

CLIMATE CHANGE


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Sustainability & Resilience, WSP

NZPI 2021
CONFERENCE

VALUES VOICES VISION

Nelson, 24-26 March

PLATINUM SPONSOR 





**The Sustainability
in
Sustainable Management**



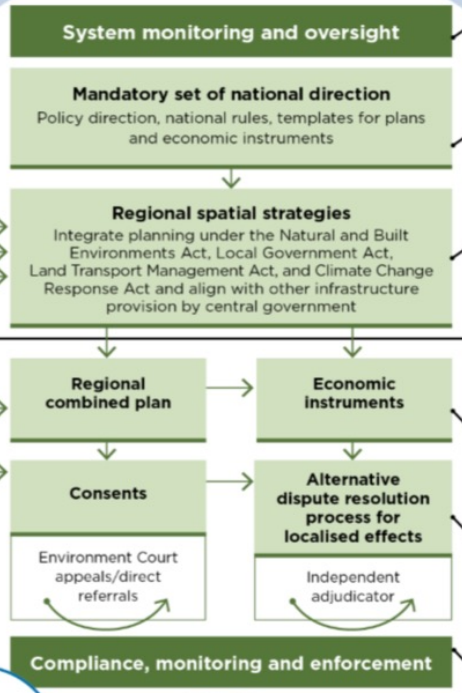
Change / Reform / Amendments

What to do?
Climate / Carbon

Limits
Actions
Dynamic / Adaptive
Regenerative

Strategic Planning Act
Promotes social, economic, environmental and cultural wellbeing through integration of environmental management, land use and infrastructure

Natural and Built Environments Act
Enhancing the quality of the natural and built environments to support the wellbeing of present and future generations

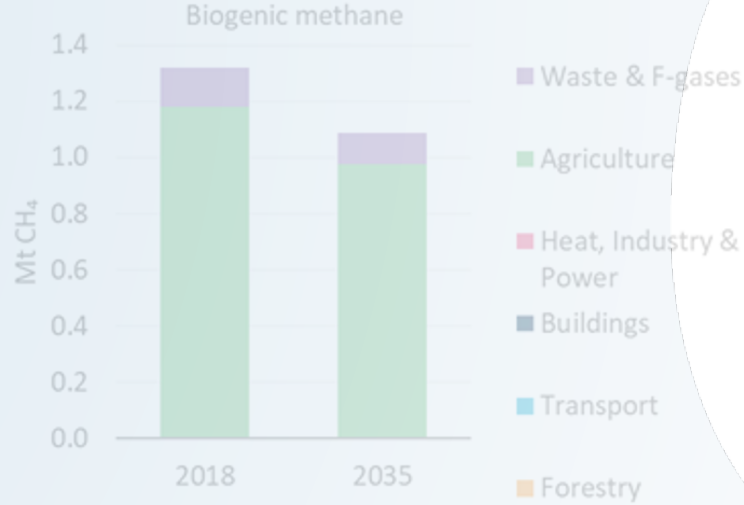
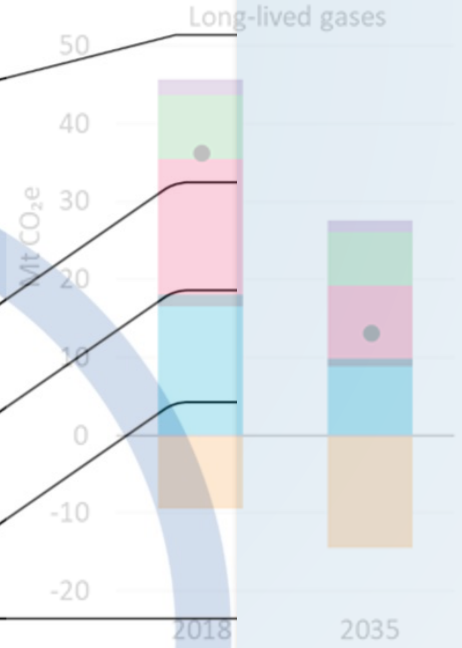


Land Transport Management Act

Local Government Act

Climate Change Response Act

Managed Retreat and Climate Change Adaptation Act



TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

STAGE 1:
First-pass risk screen

Examine risks and opportunities across New Zealand.
STAGE 2:
Prioritise the top 48 risks assessment

Result:
A set of 48 risks and opportunities. Priority risks are those with extreme or high severity and exposure, at least one of three asset classes (now, by 2030, and by 2050).
STAGE 3:
Urgency for adaptation

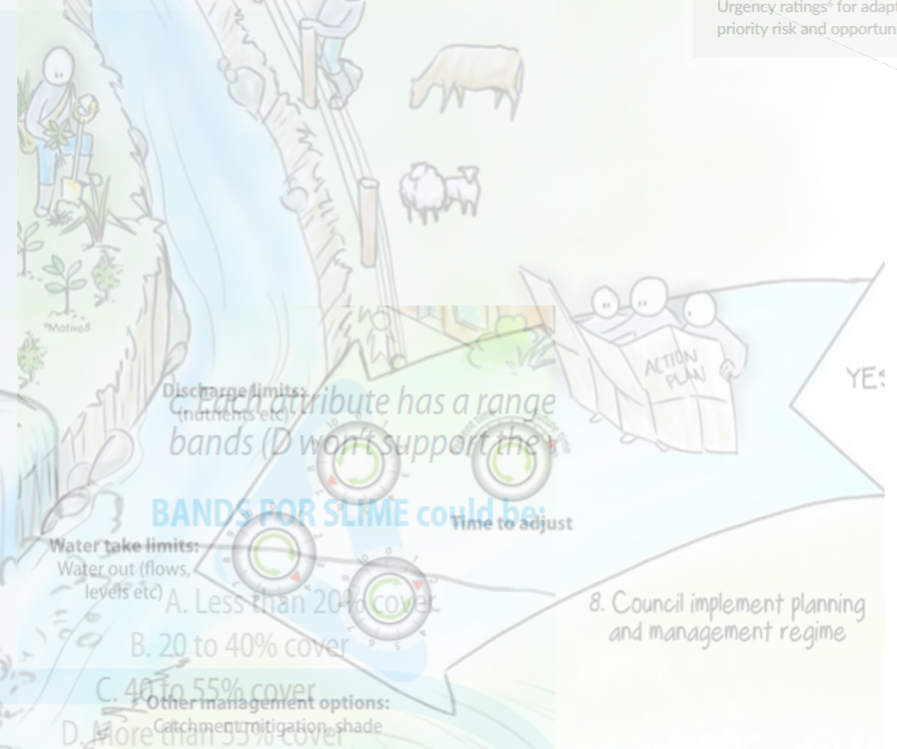
Examine the 48 risks. Investigate vulnerability and exposure. Clarify the consequences of these risks under two climate scenarios in the present term, near term (2030) and planned adaptation and how high-level actions are addressing them.
Result:
A set of 43 priority risks and four opportunities.
Identify:

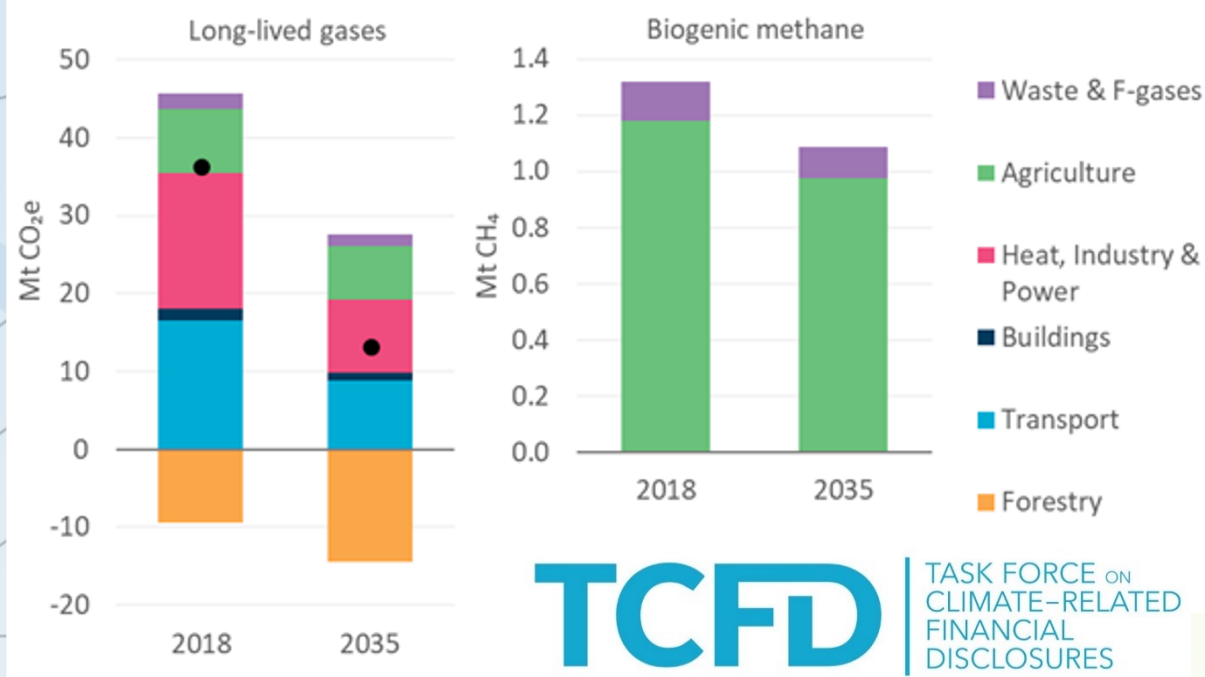
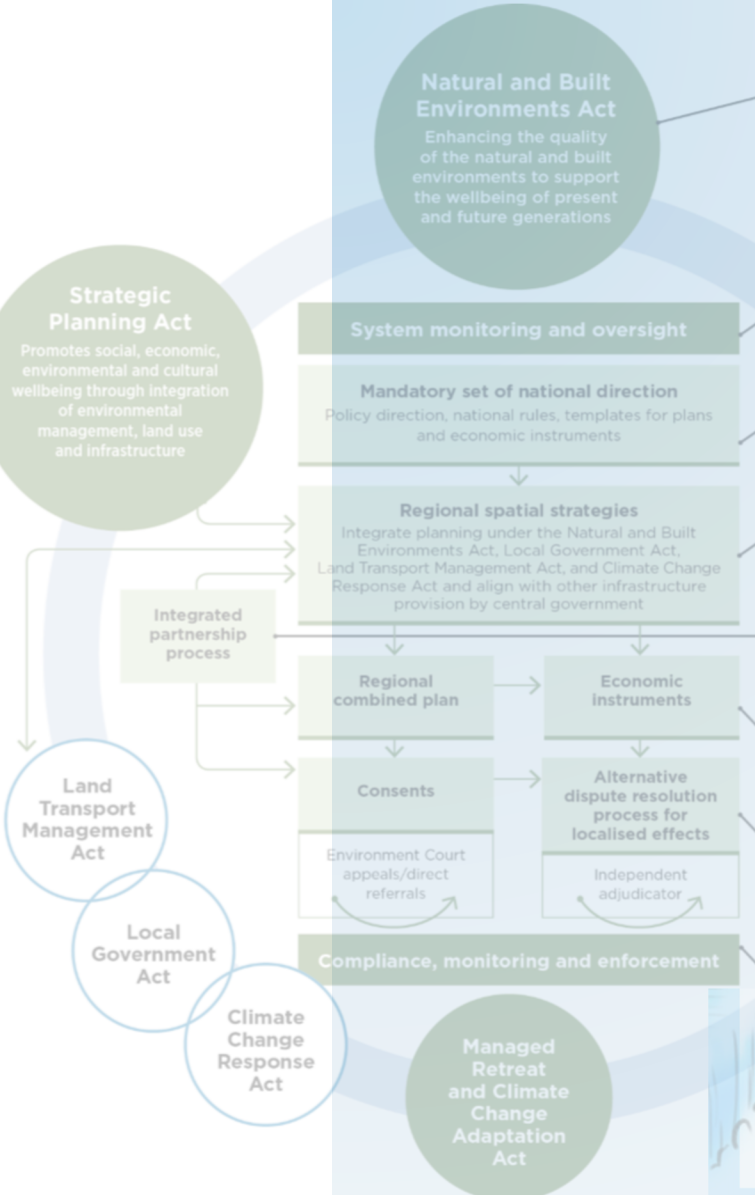
- where early action would avoid being locked into a current pathway
- actions needing long lead times
- actions with long-term implications.

