SAFE SYSTEMS PYRAMID

INDIVIDUAL EFFORT



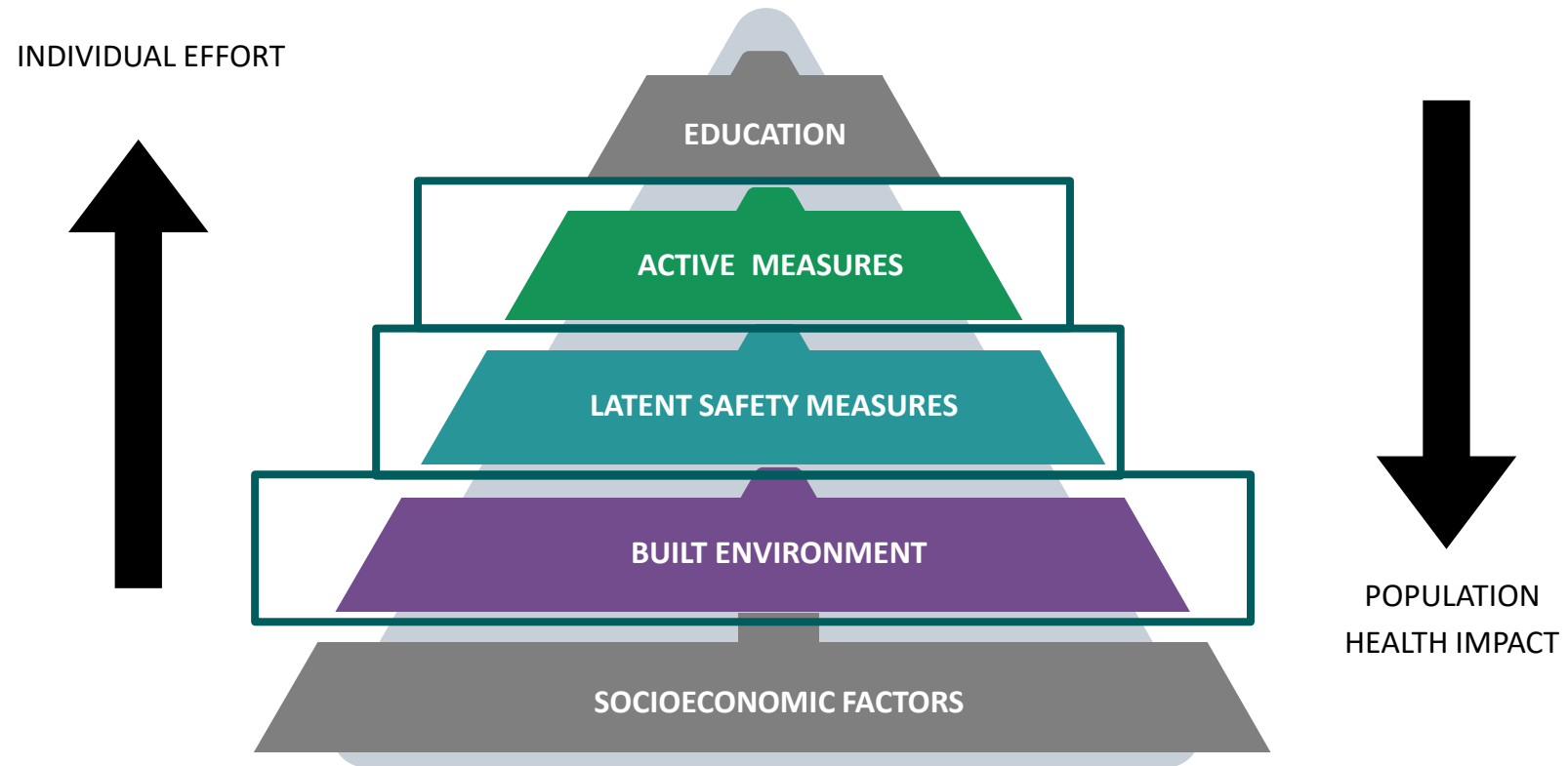
POPULATION  
HEALTH IMPACT



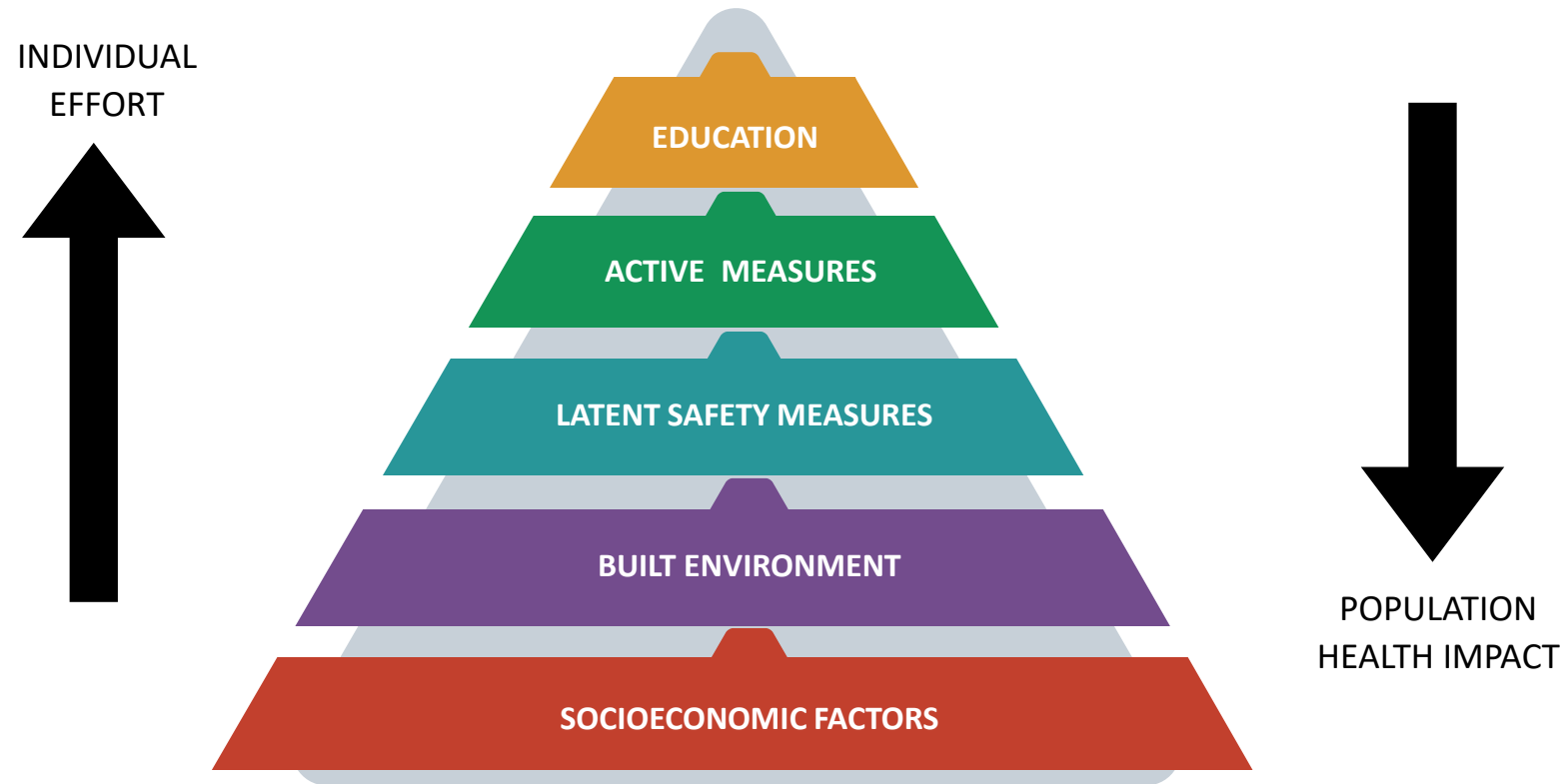
Ederer, D. J., Panik, R. T., Botchwey, N., & Watkins, K. (2023). The Safe Systems Pyramid: A new framework for traffic safety. *Transportation Research Interdisciplinary Perspectives*, 21, 100905. doi:10.1016/j.trip.2023.100905



# SAFE SYSTEMS PYRAMID



# SAFE SYSTEMS PYRAMID



## NTSB investigations:

- Are thorough, systematic, and **focus on risk**
- Remember Haddon's matrix, and **develop a long causal chain** that goes back further than the time just before an incident
- Are an excellent example of applied public health

# 'Systemic failures' caused Washington midair crash, says NTSB chair

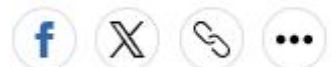
Jennifer Homendy's remarks opened a daylong meeting of federal accident investigators, who will issue safety recommendations.



Jennifer Homendy, chair of the National Transportation Safety Board, speaks during a hearing on July 30, 2025. | Kayla Bartkowski/Getty Images

