

# FORGING THE LINK

Linking the Economic Benefits  
of Low Impact Development  
and Community Decisions

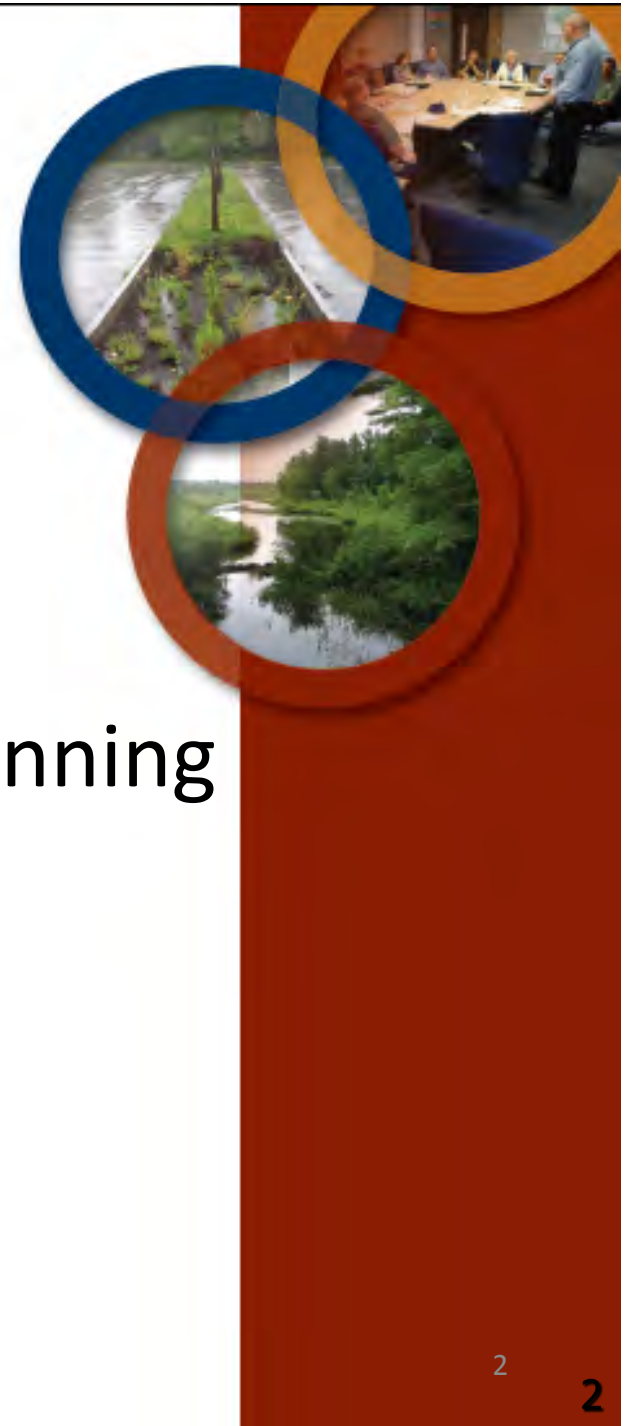


# Barriers to Implementation

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# Barriers to LID Implementation

- 1.) Economic
- 2.) Educational/Institutional/Planning
- 3.) Political or Perception
- 4.) Technical



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# Barriers to LID Implementation

