

Movement and Place Classification

Network Classification Factors and Measures

Disclaimer: The concepts outlined in this document are to undergo trials with a representative group of Road Controlling Authorities and may be changed based on the results of those trials and other feedback received.

Purpose

The purpose of this document is to present for review, discussion and agreement the factors measures to be considered for the categorisation of transport networks into the One Network Framework classification system. This includes both quantitative measures, numbers of people and tonnage of goods being moved along a corridor, and the qualitative measures, linking locations of importance such as ports, schools and commercial precincts.

Background

The One Network Framework project delivered the high level design concepts for movement and place classification in April 2020. These concepts were intentionally 'high level' and described the overall concepts that were agreed by a range of transport sector subject matter experts through a series of design workshops. The published categories included some indicative categorisation factors and measures that at the time were indicative only and served to demonstrate the concepts being presented.

The next phase of the project is expanding the high level concepts into a detailed design of the framework. This includes development, consideration and agreement of the specifics of each movement, place, modal movement and street family class, and the methodology of how streets and roads should be classified.

Place

Classification of ‘Place’ in terms of definable metrics is not necessarily a particularly easy exercise. The intrinsic value of a place is often invoked more by feelings than in what could be described by facts. Despite this, numerous academic engineering studies have sought to quantify the value of place. Much of this enquiry was in response to the need to classify place and its relationship with movement, in so enabling a movement and place approach to transport corridor planning and management.

The classification of place should achieve the following outcomes:

- Reflect the planned and intended nature of the specific location
- Relate to the on-street activity generated by adjacent land-use
- Consider the interaction with the movement function of the corridor, including the requirement for lateral movement across the carriageway
- Factor in the requirement for access to adjacent land-use from the corridor and access to the transport corridor from adjacent land, in terms of frequency and regularity.
- Be informed by adjacent land-use, and the density of activity occurring ‘off-street’
- Recognise the significance of the catchment from which the location attracts visitors, or the location’s importance to the surrounding community.

Intended nature of place

The ONF intends to primarily describe the aspirational view of the transport network and the relationship with adjacent land-use close to the transport corridor. The intended nature of a place is a brief description of the location that in simple language describes the overall nature of the place and is able to invoke in the mind’s eye what the place may appear like.

On-street activity

The level of on-street activity is a direct pointer to the classification of place. As the level of observable and measurable activity off-carriageway within the corridor increases, so does the classification of place, in proportionate steps.

In terms of metric to describe each on-street activity category, this most closely aligns with pedestrian activity, thus describing a correlation between movement and place. On-street activity also creates the need for pedestrians to cross the carriageway laterally proportionately, this is considered through the interaction with movement metric.

Catchment significance and connection to community

At a high level, catchment significance relates to how far people are willing to travel to experience a place. Guidance is provided in terms of the types of facilities that may fall into each class.

Adjacent Land-use

Adjacent land-use is a creator of on-street activity and the requirement for access to and from the corridor. While a range of economic and social indicators, such as GDP and population density, could be used as metrics to categorise place in terms of adjacent land-use, the application of this would be cumbersome and require a large amount of data analysis. Land-use zoning in the TLA’s district plan provides the aspirational intentions for the adjacent land as determined by land-use planners.

Interaction with movement function

As the levels of on-street activity and requirement for access increase, so does the need for movement laterally across the carriageway. This requirement can be thought of in terms of the frequency of crossing facilities along the corridor, with the requirement for lateral movement across the carriageway increasing in proportion to on-street activity. For M1P5 in the urban context lateral movement will always be grade separated.

Intensity of use

Intensity of use is a measure of how much the off-carriageway space is being used, by people dwelling in the space, eating al-fresco, browsing market stalls, window shopping, or just relaxing on a bench seat. The metric measures how utilised each square metre of public space is over the course of a day (7am to 5pm).

The table overleaf describes how each of the factors described above could be used for categorisation of place. Once agreed and approved the metrics in the table would be utilised in a functional classification tool that would form part of the toolset to assist users in the application of the framework.

The factors described in the table are derived from a number of local and overseas movement and place frameworks, including those used by Transport for London, City of Toronto, VicRoads (Victoria, Australia), Transport New South Wales, and Auckland Transport.