Result:
Urgency ratings⁶ for adaptation, for each priority risk and opportunity.

ATTRIBUTES FOR ECOSYSTEM HEALTH:

1. Temperature
2. Sediment
3. Flows
4. Periphyton (slime)
5. Nitrate (toxicity)
6. Fish
7. Invertebrates





TCFD

TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

STAGE 1: First-pass risk screen

Examined New Zealand's climate-related risks and opportunities. **Priority risks** identified for the first pass risk screen.

Result: A set of opportunities, extreme risks, and/or least or most likely risks.

STAGE 2: Detailed risk assessment

Examined the detailed risks and opportunities. **Investment** in climate-related risks and opportunities. **Clarified** two climate-related risks near to the business model.

Result: A set of risks and opportunities.

STAGE 3: Urgency for adaptation

Assess existing and planned adaptation and how high-level actions are addressing priority risks.

Identify:

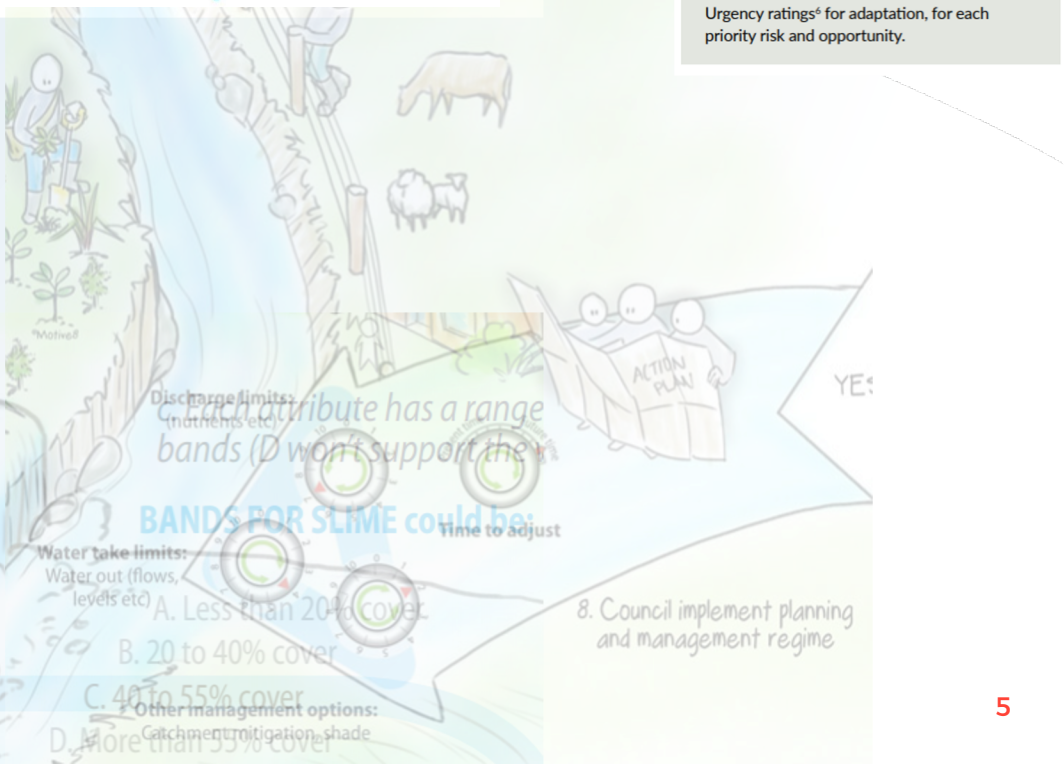
- where early action would avoid being locked into a current pathway
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Result: Urgency ratings⁶ for adaptation, for each priority risk and opportunity.



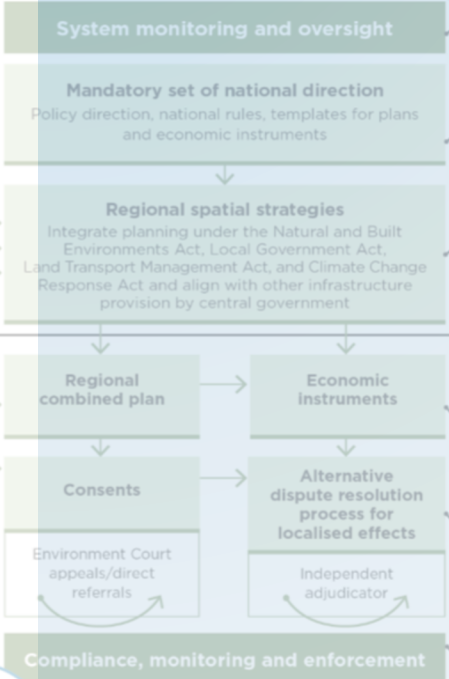
ATTRIBUTES FOR ECOSYSTEM HEALTH:

1. Temperature
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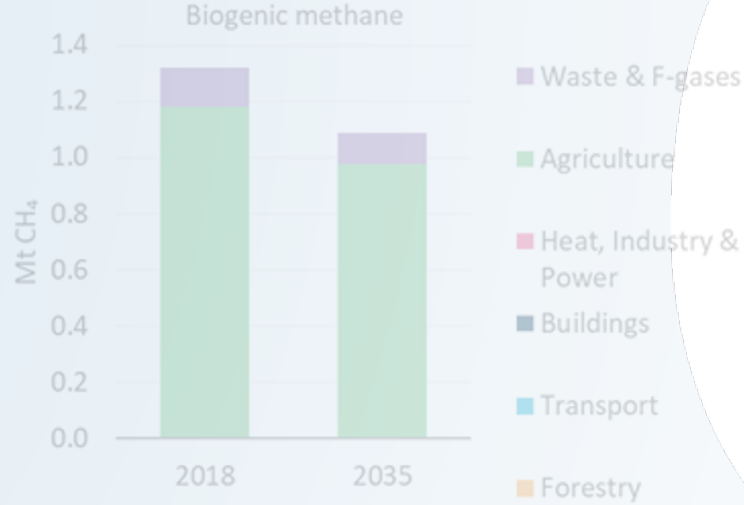


Land Transport Management Act

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TCCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Net emissions

STAGE 1:
First-pass risk screen

Examine risks and opportunities across New Zealand

STAGE 2:
Prioritise the 48 risks

Result:
A set of 48 risks and opportunities. Priority risks are those with extreme or high-level exposure.

