Transportation Group conference 2024

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A catalogue of evidence for transport interventions: design and initial prototype

WSP

Making evidence on transport interventions available through…

A structured approach to assessing suitability of interventions

Efficient & consistent efforts to assess interventions

Framework, standards & domain model required

Structuring evidence on
- Costs
- Transferability
- Effectiveness

What transport interventions will work in Aotearoa New Zealand?

Project approach

Step 1
Identify requirements for cataloguing interventions – frameworks, metadata standards, domain models

a) Desktop review of existing catalogues

b) Desktop review of best practice for catalogue and evidence standards

c) Identify stakeholder and user needs for cataloguing

Step 2: Design and test prototype

a) Draft design – framework, standards, digital interface

b) User test

c) Revise and validate

Step 3: Recommend measures that might be employed in Aotearoa

a) Steering group workshop

Requirements – lessons we took into the design phase

Our approach to evidence

Will it work here?

Stakeholder input: What features, functions, & qualities would make a catalogue work for you?

Desired evidence standards

- Searchable structure and language – vocabulary & information
- Robustness and quality of sources - methodologies
- Clarity
- Relevance to NZ transport context
- Content – broad range of outcomes & interventions

Features, functions, qualities

- Coping with multiple disciplines and technical language
- Shareable outputs
- Make visible current evidence gaps
- Connections within the catalogue
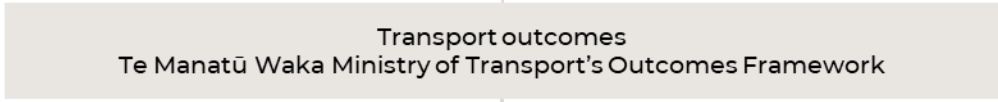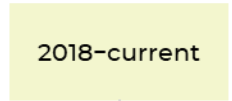- Connections to wider evidence bases

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Framework design for CETI

(Catalogue of Evidence for Transport Interventions)

CETI Framework

Hierarchy level

Hierarchy structure

Level 1: Historical window

2018-current

Transport outcomes
Te Manatū Waka Ministry of Transport's Outcomes Framework

Level 2: Policy outcomes

| Healthy and safe people | Resilience and security | Economic prosperity | Environmental sustainability | Inclusive access |

Level 3: Functions (changes to)

| User safety | Perceptions of safety | Human health | Impacts of unplanned disruption | Transport costs | Economic impacts | Natural environment | Climate | Resource efficiency | Access to opportunities | Liveability of places | Te ao Māori values |

Level 4: Intervention types

Level 5: Sources

CETI filters – evidence content

Hierarchy level

Hierarchy structure

Level 3: Functions (changes to)

User safety

Level 4: Intervention types (with qualitative summaries)