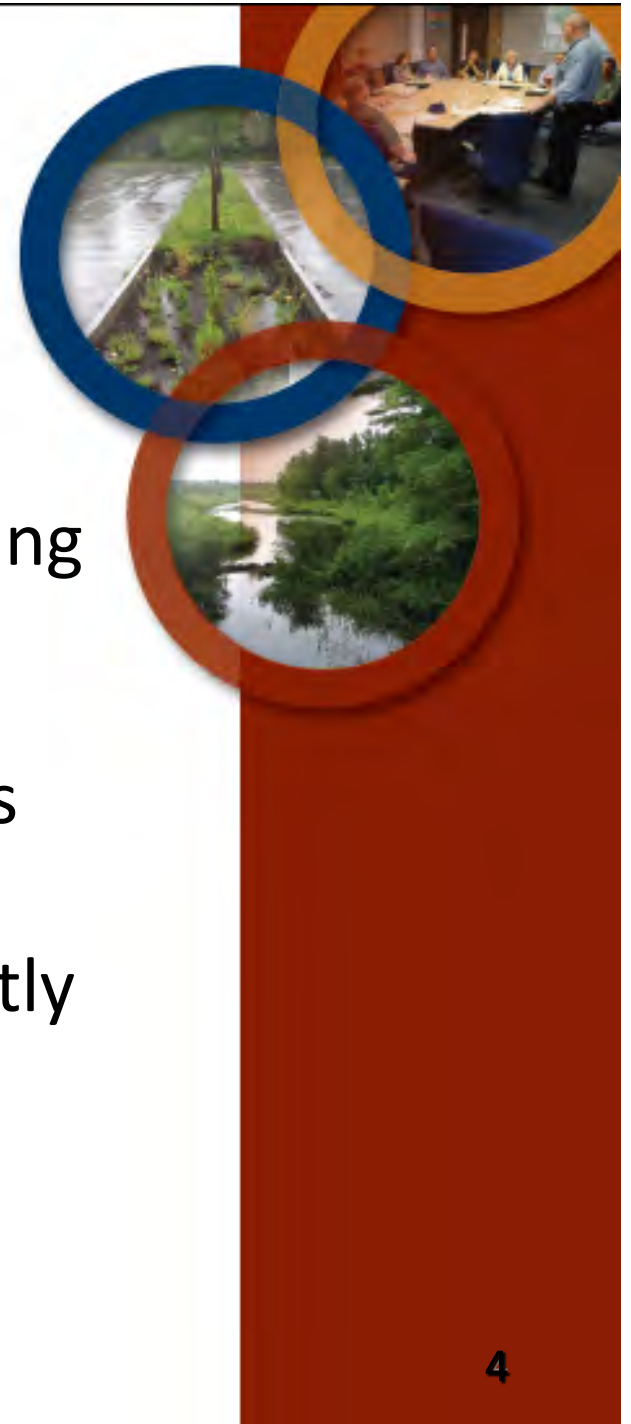
## 1.) Economic:

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What's the  
bottom line?



# The Costs of Water Quality Impairments

- When pricing the inability to meet water quality standards, costs to bring stormwater pollutant levels into compliance far exceed the construction and maintenance costs (Khan, 2006)
- LID water quality performance greatly exceeds that of conventional technology