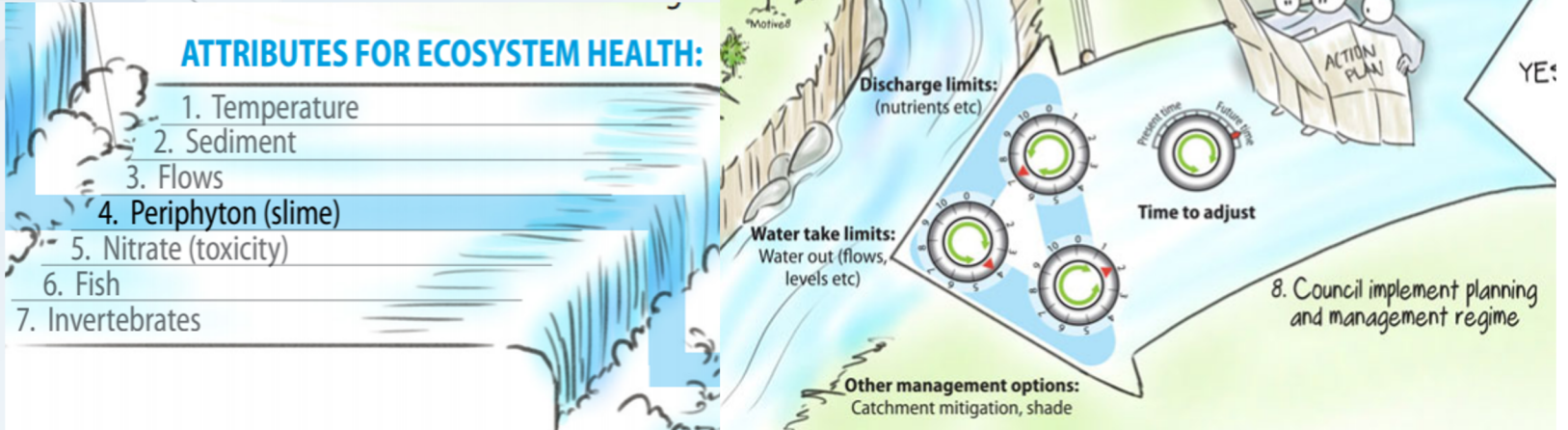
STAGE 3:
Investigate the 48 risks

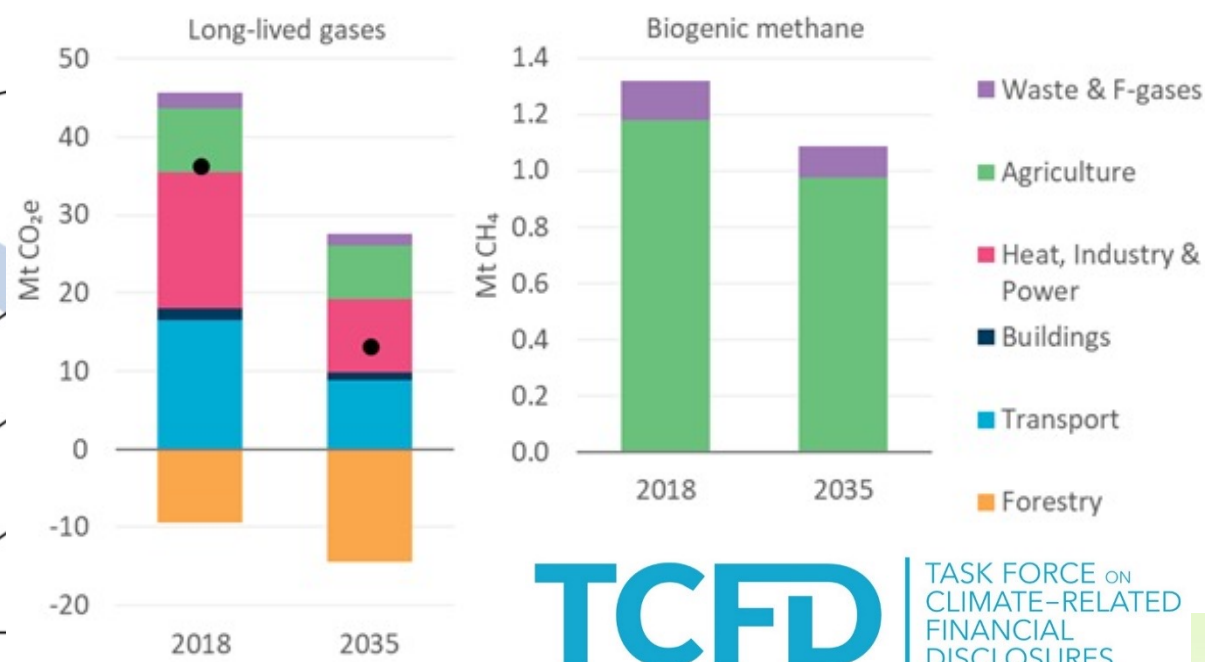
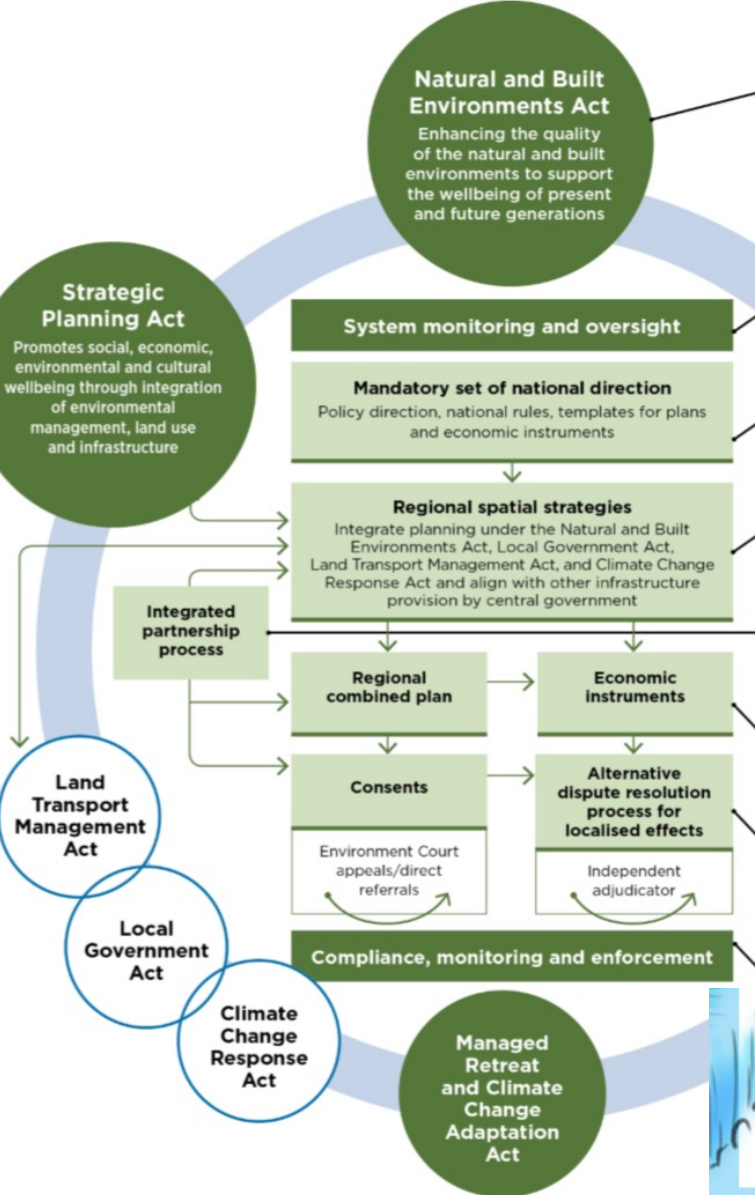
Urgency for adaptation
Clarify the consequences of these risks under two climate scenarios in the present term, near term and long term

Result:
A set of 43 priority risks and four opportunities.

- Identify:**
- where early action would avoid being locked into a current pathway
 - actions needing long lead times
 - actions with long-term implications.

Result:
Urgency ratings⁶ for adaptation, for each priority risk and opportunity.





STAGE 1: First-pass risk screen

Examined New Zealand
Priority: A set of opportunities, extreme least or (now, b)

STAGE 2: Detailed risk assessment

Examined
Investment
Clarification two c near t

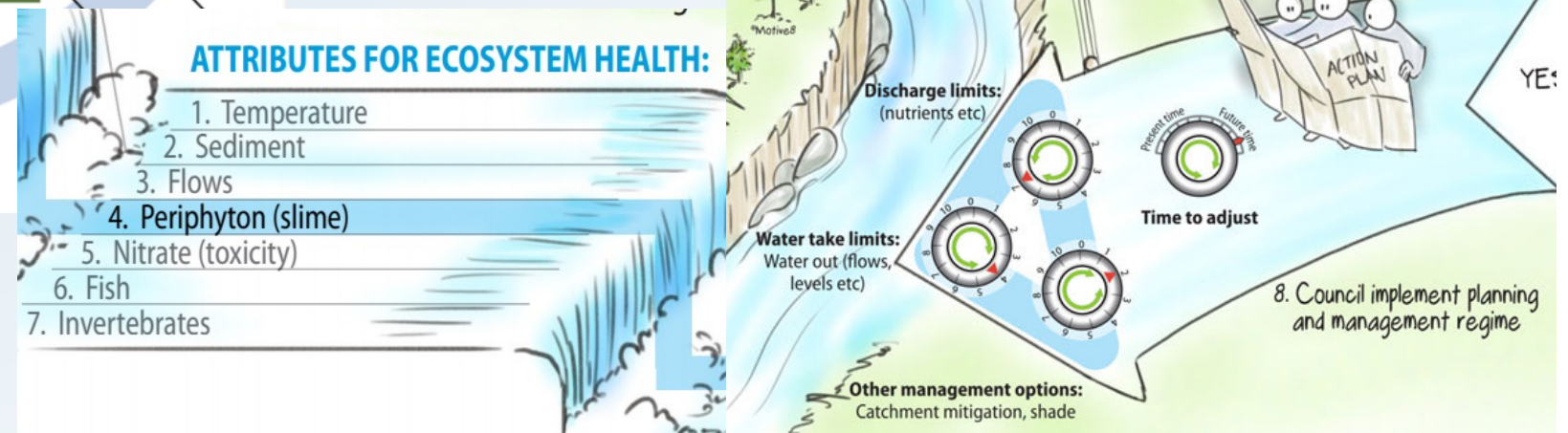
STAGE 3: Urgency for adaptation

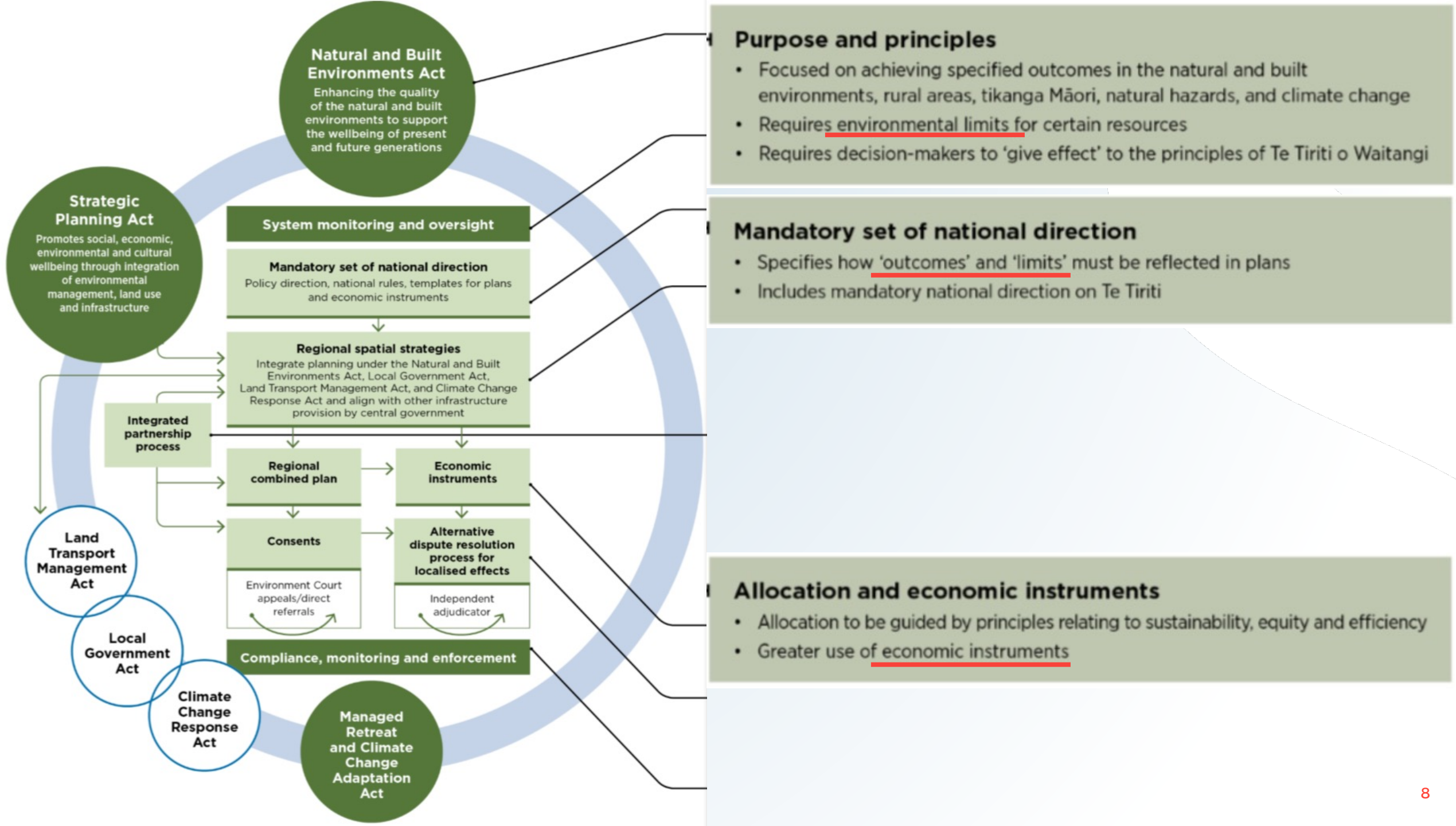
Assess existing and planned adaptation and how high-level actions are addressing priority risks.

Identify:

- where early action would avoid being locked into a current pathway
- actions needing long lead times
- actions with long-term implications.

Result: Urgency ratings for adaptation, for each priority risk and opportunity.