Low-speed zones

Level 5: Sources

XYZ et al   ABC et al   JKL et al

MOP et al   DEF et al   RTS et al
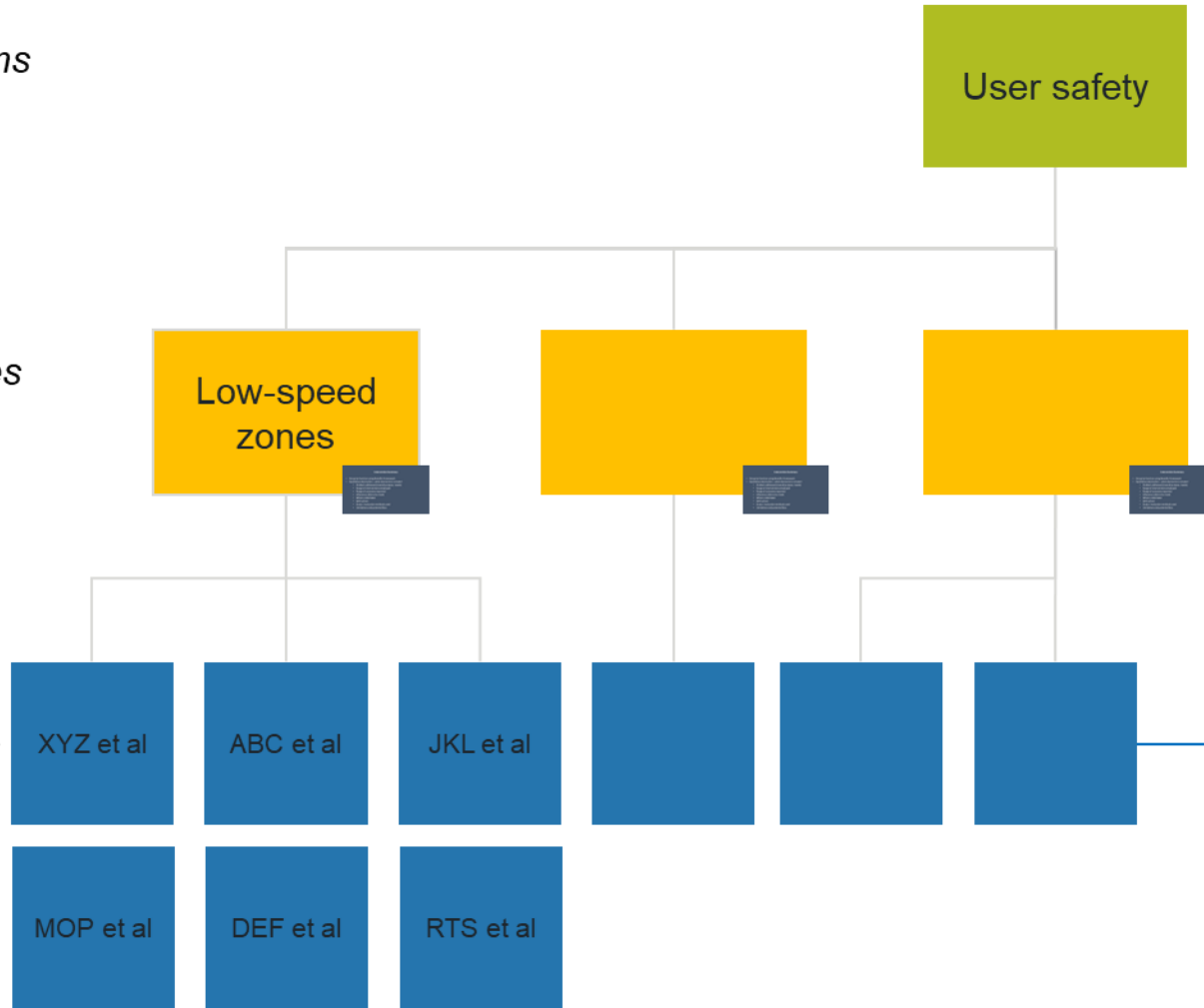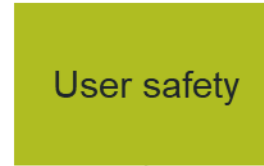
Available filters to filter sources by intervention type

Changes to … (the intervention function)
Type of intervention or change
System level
Costs
Time scale
Geographic scale
Mode
Context
Urbanicity and multi-modal maturity
Observed changes
Intervention outcomes

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CETI filters – source details & quality

Hierarchy level

Hierarchy structure

Level 3: Functions
(changes to)

User safety

Level 4:
Intervention types
(with qualitative
summaries)

Low-speed
zones

Available filters to filter sources by type

Citation details
Type of source
Type of data
SMS rating
Type of assessment

Level 5: Sources

XYZ et al

ABC et al

JKL et al

MOP et al

DEF et al

RTS et al

Standards & harmonising

Harmonising - *making inferences across diverse sources*

Filters-based:

Standardising definitions across non-identical sources to create a cohesive database.

- Evidence standards

- metadata

Features, functions, qualities

Harmonising Evidence Heuristic

CETI filters – source details & quality

Phase 1: Realist review questions (content extracted from the CETI)

What inferences can I confidently take from these sources about my problem?

| AA intervention did BB... | in given context CC... | which led to changes DD... | that produced outcome EE |

Phase 2: Sense-making questions (experience, complementary information, judgement)

| What other information is useful? | How plausible is it? | How confident can I be? |

