

# Advanced Sanitation: The Future of Safer Food



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3A Sanitary Standards Educational Conference  
May 2<sup>nd</sup> 2017, Minneapolis MN*



**2 Billion More  
by 2050**



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Clean Water  
Clean Air  
Produce More  
Food  
Sanitary  
Infrastructure  
Housing  
Education  
Healthcare  
Transportation

# Business Case

- \$10 billion opportunity
- Production down time
- Water, chemical and testing
- Personnel costs

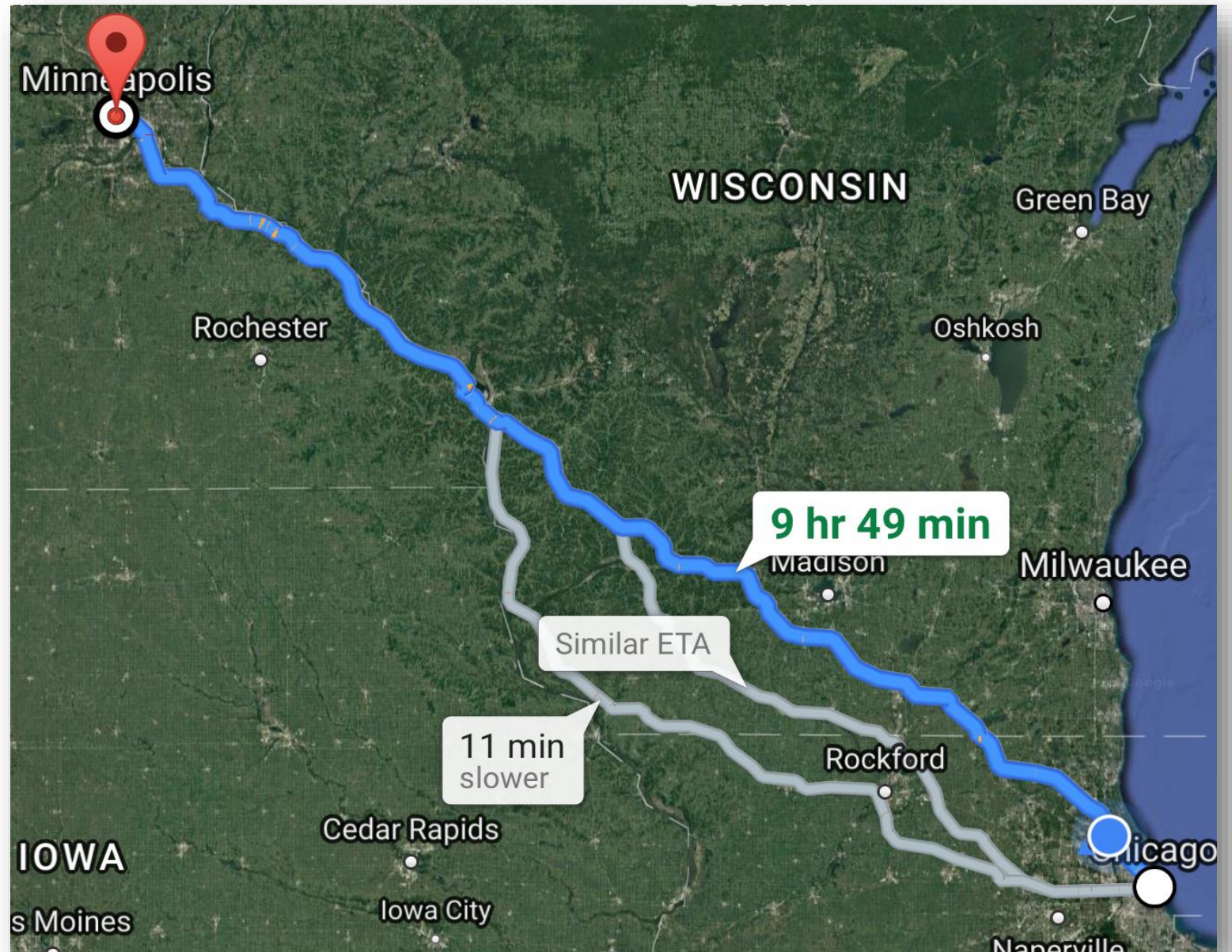
Innovation to transform facilities/equipment - More readily cleanable

- Design, materials, surfaces
- Chemicals, natural alternatives, effectiveness
- Technology transfer to food environments
- Applied methods
- Streamlining operations
- Reduce down time
- Harborage sites
- Support automation
- Workforce
- Share best practices
- Get involved at the front end of equipment design



