



**Pedestrian and Bicycle
Information Center**

**Global Benchmarking Webinar Series:
Improving Pedestrian Safety on Urban Arterials (Part 1)**

Introduction and Overview of Study Findings

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Housekeeping

- ⇒ **Submit your questions**
- ⇒ **Webinar archive: www.pedbikeinfo.org/webinars**
- ⇒ **Certificates and professional development hours**
- ⇒ **Follow-up email later today**
- ⇒ **Review previous episodes and sign up for upcoming sessions**

Improving Pedestrian Safety on Urban Arterials: Learning from Australasia

U.S. DOT Federal Highway Administration
Office of International Programs
September 2023



Source: USDOT/Getty



Study Team Overview



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in coordination with:



Available Reports



FHWA Office of International Programs



Global Benchmarking Program:

Reducing Pedestrian Fatalities and Injuries on Urban Signalized Arterials



U.S. Department of Transportation

Federal Highway Administration

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FHWA-PL-22-020

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FINAL REPORT
June, 2023



U.S. Department of Transportation
Federal Highway Administration

FHWA Global Benchmarking Program
RPT No. FHWA-PL-23-006

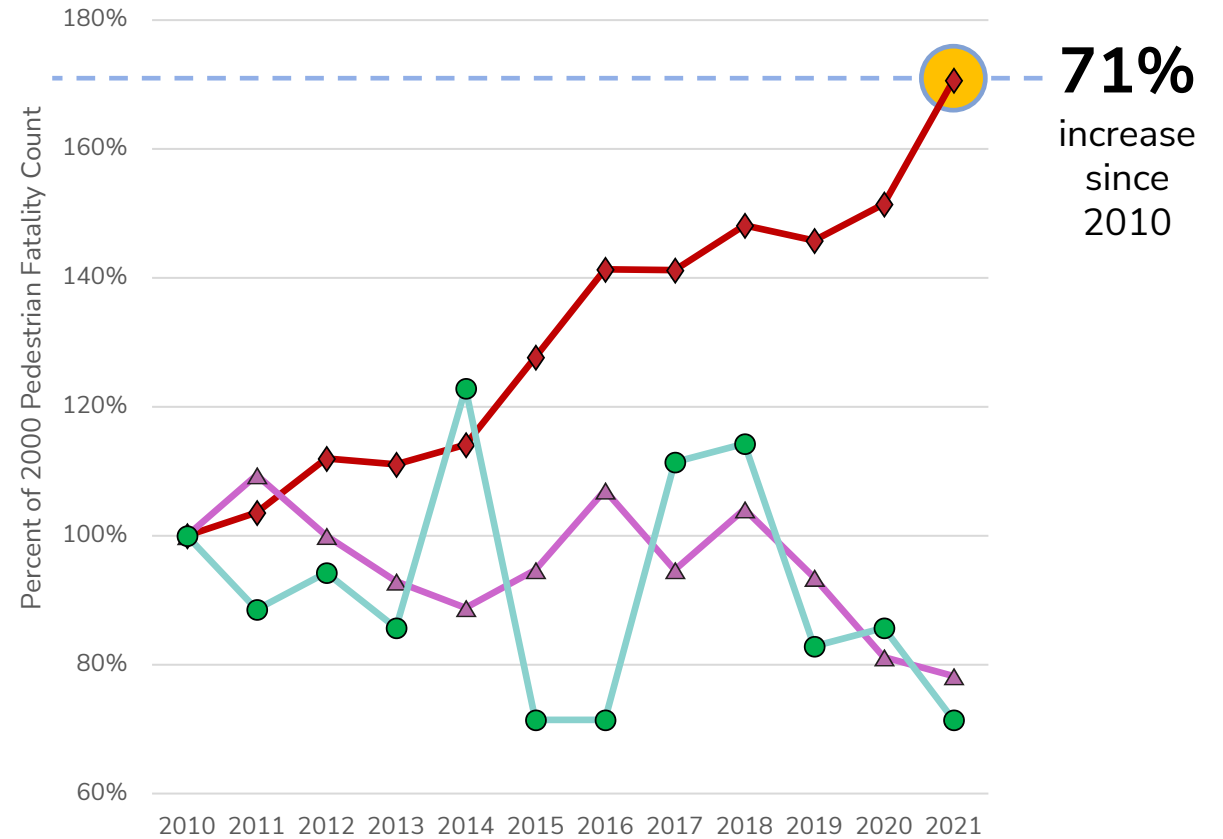
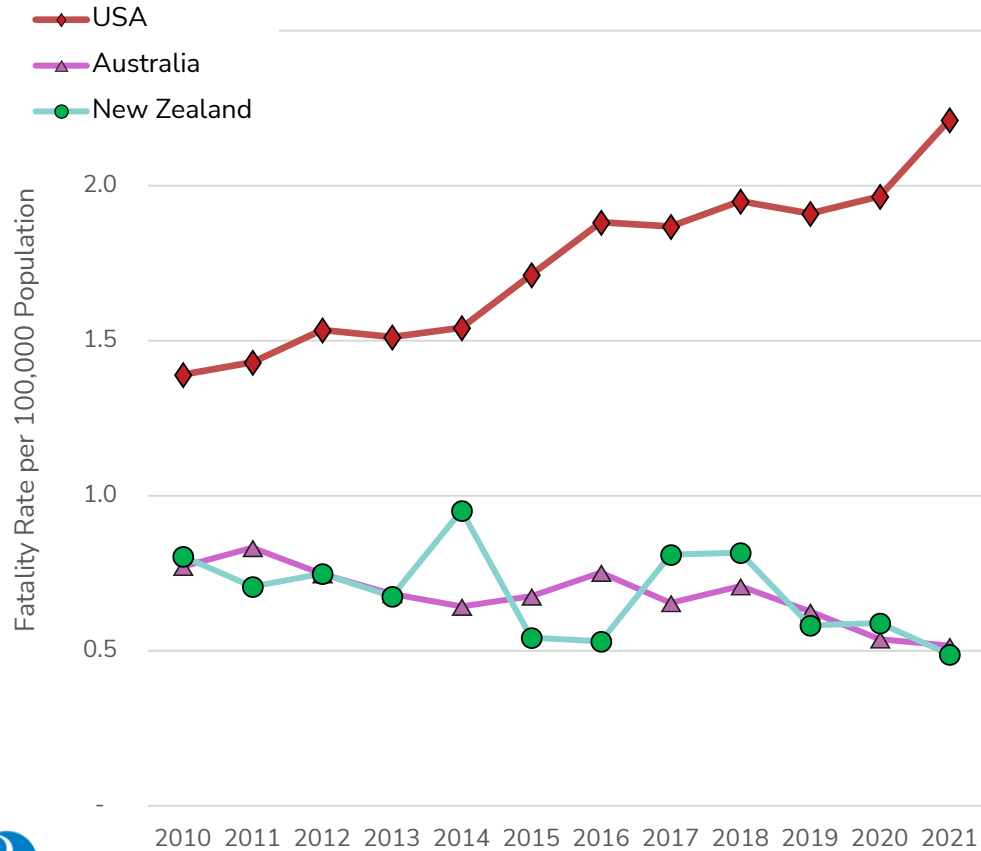