By **SAM OGOZALEK**

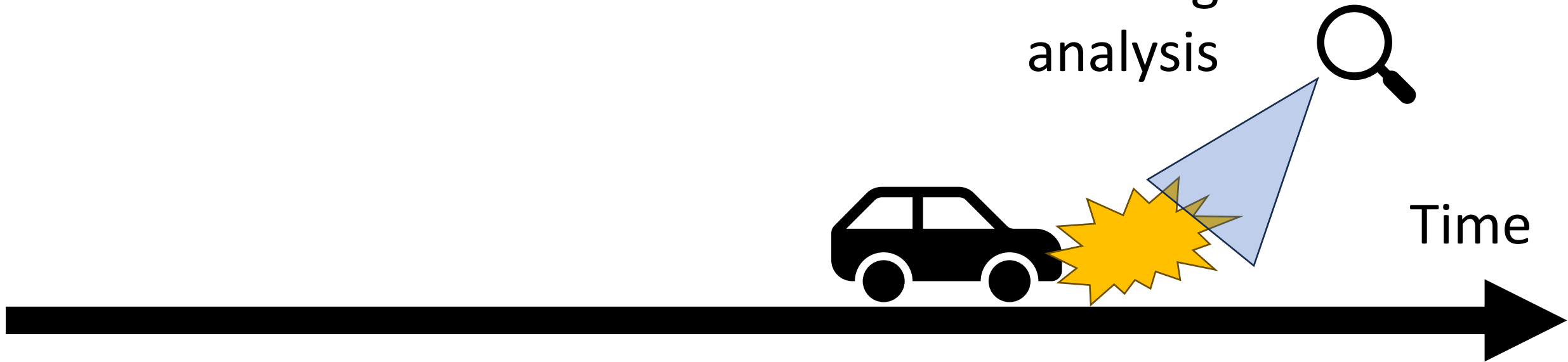
01/27/2026 09:58 AM EST



<https://www.politico.com/news/2026/01/27/ntsb-washington-crash-meeting-00748949>

# How do we generate traffic safety data?

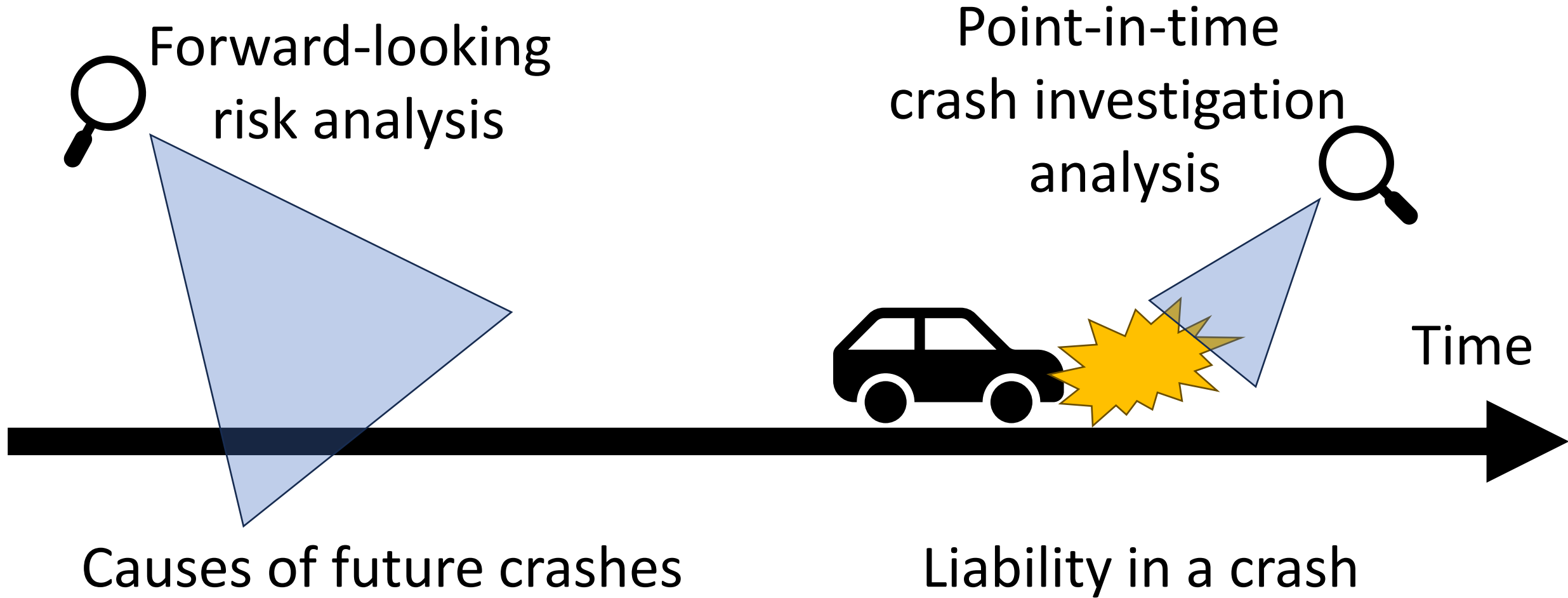
Point-in-time  
crash investigation  
analysis



Liability in a crash



# How should we focus on prevention?



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“But don't miss the point that two centuries of advances finally paid off in the recent decades. **Public health accumulates.** It took 180 years to eradicate smallpox after vaccine became available. It will take 45 years to eradicate polio. But we are getting better and faster at using our tools and injury control has already paid off in its first years and will continue to get better.”

-Bill Foege, former Director of CDC, credited with devising the strategy to eradicate smallpox

# Key takeaways

1. **Safe Systems is the public health** approach in transportation safety.
2. The causal chain starts long before a crash. **Investigate systems like the NTSB.**
3. We have **unprecedented financial resources** to improve **safety** and promote **physical activity**.
4. We can do this. **Public health accumulates.**

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THANK YOU.