Resource Management Amendment Act 2020

Public Act 2020 No 30
Date of assent 30 June 2020
Commencement see section 2

...regional and territorial authorities

...to consider and have regard for

...emissions reduction plans and national adaptation plans

...in their policy and plan-making

(s61, 66, 74)

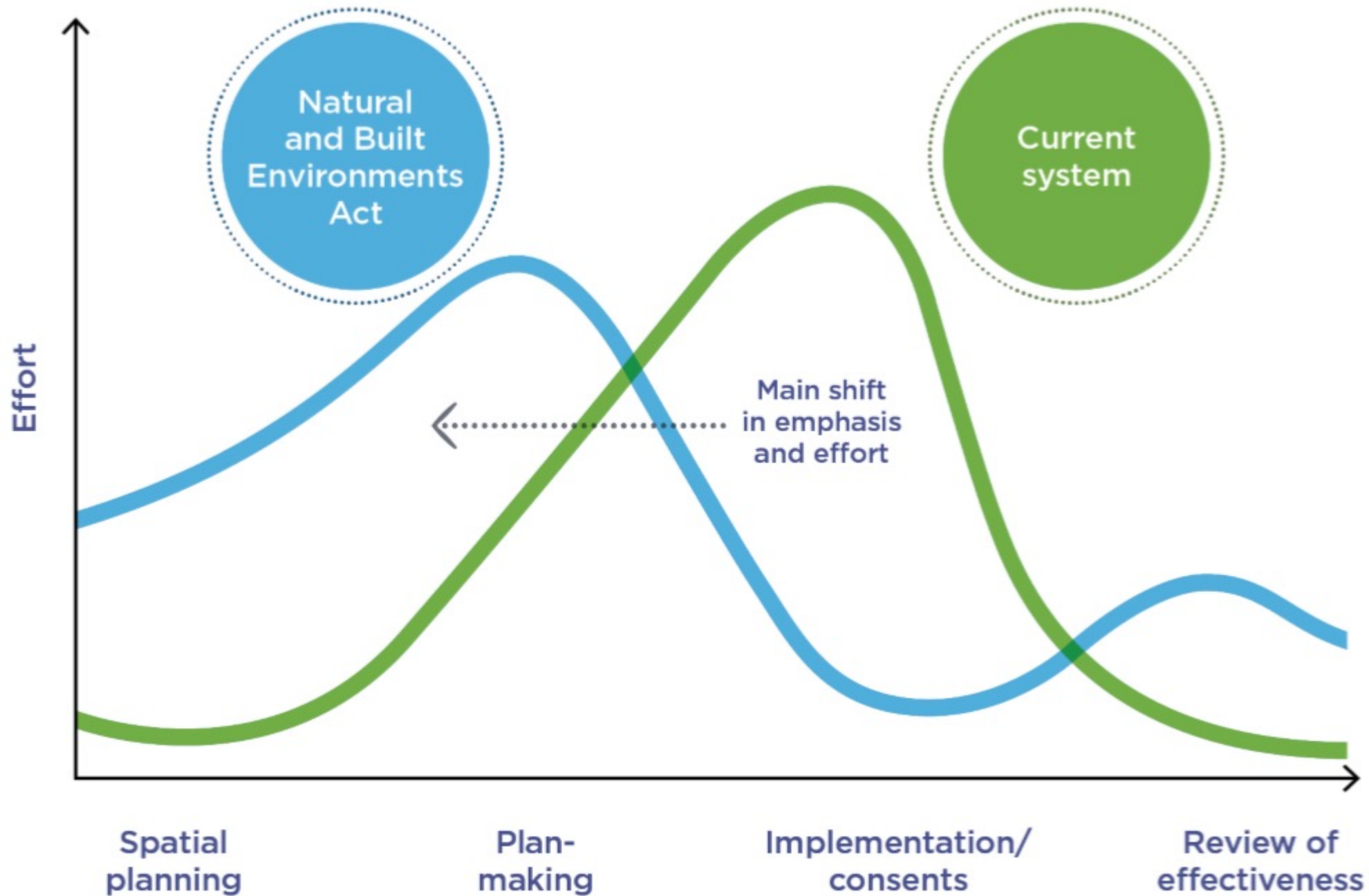
[transition effect - excl. where appeal period has passed]

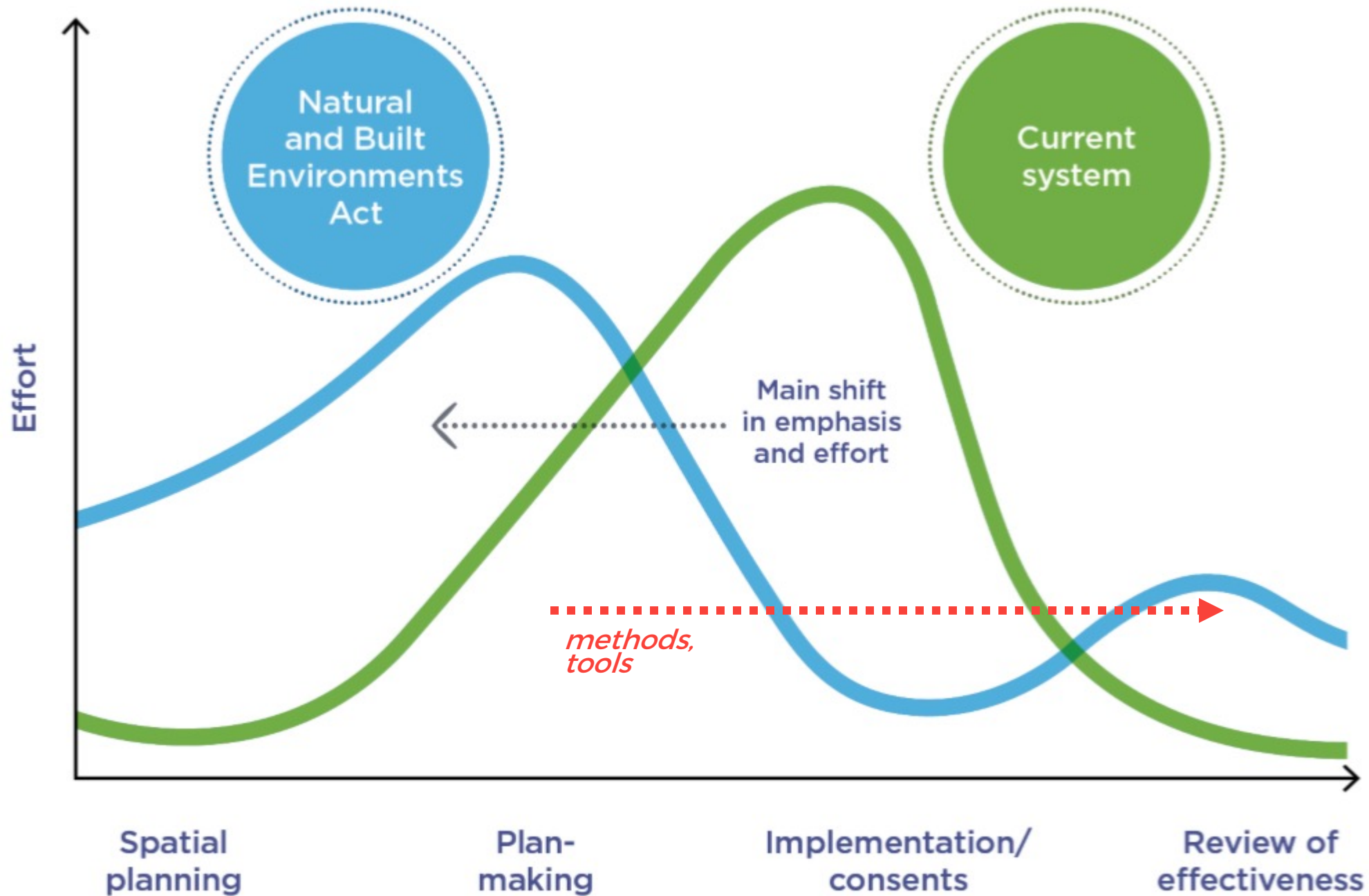
National Policy Statement on Urban Development 2020

July 2020

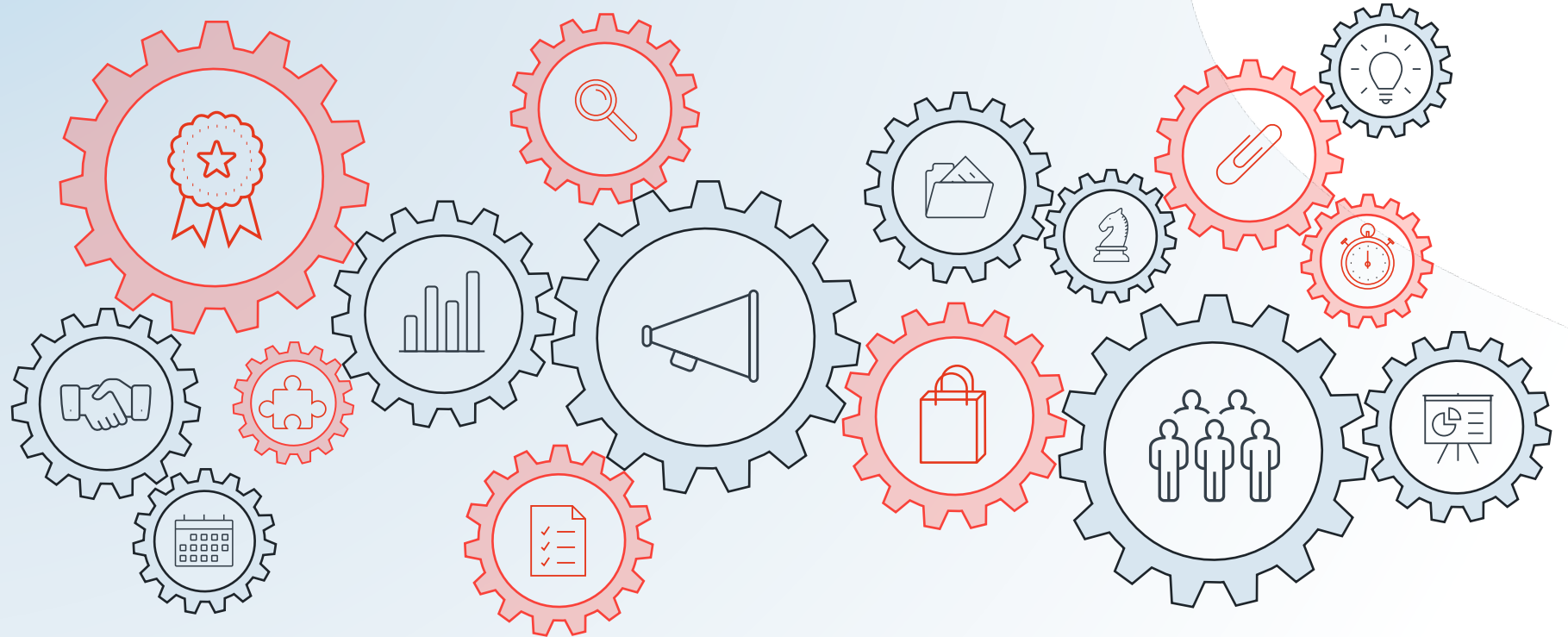
3.13 Purpose and content of FDS

- (1) The purpose of an FDS is:
 - (a) to promote long-term strategic planning by setting out how a local authority intends to:
 - (i) achieve well-functioning urban environments in its existing and future urban areas; and
 - (ii) provide at least sufficient development capacity, as required by clauses 3.2 and 3.3, over the next 30 years to meet expected demand; and
 - (b) assist the integration of planning decisions under the Act with infrastructure planning and funding decisions.
- (2) Every FDS must spatially identify:
 - (a) the broad locations in which development capacity will be provided over the long term, in both existing and future urban areas, to meet the requirements of clauses 3.2 and 3.3; and
 - (b) the development infrastructure and additional infrastructure required to support or service that development capacity, along with the general location of the corridors and other sites required to provide it; and
 - (c) any constraints on development.