# The problem with standards

- Destination is known



# Detailed Directions that Support Standards

- Develop outputs and data for equipment, chemicals and facilities
- Connect equipment design with facility needs
- Collaborate on breakthrough innovations for facilities
- Educate (entry level to advanced)
- Portability
- Assess and manage risks

*Make food safety not a competitive advantage*



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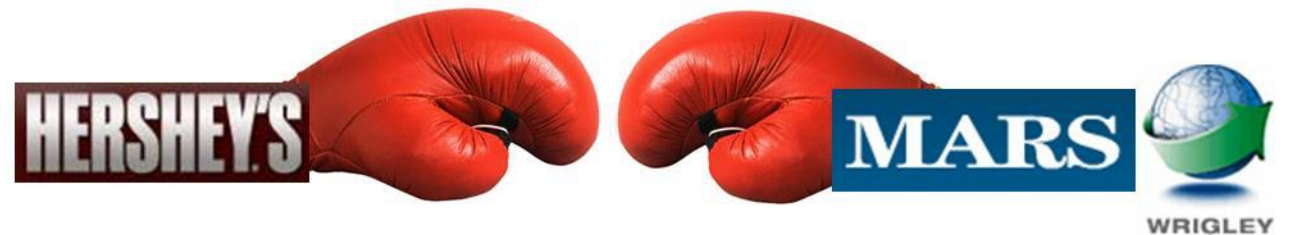
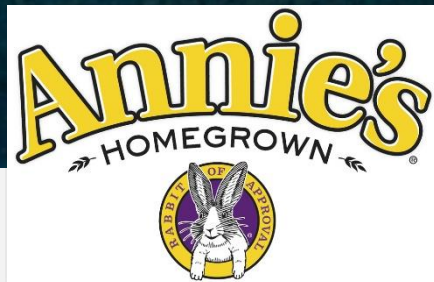


Food Safety Risks  
Business Risks  
Risks to Consumers



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# Changing landscape of the food industry





# The Court of Social Media



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# Regulatory and Workforce Changes



# Sanitation Practices are Core to FSMA and Food

FSMA requirements heavily rely on sanitation programs  
Scope 97,000 domestic and 109,200 international facilities

All 7 FSMA Rules Have Common Theme

- Prevention
- Control
- Sanitation
- Data
- Ownership
- Proactive Measures
- Validation
- Hygienic Design