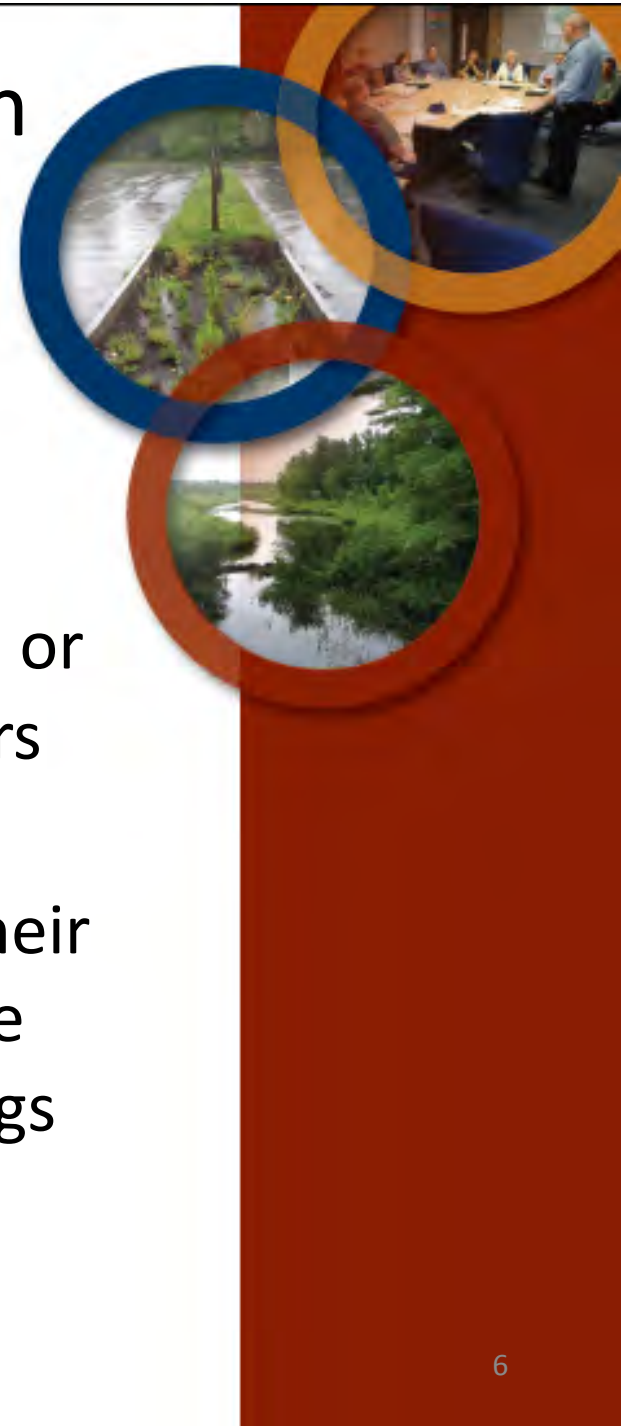
Detail the economic incentives for  
early adoption of innovative  
stormwater management \$\$\$\$\$\$\$\$\$\$  
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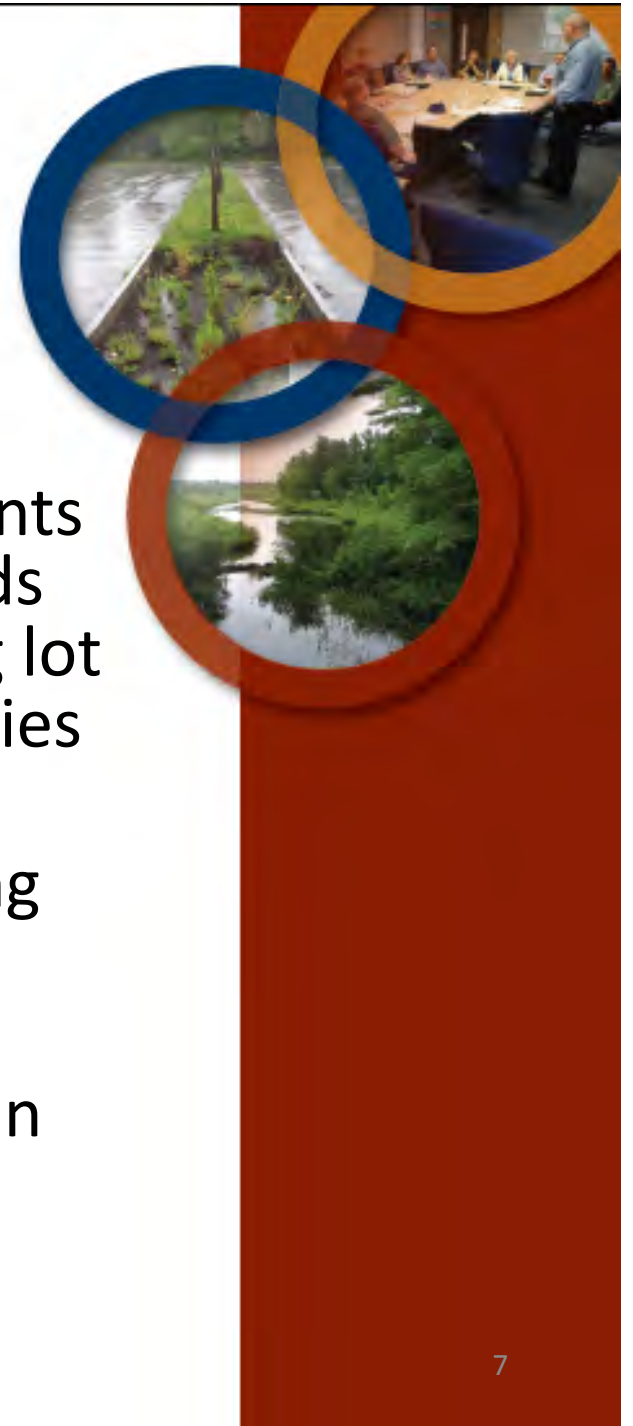
## 2.) Education/Planning Barriers

- There is a need for education, training, or resources for municipal decision makers and secondarily for the general public
- Local officials tend to obtain most of their environmental information through the use of the Web and from direct trainings or presentations.



