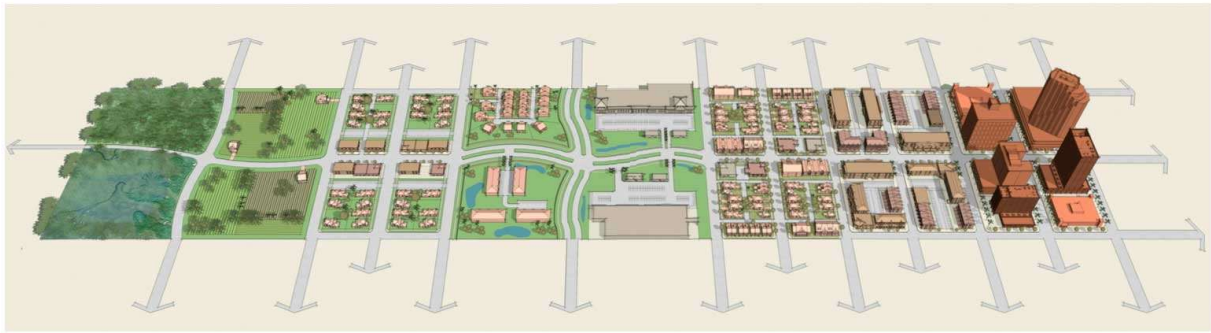
Beyond Functional Classification

A MOVEMENT *& PLACE* FRAMEWORK, WHERE DESIGNERS DON'T HAVE TO SAVE THE WORLD BY THEMSELVES.

ZAK HARTMAN, P.E. – MOA TRAFFIC SIGNALS MARCH 2026

Outline

- What types of roads are we building? What is our Goal?
- How does our use (reliance?) on functional classification meet that goal?
- What have other places done to better meet that goal?
  - US DOT Global Benchmarking Program
  - Movement Place Framework
- How this (might) tie into the DCM.



Source: FDOT Context Classification Guide

COMMUNITY BUILDING: THE CITY'S MISSION The mission of the Municipality of Anchorage is building and sustaining a community for current and future generations of Alaskans.

"Context Sensitive Solutions is a collaborative, interdisciplinary approach to project development, involving all stakeholders at the earliest phase, ***to ensure that transportation projects are in harmony with communities and preserve environmental, scenic, aesthetic, and historic resources while maintaining safety and mobility.*** *It involves taking into consideration the land use and environment adjacent to the roadway when planning and designing a project so as to make the improvement blend in with the surrounding community."*

CSS…

- Solves the right problem
- Conserves environmental and community resources
- Saves time (project delivery)
- Saves $$$ (project delivery)
- Builds support (public & regulators)
- Helps prioritizes scarce roadway funds
- Leads to better decisions
- Is the right thing to do: It serves the public interest, helps build communities, and leaves a better place behind.

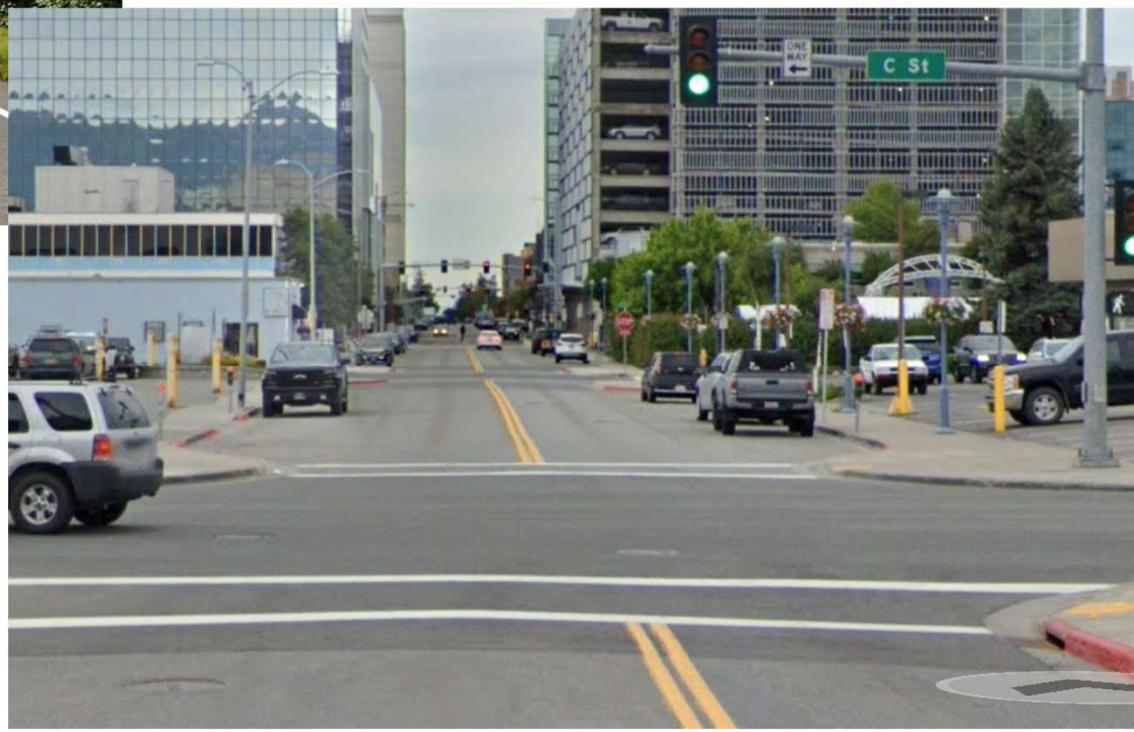
2008!

4th Ave, between A & C

Dowling, between Lake Otis & Elmore

Jodhpur Street, West Anchorage

7th Ave at C St



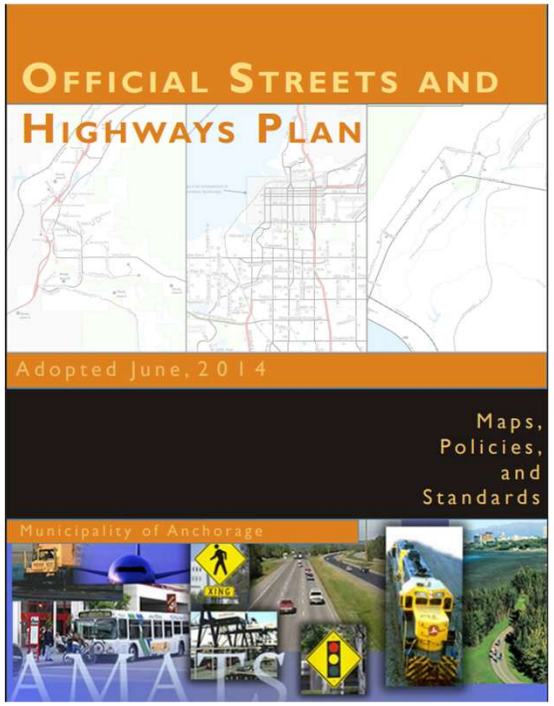
Lauden Cir, West Anchorage

Local Streets

The primary function of local streets is to provide access to abutting properties. Local streets also provide space for on-street parking and for utility placement.

F St, Downtown

What is Functional Class?



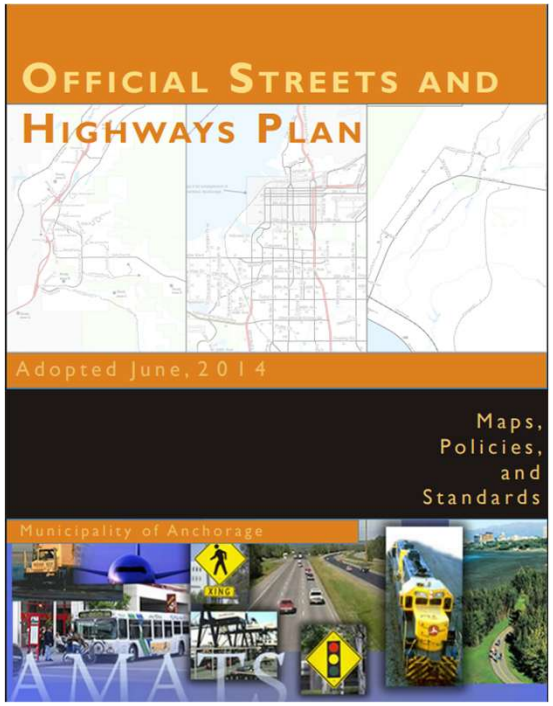
SECTION 6

STREET TYPOLOGY

OVERVIEW

Functional street classifications (described in Section 3) encompass both the character of services that the streets are intended to provide and certain design characteristics of those streets. The functional classifications in the Official Streets and Highways Plan identify the primary function and use of the roadway for vehicular travel. Traditionally, functional classifications form hierarchies of streets ranging from those that are primarily for travel mobility (highways and arterials) to those that are primarily for access to adjacent property (local streets).