Phase 3: Expert judgement and conclusion

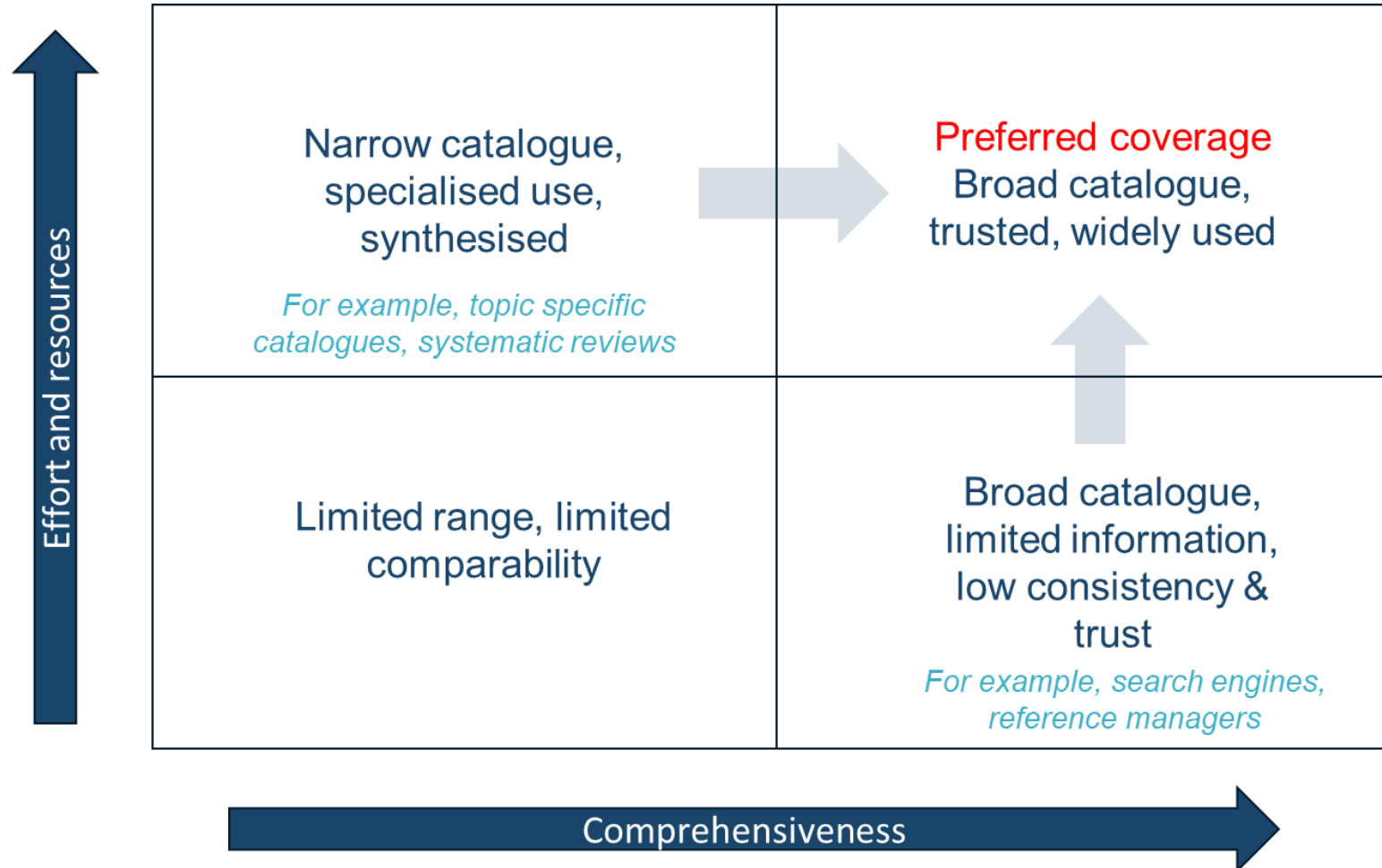I have more/less confidence that AA intervention will achieve EE outcome in my context

Making it happen

Practicalities

Extraction method	Data field example	Effort and expertise required
Copy and paste	Title Authors	Low
Find	Location Costs Included	
Interpret	Geographical Scale Assessment Type	Medium
Assess	SMS Transport Outcomes	
Judgement	Relevance to NZ settlement tiers	High

Practicalities

The slide shows a 2x2 matrix with axes "Effort and resources" (vertical) and "Comprehensiveness" (horizontal).

Top-left quadrant:
Narrow catalogue, specialised use, synthesised

For example, topic specific catalogues, systematic reviews

Top-right quadrant:
Preferred coverage
Broad catalogue, trusted, widely used

Bottom-left quadrant:
Limited range, limited comparability

Bottom-right quadrant:
Broad catalogue, limited information, low consistency & trust

For example, search engines, reference managers

Recommendations

Get to a useful size quickly

Target the most relevant content and coverage

Quality of information creates confidence

Optimise existing knowledge sources

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Thank you