Voluntary



Compliance

Limits

Actions

Dynamic / Adaptive

Regenerative

Limits

Measurable
Robust

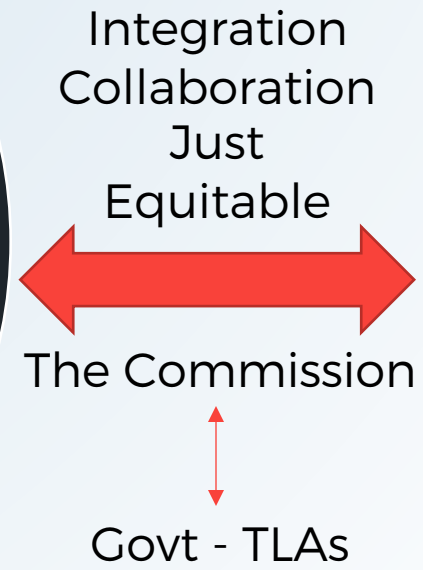
Performance / Accountable
Across Scale / Spatial -> Site
Target Setting & Nesting
Economic Instruments / Budgets

Limits

Top-down / Compliance



Bottom-up / Voluntary



LOCAL SOCIAL



LOCAL ECOLOGICAL



CARBON SEQUESTRATION

HOW NATURE DOES IT
Land-based and sea-based plants absorb and store CO₂, as do phytoplankton in the ocean.

TO WORK LIKE NATURE
Amsterdam could set goals for sequestering and storing carbon in land- and sea-based plants.

CITY TARGET
Reduce the city's total CO₂ emissions to 55% below 1990 levels by 2030, and to 95% below by 2050.

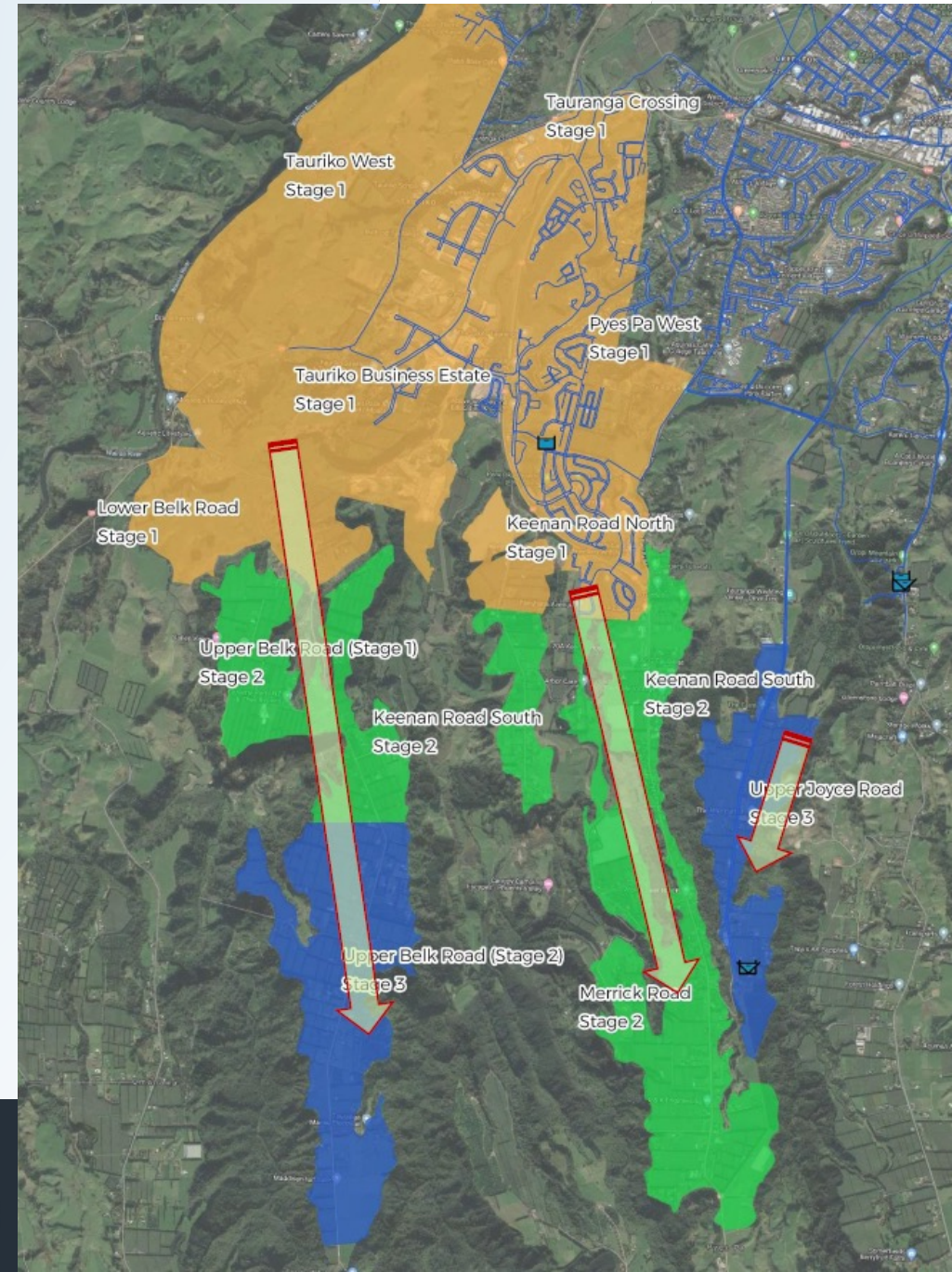
CITY SNAPSHOT
Dutch greenhouse gas emissions fell by 2.2% in 2018, contributing to a total reduction of 14.5% below 1990 levels.

Tauranga City Council

Tauriko West Growth Area

Water Supply Strategy and Implementation Plan

- 19,000 homes / 335ha industry
- CarbonZero Appraisal per option
- Nested in carbon limits and targets



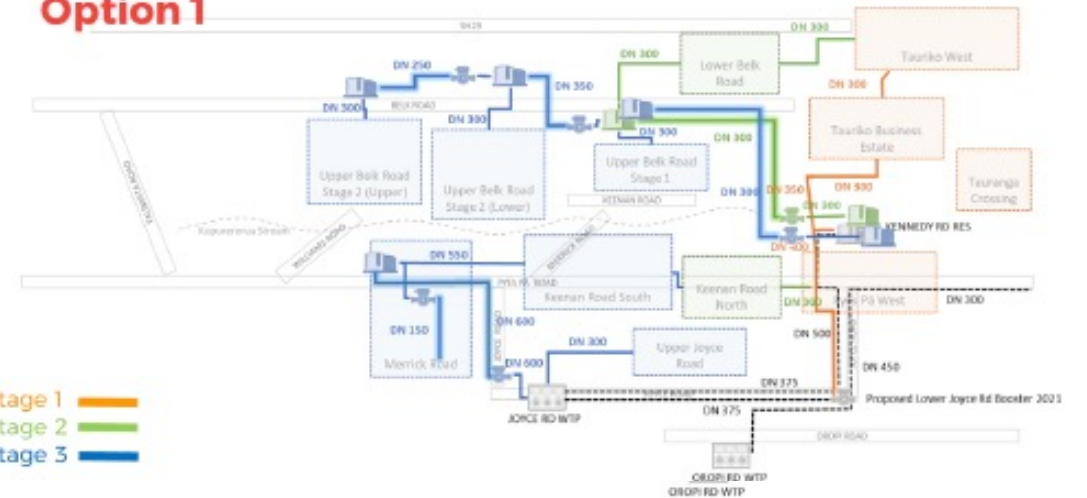
CarbonZero Appraisal

Key GHG emission sources

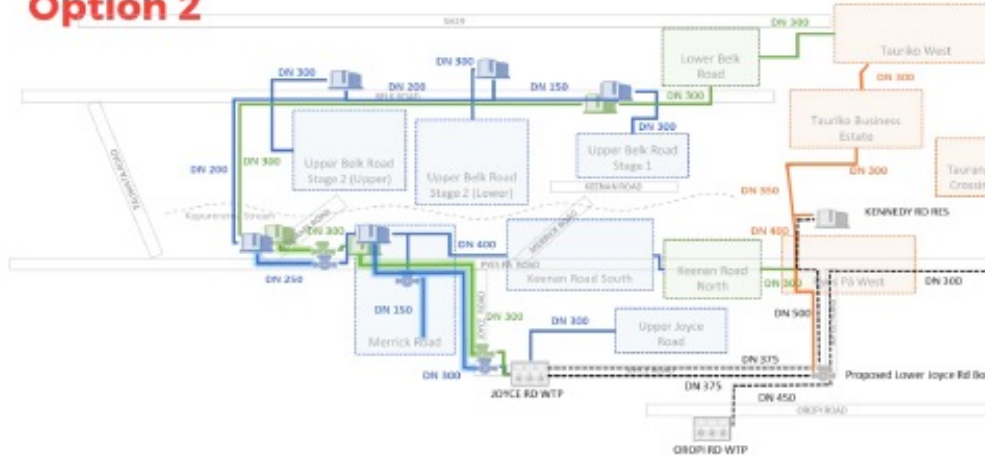
1. Pipes
2. Reservoirs
3. Pump Station
4. Operational Energy

Concrete | Steel | Fuel | Electricity

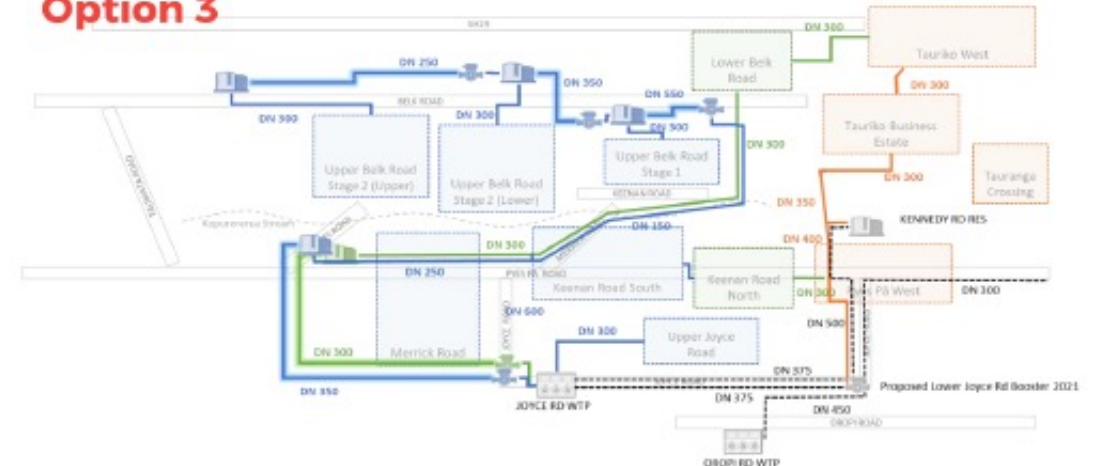
Option 1



Option 2



Option 3



CarbonZero Appraisal

- Pre – consenting
- Emissions per stage, per option
- Net Present Value WOL financial cost of carbon
- In MCA
- Nest within TCC GHG inventory / targets

