



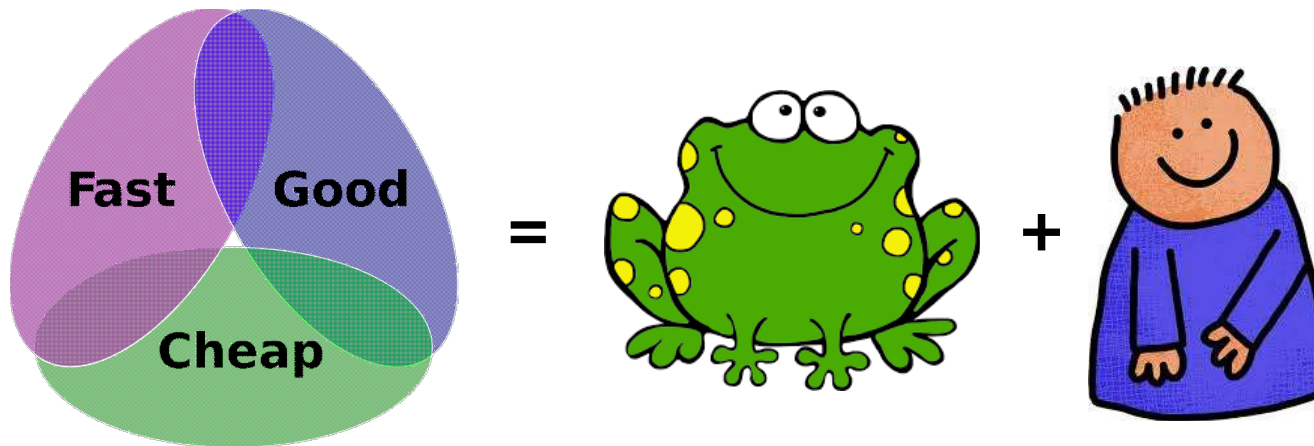
# **Competing demands for environmental stormwater standards**

Georgie Wettenhall

27/7/17

# Wish list

- Standards that:
  - Ensure healthy waterways
  - Efficient to apply (proponents and checkers)
  - Transparent to assess
  - Cost effective to comply with
  - Facilitate multiple benefits including liveability





# Terminology

- Standards versus objectives
  - “Environmental stormwater standards”
    - related to, but not the same as, stormwater standards for asset protection and/or safety
- Stormwater
  - Urban runoff resulting from rainfall (pipe flow & infiltration)?
  - Urban excess runoff?
  - Rural runoff?
  - Rainfall runoff or all water in a stormwater pipe?

# Impact of standards

- Function of:

1. Type of land standards apply to
2. How high set standards
3. Effectiveness of measures used to meet standards
  - Design
  - Construction
  - Maintenance
4. Whether standards politically acceptable