# Applying the Safe System Approach for Rural Areas

January 28, 2026 | 11:00am – 12:30am EST

Dr. Kari Finley, PhD, Director, Research Scholar  
Samantha Pinzl, MPH, CHES, Research Scientist

Center for Health and Safety Culture at Montana State University

National Center for  
Rural Road Safety  
Mini-Conference



Center for Health & Safety Culture

[www.CHSCulture.org](http://www.CHSCulture.org)



# About the Center for Health and Safety Culture

We are an interdisciplinary center serving communities and organizations through research, training, and guidance to cultivate healthy and safe cultures.

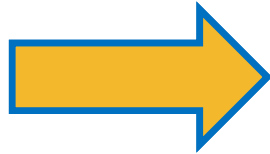


# Three Questions to Consider

- What are the **NEGATIVE OUTCOMES** we are working to reduce or eliminate?
- What are the **BEHAVIORS** that lead to these negative outcomes?
- What are the **BELIEFS** that support these behaviors?

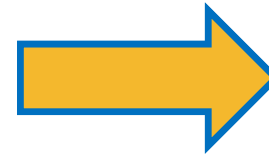
# The Belief-Behavior-Outcome Connection

## Beliefs



"It won't happen to me."  
"I am an above-average driver."  
"I can multi-task."  
"I won't get caught."  
"My vehicle will protect me."  
"It doesn't matter; people do what they want."  
"It's up to road users to make safe choices."

## Behaviors



Aggressive driving  
Speeding  
Lack of seat belt use  
Impaired driving  
Distracted driving  
Fatigued driving  
Unsafe designs

## Negative Outcomes

Fatalities  
Serious injuries  
Emotional distress/trauma  
Healthcare costs  
Workplace costs  
Mobility costs  
Congestion/delays



Focus on **growing beliefs** to  
**shift** behaviors to  
**change** negative outcomes.

***“It is almost unanimously agreed that beliefs deeply affect our actions” (p. 237)***



Castelfranchi, C., & Paglieri, F. (2007). The role of beliefs in goal dynamics: Prolegomena to a constructive theory of intentions. *Synthese*, 155(2), 237–263.  
<https://doi.org/10.1007/s11229-006-9156-3>





Where do these **beliefs** come from?

culture



# Traffic Safety Culture

*The shared beliefs of a group of people  
that influence road user behaviors and  
stakeholder actions  
that impact traffic safety*

# **How do we Apply Traffic Safety Culture into the Safe System Approach for Rural Areas?**

# Key Principle: Shared Responsibility

*“**All** stakeholders—including government at all levels, industry, non-profit/advocacy, researchers, and the general public—are vital to preventing fatalities and serious injuries on our roadways.”*

U.S. Department of Transportation (2024). What is a safe system approach. Retrieved from <https://www.transportation.gov/NRSS/SafeSystem>