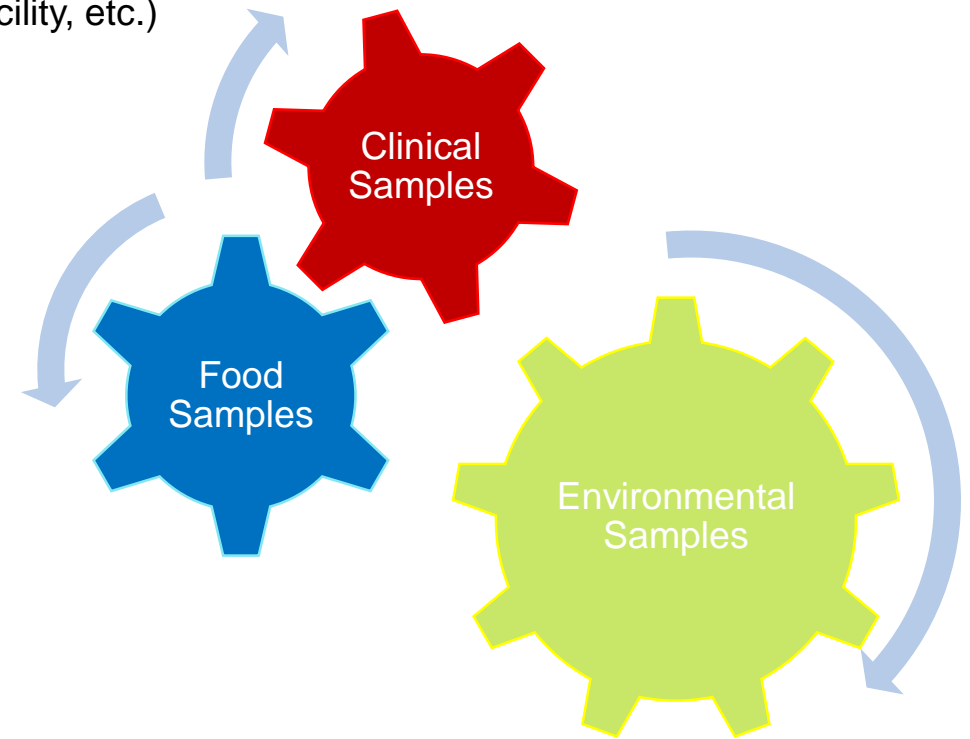


# Whole Genome Sequencing

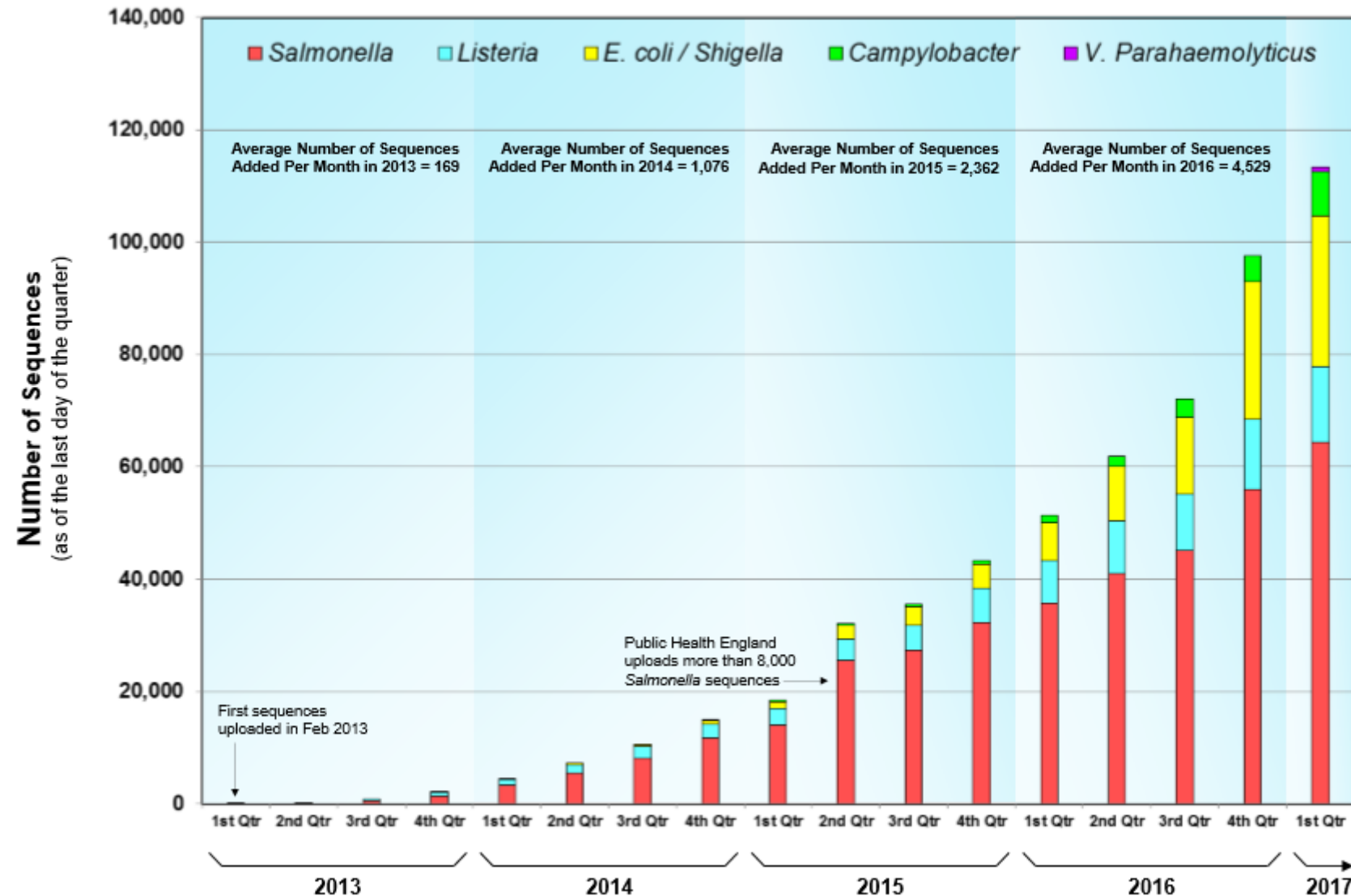
- WGS can clearly define foodborne illness outbreaks
- WGS networks are reliable, efficient, and can provide location specificity for outbreak investigations
- Whole genome sequencing is inexpensive, easy to use, has identical sample prep for all pathogens, is the most accurate and high resolution subtyping technique, and a single test yields information about resistance, serotype, virulence factors, etc.
- The need for increased number of well characterized environmental (food, water, facility, etc.) sequences may outweigh the need for extensive clinical isolates