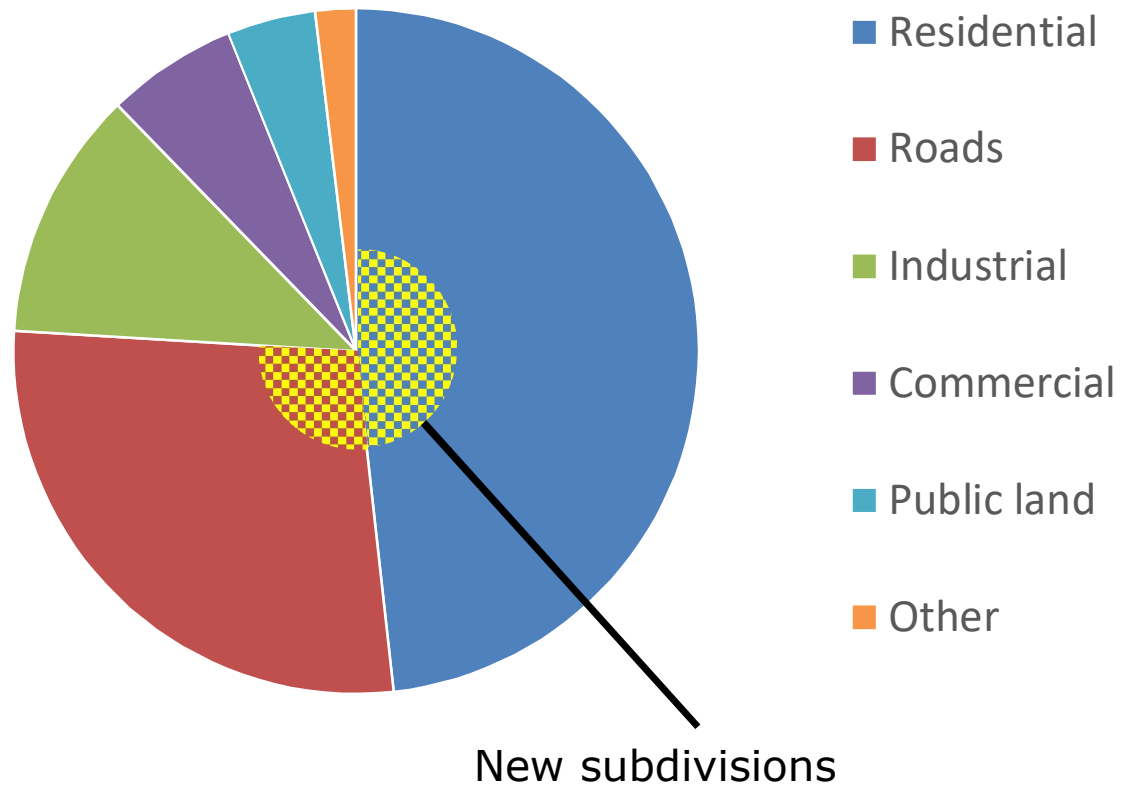
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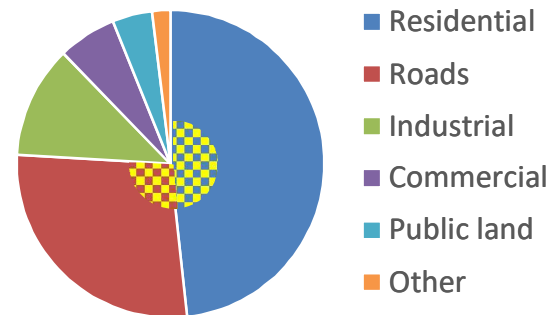
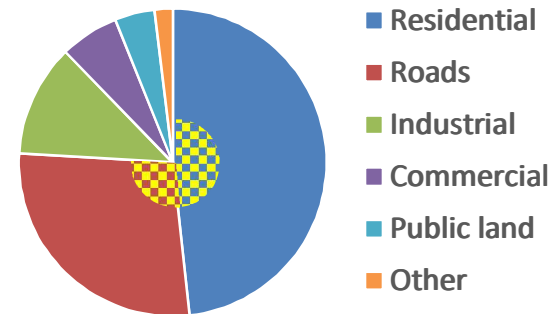
# Type of land standards apply to

Indicative Victorian impervious area split



# Type of land standards apply to

- Potential to:
  - Apply to greater range of land uses
  - Apply to existing developed areas as well as new development



# Impact of standards

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  2. **How high set standards**
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# How high to set standards

- Currently:
  - 80% reduction in TSS compared to “do nothing”
  - 45% reduction in TP & TN compared to “do nothing”
  - (match pre-development 1.5 yr ARI flow rate)
- Set based on what was considered possible with “best practice” technology in 1997
  - Pre bioretention
  - Pre MUSIC

## Car safety “best practice”

<b>1920s</b>	Head rests Laminated windscreens
<b>1940s</b>	Padded dashboards
<b>1970s</b>	Mandatory use of seat belts Anti-lock braking
<b>1980s</b>	Airbags
<b>1990s</b>	Blind spot warning system

# How high to set standards

- Potential to:
  - Introduce flow regime standard(s)
  - “Raise the bar” for water quality standards