What is Functional Class?



In the Anchorage Bowl, it has become clear since the adoption of the Anchorage 2020: Anchorage Bowl Comprehensive Plan in 2001 that the traditional functional classification system needs to be supplemented to induce a more balanced street function that emphasizes adjacent land uses and accommodates all users – pedestrians, bicyclists, transit users, and motorists. The Anchorage Bowl 2025 Long-Range Transportation Plan with 2027 Revisions first included a slate of street typologies in order to meet this need. The plan recognized and retained the existing functional classification system adopted by the MOA for freeways, expressways, arterials, collectors, and local streets but recommended augmenting the classifications with street typology designations to give more direction for the design of some streets.

Streets in the Chugiak-Eagle River community may also be given street typology designations. The street typology system might differ in the Chugiak-Eagle River area, based on the specific needs of that community, as identified in the Chugiak-Eagle River Comprehensive Plan.

Street typologies further refine street designs by relating them to the adjacent land uses and their functions for all users including pedestrians, bicyclists, and transit riders. Street design based solely on the traditional functional classification often under-represents other modes of travel. The design of a street, its intersections, sidewalks, and transit stops should reflect the adjacent land uses because the type and intensity of the adjacent land use directly influences the level of use by other modes.

The street typologies attempt to strike a balance among functional classification, adjacent land use, and the competing travel needs and uses. Each street typology prioritizes various design elements by looking at factors related to both the adjacent land uses and functional classification. Where sufficient public right-of-way exists, all design elements may be accommodated. Within constrained public right-of-way however, trade-offs between priority design elements are required to balance the needs of various travel modes. The specific design elements for a street will be chosen through the context-sensitive design process. In 2008, the Municipality adopted "A Strategy for Developing Context Sensitive Transportation Projects," which can be found at www.muni.org/Departments/works/traffic/pages/default/aspx. All street designs must emphasize safety for people both inside and outside of vehicles.

DCM and Context

TABLE 1-3 PRIMARY STREETS: MINOR ARTERIAL'S ROADWAY CHARACTERISTICS

Characteristics	CBD (Class IIA)[2] Figure 1-8	Urban (Class II) Figure 1-9	Rural (Class II) Figure 1-10
Lane Width	11'	11'	12'
Shoulders Width	N/A	N/A	6'
Median Width	11' (2-Way Left Turn Lane)	14' (2-Way Left Turn Lane)	14' (2-Way Left Turn Lane)
Design Speed	35 MPH	45 MPH	45 MPH
Posted Speed	30 MPH	35 MPH	40 MPH
Intersections	At-Grade	At-Grade	At-Grade
ADT[1]	10,000 – 20,000	10,000 – 20,000	10,000 – 20,000
No. of Lanes	2 – 4	2 – 4	2
Transit Stops	Permitted	Permitted	Permitted
Parking	May be allowed	Prohibited	Prohibited
Pedestrian Facilities	Back of Curb	Separated	Separated
Bicycle Facilities	Shared with traffic	Separated	Separated

[1] Average Daily Traffic

[2] This classification applicable only in area bounded by and including L Street, 3rd Avenue, Karluk Street, and 15th Avenue.

TABLE 1-8 SUMMARY ROAD GRADES: HILLSIDE VS. NON-HILLSIDE AREAS

[DCM Ref].\ADT	≥ 2000 trips/day	< 2000 trips/day
Maximum grades [1.9 D 2.b)]	s ≤ 6%	s ≤ 6%
Hillside areas [1.9 D 2.c)(1)&(2)]	s ≤ 8%	s ≤ 10%
Hillside w/variance [1.9 D 2.c)(3)]	n/a	s = 10 – 12% for ≤ 250'
Req'd Straight Section for variance approved grades [1.9 D 2.d)]	n/a	Straight ≥ 500' & s ≤ 10% for above & below 10-12% grades
Max slopes for Radii < Table 1-9 [1.9 D 2.e)(1)]	for R < 600', s ≤ 5%	for R<150', s ≤ 5%
Req'd uphill tangent & slope for Radii < Table 1-9 [1.9 D 2.e)(2)]	for R < 600', uphill tangent ≥ 250' & s ≤ 5%	R < 150', uphill tangent ≥ 250' & s ≤ 5%

DCM and Context

Exclusive right-turn lanes shall be constructed on all main street approaches at any signalized or unsignalized intersection constructed on a roadway classified as an arterial in the Municipality of Anchorage's Official Streets and Highways Plan (OS&HP).

Driveway entrances with a projected right-turn traffic volume of greater than 20 vph during the peak hours shall also provide for an exclusive right-turn lane on the arterial approach. Other driveway entrances along an arterial shall provide for efficient or tapered entrances so as to reduce friction to traffic traveling along the arterial. Excluding right-turn lanes at any intersection, including driveways, causes excessive friction and platoon dispersion along the arterial resulting in break downs in travel speed and signal coordination.

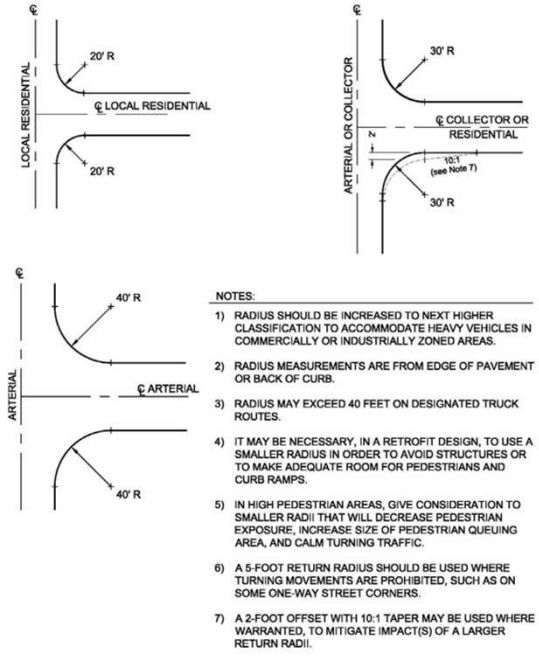
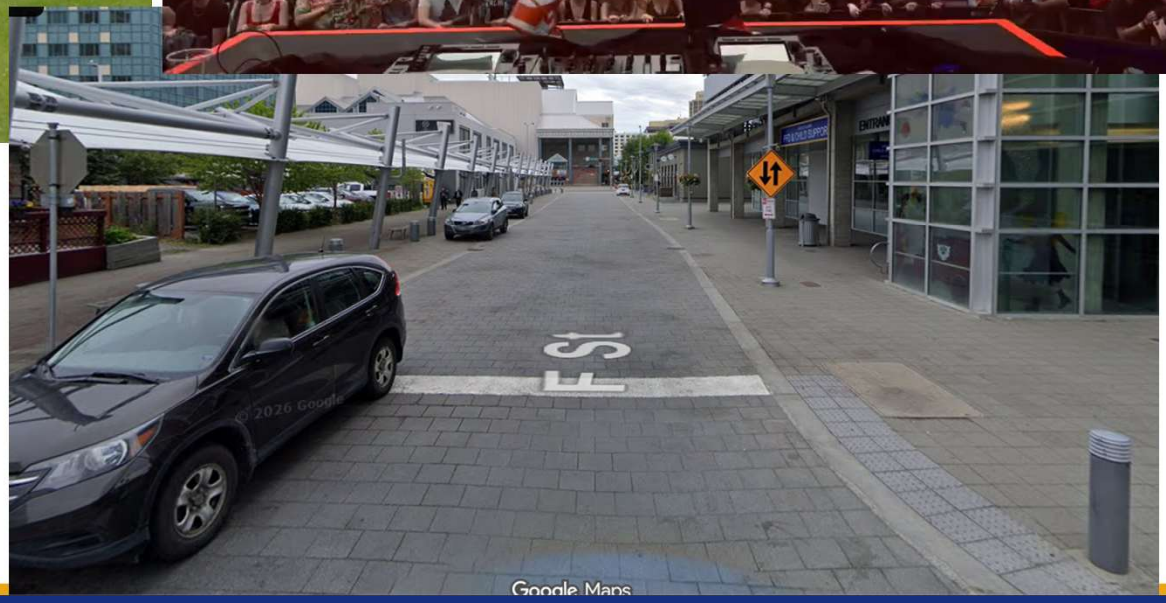