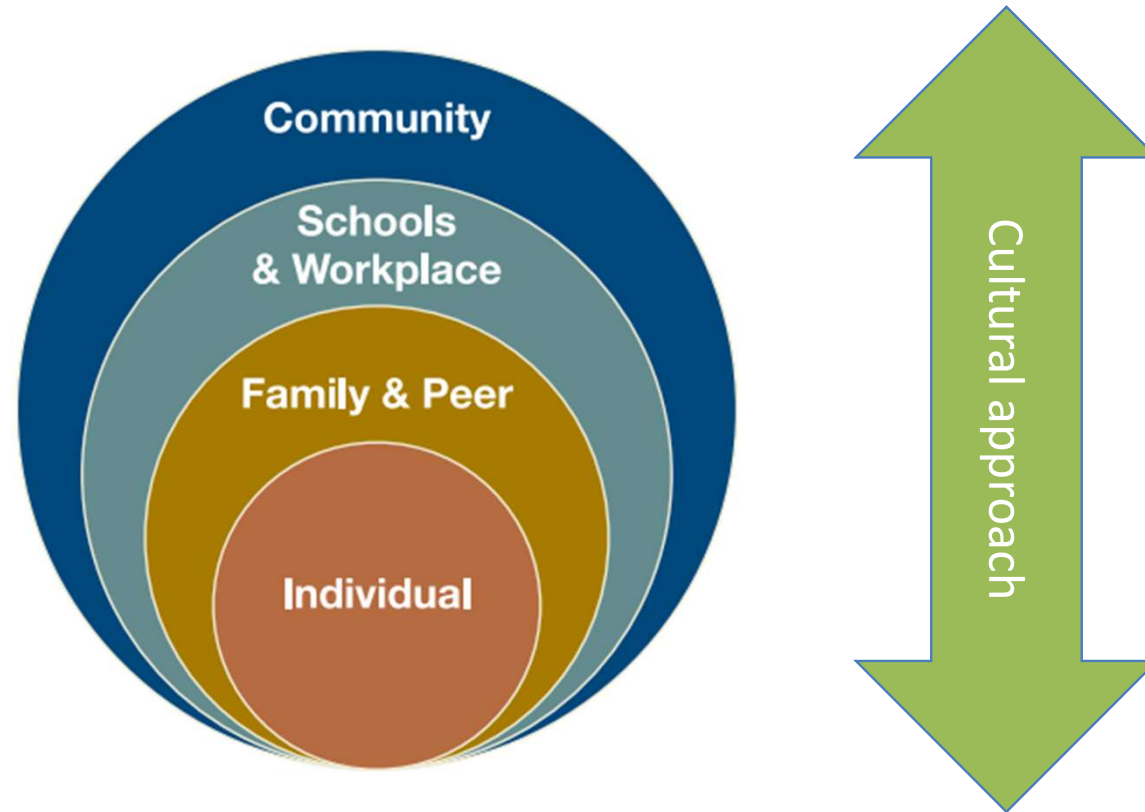
# A Way to Foster Shared Responsibility

## 1. Engage across the social ecology

# Social Ecology



# Social Ecology





# Transforming Our Approach

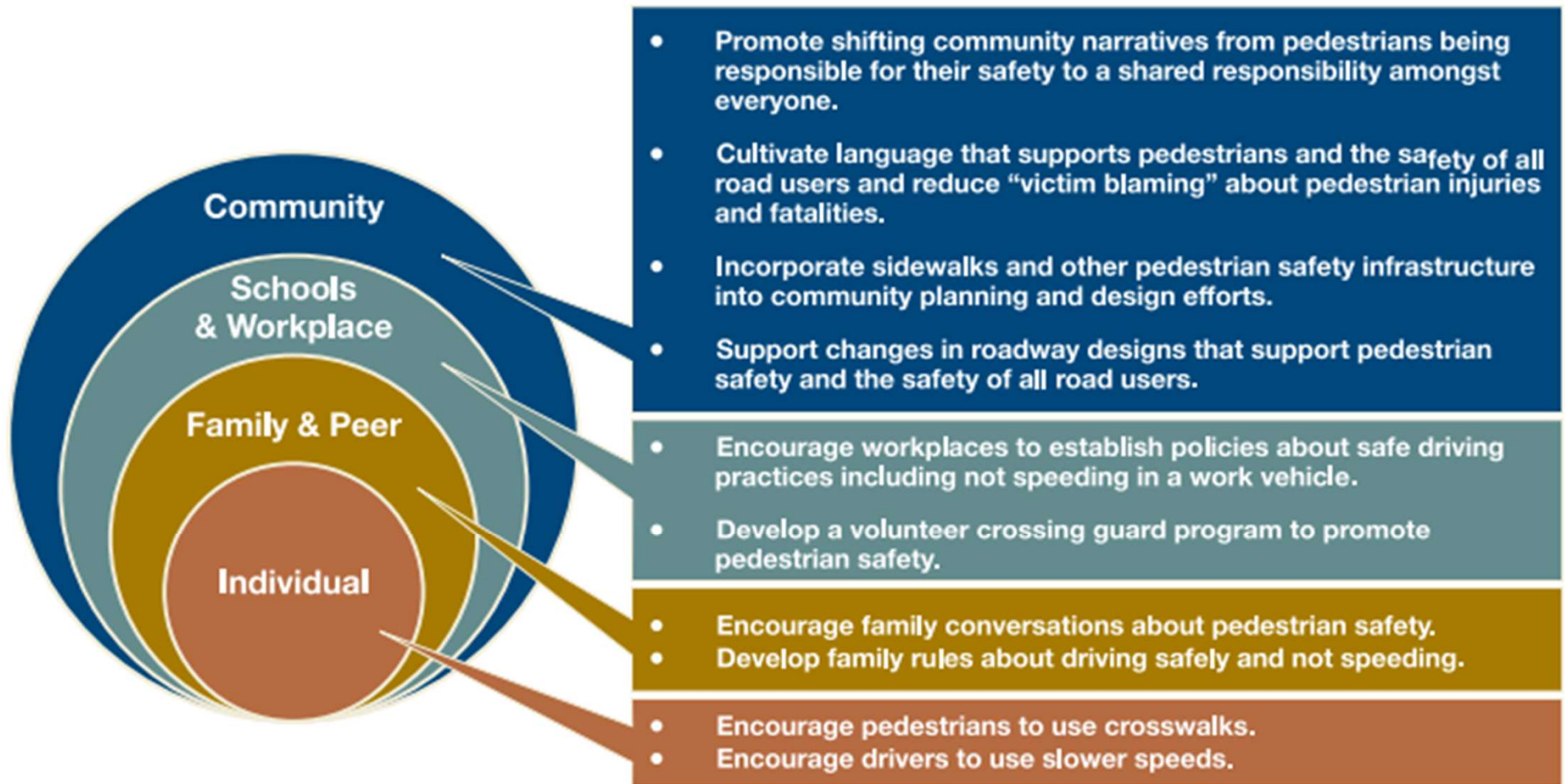
## Before

“How do I get pedestrians to be safer?”

## Now

“What opportunities exist to promote pedestrian safety at each level of the **social ecology**?”