	SCOPE 1 & 2 (fuel and electricity)				SCOPE 3 (materials)			TOTAL
	Pipe trench and haulage	Pump Station construction	Reservoir construction	Operational energy (total per Stage)	Pipeline	Pump Station	Reservoir	
Option 1								15,912
Stage 1	142	-	-	-	1,673	-	-	1,816
Stage 2	132	2.66	263	889	983	13.3	1,312	3,594
Stage 3	66.2	4.14	419	7,465	440	20.7	2,087	10,502
Option 2								26,631
Stage 1	249	2.96	458	534	2,634	14.8	2,286	6,178
Stage 2	110	2.66	294	2,837	661	13.3	1,471	5,389
Stage 3	37.3	-	443	12,006	365	-	2,212	15,064
Option 3								18,368
Stage 1	191	1.48	260	225	2,160	7.4	1,300	4,144
Stage 2	124	1.33	213	1,305	797	6.6	1,066	3,513
Stage 3	63.8	3.99	443	7,549	420	19.9	2,212	10,711

Actions

Pathway to targets
Projects / Programmes / Plans
Strategy / Framework
Systems / Business case
Standards / Procurement

Actions



Enabling recommendation 4

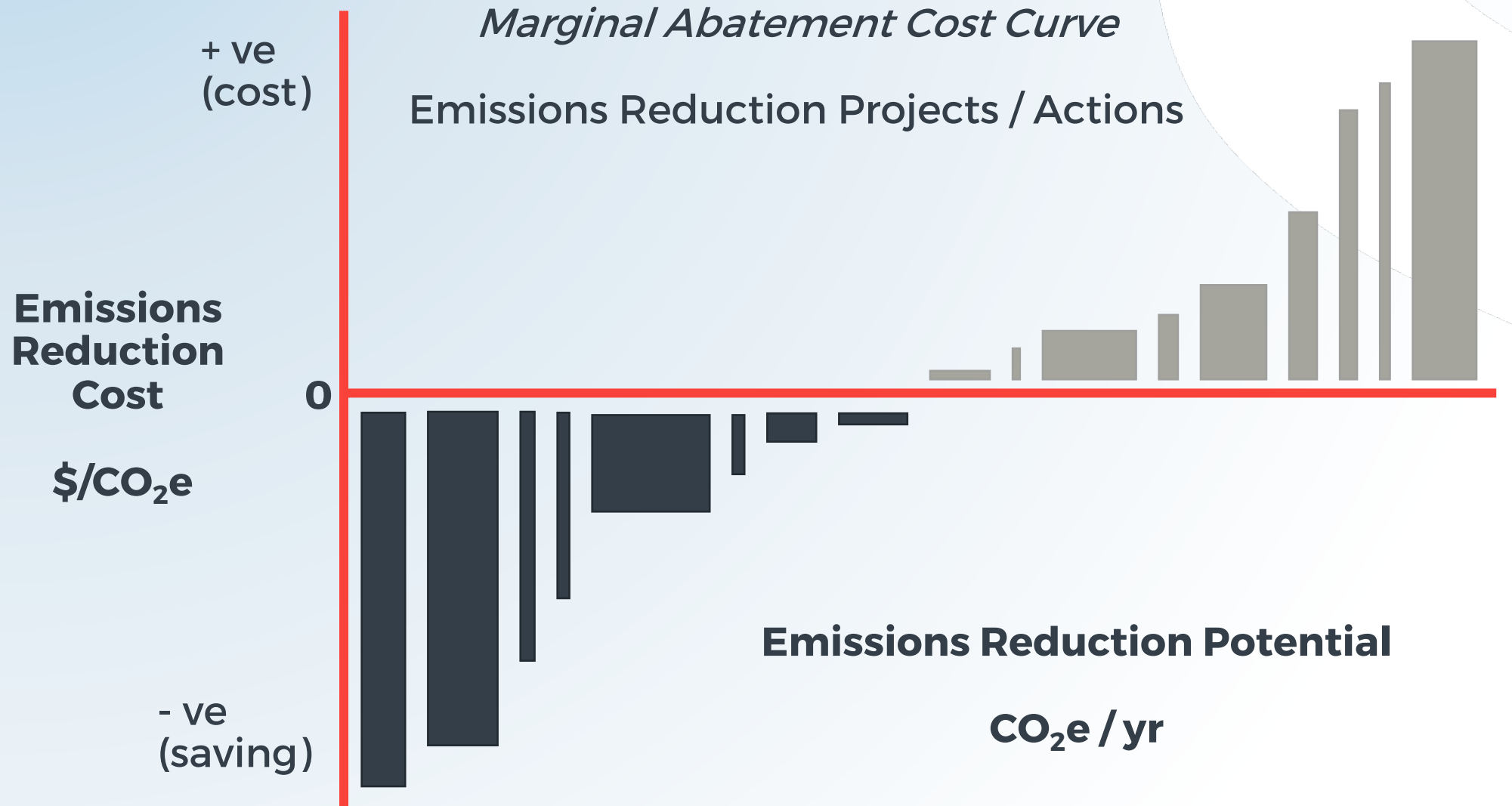
Central and local government working in partnership

central and local government work together to:

- a. Align legislation and policy to enable local government to make effective decisions for climate change mitigation and adaptation, including aligning the Local Government Act, the Building Act and Code, national direction under the RMA, the proposed RMA reforms, implementation of the freshwater management framework and the 30-year infrastructure plan.
- b. Implement funding and financing mechanisms to enable the emissions reduction plans to be implemented effectively and to address the distributional effects of policy change today and for future generations.

We have also heard through our engagement the importance of integrating transport into urban form. It will be important that central and local government factor this into their planning and decision-making.

Actions



Actions

Target-consistent long-term abatement cost values

Time-critical necessary action 6

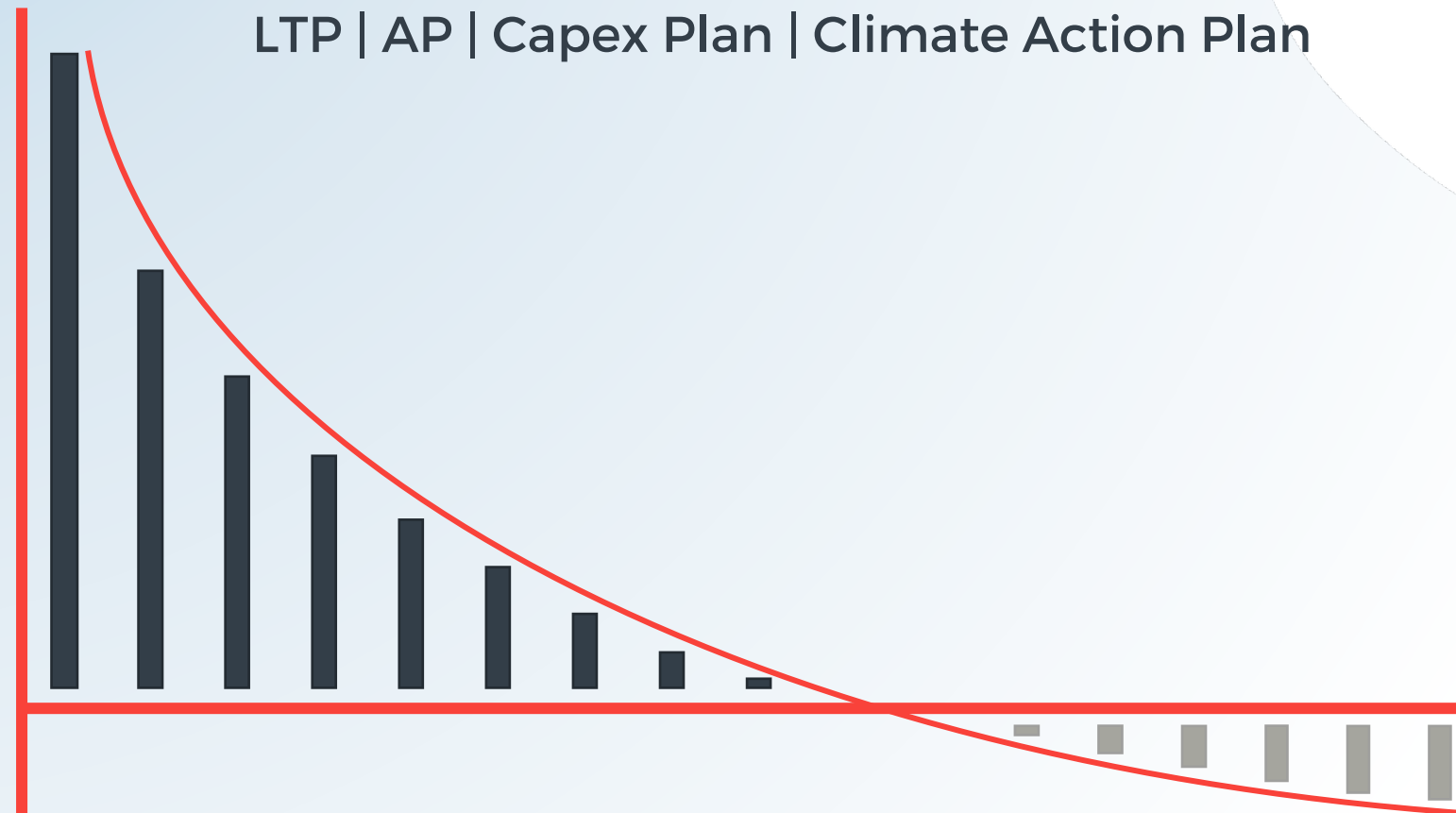
Align investments for climate outcomes

- a. Immediately start to factor target-consistent long-term abatement cost values into policy and investment analysis in central government. These values should be informed by the Commission's analysis which suggests values of at least \$140 per tonne by 2030 and \$250 by 2050 in real prices.
- b. Encourage local government and the private sector to also use these values in policy and investment analysis.