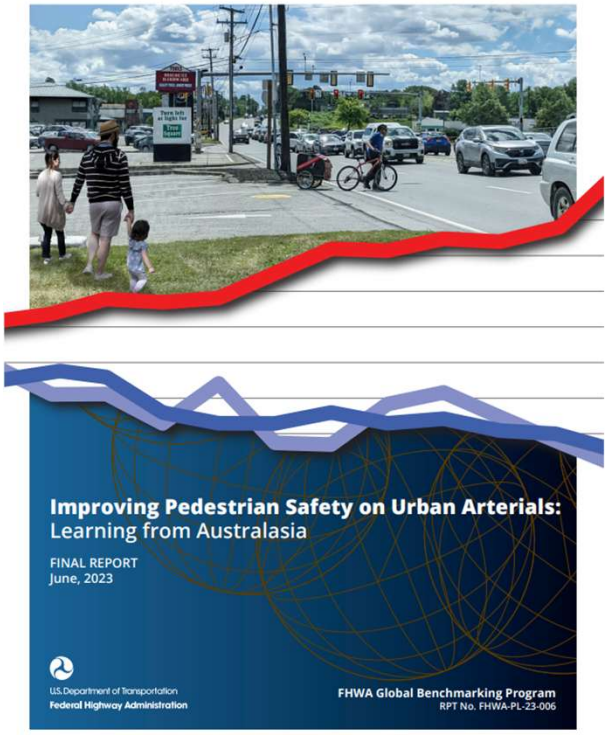
FIGURE 1-22 STANDARD CURB RETURN RADII



LOCAL STREETS

The primary function of local streets is to provide access to abutting properties. Local streets also provide space for on-street parking and for utility placement.

Enter: Movement & Place Framework.



Takeaway #1: Policy & Law – Pedestrian Safety is Foundational for Wellbeing and Livability

Takeaway #2: Planning & Process – Movement and Place are an Interconnected System

Takeaway #3: Design & Implementation – Pedestrian Safety Challenges Benefit from Proactive and Interdisciplinary Solutions

The Problem with Stroads

52%
of all fatal crashes

60%
of fatal pedestrian crashes

occurred on
principal & minor arterials
in 2021

U.S. Department of Transportation
Federal Highway Administration
Office of International Programs

How do we know where to build what?

Streets

Roads

U.S. Department of Transportation
Federal Highway Administration
Office of International Programs

Source: Transport for New South Wales

From the Report...

Movement and Place helps practitioners take an objective and proactive approach to the ongoing evolution of the transportation network.

Planning with the Movement and Place framework establishes a defensible logic for each project and project management team that subsequently sets out to transform the network, one segment or corridor at a time, as contributing to the implementation of a larger strategic plan at a network-scale.

Core Principles of Movement & Place

1. Establish a common basis for decision making
2. Consider the role and capabilities of different modes
3. Coordinate the transformation of land use and transportation

"The complex requirements of building a safe and connected multimodal network can only be met at the network scale, linking land use and transportation decision making to achieve broad equity, climate, public health, and economic opportunity goals."

— FHWA Global Benchmarking Report

U.S. Department of Transportation
Federal Highway Administration
Office of International Programs

Link & Place
A guide to street planning and design

This guide introduces a new paradigm for planning and designing urban streets, based on the dual principles of link and place street functions.

As a link, a street is designed for users to pass through it as quickly as possible... to minimize travel time.

As a place, the street is a destination... where people are encouraged to spend time.

The guide presents an integrated approach to street planning, creating a street plan that defines the intended role of each street with the characteristics of the whole street network, to guide the design of individual streets, in accordance with their role in the street plan.

The greatest design challenges lie on the traditional high streets, which combine a high link status with a high place status.

Source: Jones, P. et. al, 2007

U.S. Department of Transportation
Federal Highway Administration
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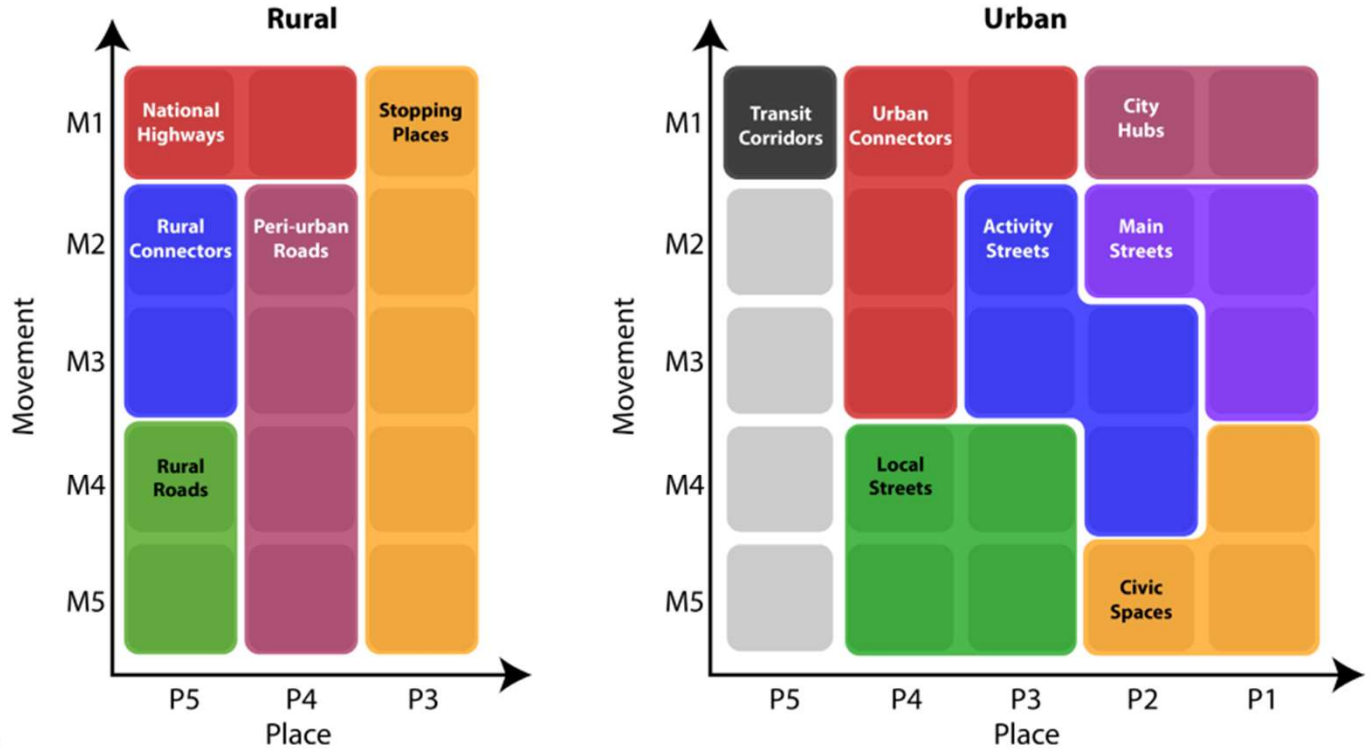
Movement & Place Framework



