



Workshop: Planning & Designing Stormwater Infrastructure – A Zero Carbon Future



Stormwater 2023
Te Roopu Wai Āwhātanga
23–25 May | Cordis, Tāmaki Makaurau Auckland

Karakia

Whakataka te hau ki te uru

Cease the winds from the west

Whakataka te hau ki te tonga

Cease the winds from the south

Kia mākinakina ki uta

Let the breeze blow over the land

Kia mātaratara ki tai

Let the breeze blow over the ocean

E hī ake ana te atakura

Let the red-tipped dawn come with a
sharpened air.

He tio, he huka, he hau hū

A touch of frost, a promise of a
glorious day

Tihei mauri ora!

Industry Challenges

- The Planet's finite resources
- Anthropogenic effect
- Paris Agreement progress slow
- Climate Change Response (Zero Carbon) Amendment Act – zero carbon emissions by 2050
- Carbon Neutral Government Programme
- National Emissions Reduction Plan
- Climate Emergency declared
- Climate change effects happening now
- Stormwater supports adaption AND mitigation
- We need to:
 - Lead by example
 - Act rapidly
 - Work together
- **We can't solve problems with the same techniques that got us into the problem**

Purpose of the Workshop



Share knowledge, build momentum



Work together to identify tangible, low carbon ideas



An approach to apply low carbon mindset to your local infrastructure challenges

Workshop Context: Flooding and climate change



Today

Overview [11-11.15am]

The Challenge

Tools

Group Problem Solving [11.20-11.50am]

Review your problem

Develop approach, test carbon implications

Develop a preferred option

Estimate carbon % reduction

Discuss and record key risks/implications

Share and Discuss [11.50-12.20pm]

Short summaries

Open discussion on each problem

Close [12.30pm]

Making outputs available



Carbon Overview: Carbon Reduction Hierarchy

Align the outcomes with the net zero transition at the system level and evaluate the basic need at the asset and/or network level

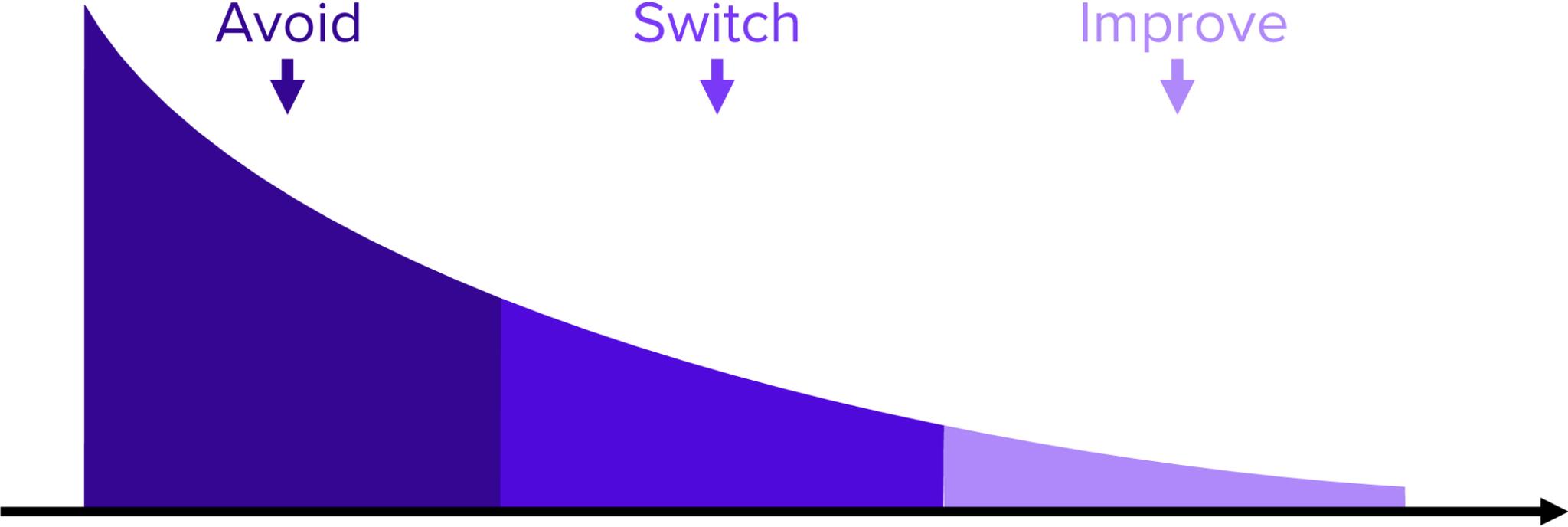
Assess alternative solutions that reduces whole life emissions through alternative scope, design, materials, technologies.

Identify and adopt solutions and techniques that improve the use of resources and design life of an asset/network.

Avoid

Switch

Improve



PAS 2080, 2023

Group Problem Solving (30mins)

Purpose:

Identify one conceptual option – think “low carbon”!

Understand implications of carbon as a driver in decision making.

Time:

20 minutes – option identification and carbon estimation

1. Nominate scribe and speaker (or get volun-told by your facilitator!)
2. Review your problem and information.
3. Brainstorm solutions to the problem. Understand carbon implications using Moata Carbon Portal.
4. Agree preferred solution.
5. Estimate carbon reduction of preferred solution using Mota Carbon Portal.

10 minutes - Discuss and record 2-3 key risks and implications. Factors to consider:

1. Level of service outcome
2. Change in risks
3. H / M / L cost impact
4. Additional benefits
5. Consenting/regulatory implications

Guidance/Advice



1. The objective is challenge the status quo, not come up with the perfect solution – don't go down the rabbit hole!



2. Use MCP for high level comparison, e.g. quantities of material – don't go down the rabbit hole!



3. Operational carbon is in 'parking lot' – don't go down the rabbit hole...



Proposed work for Te Kanawa

600mm dia concrete pipe
200m (Trenched)

Theoretical development
area (THAB)

500mm dia concrete pipe
300m (Trenchless)

700mm dia concrete pipe
300m (Trenchless)

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Height datum: Auckland 1946.



Scale: A3
Date printed: May
2023

EMBODIED CARBON = 1500 tCO2e



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Get Started!

- Questions on activity?
- Watch for rolling images of example stormwater infrastructure



Group Session Share & Discuss (20 mins)

Purpose:

Opportunities - Share ideas, considerations, approach, and conclusions.

Challenges - Share uncertainties, gaps, challenges for stormwater industry

Leave with improved understanding and ideas for how you could deliver lower carbon solutions

Time:

10 minutes – Group Share (1 min each)

1. Preferred solution
2. Carbon reduction – how much did you save?
3. 2-3 key risks/implications

10-15 minutes – Group Discussion

1. What are the hurdles to achieving these options?
2. What do we do about it?

Guidance/Advice



1. Quick fire summary



2. Don't focus on the information you wish you had for your problem – consider the big picture knowledge needs.

Close: What Next

1. QR code
2. Facilitators collate table collateral
3. Ideas, challenges organised and circulated post-conference to attendees.



Karakia

Unuhia, unuhia

Unuhia ki te uru tapu nui

Kia wātea, kia māmā, te ngākau, te
tinana, te wairua i te ara takatā

Koia rā e Rongo, whakairia ake ki
runga

Kia tina! TINA! Hui e! TĀIKI E!

Draw on, draw on,

Draw on the supreme sacredness

To clear, to free the heart, the body
and the spirit of mankind

Rongo, suspended high above us

Draw together! Affirm!