# Education/Planning Barriers

- Some regulation and zoning requirements such as minimum dimensional standards with respect to building lot and parking lot sizes work against LID design philosophies and smart grow (BSD)
- Municipalities are increasingly reviewing and updating regulations that do not accommodate innovative BMP's
- EPA is requiring this and pushing ms4s in this direction





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# You Need More than Just a Compelling Message

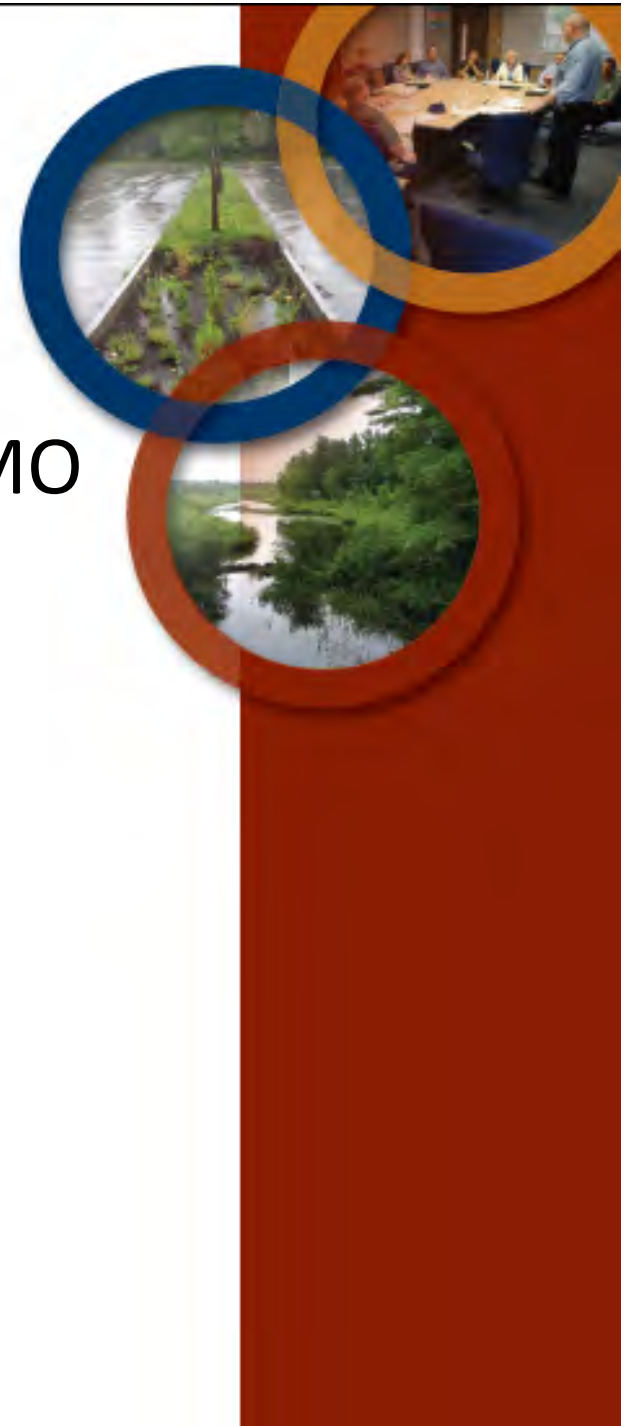




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# Partner Networks

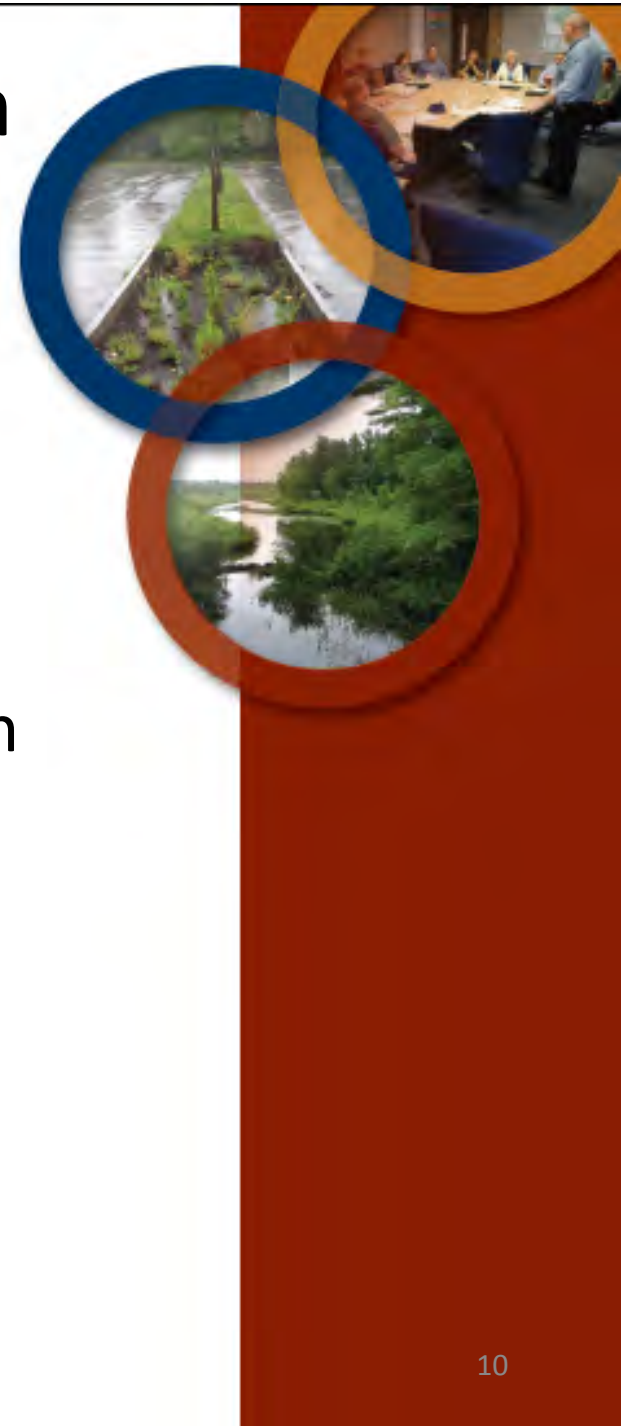
- NEMO groups like Northland NEMO and the HUB, NERRs CTPs in OH, MA, NH and ME and Cooperative Extension networks have been critical to FTLs completion