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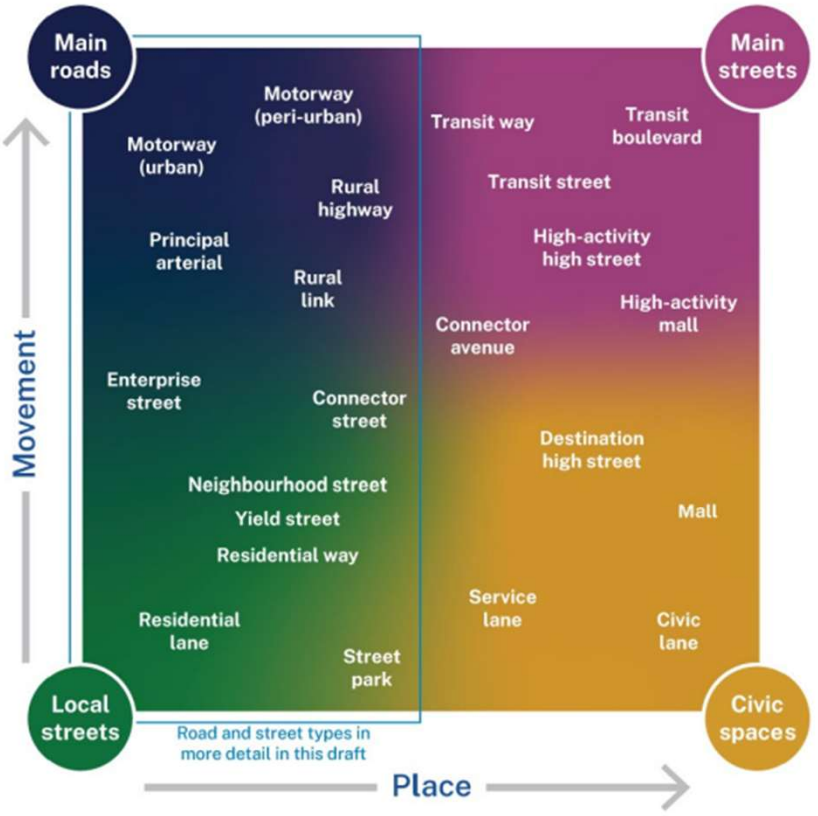
Source: Waka Kotahi NZTa

NSW Movement and Place Framework



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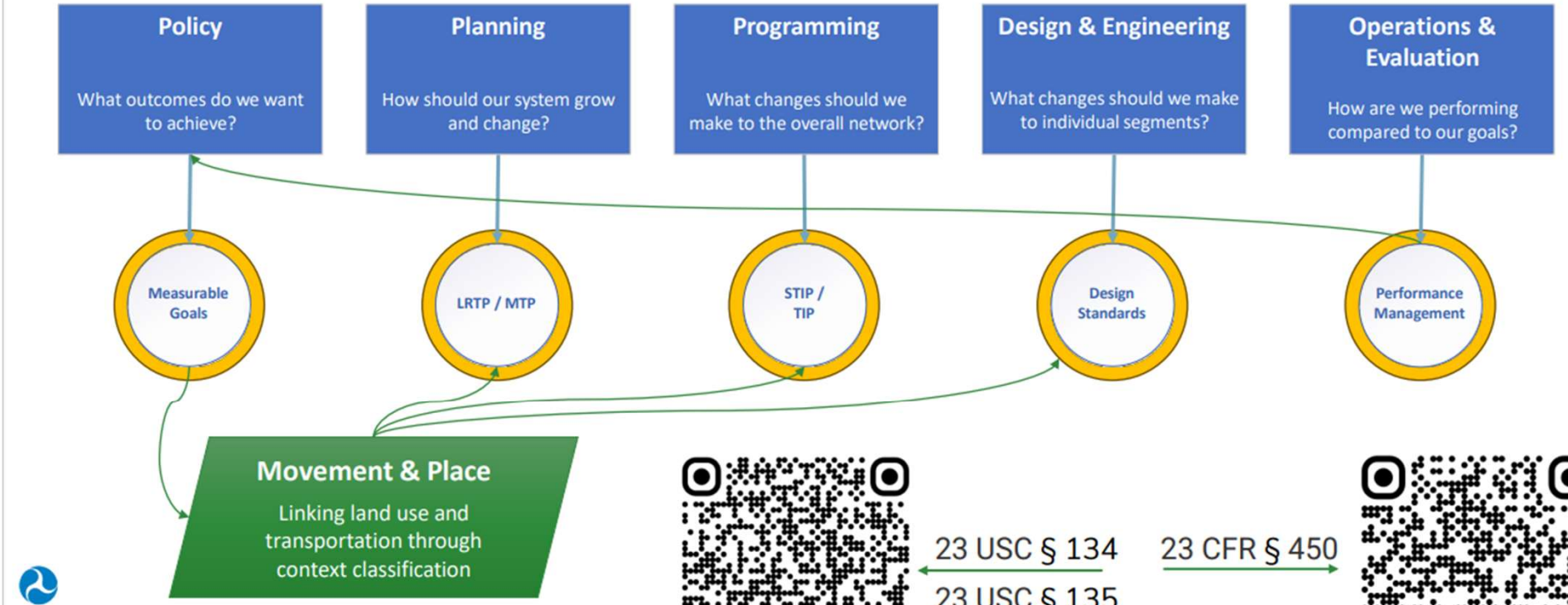
Source: Transport for New South Wales

How Movement & Place can work for U.S.



23 USC § 134
23 USC § 135

23 CFR § 450

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Federal Highway Administration
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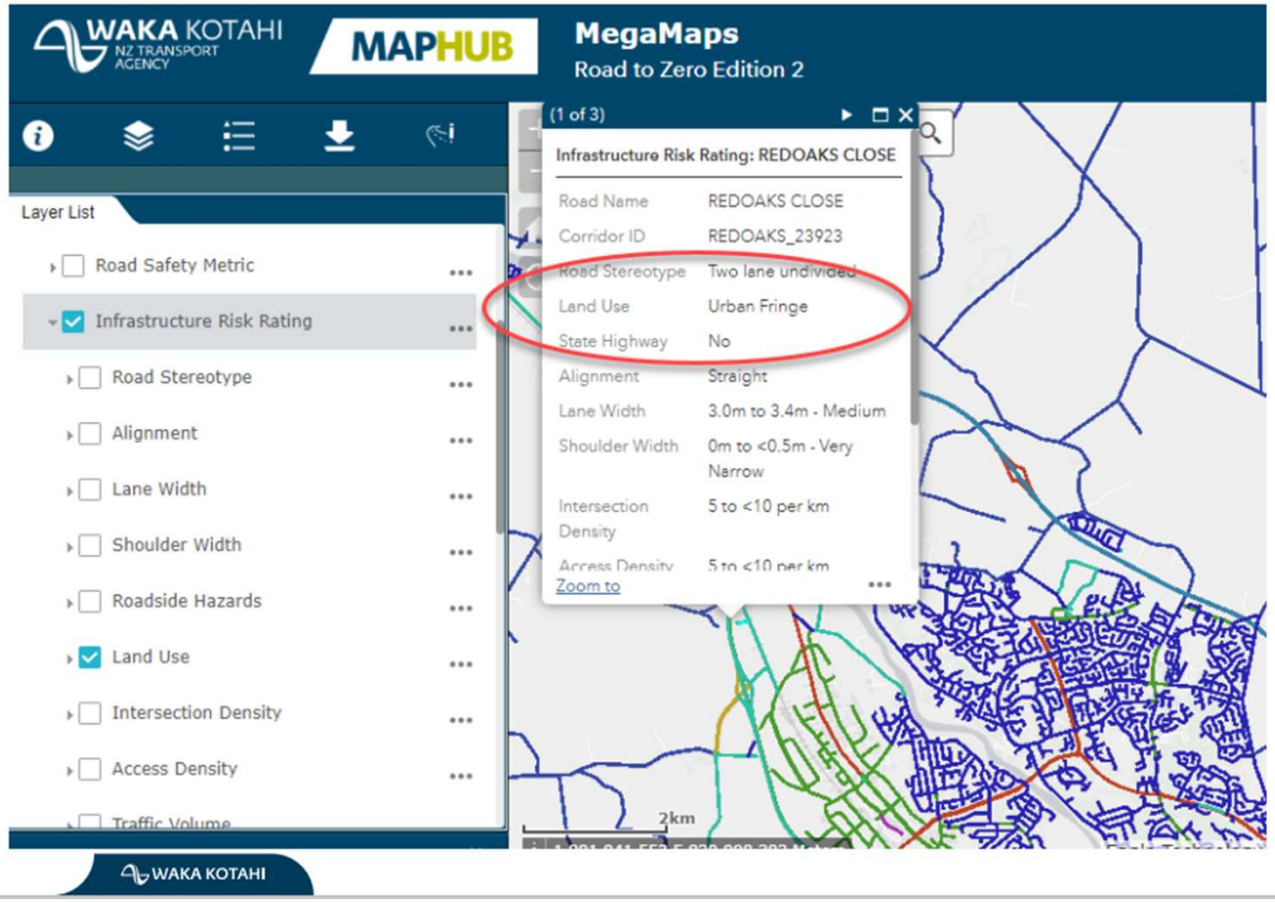
How we've been doing it