Total Annual Food Sales	Facilities	Production Volume (\$)
\$250,000	34,600	<0.5%
\$500,000	45,900	<1%
\$1,000,000	63,500	<2%

11,500 facilities were already classified under the 418(1)(1)(c) of the FD&C Act.  
<http://www.fda.gov/downloads/food/guidanceregulation/fsma/ucm334117.pdf>



## Total Number of Sequences in the GenomeTrakr Database



- 14 U.S. Federal Labs
- 14 U.S. State Health & University Labs
- 1 U.S. Hospital Lab
- 9 labs located outside of the U.S.,
- and collaborations with independent academic researchers.

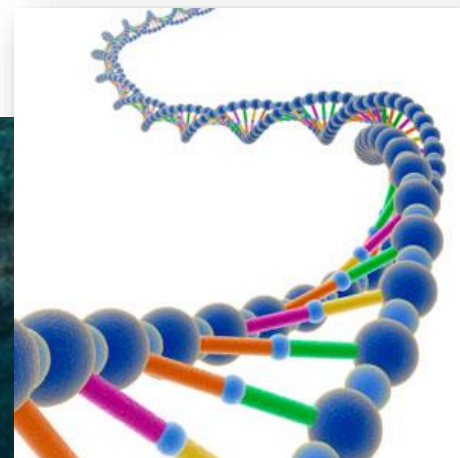
>10,000 bacterial genomes in Genome Trakr

Data curation and bioinformatic analyses support by the National Center for Biotechnology Information (NCBI).

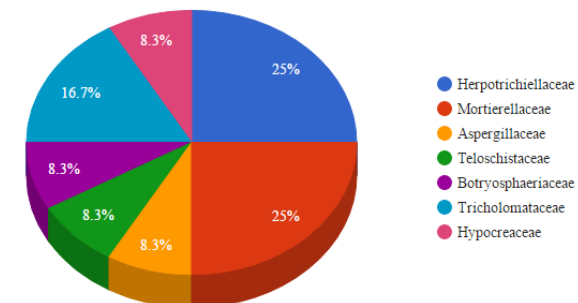
NIH and GenomeTrakr network has sequenced more than 110,000 isolates.

*Well characterized food manufacturing environments could provide manufacturers with an Alliance Approach – Preventive Approach for manufacturers.*

# Data based plant sanitation



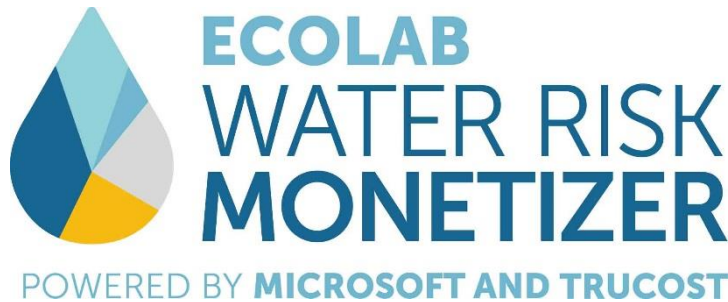
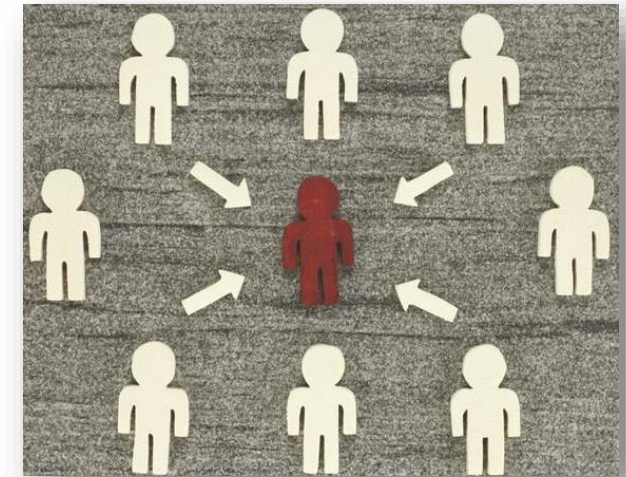
*family distribution*



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# Contribute to corporate sustainability goals