# How high set standards

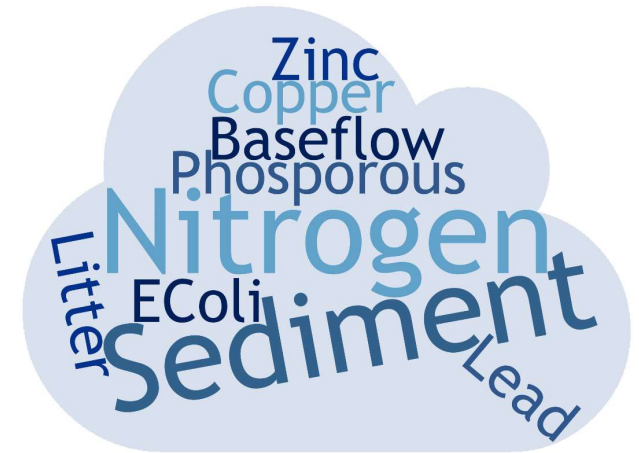
- Developing new standards

- **Step 1:** Select parameters

- Important for waterway health
    - Quantifiable
    - Independent from other parameters

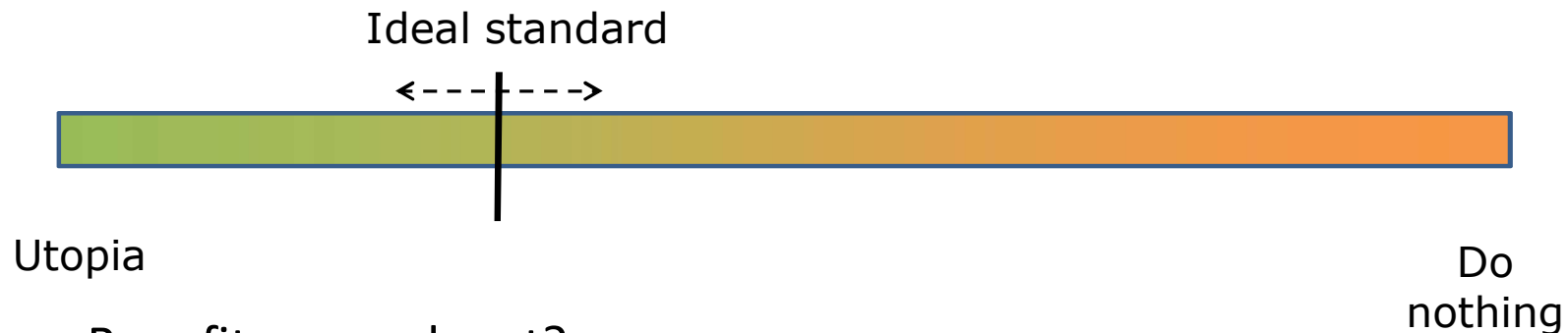
- **Step 2:** Select structure of standards e.g.

- Absolute (e.g. 1 ML/ha/yr)
    - Relative to natural (e.g. match 1.5 yr pre development flow)
    - Relative to “do nothing” (e.g. current TSS/TP/TN)



# How high to set standards

- Developing new standards
  - **Step 3:** Select level of standards
    - i.e. the number part



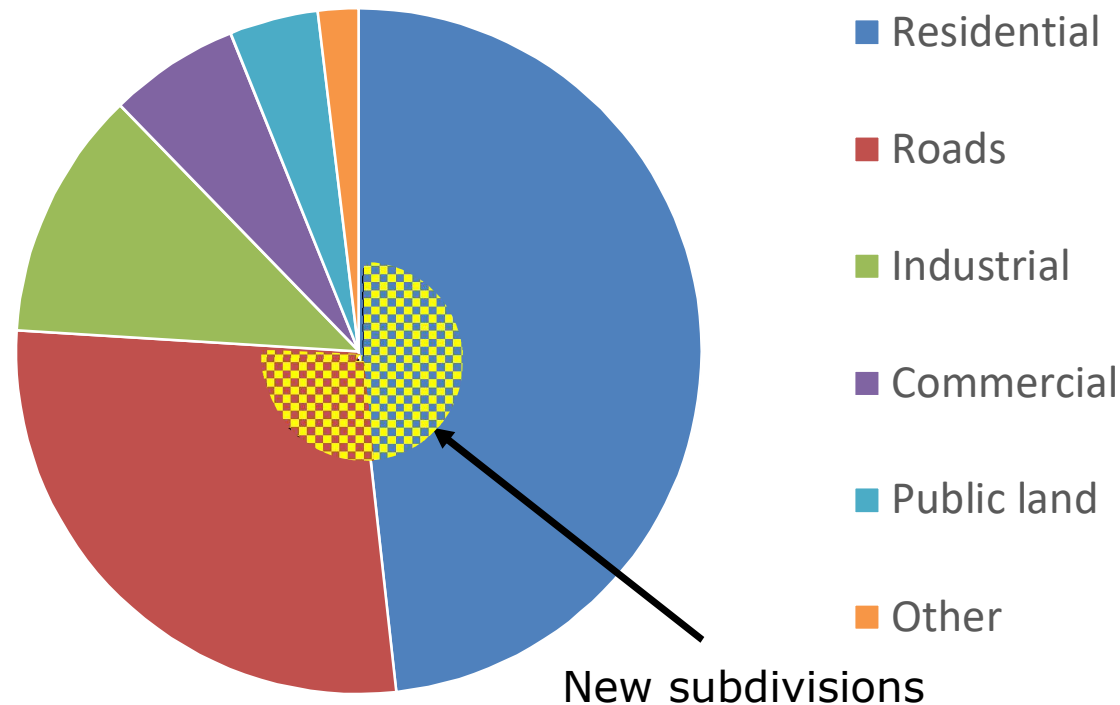
- Benefits exceed cost?
- Link to known thresholds?
- Best possible with technology currently available?
- Best possible with anticipated innovation?
- Intend deter/change development?