The One Network Road Classification (ONRC) was based on the volume of vehicles on the network

Megamaps



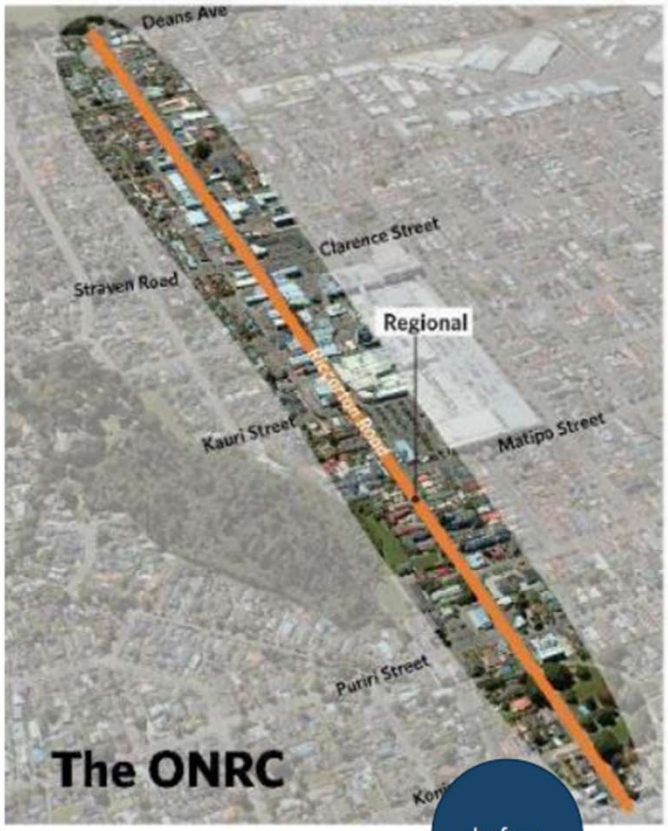
Urban

- Commercial Big Box/Industrial
- Commercial Strip Shopping
- Urban Residential
- Controlled Access
- Rural Town

Rural

- No Access
- Rural Residential
- Remote Rural
- Urban Fringe

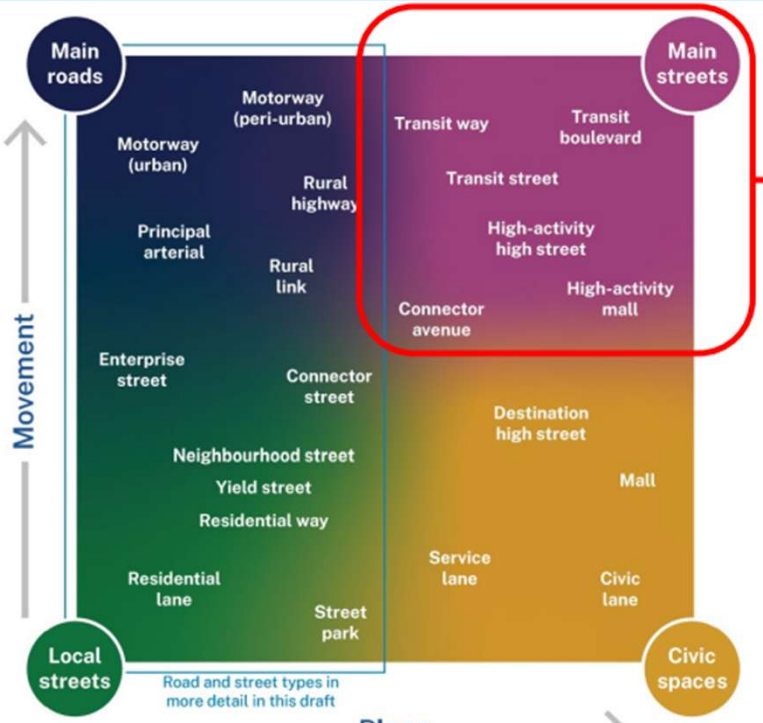
Functions change along a corridor



before

after

Linking Classification to Design Standards



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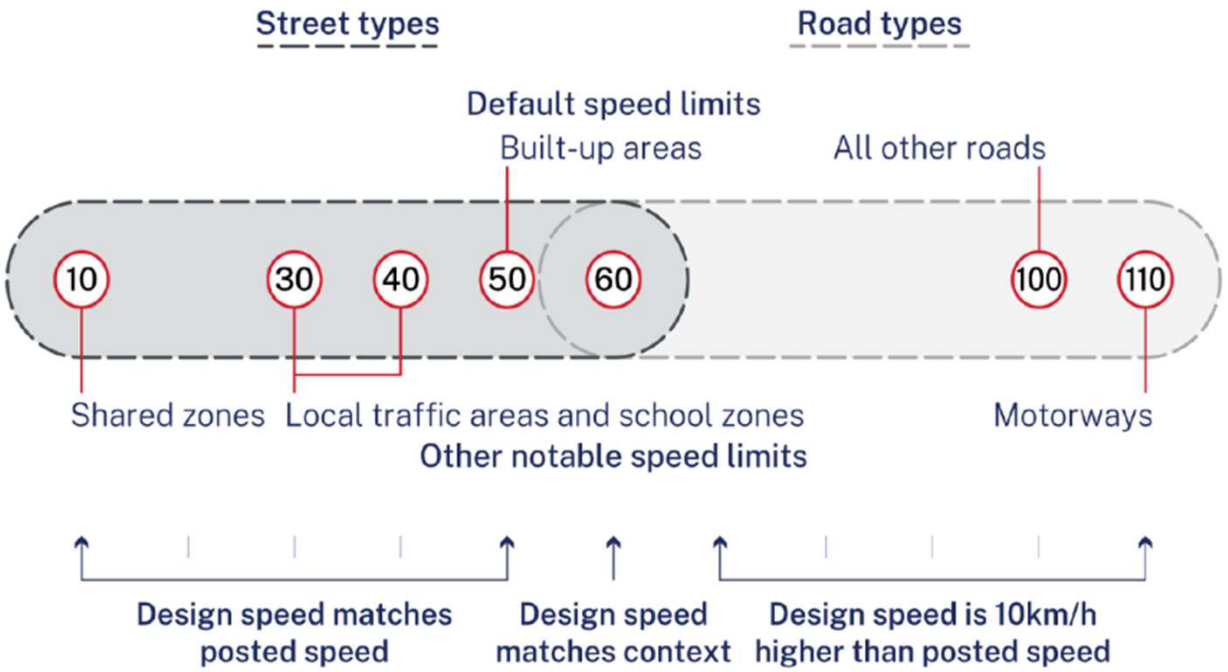
	Main streets					
	Transit way	Transit boulevarde	Transit street	Arterial high street	High-activity mall	Connector avenue
General						
Place contexts	Urban and Suburban	Urban Centre, Urban and Suburban	Urban Centre, Urban and Suburban	Urban Centre, Urban and Suburban	Urban Centre, Urban and Suburban	Urban Centre, Urban and Suburban
Land uses	Various urban land uses	Mixed uses	Medium to high density mixed uses	Mixed uses	Medium to high density mixed uses	Mixed uses
Built form frontages	Set back secondary frontages	Active retail frontages or other frontages set back	Active retail frontages or other frontages set back	Active retail frontages	Active retail frontages	Active retail frontages or other frontages set back
Access to properties	Option for direct pedestrian access to frontages, primary direct access to properties from adjacent streets	Direct pedestrian access to frontages with vehicle access to rear of properties	Direct pedestrian access to frontages with vehicle access to rear of properties	Direct pedestrian access to frontages with vehicle access to rear of properties	Direct pedestrian access to frontages with vehicle access to rear of properties	Direct
Posted speed (km/h)	60-90	60-70	30-40	40-50	30-50	40-60
Design speed (km/h)	60-100	60-80				
Active transport						
Level of active transport seperation from motor vehicles	Separated	Separated	Separated	Separated	Separated	Separated
Environment						
Tree canopy cover target[3]	Apply local council tree canopy targets	Apply local council tree canopy targets	Apply local council tree canopy targets	Apply local council tree canopy targets	Apply local council tree canopy targets	Apply local council tree canopy targets
Intersections						
Intersection type	At grade or separated	At grade	At grade	At grade	At grade	At grade
Kerb extensions at intersections and crossings	Where appropriate	Where appropriate	Required	Required	Required	Required
Continuous footpaths/ threshold paint on low volume side streets[3]	Use with caution	Use with caution	Use with caution	Required	Required	Required
Vehicles						
Buses	Yes	Yes	Yes	Yes	Where appropriate	Yes
Can check vehicle swept path cross the centreline at intersections?	No	No	Yes	No	Yes	No
Parallel car parking lane	n/a	Permitted	Use with caution	Use with caution	n/a	Permitted
Sight distance[4]	Greater than 50m	Greater than 50m	-	45	-	-