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https://international.fhwa.dot.gov/programs/mrp/improving_pedestrian_safety.cfm

Pedestrian Fatality Trends 2010 – 2021



U.S. Domestic Context



52%

of all fatal crashes

60%

of fatal pedestrian crashes

occurred on

**principal & minor
arterials**

in 2021



Source: Volpe Center



U.S. Department of Transportation

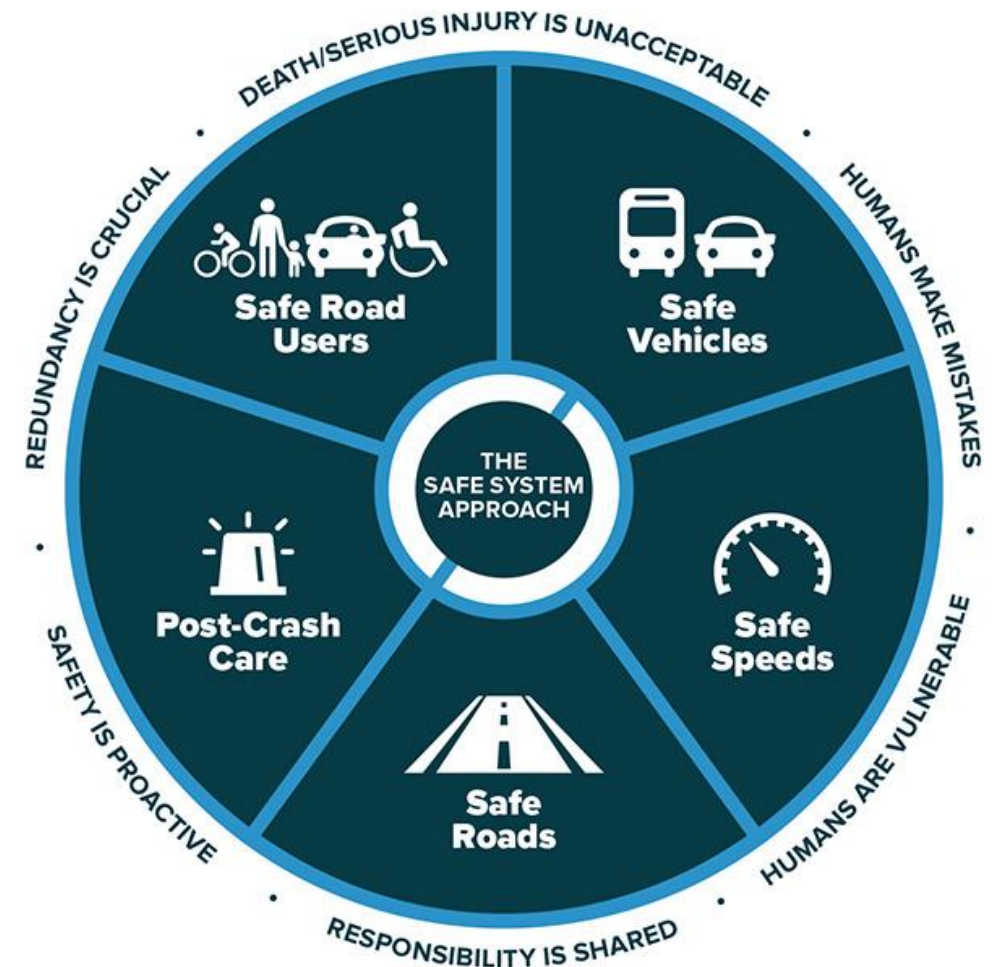
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The WHAT: Core Factors to Improve Safety



- **Reduce vehicle speed to mitigate kinetic energy**
using geometric design and operational strategies, including emerging technologies like camera enforcement
- **Separate vulnerable road users from motorized vehicles in time and space**
when vehicle speeds exceed survivable levels
- **Design roads and streets to suit their desired context**
considering future land use, as well as economic, climate, public health, and equity goals



Source: FHWA.



The HOW: Policy, Planning, and Design



Takeaway #1 – Policy & Law:

Pedestrian Safety is Foundational for Wellbeing and Livability

- Pedestrian movement is the foundation of transportation – it is the most elemental form of access to opportunity.
- Transportation systems that prioritize pedestrians are shaped by policies and laws that put human wellbeing at the center of policy goals.
- Policies that focus on the safe, efficient, and sustainable *movement of people and goods*, rather than the *movement of vehicles*, can more objectively balance multimodal access and mobility to achieve the best societal outcomes.



The HOW: Policy, Planning, and Design



Takeaway #2 – Planning & Process:

Movement and Place are an Interconnected System

- Addressing safety, equity, climate, and economic challenges requires communities to understand the role that land use – *place* – plays in contextualizing the priorities for transportation – *movement*.
- *The Movement and Place Planning Framework* can help break the cycle of self-reinforcing auto-oriented land use and transportation projects.





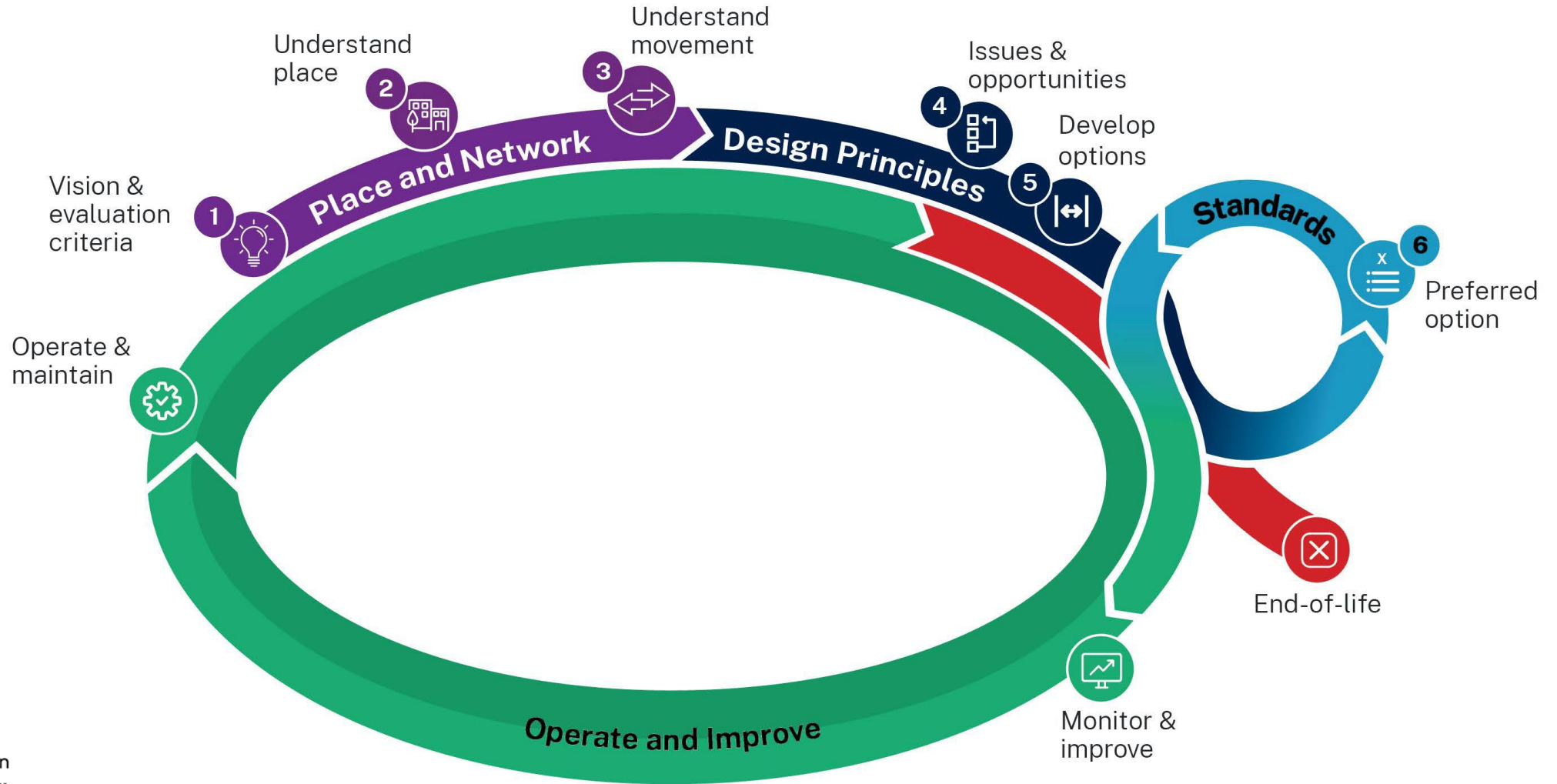
Takeaway #3 – Design & Implementation:

Safety Challenges Benefit from Proactive and Interdisciplinary Solutions

- Communities cannot effectively address discrete transportation issues – safety, equity, public health, congestion, freight – in isolation.
- Sustainable solutions to these issues require analytical tools and multidisciplinary practitioners who can work outside of their silos to analyze the tradeoffs between different modal emphases through a rational, systemic approach.



Linking Policy – Planning – Design



Insights for the U.S. Transportation Lifecycle



Policy

What outcomes do we want to achieve?

Planning

How should our system grow and change?

Programming

What changes should we make to the overall network?

Design & Engineering

What changes should we make to individual segments?

Operations & Evaluation

How are we performing compared to our goals?

Safe System Principles

Eliminate fatal and serious crashes for all road users

Work collaboratively with stakeholders to build a shared vision and coordinated action

Use proactive tools to identify and mitigate latent risks in the system

Keep impact energy on the human body at tolerable levels

Develop holistic performance measures and supportive data and analysis tools

Barriers to Safe System Adoption

Competing policy interests and/or weak safety goals

Silo'ed planning processes
Lack of public engagement
Outdated/poor forecasting models

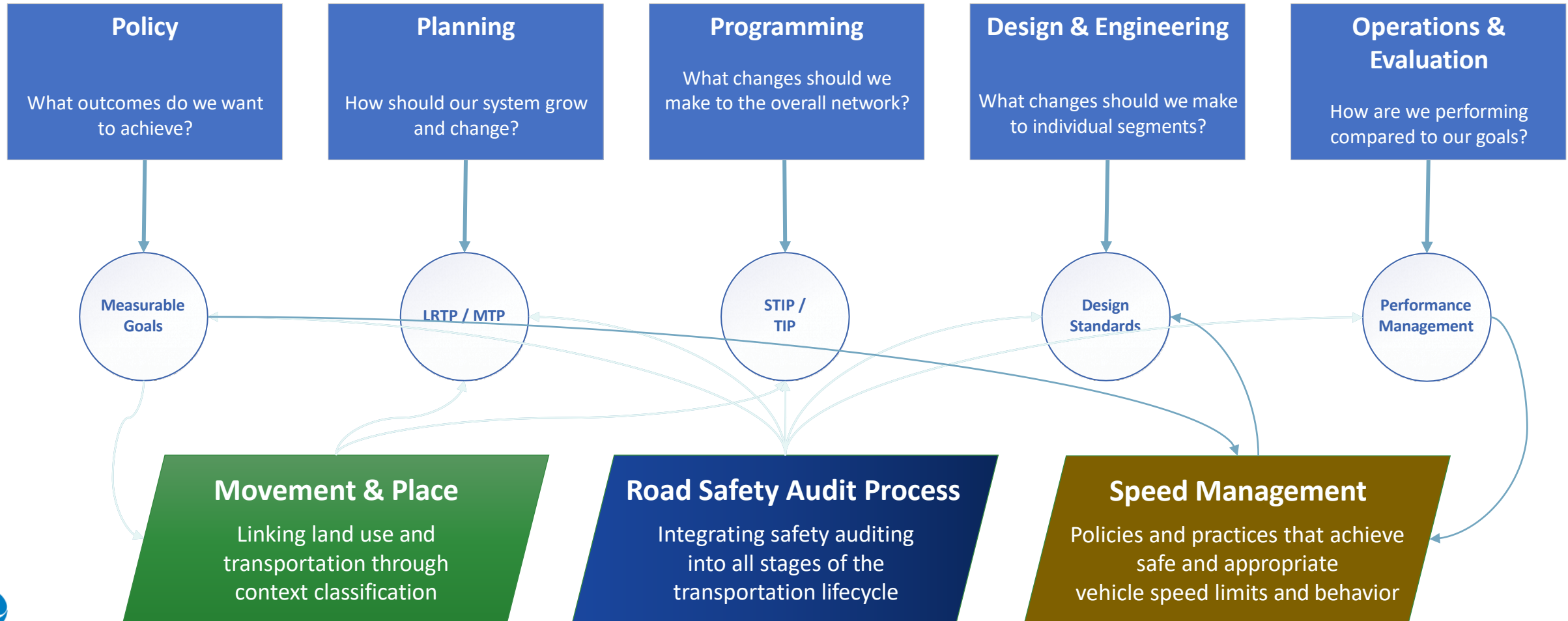
Misalignment with policies
Inappropriate/outdated prioritization tools (e.g., hotspot focus)
Risk assessment too downstream

Outdated design standards
Design standards misaligned with agency policies/goals (e.g., do not prioritize safety)
Weak or missing policy supports
Lack of systematic safety checks

Weak or missing safety metrics
Focus on lagging indicators rather than leading indicators