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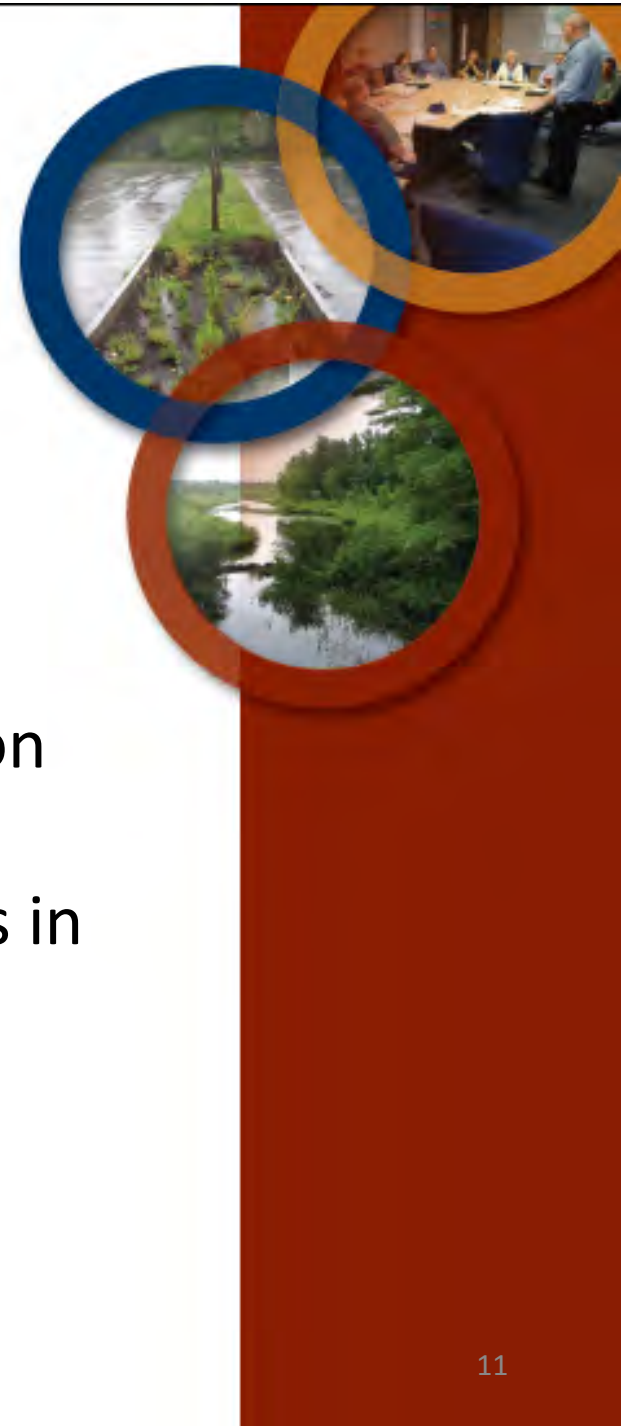
## 3.) Political or Perception:

- Language/Terminology
- Misperceptions
- Age old resistance to regulation



# Political or Perception

- Some municipalities may be leery of discussion controversial issues such as climate change.
- Many communities may not be clear on what LID actually is or what it entails
- EPA is requiring this and pushing MS4s in this direction





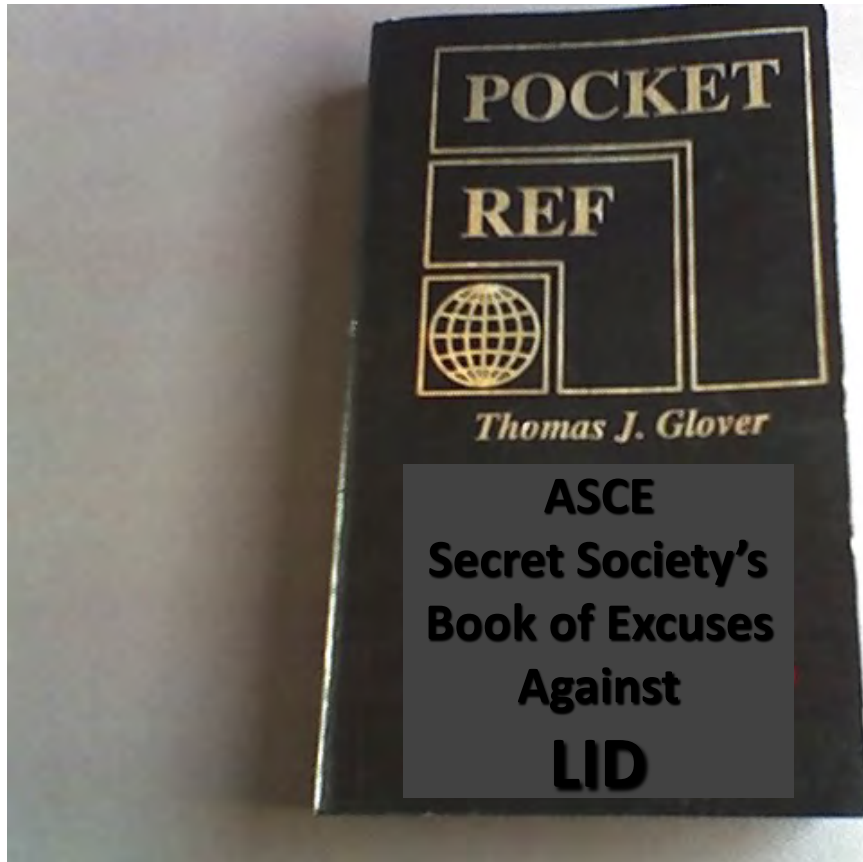
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## 4.) Technical