Source: Transport for New South Wales

Matching Speed to Context



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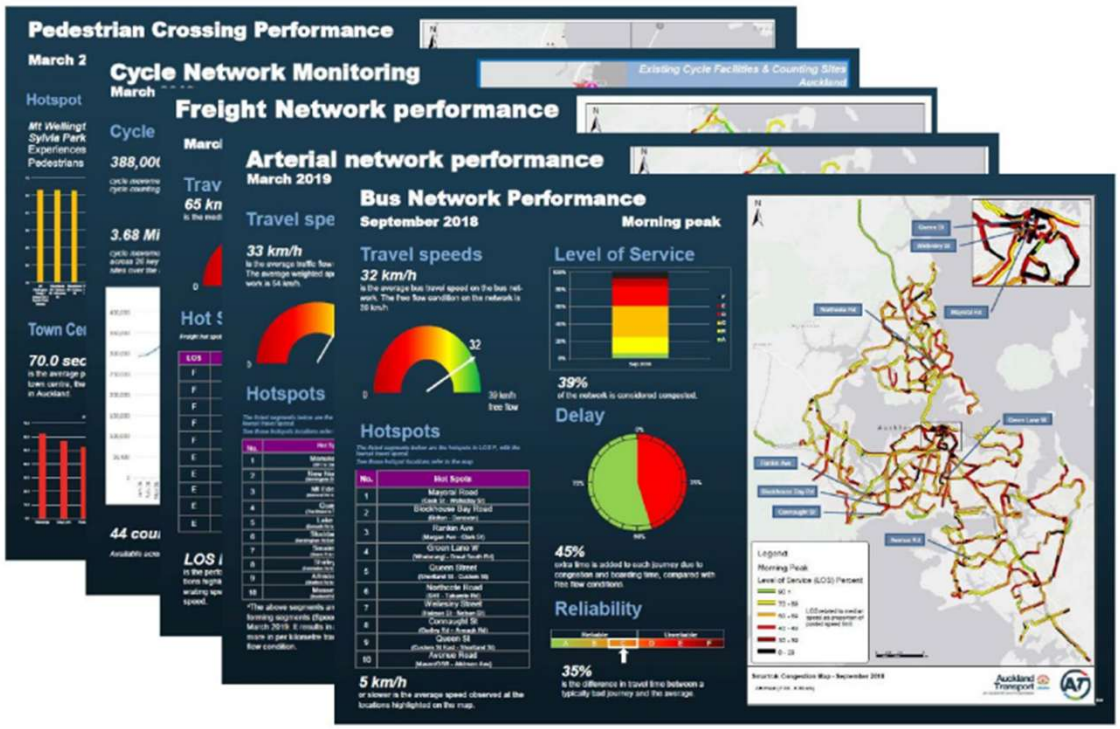
Source: Transport for New South Wales

Turning strategy into reality

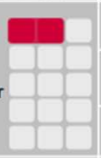
Our central approach to translating guidance provided by Future Connect and Roads and Streets Framework into on-the-network changes in the short term

Across five areas:

Operations performance monitoring



Using ONF to determine Levels of Service – DRAFT

ONF Category	Mode	What's important for people that use this ONF category?	What is the desired Level of Service?	Whats the action from an activity/lever perspective? (examples)
Local Street 	Walking	Footpaths are safe for all users	Safe space for pedestrians, streetlighting provides security	Place making initiatives
	Cycling	Footpaths and carriageways are safe for cyclists	Safe space for cyclists, streetlighting provides security	Cycling infrastructure
	Public Transport	Local access is available only	Maintain localised PT services	Only prioritise local access and coverage, or
	Freight	Access for courier light vehicles.	Heavy vehicles discouraged	
	General Traffic	Local use only	Accessibility is important, efficiency is not	Traffic calming initiative
Transit Corridor 	Public Transport	PT services are frequent and reliable	PT given priority on rapid transit routes	Bus lane is required
	Freight	Efficient movement of Freight	High volume, higher speed reliable travel	Freight
	General Traffic	Travel is frequent and reliable	Roads are smooth and there is no congestion	
Inter Regional Connector 	Public Transport	Efficient and reliable journey times	PT de-prioritised but can rely on predictable journey times	
	Freight	Freight moves efficiently	Freight is a priority	Freight lane or increased pavement cost
	General Traffic	Travel is frequent and reliable	Fast, safe and reliable long distance journeys	High road maint costs/emphasis
Main Street 	Walking	Safe for all users	Reliable travel, access to services	
	Cycling	Its safe and reliable to cycle in these spaces	Reliable travel, access to services	Separated cycleway
	Public Transport	There is a choice of PT available to me	PT a priority for access to services	
	Freight	Goods delivery to businesses	Freight use for pickup/delivery of goods	
	General Traffic	Travel is reliable	Reduced speeds through these routes to create a safe space for active modes	

Stateside: Expanded FCS Framework

- NCHRP 855: An Expanded Functional Classification System for Highways and Streets
- "Replace the existings functional classification schem….to take into account contex, road functions, and user needs."