Insights for the U.S. Transportation Lifecycle



Study Focus Areas

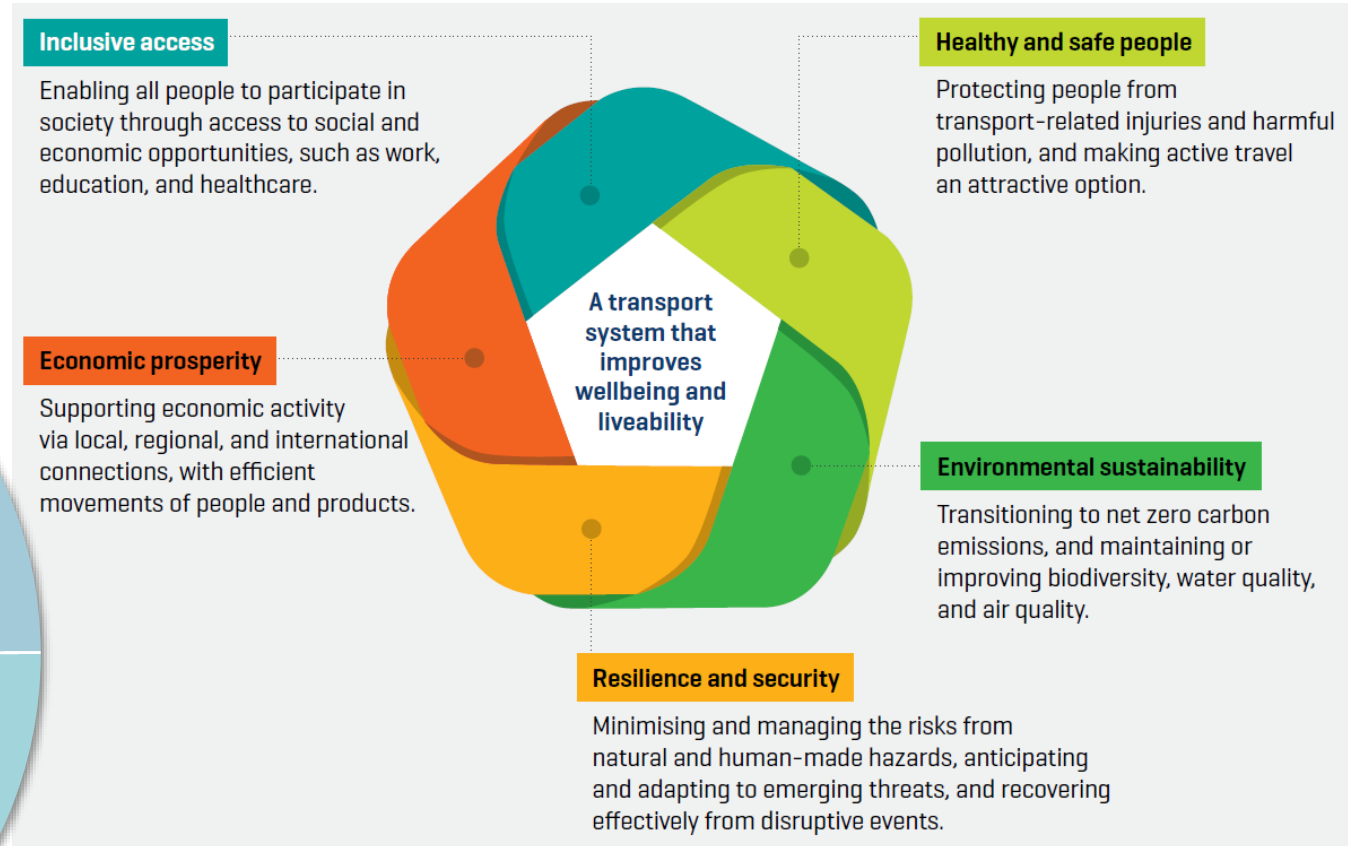


Policy: Take a Holistic Approach



“Road safety goes beyond our obligation to prevent deaths and injuries to improving lives and lifestyles too. It ensures everyone, even our most vulnerable road users, feels safe to use our transport network.”

- New Zealand Road Safety Strategy 2020 – 2030



Policy: Link Policy to Performance



Strategic Priority	Transport Outcome(s)					Proposed Indicator(s)
	Healthy and safe people	Inclusive access	Economic prosperity	Resilience and security	Environmental sustainability	
Strategic priority 1: Developing a transport system where no-one is killed or seriously injured	✓	✓	✓	✓		1. Deaths and serious injuries on the road and rail corridor 2. Hospitalisations from road crashes 3. Pedestrian and cyclist injuries
						4. Deaths and serious injuries where alcohol, drugs, speed, fatigue or distraction was a contributing factor
						5. % of state highway and local road networks modified to align with a safe and appropriate speed
						6. % of road network covered by automated safety cameras
						7. % of urban network with speed limit of 40 km/h or below

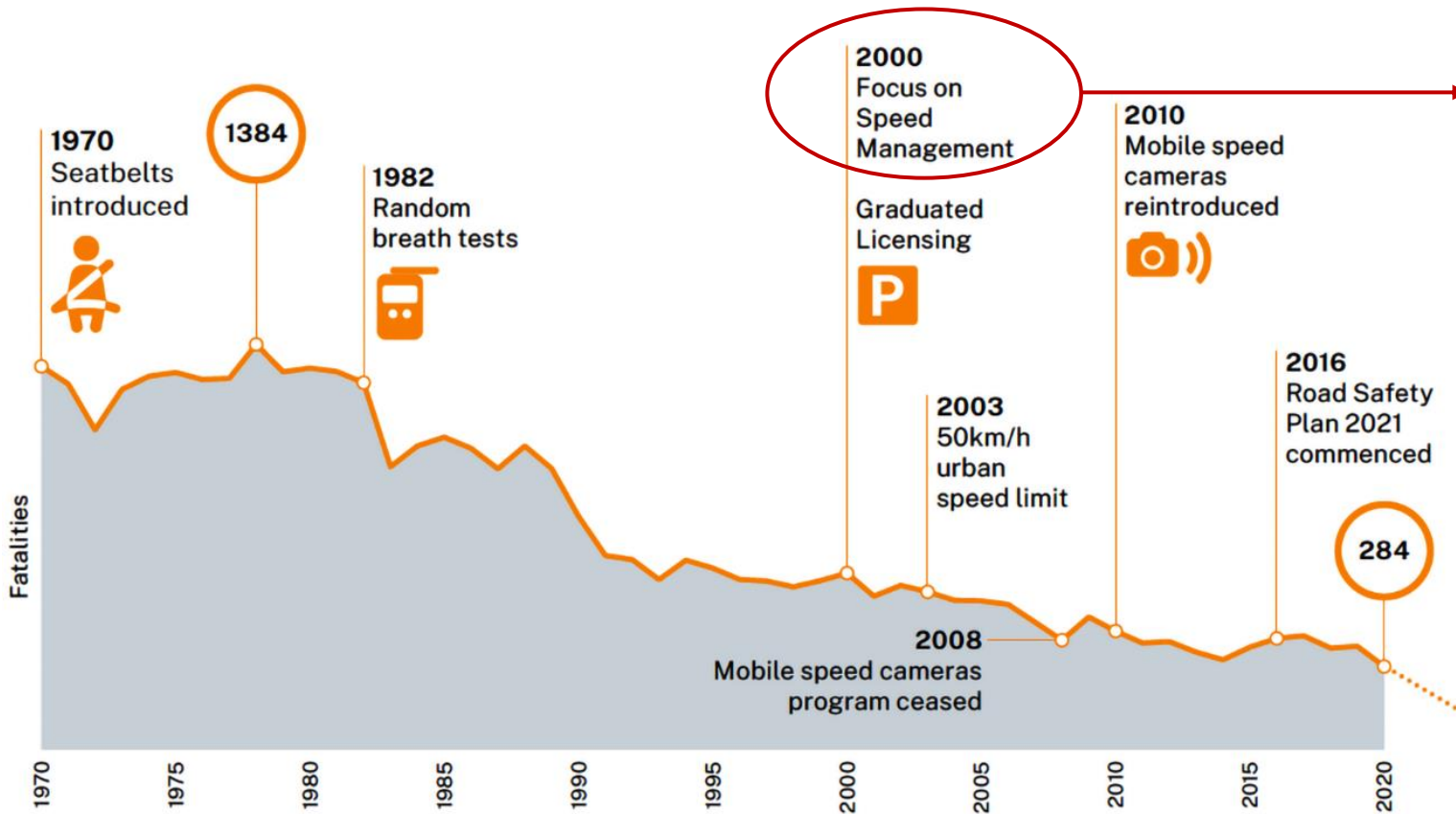
Strategic priority 2: Providing people with better travel options to access places for earning, learning, and participating in society	✓	✓	✓	✓	✓	10. Access to jobs 11. Access to essential services (i.e. shopping, education and health facilities) 12. % of population with access to frequent public transport services 13. Mode share for people (i.e. % of travel by mode)
						14. Number of passenger boardings using urban public transport services (by region)
						15. SuperGold boardings
						16. Use of specialised services
						17. Network kilometres of walking and cycling facilities delivered
						18. Cycling count in urban areas