# Actions Across the Social Ecology for Pedestrian Safety



# Another Way to Foster Shared Responsibility

1. Engage across the social ecology
2. Collaborate with multiple partners



**An Example of  
Growing Shared  
Responsibility and  
Traffic Safety  
Culture for  
Pedestrian Safety**

# Ways to Foster Shared Responsibility to Grow Traffic Safety Culture in Rural Areas

1. Engage across the social ecology
2. Collaborate with multiple partners
3. Leverage the positive culture that already exists



## Utah Together for Life Campaign



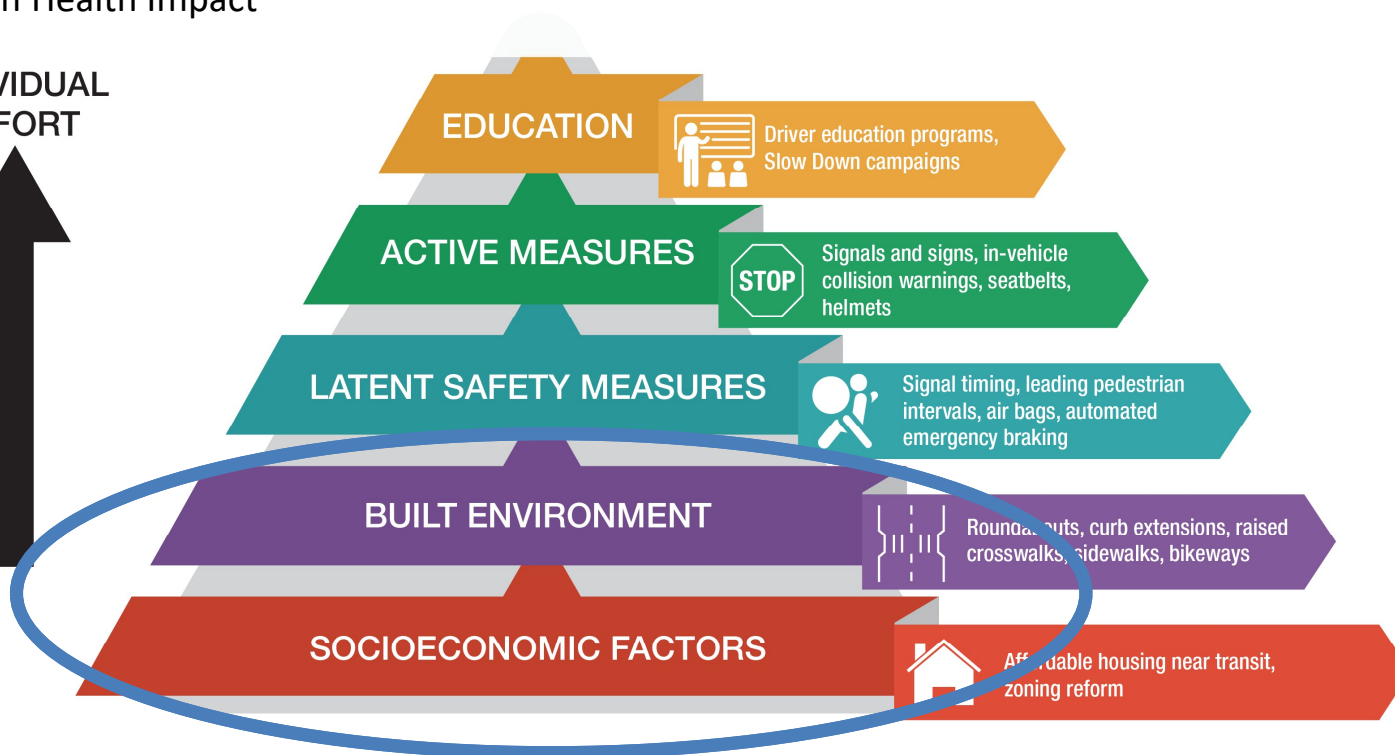


**The solutions  
are in the  
community**



## Population Health Impact

INDIVIDUAL  
EFFORT



POPULATION  
HEALTH IMPACT



Source: Ederer, D. J., Thompson Panik, R., Botchwey, N., & Watkins, K. (2023). The Safe Systems Pyramid: A new framework for traffic safety. *Transportation Research Interdisciplinary Perspectives*, 21, 100905. <https://doi.org/10.1016/j.trip.2023.100905>



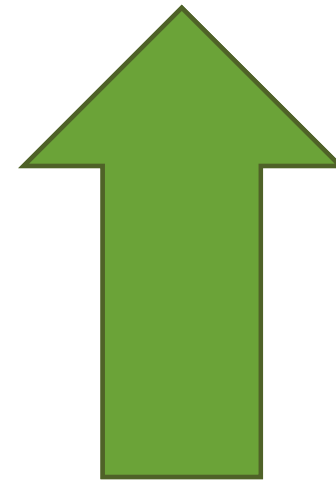
# **How do we Grow Shared Responsibility and a Positive Traffic Safety Culture?**