# Dead Engineer's Society?



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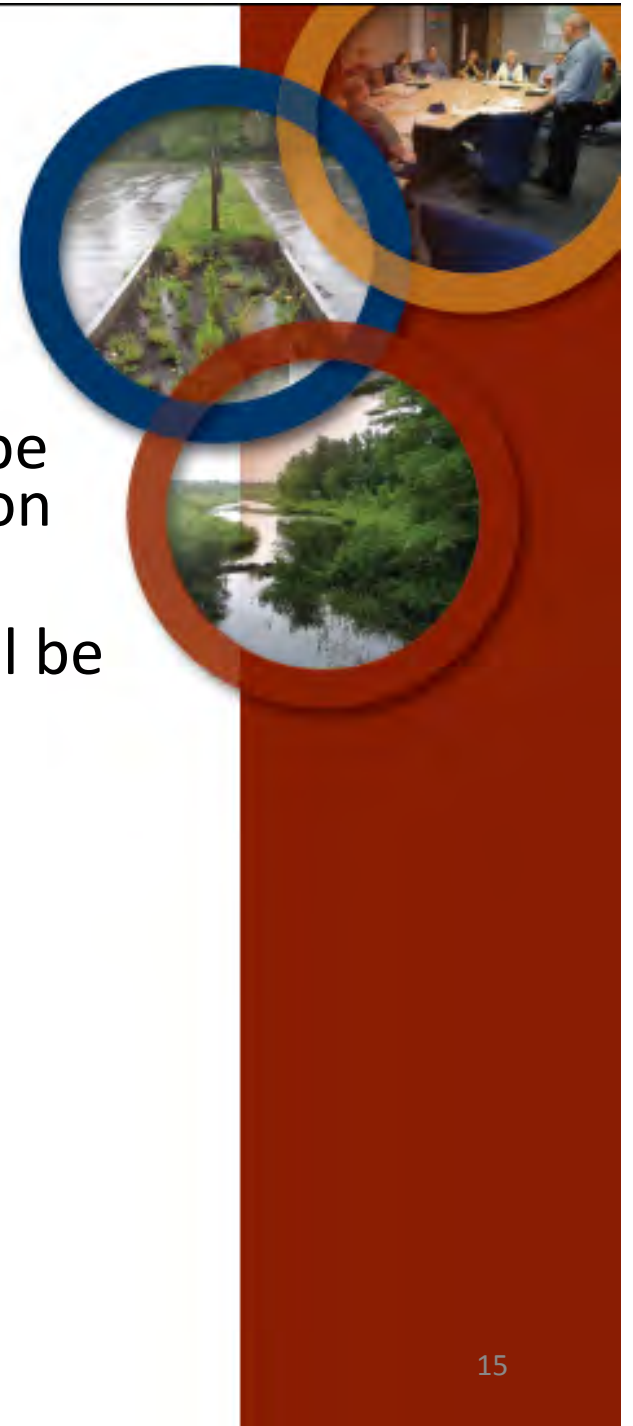
- Lack of information regarding water quality performance
- Modern design specs
- Designer unfamiliarity
- Challenging Site Conditions
- Construction Challenges
- Maintenance misperceptions and practices
- Cold Climate Performance suspicions
- Reasonable Doubt





# Reasonable Doubt

- Standard of Reasonable Doubt cannot be easily overcome and can stifle innovation
- For any innovative technology there will be a lighter record of usage
- Cost to overcome doubt can be unreasonable
- What we do know is that the current standard of practice will not meet WQ requirements



# Acknowledgements