Actions

Spatial Plan | District Plan | Infrastructure Strategy | Structure Plans

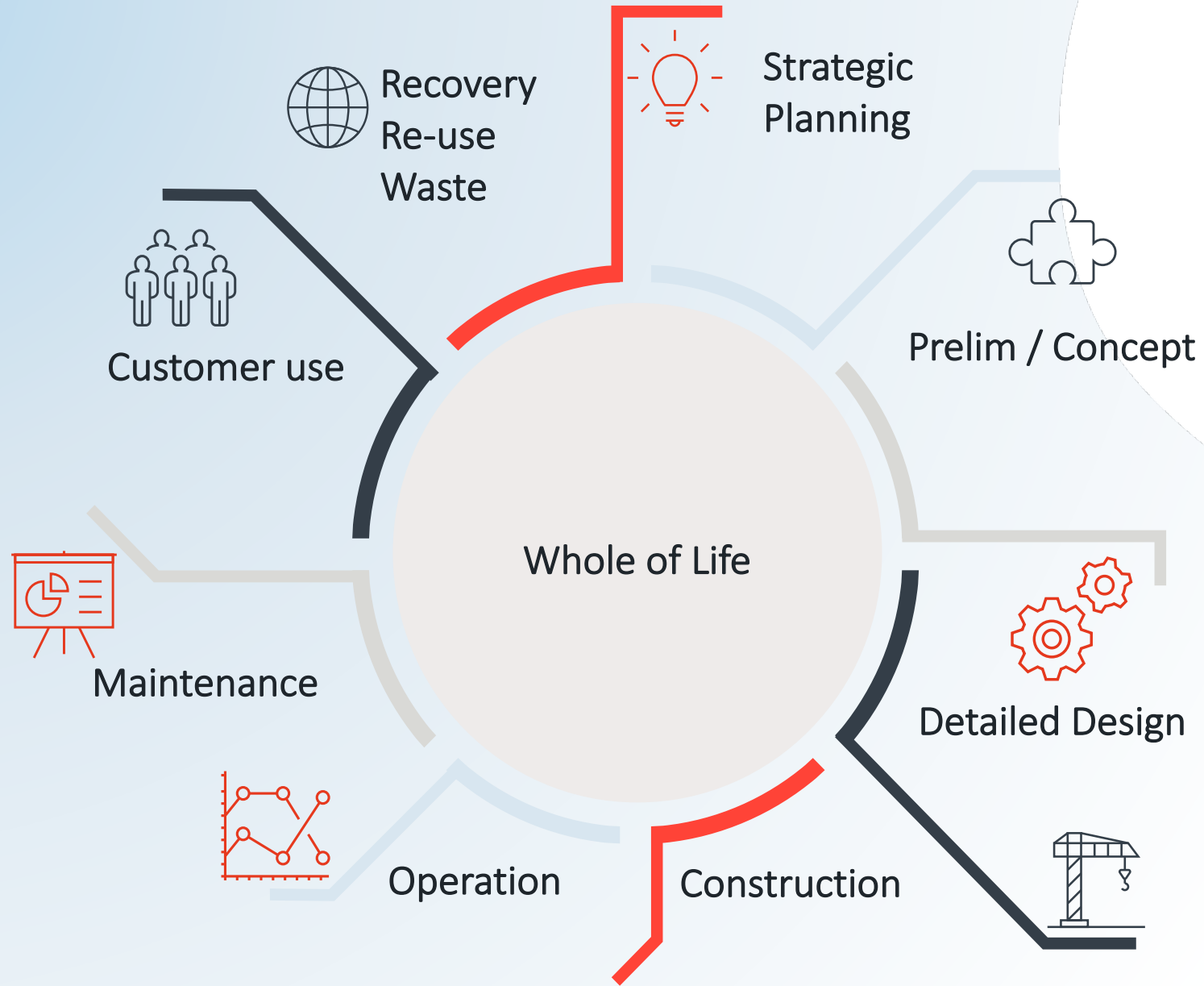
LTP | AP | Capex Plan | Climate Action Plan

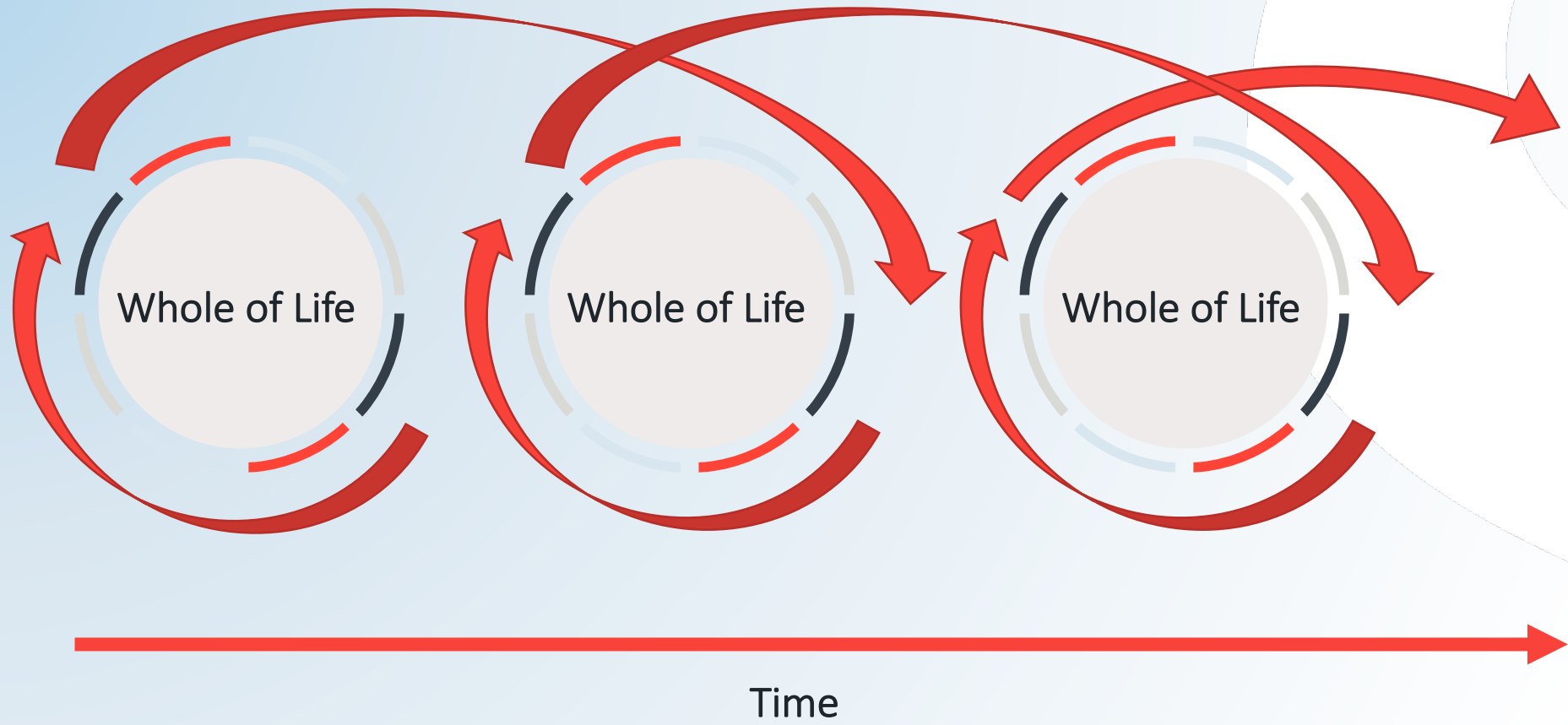


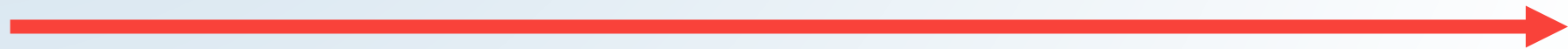
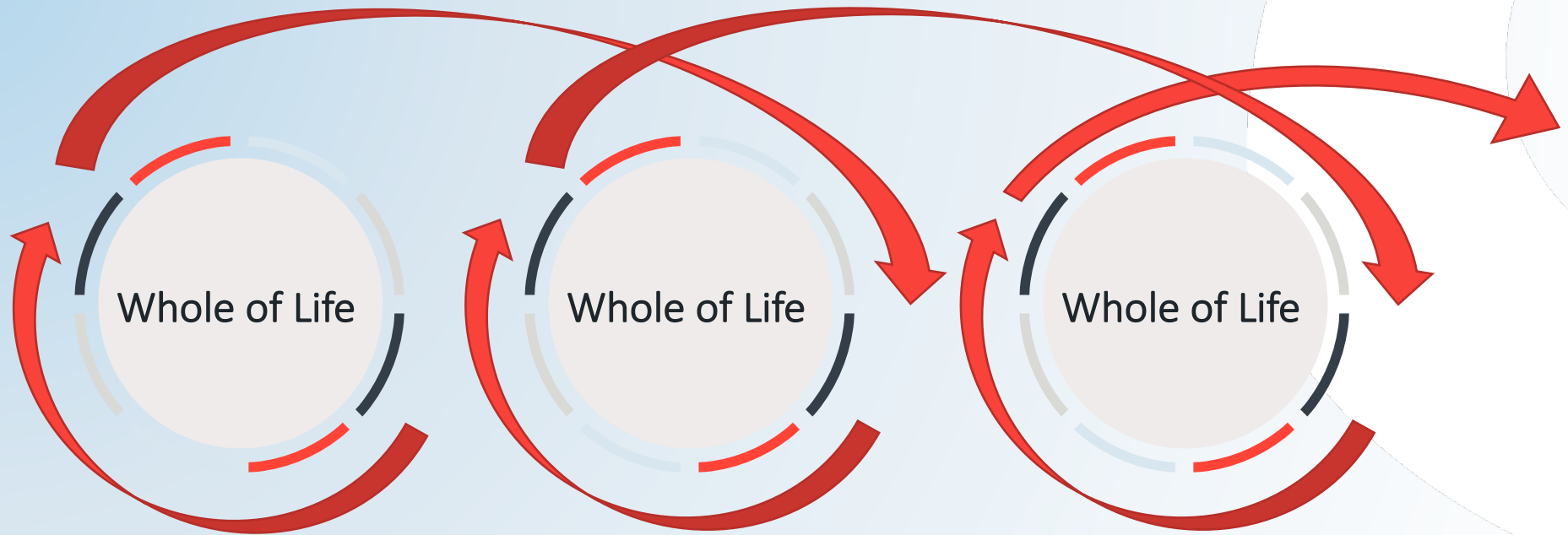
Costed | Prioritised | Value/\$ | Programmed