Strategic Priority	Transport Outcome(s)					Proposed Indicator(s)
	Healthy and safe people	Inclusive access	Economic prosperity	Resilience and security	Environmental sustainability	
Strategic priority 3: Improving freight connections to support economic development	✓		✓	✓	✓	19. Predictability of travel times on priority routes¹ 20. Mode share for domestic freight (i.e. % of freight moved by road, rail, and coastal shipping) 21. Availability of state highway network 22. Number of affected travel hours that priority routes are unavailable 23. % of priority routes that have viable alternative routes 24. Kilometres of road and rail infrastructure susceptible to coastal inundation with sea level rise 25. Maintenance cost per lane kilometre delivered for: (i) state highway, (ii) local roads
						26. Tonnes of greenhouse gases emitted per year from land transport
						27. Tonnes of harmful emissions per year from land transport
						28. Number of people exposed to elevated concentrations of land transport-related air pollution
						29. Number of people exposed to elevated levels of land transport noise
						30. Vehicle kilometres travelled
						31. Distance per capita travelled in single occupancy vehicles

Strategic priority 4:
 Transforming to a low carbon transport system that supports emissions reductions aligned with national commitments, while improving safety and inclusive access



Policy: Measure Actions by their Results



Speed Management – NSW key performance indicators:

- Share of urban roads with safe speed limits of 40 km/h (25 mph) or less
- Share of at-grade urban intersections designed at no more than 50 km/h (31 mph)
- Share of vehicles compliant with 40 to 60 km/h speed limit on urban roads (25 to 37 mph)

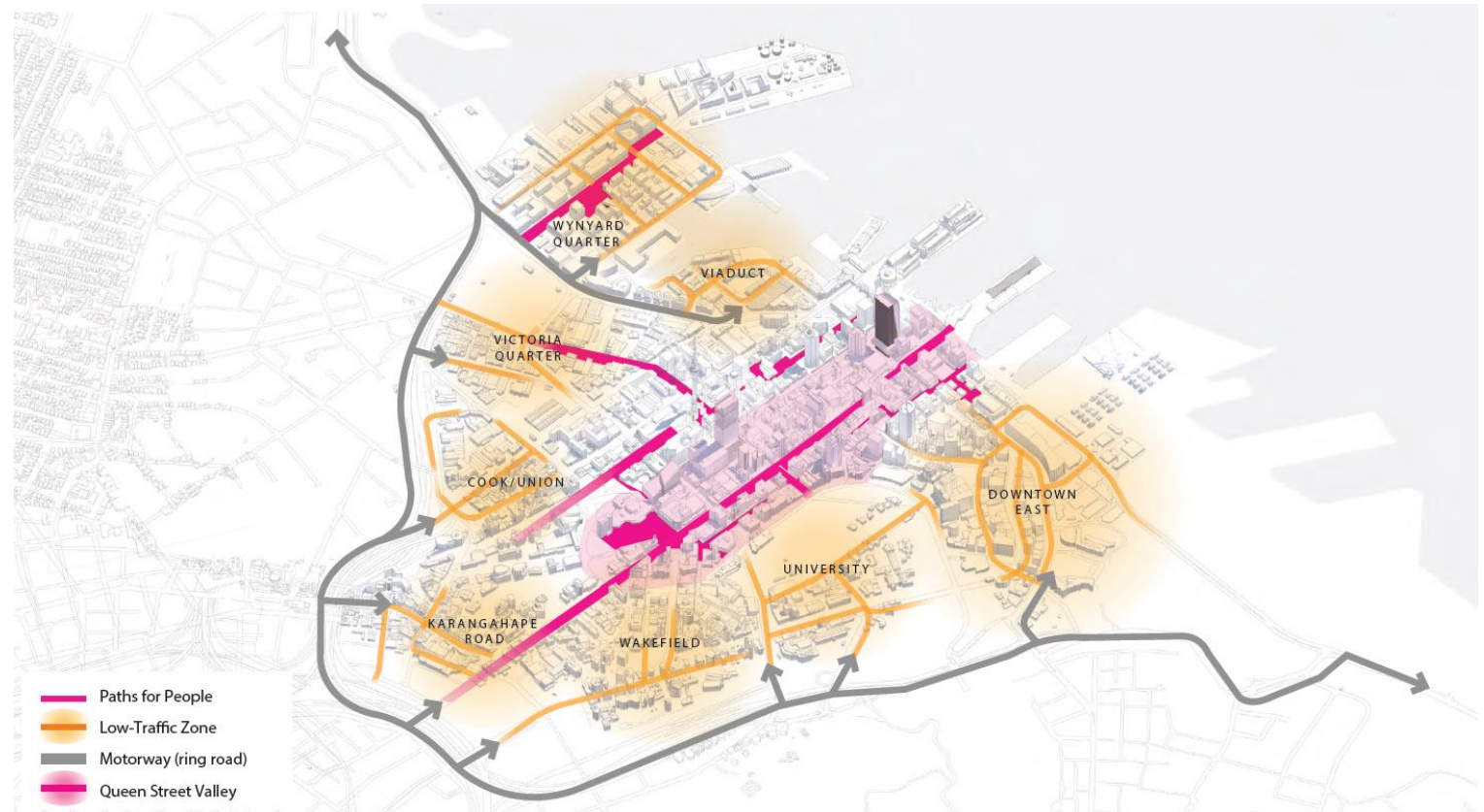


Policy: Coordinate Priorities for Urban Areas



A4E coordinated campaign:

- Limit motorized through-traffic
- Prioritize access to city center destinations
- Improve access for service, freight, and delivery
- Favor public transport, walking and cycling
- Create new places for people



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Source: City of Auckland Access for Everyone (A4E)

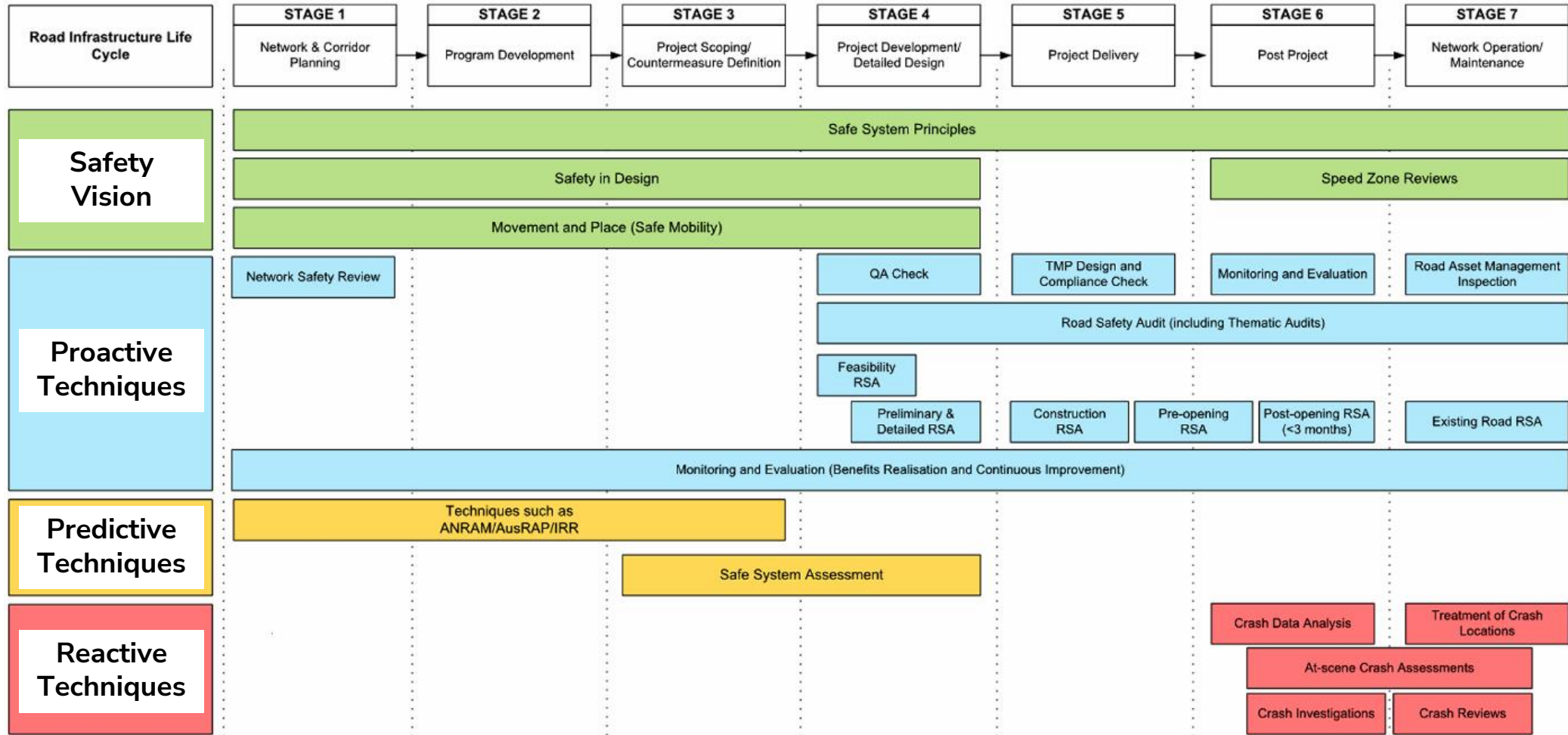
Policy: Bake in Safety through Road Safety Audits