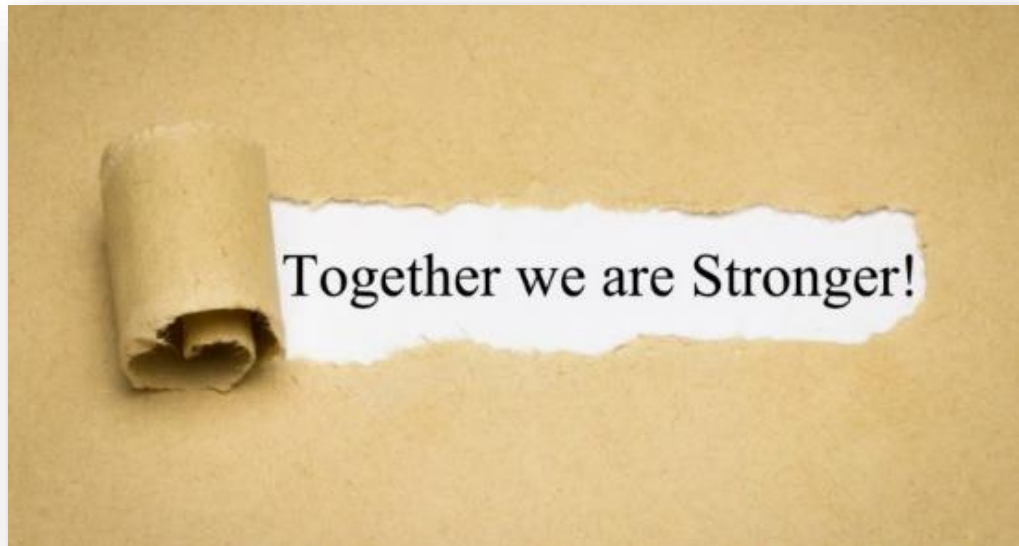


*"Proactively talking with stakeholders allows you to better understand the realities, the risks and the opportunities, and positions you to respond quicker" – ConAgra Brands*



- Training in Sanitation
- Workforce evolution for future jobs (scrubbing → automated facility management)





To critically look at issues shared by many and attempt to solve them in a manner that can only be done because of a unique collaboration between these organizations.

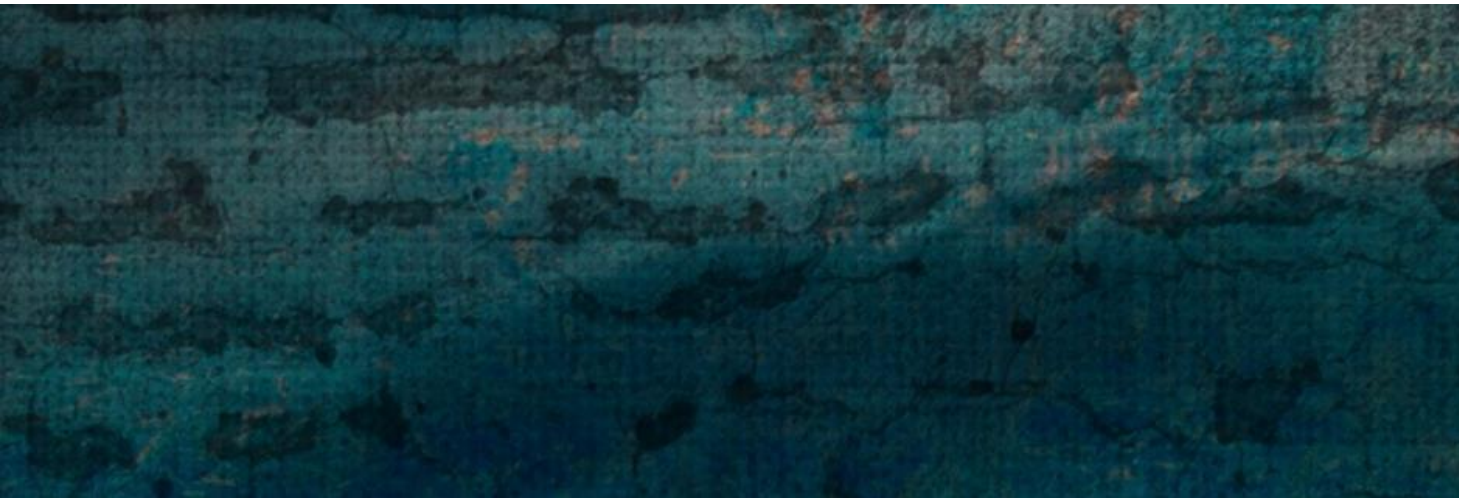


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# Why an Alliance?





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*[www.sanitationalliance.org](http://www.sanitationalliance.org)*