Dynamic / Adaptive

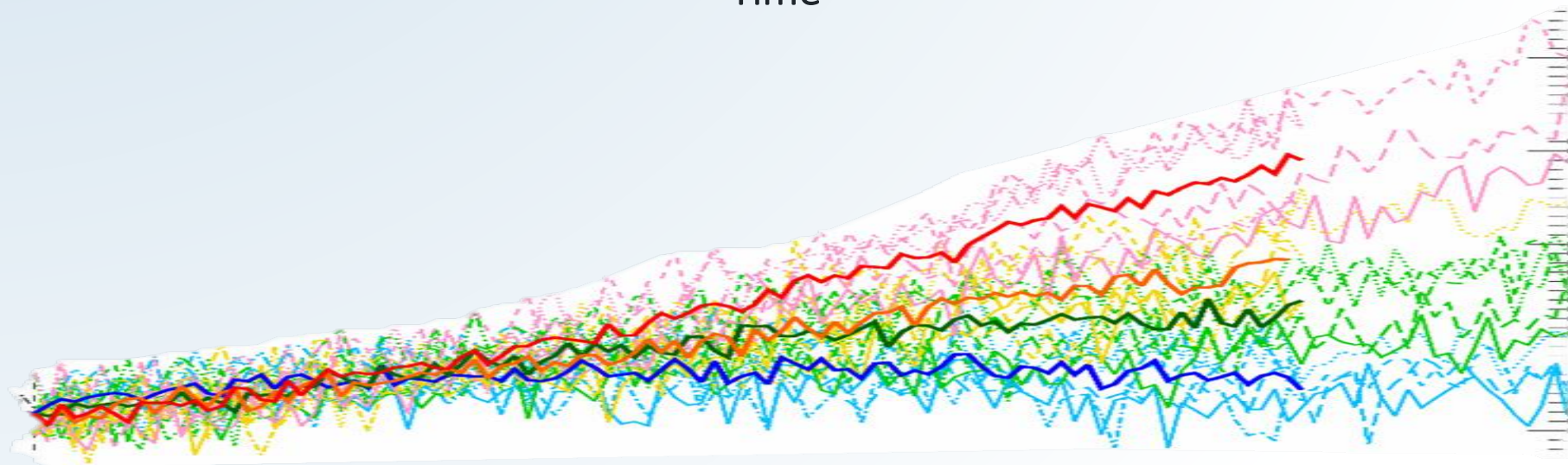
**Resilience
Future Ready
Circular**

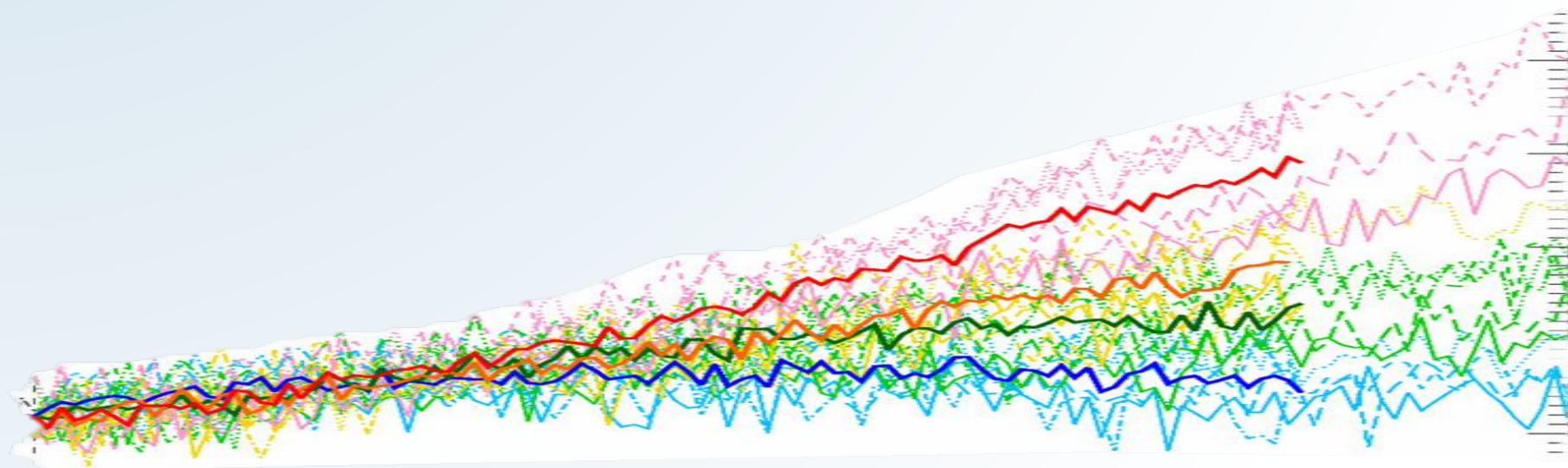






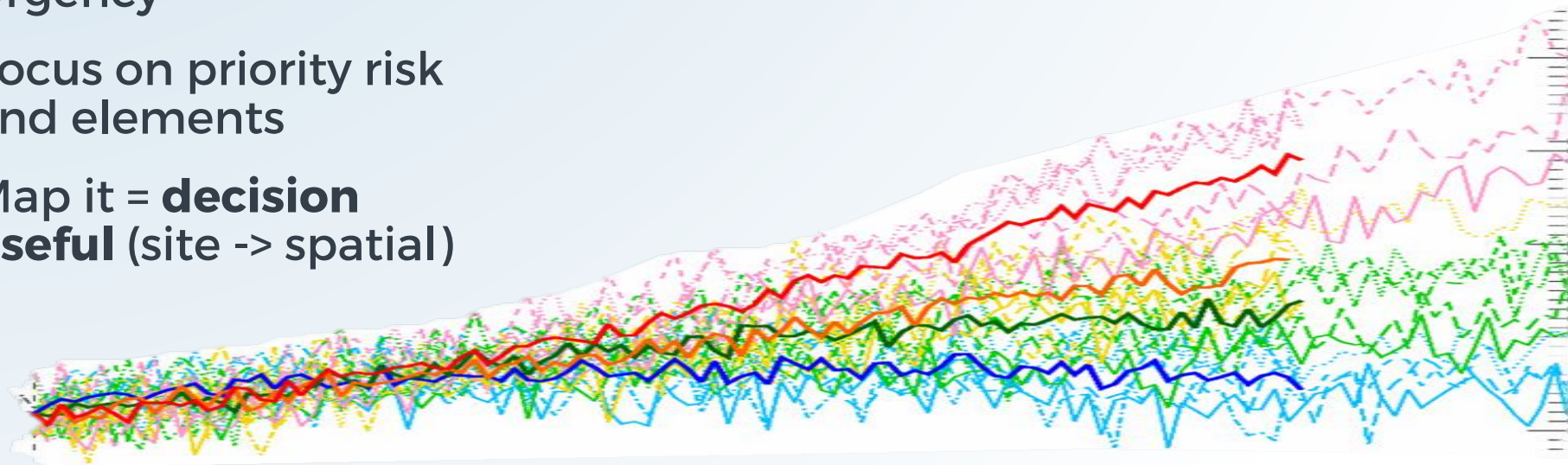
Time





First Pass Risk Assessment

- Direct impacts, selective transitional
- Known aspects/elements in organisation structure
- Workshop Exposure, Vulnerability, Consequence, Urgency
- Focus on priority risk and elements
- Map it = **decision useful** (site -> spatial)



First Pass Risk Assessment

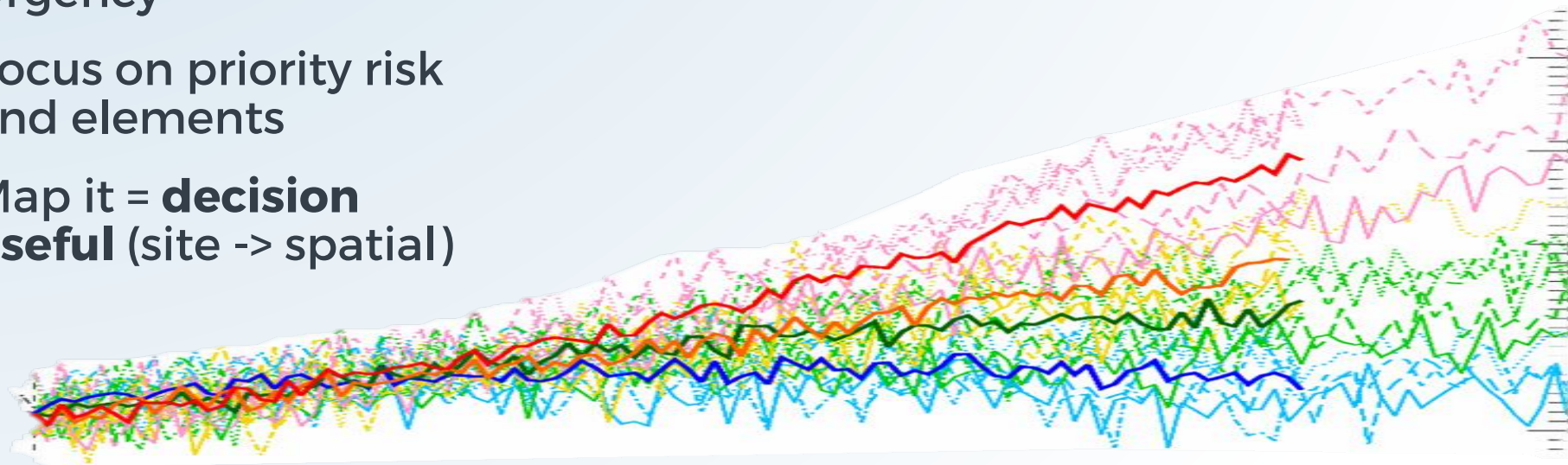
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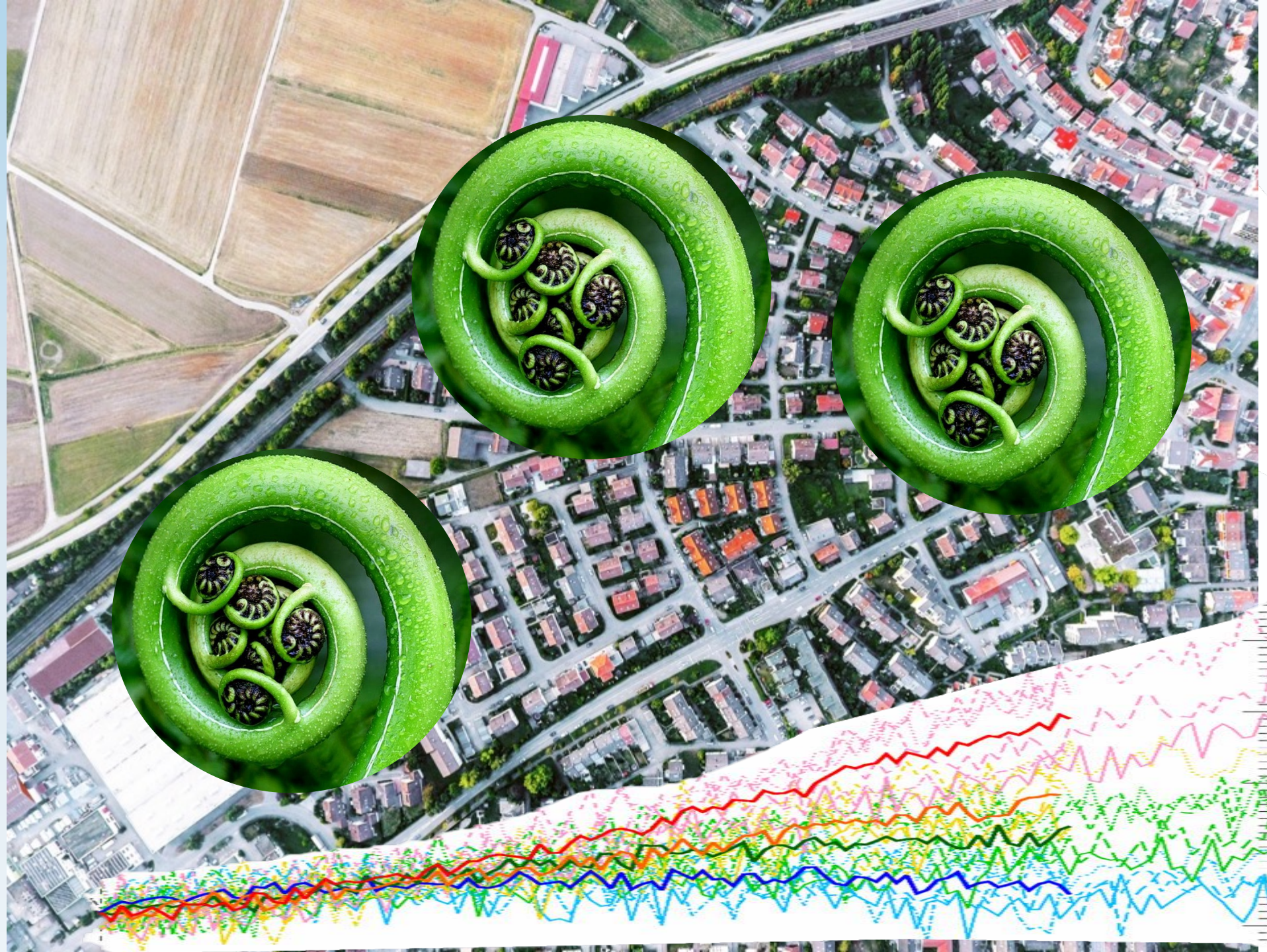


Get it out there

Get it used / referenced

Let the complexity grow





Regenerative

Interconnectedness
Interrelationships
Living systems / Biosphere
Water / Biodiversity / Ecology

Abundance
(*The limits of Limits*)

Limits

Actions

Dynamic / Adaptive

Regenerative

Enablers

Honouring Ti Tiriti

Looming (un)certainty

Moving fast

Keeping together

Ngā mihi
Thank you