# Understand the Destination

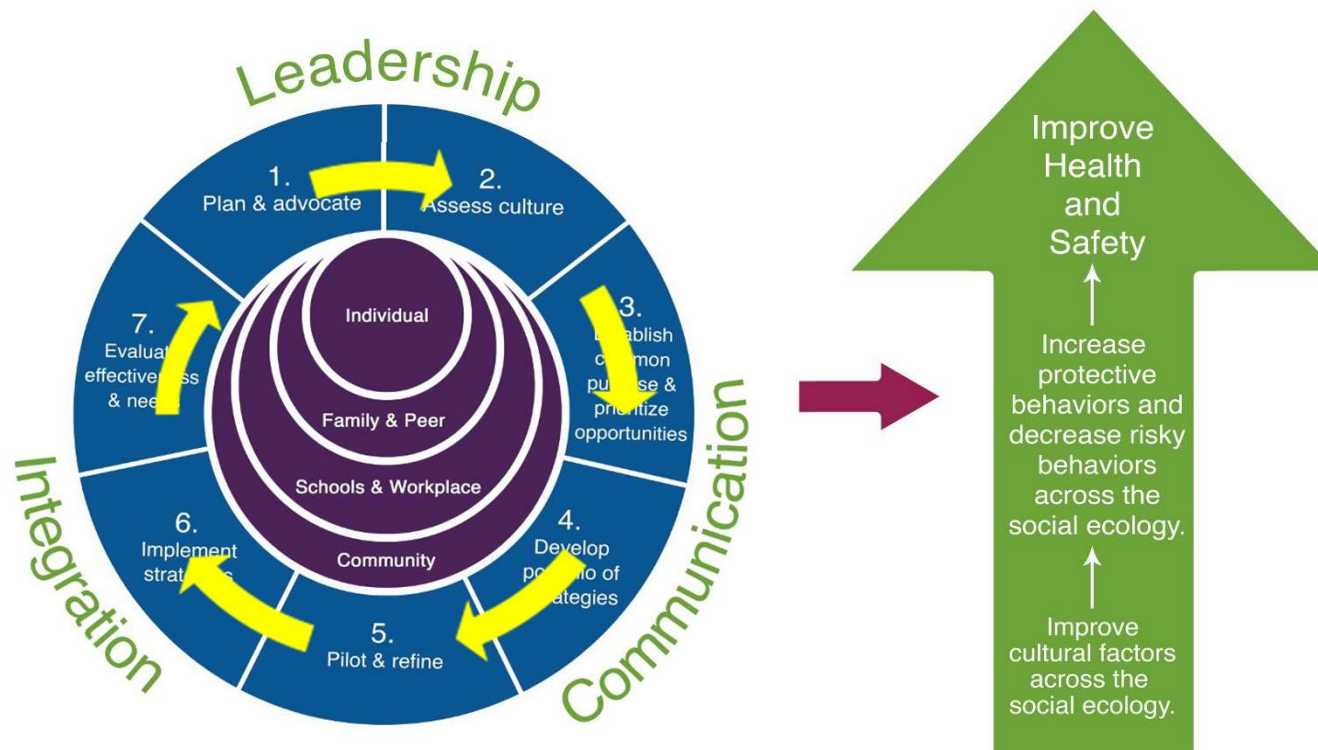
“Begin with the end in mind.”

—Stephen Covey (Seven Habits of Highly Effective People)

What do you want to grow?



# Positive Culture Framework



# Use a Process



# Step 1. Plan and Advocate

- Build relationships
- Establish concern and raise hope
- Create a diverse group of stakeholders
- Establish a shared purpose
- Build capacity
- Create an evaluation plan

# Step 1 Activity: Building Capacity

**Resources + Readiness = Capacity**

Prevention Technology Transfer Center Network. (2023). SPF Application for Prevention Success Training participant manual, p. 58.



# Organizational Readiness

How ready is an organization....

to adopt the Safe System Approach?

to take action to change the  
problem?

Adapted from Prevention Technology Transfer Center Network. (2023). SPF Application for Prevention Success Training participant manual, p. 59.



# How to Gauge Your Agency's Readiness

# Organizational Road Safety Culture

- Strategic plan
- Operational procedures
- Safety policies
- Safety is a priority
- Empowered to improve safety