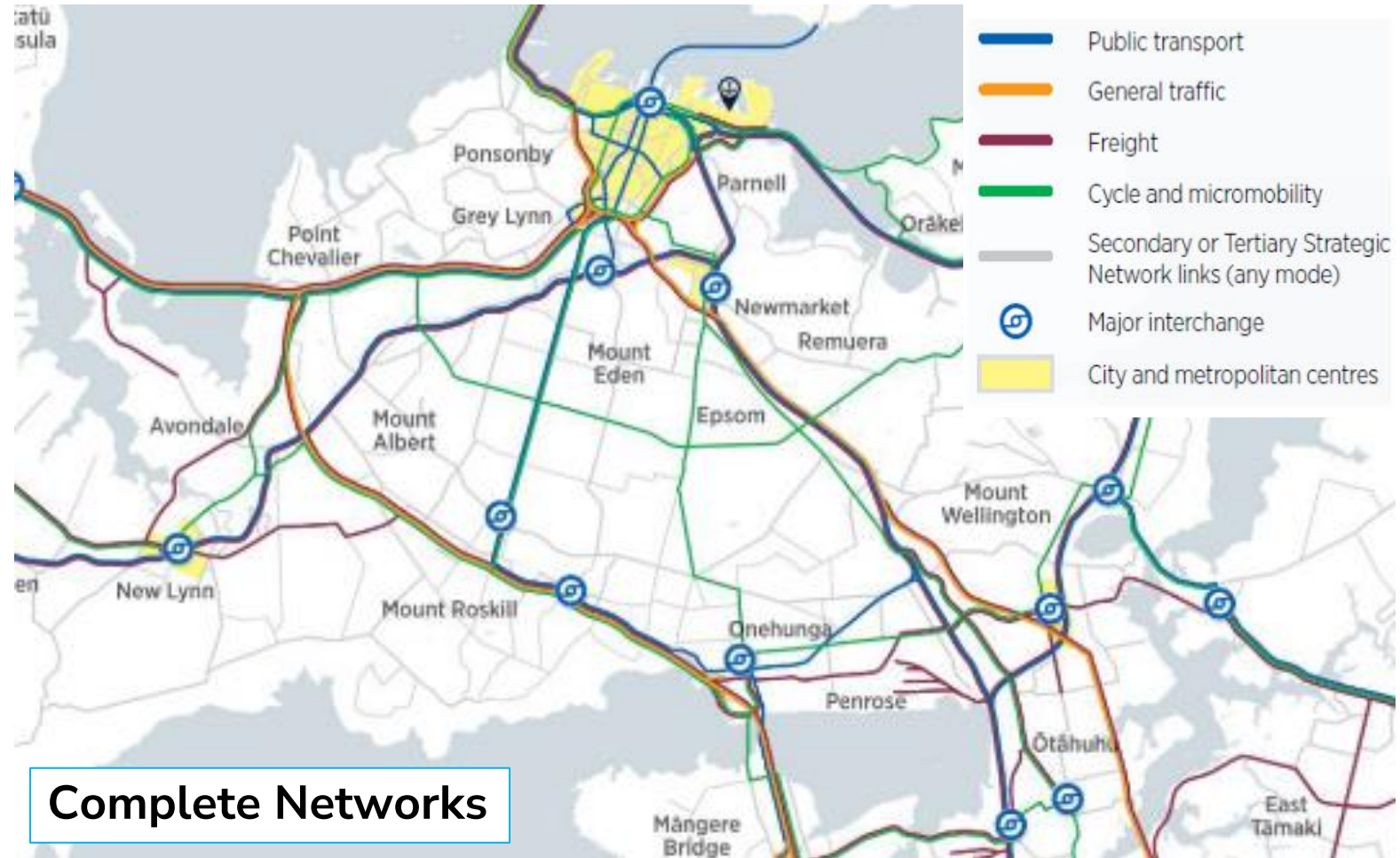
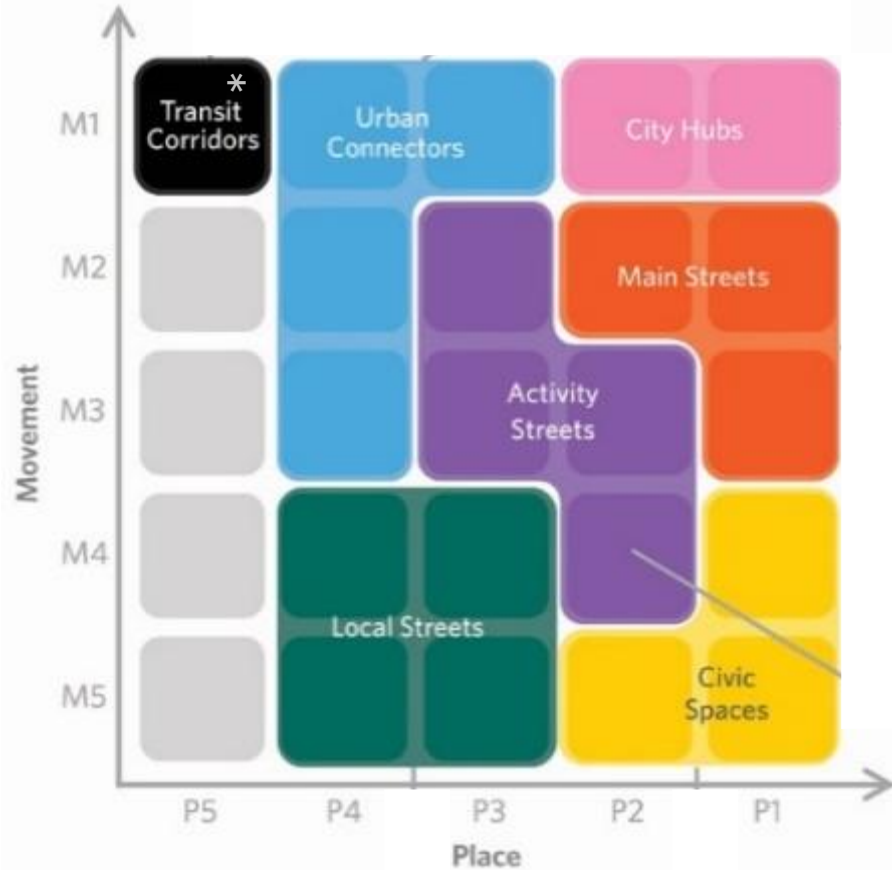
Systemic Approach

Span all stages of the project lifecycle:

1. Network / corridor-scale planning
2. Programming
3. Scoping / developing countermeasures
4. Project development / detailed design
5. Project delivery
6. Post project
7. Network operation / maintenance