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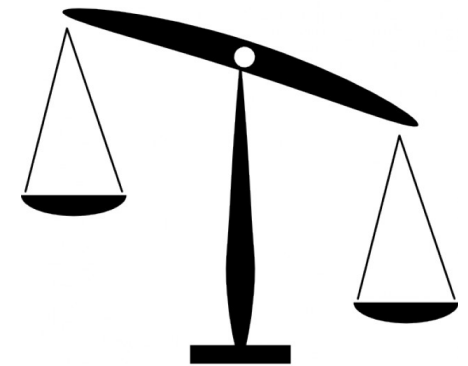
# Effectiveness of measures used to meet standards



- Audits show ~50% assets operating in accordance with design intent

# Effectiveness of measures used to meet standards

- Potential to improve:
  - Ensure capacity of proponents and checkers matches competency required
  - Accountability for asset managers
    - Accountability for flood management can be driven by community complaints
    - Community complaints about underperforming WSUD assets less likely... & frogs aren't good with phones



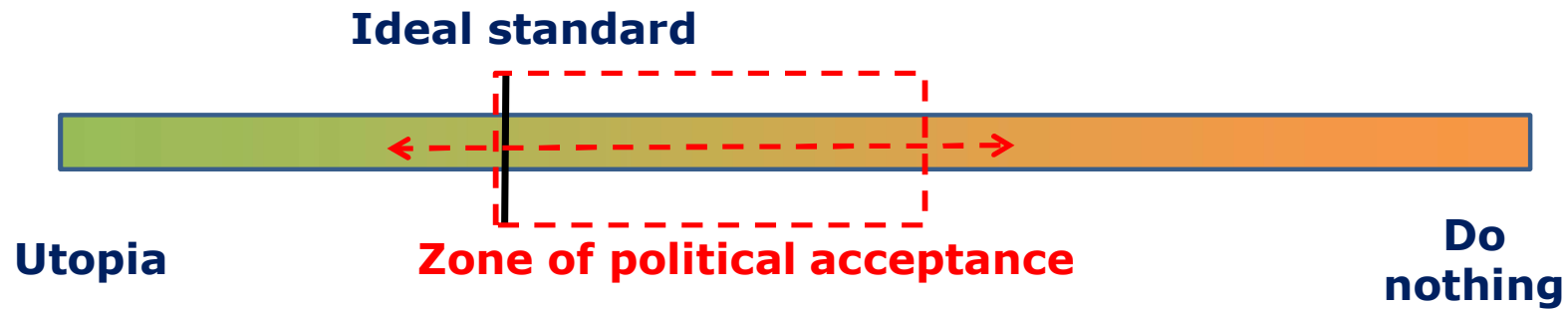
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# Whether standards politically acceptable



- Binary
- Regulatory impact statement
  - Generally required to change/create legislative instrument (e.g. planning scheme)
  - Cost benefit analysis - can we improve accuracy of inputs?
  - Stakeholder consultation

# Environmental standards