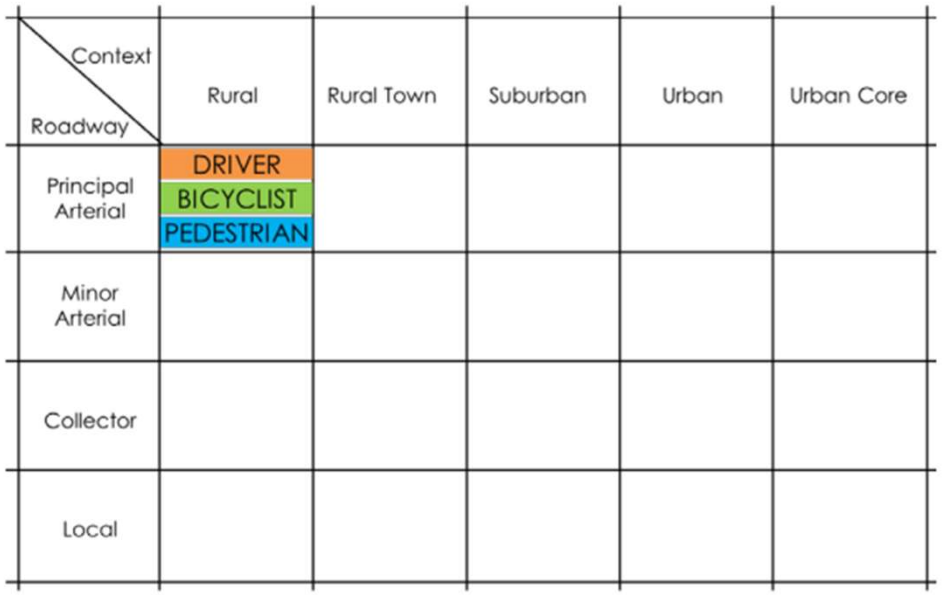


Figure 1 Expanded FCS framework user matrix

M&P (Context) In Action - Stateside

- FDOT wide shift
- “Putting the right street in the right place”

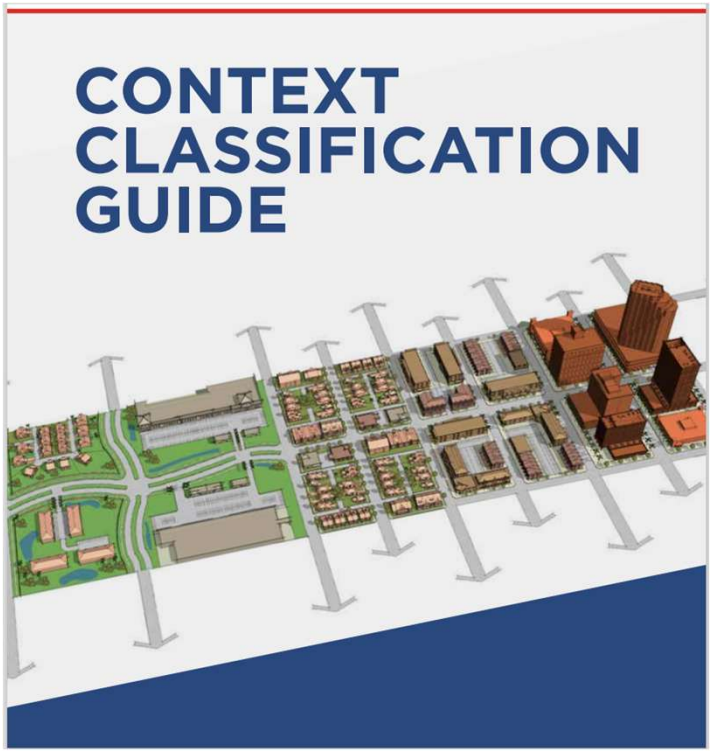


TABLE 1 Context Classification Matrix

Context Classification	(1) Distinguishing Characteristics	(2 A/B) Primary Measures: Roadway Connectivity: Intersection Density (Intersections/ Square Mile)	(2 A/B) Primary Measures: Roadway Connectivity: Block Perimeters (Feet)	(2 A/B) Primary Measures: Roadway Connectivity: Block Length (Feet)	(2 A/B) Primary Measures: Land Use (Description)	(2 C) Secondary Measures: Building Height (Floor Levels)	(2 C) Secondary Measures: Building Placement (Description)	(2 C) Secondary Measures: Fronting Uses (Yes/No)	(2 C) Secondary Measures: Location of Off-street Parking (Description)	(2 C) Secondary Measures: Allowed Residential Density (Dwelling Units/ Acre)	(2 C) Secondary Measures: Allowed Office/ Retail Density (Floor-Area Ratio (FAR))	(2 C) Secondary Measures: Population Density (Persons/Acre)	(2 C) Secondary Measures: Employment Density (Jobs/Acre)
C1-Natural	Lands preserved in a natural or wilderness condition, including lands unsuitable for settlement due to natural conditions.	N/A	N/A	N/A	Conservation Land, Open Space, and/or Park	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C2-Rural	Sparsely settled lands; may include agricultural land, grassland, woodland, and wetlands.	<20	N/A	N/A	Agricultural and/ or Single-Family Residential	1 to 2	Detached buildings with no consistent pattern of setbacks	No	N/A	<1	N/A	<2	N/A
C2T-Rural Town	Small concentrations of developed areas immediately surrounded by rural and natural areas; includes many historic towns.	>100	<3,000	<500	Retail, Office, Single-Family Residential, Multi-Family Residential, Institutional, and/or Industrial	1 to 2	Both detached and attached buildings with no or shallow (<20') front setbacks	Yes	Mostly on side or rear; occasionally in front	>4	>0.25	N/A	>2
C3R-Suburban Residential	Mostly residential uses within large blocks and a disconnected or sparse roadway network.	<100	N/A	N/A	Single-Family and/ or Multi-Family Residential	1 to 2, with some 3	Detached buildings with medium (20' to 75') front setbacks	No	Mostly in front; occasionally in rear or side	1 to 8	N/A	N/A	N/A
C3C-Suburban Commercial	Mostly non-residential uses with large building footprints and large parking lots within large blocks and a disconnected or sparse roadway network.	<100	>3,000	>660	Retail, Office, Multi-Family Residential, Institutional, and/or Industrial	1 (retail uses) and 1 to 4 (office uses)	Detached buildings with large (>75') setbacks on all sides	No	Mostly in front; occasionally in rear or side	N/A	<0.75	N/A	N/A
C4-Urban General	Mix of uses set within small blocks with a well-connected roadway network. May extend long distances. The roadway network usually connects to residential neighborhoods immediately along the corridor or behind the uses fronting the roadway.	>100	<3,000	<500	Single-Family or Multi-Family Residential, Institutional, Neighborhood Scale Retail, and/ or Office	1 to 3, with some taller buildings	Both detached and attached buildings with no setbacks or up to medium (<75') front setbacks	Yes	Mostly on side or rear; occasionally in front	>4	N/A	>5	>5
C5-Urban Center	Mix of uses set within small blocks with a well-connected roadway network. Typically concentrated around a few blocks and identified as part of a civic or economic center of a community, town, or city.	>100	<2,500	<500	Retail, Office, Single-Family or Multi-Family Residential, Institutional, and/or Light Industrial	1 to 5, with some taller buildings	Both detached and attached buildings with no or shallow (<20') front setbacks	Yes	Mostly on side or rear; occasionally in front, or in shared off-site parking facilities	>8	>0.75	>10	>20
C6-Urban Core	Areas with the highest densities and building heights, and within FDOT classified Large Urbanized Areas (population > one million). Many are regional centers and destinations. Buildings have mixed uses, are built up to the roadway, and are within a well-connected roadway network.	>100	<2,500	<660	Retail, Office, Institutional, and/ or Multi-Family Residential	>4, with some shorter buildings	Mostly attached buildings with no or minimal (<10') front setbacks	Yes	Side or rear; often in shared off-site garage parking	>16	>2	>20	>45

FIGURE 10 Distinguishing Context Classification Segments by Development Intensity and Roadway Network

A context classification change occurs where the development patterns change between the natural land and the concentrated developed land and again when the roadway network changes from a sparse, disconnected network to a well-connected grid network.