Planning: Movement and Place Frameworks

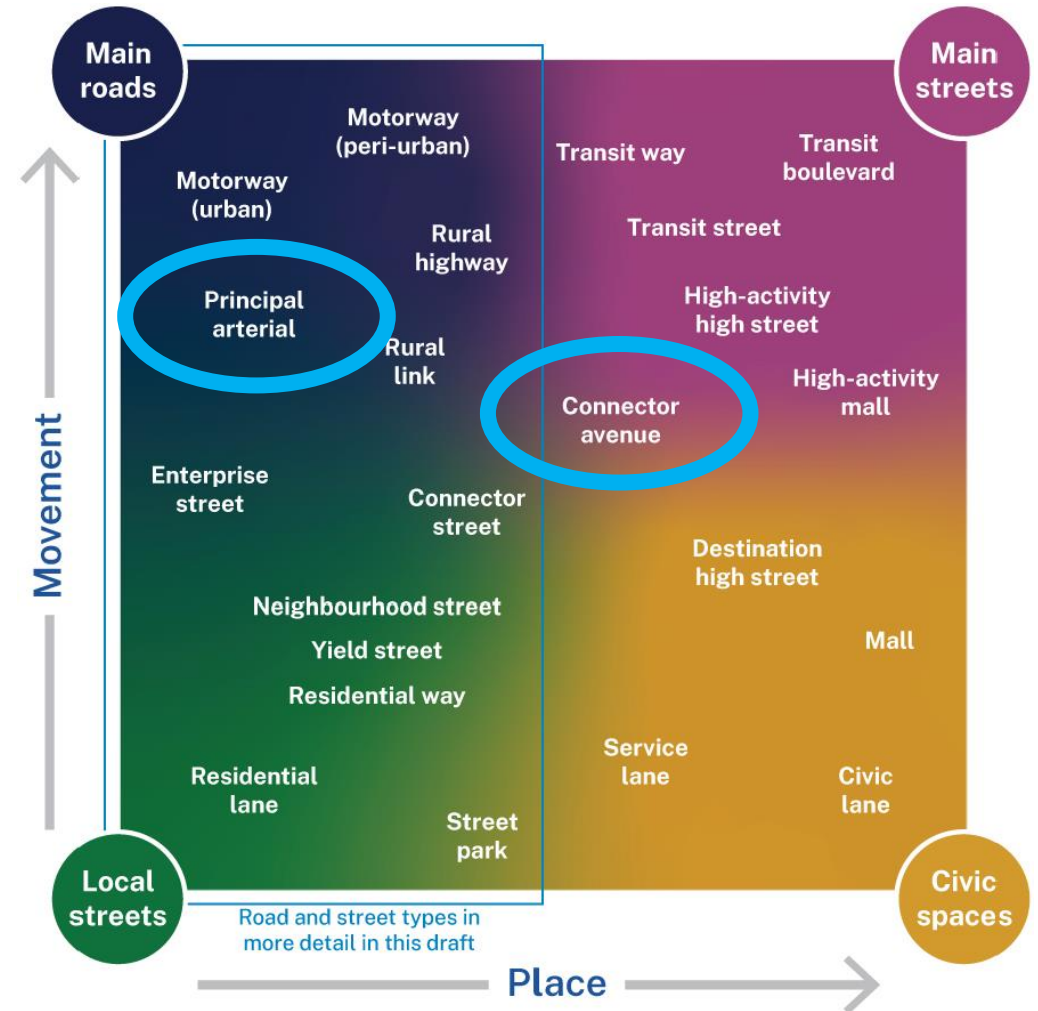
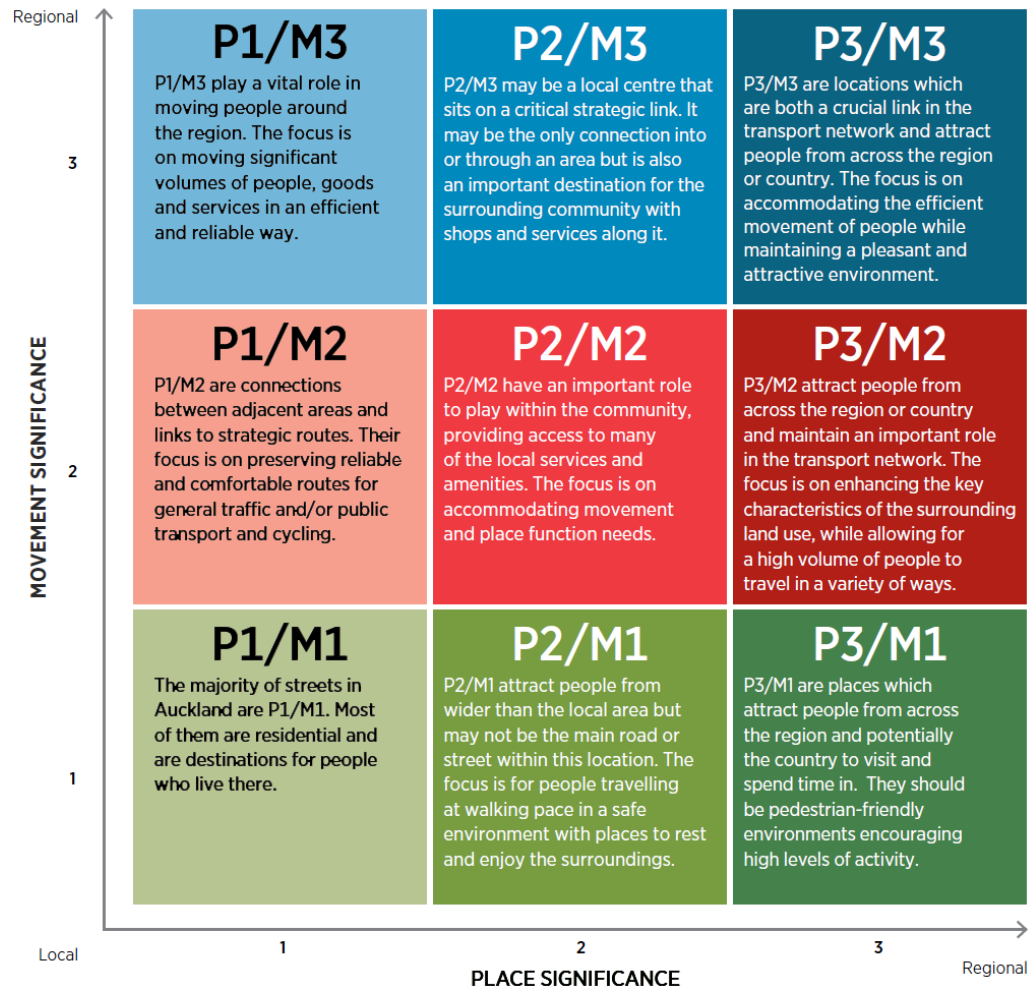


* Note, the name “transit corridors” should not be confused with the United States’ use of the term “transit,” which references public transit service and transit vehicles like buses and trains.

Source: Waka Kotahi NZTA; Auckland Transport



Planning: Customizing the Framework for Context



Design: Retrofitting a “Connector Avenue”



Design: Retrofitting a “Connector Avenue”



Design: Retrofitting a “Connector Avenue”



Design: Retrofitting a “Principal Arterial Road”



Design: Retrofitting a “Principal Arterial Road”



Design: Retrofitting a “Principal Arterial Road”



Design: Speed Limits / Camera Enforcement



Design: Modal Separation / Camera Enforcement



Design: Modal Separation / Urban Experience



Design: Modal Separation / Speed Management



Design: Modal Separation / Vertical Deflection



Design: Modal Separation / Vertical Deflection



Design: Vertical Deflection / Speed Management



Implementation Goal Areas & Upcoming Webinars



- **Goal 1: Opportunities to integrate Movement & Place**
 - Context Classification @ State/Metro Planning (LRTP/MTP)
 - AASHTO Green Book 8
 - FHWA Resources
- **Goal 2: Opportunities to integrate RSA “transportation lifecycle process”**
 - State/Metro: Planning and Programming / Design and Engineering / Construction and Operation
- **Goal 3: Opportunities to integrate Speed Management**
 - FHWA / NCHRP Resources (USLIMITS 2, etc.)
 - Speed Limit Setting Guidance
 - Camera-based Enforcement

Movement & Place

Linking land use and transportation through context classification

Monday, October 2
2:30pm to 4:00pm ET

Road Safety Audit Process

Integrating safety auditing into all stages of the transportation lifecycle

Monday, October 23
2:30pm to 4:00pm ET

Speed Management

Policies and practices that achieve safe and appropriate vehicle speed limits and behavior

Tuesday, November 7
2:30pm to 4:00pm ET



U.S. DOT Funding Opportunities



FUNDING SAFETY FOR ALL.

FHWA encourages implementation of projects and programs that improve safety, equity, and accessibility for all road users. Take the first step toward exploring federal funding opportunities for your Complete Streets Network.

[Federal Transit Administration Grant Programs](#)

[National Highway Performance Program](#)

[Surface Transportation Block Grant Program](#)

[Bridge Replacement and Rehabilitation Program](#)

[Highway Safety Improvement Program](#)

[Congestion Mitigation and Air Quality Improvement Program](#)

[Bridge Investment Program](#)

[Transportation Alternatives](#)

[Carbon Reduction Program](#)

[Tribal Transportation Program](#)

[Metropolitan Planning Funds](#)

[PROTECT](#)

[Railway-Highway Crossing Program](#)

[Statewide Planning and Research](#)

[Recreational Trails Program](#)

[Bridge Formula Program](#)

[Railroad Rehabilitation & Improvement Financing](#)

[TIFIA Program](#)

[Federal Lands and Tribal Transportation Programs](#)

[Tribal Transportation Program Safety Fund](#)

[ATTAIN](#)

[RAISE Discretionary Grants](#)

[INFRA Grants](#)

[Safe Streets and Roads for All Grants](#)

[Transit Oriented Development](#)

[Reconnecting Communities Pilot Program](#)

[Areas of Persistent Poverty Program](#)

[National Scenic Byways Program](#)

[Active Transportation Infrastructure Investment Program](#)



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<https://highways.dot.gov/complete-streets/make-complete-streets-default-approach>

Q&A

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Source: USDOT/Getty



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Discussion

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