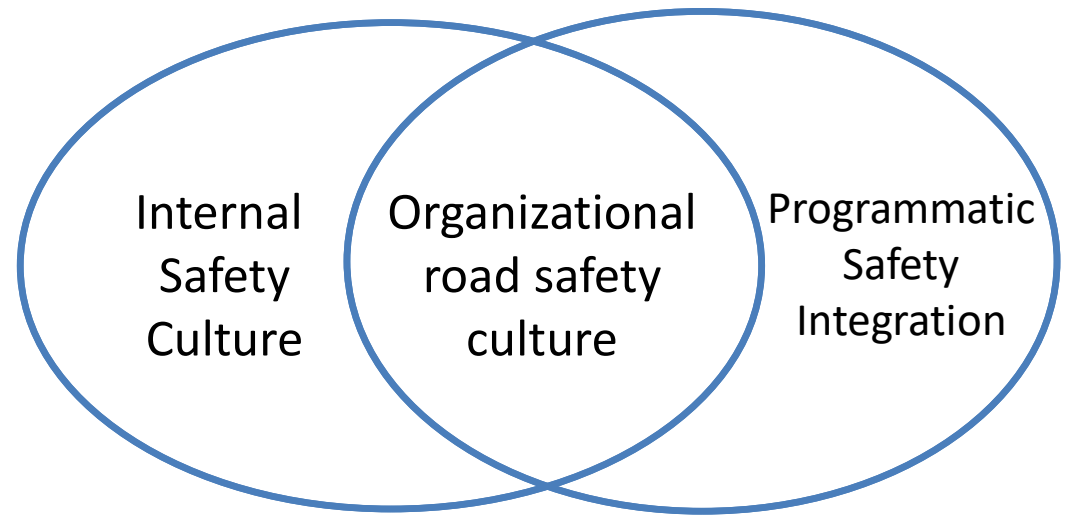
U.S. Department of Transportation Federal Highway Administration. (2024). Organizational safety culture self-assessment for transportation agencies: Instruction manual. <https://highways.dot.gov/sites/fhwa.dot.gov/files/2024-07/Self%20Assessment%20Instruction%20Manual%207.2024.pdf>

# Organizational Safety Culture Self-Assessment for Transportation Agencies

## Instruction Manual



Photos Source: FHWA



U.S. Department of Transportation  
**Federal Highway Administration**

FHWA-SA-24-030

**ZERO IS OUR GOAL**  
A SAFE SYSTEM IS HOW WE GET THERE

U.S. Department of Transportation Federal Highway Administration. (2024). Organizational safety culture self-assessment for transportation agencies: Instruction manual. <https://highways.dot.gov/sites/fhwa.dot.gov/files/2024-07/Self%20Assessment%20Instruction%20Manual%207.2024.pdf>



Center for Health & Safety Culture

[www.CHSCulture.org](http://www.CHSCulture.org)

# Overview of Self-Assessment



- Questionnaires
- Improvement strategies
- Improvement plan template

U.S. Department of Transportation Federal Highway Administration. (2024). Organizational safety culture self-assessment for transportation agencies: Instruction manual. <https://highways.dot.gov/sites/fhwa.dot.gov/files/2024-07/Self%20Assessment%20Instruction%20Manual%207.2024.pdf>

# When to Take the Self-Assessment?



- Just getting started and aren't sure where to begin
- Organization's structure and safety goals are siloed
- Getting ready to promote road safety efforts
- Efforts have become stuck or stagnant
- Starting a strategic planning process or updating policies
- A safety incident has occurred



# How to Increase Your Agency's Readiness



# Increasing Readiness



- Questionnaires
- Improvement strategies
- Improvement plan template

U.S. Department of Transportation Federal Highway Administration. (2024). Organizational safety culture self-assessment for transportation agencies: Improvement strategies. <https://highways.dot.gov/media/56616>

U.S. Department of Transportation Federal Highway Administration. (2024). Organizational safety culture self-assessment for transportation agencies: Improvement plan template. <https://highways.dot.gov/sites/fhwa.dot.gov/files/2024-07/Self%20Assessment%20Improvement%20Plan%20Template%207.2024.pdf>

# Conclusion

- Improving traffic safety is a complex challenge requiring new ways of thinking and acting.
- We have a shared responsibility.
- We can:
  - Engage across the social ecology
  - Collaborate with multiple partners
  - Leverage the positive culture that already exists
  - Include interventions that account for stakeholder actions, built environment, and socioeconomic factors that impact health and safety
- Safety commitment starts within our organization and grows outward into communities.

# Questions



# Participant Resources

- U.S. Department of Transportation Federal Highway Administration. (2024). Organizational safety culture self-assessment for transportation agencies: Instruction manual.  
<https://highways.dot.gov/sites/fhwa.dot.gov/files/2024-07/Self%20Assessment%20Instruction%20Manual%207.2024.pdf>
- U.S. Department of Transportation Federal Highway Administration. (2024). Organizational safety culture self-assessment for transportation agencies: Improvement strategies.  
<https://highways.dot.gov/media/56616>
- U.S. Department of Transportation Federal Highway Administration. (2024). Organizational safety culture self-assessment for transportation agencies: Improvement plan template.  
<https://highways.dot.gov/sites/fhwa.dot.gov/files/2024-07/Self%20Assessment%20Improvement%20Plan%20Template%207.2024.pdf>
- Utah Department of Public Safety Highway Safety Office. Together for Life Campaign.  
<https://togetherforlifeutah.org/>
- Utah Department of Public Safety Highway Safety Office. Box Elder County Utah Video.  
<https://www.youtube.com/embed/e2kn97VJTb4>



Thank you!

## Contact Us

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