Figure 212.12.4 Near Perpendicular Right-Turn Lane

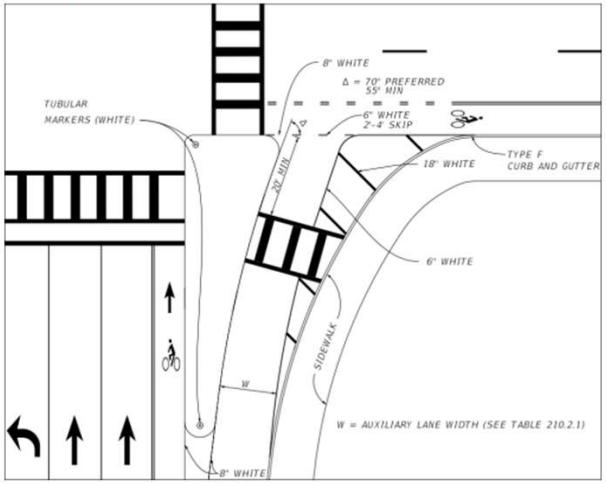
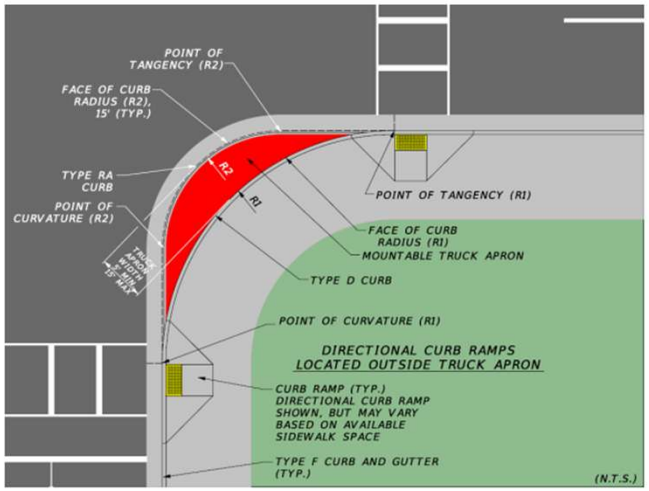
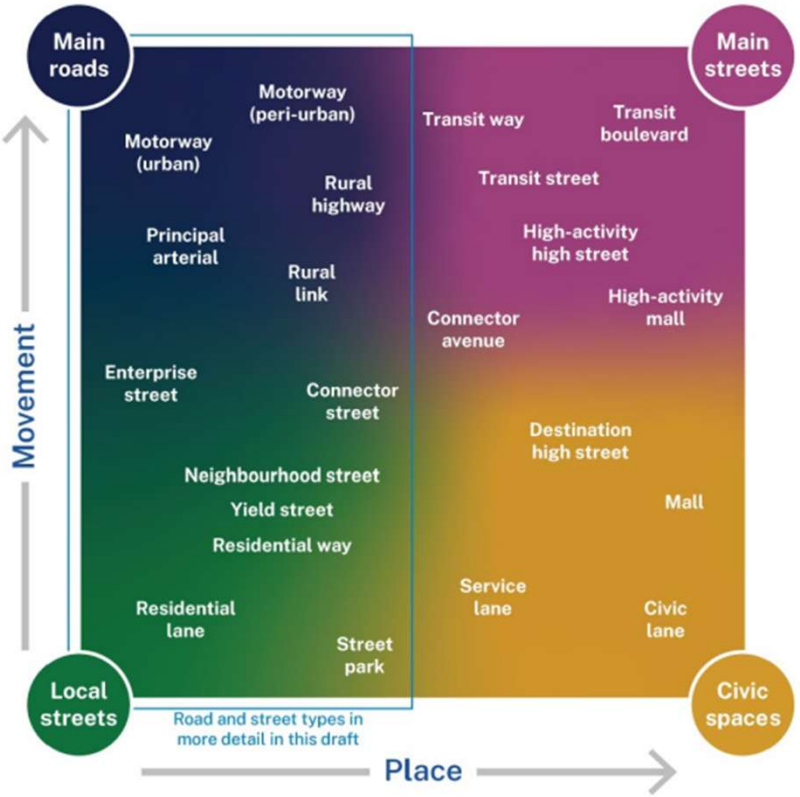


Figure 212.12.5 Mountable Truck Apron



NSW Movement and Place Framework



Source: Transport for New South Wales

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Federal Highway Administration
Office of International Programs

COMMUNITY BUILDING: THE CITY'S MISSION The mission of the Municipality of Anchorage is building and sustaining a community for current and future generations of Alaskans.

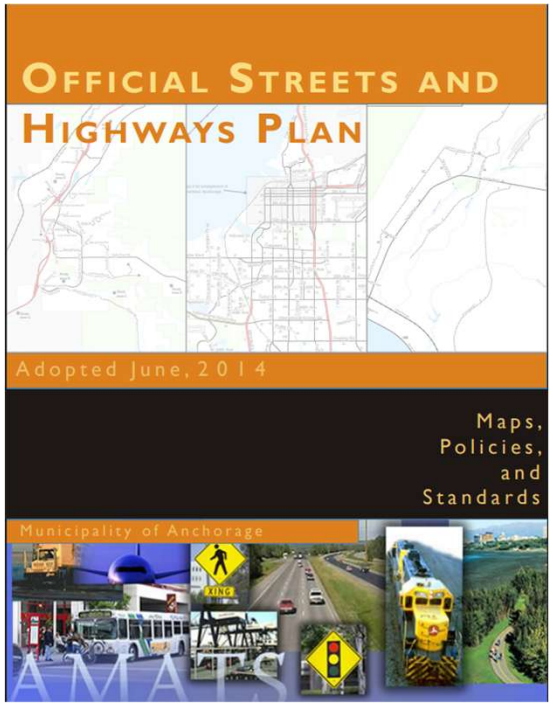
Context Sensitive Solutions is a collaborative, interdisciplinary approach to project development, involving all stakeholders at the earliest phase, ***to ensure that transportation projects are in harmony with communities and preserve environmental, scenic, aesthetic, and historic resources while maintaining safety and mobility.*** *It involves taking into consideration the land use and environment adjacent to the roadway when planning and designing a project so as to make the improvement blend in with the surrounding community.*

CSS…

- Solves the right problem
- Conserves environmental and community resources
- Saves time (project delivery)
- Saves $$$ (project delivery)
- Builds support (public & regulators)
- Helps prioritizes scarce roadway funds
- Leads to better decisions
- Is the right thing to do: It serves the public interest, helps build communities, and leaves a better place behind.

2008!

What is Functional Class?



In the Anchorage Bowl, it has become clear since the adoption of the Anchorage 2020: Anchorage Bowl Comprehensive Plan in 2001 that the traditional functional classification system needs to be supplemented to induce a more balanced street function that emphasizes adjacent land uses and accommodates all users – pedestrians, bicyclists, transit users, and motorists. The Anchorage Bowl 2025 Long-Range Transportation Plan with 2027 Revisions first included a slate of street typologies in order to meet this need. The plan recognized and retained the existing functional classification system adopted by the MOA for freeways, expressways, arterials, collectors, and local streets but recommended augmenting the classifications with street typology designations to give more direction for the design of some streets.

Streets in the Chugiak-Eagle River community may also be given street typology designations. The street typology system might differ in the Chugiak-Eagle River area, based on the specific needs of that community, as identified in the Chugiak-Eagle River Comprehensive Plan.

Street typologies further refine street designs by relating them to the adjacent land uses and their functions for all users including pedestrians, bicyclists, and transit riders. Street design based solely on the traditional functional classification often under-represents other modes of travel. The design of a street, its intersections, sidewalks, and transit stops should reflect the adjacent land uses because the type and intensity of the adjacent land use directly influences the level of use by other modes.

The street typologies attempt to strike a balance among functional classification, adjacent land use, and the competing travel needs and uses. Each street typology prioritizes various design elements by looking at factors related to both the adjacent land uses and functional classification. Where sufficient public right-of-way exists, all design elements may be accommodated. Within constrained public right-of-way however, trade-offs between priority design elements are required to balance the needs of various travel modes. The specific design elements for a street will be chosen through the context-sensitive design process. In 2008, the Municipality adopted "A Strategy for Developing Context Sensitive Transportation Projects," which can be found at www.muni.org/Departments/works/traffic/pages/default/aspx. All street designs must emphasize safety for people both inside and outside of vehicles.

Thank You – Discussion/Questions

Beyond Functional Classification

A MOVEMENT ***& PLACE*** FRAMEWORK, WHERE DESIGNERS DON'T HAVE TO SAVE THE WORLD BY THEMSELVES.

ZAK HARTMAN, P.E. – MOA TRAFFIC SIGNALS MARCH 2026