Place

		Classification factors				Metrics				
Nature of Place	Level of On-Street Activity	Indicative Land-Use	Catchment Significance	Level of On-Street Activity	Interaction with movement	Indicative Adjacent Land-Use	Catchment Significance	Intensity of use		
				Pedestrian volume	Requirement for lateral movement	Residential and Commercial density: Land-use zone classification	Place significance - Activity generating facilities	The intensity of use of the off-carriageway space by persons dwelling		
P1	Provincial/ Regional	On-street facilities encourage use by active modes, and visitors to stop and experience the locality for longer periods.	Land-use generates high levels of on-street activity including lateral movement across the carriageway. Sites of regional significance that attract significant visitor numbers to the location.	Very high-density mixed use (high rise apartments and office towers), downtown retail and commercial centres.	Streetscape provides for a provincial or regional level of amenity.	Aligned to W1 > 1000 /hour (peak) > 5,000 /day	At intersections, and frequent intermediate intervals midblock	Metropolitan Centre zone City Centre zone	Regionally Significant Locations: Central Business Districts Airports Central Metro Stations Ports Hospitals Sports Stadiums and Event Arenas University and Polytechnic Campuses Major tourist destinations	> 4 Person hours/m ² /day (7am to 5pm)
P2	City/ District	On-street facilities encourage visitors to stop and experience the locality.	Surrounding land-use generates significant levels of on-street activity including lateral movement across the carriageway. Weekend markets and special events may also generate peak activity.	Diverse mixed use, low rise apartments, special zones or high density commercial/ retail.	Streetscape provides for a city or district level of amenity.	Aligned to W1,W2 > 2500 /day	At intersections, and infrequent intermediate intervals midblock	High Density Residential Zone Commercial zone Large Format Retail zone	City/District Significant Locations: Main Shopping Centres Big Box Retail precincts Transport Interchanges Secondary Schools Main regional tourist attractions	> 2 Person hours/m ² /day (7am to 5pm)
P3	Neighbourhood/ Township	Increasing levels of on-street activity and access to adjacent land.	Surrounding land-use generates increased on-street activity. Community facilities and points of interest in rural settings generating some on-street activity.	Medium density residential, mixed use residential/ commercial, or industrial areas.	Streetscape provides for a neighbourhood or township level of amenity.	Aligned to W2 > 1000 /day	At intersections and connecting strategic routes (such as pedestrian alleyways and cycle paths)	Medium Density Residential zone Neighbourhood Centre zone Local Centre zone Mixed use zone Town Centre zone Light Industrial zone Heavy Industrial zone Open space zone Sport and Active Recreation zone	Neighbourhood Significant Locations: Suburban Shopping Centres Suburban Metro Stations Primary Schools Playgrounds Sporting Club Grounds Local parks District Halls Places of local interest/colour	> 1 Person hours/m ² /day (7am to 5pm)
P4	Local	Quieter streets likely to attract some on-street activity. Generally private low frequency access.	Primarily residential or peri-urban in nature, with on-street activity associated with residents going about their lives.	Mostly low density residential in urban and peri-urban areas. Lifestyle blocks in peri-urban areas.	Streetscape has local area significance.	Aligned to W3 < 1000 /day	Casual with care within M4 and M5 movement classes, targeted but infrequent within M2 and M3, Grade separated at M1.	Large Lot Residential zone Low Density Residential zone General Residential Zone Rural Lifestyle zone (R) Settlement zone (R) Natural Open Space zone	Suburban Residences	< 1 Person hours/m ² /day (7am to 5pm)
P5	Limited	Movement of people and goods the primary function. Limited on-street activity and requirement for access.	Little discernible on-street activity.	Mostly rural, except for Motorways and Expressways in urban areas.	Streetscape has local significance in the rural context, but does not provide any amenity for on street activity	No pedestrian movement, Walking may be prohibited along corridor, no Pedestrian facilities provided	Casual with care	General Rural zone (R) Rural Production Zone (R)	Rural Environment	Effectively Nil

Movement of People and Goods

The classification of overall movement should achieve the following outcomes:

- Recognise the contribution to movement of all modes of transport, including active modes
- Re-focus on the movement of people and goods along a corridor, not simply the number of vehicles using the carriageway
- Provide a method for classification that can be both prescriptive and intuitive. That is, the approximate classification can be derived using quantitative measures, and refined using qualitative factors
- Feel right when the movement and place classification for the corridor is compared against the street family that classification places it in, i.e. the intended function of the corridor is congruent with its movement class.
- Is there a transport function to be considered?

People movement

A fundamental shift from the One Network Road Classification framework is the consideration of movement as people and goods, rather than the number of cars and trucks using a corridor. This approach also better recognises the contribution of other modes to the classification of overall movement. Consider figure 1, if we need to move 100 people along a corridor. This can be achieved by 100 pedestrians, or 100 cyclists, or 84 cars and light vehicles, or 2.5 buses, or just one train carriage. In reality it will be some combination of all available modes. The point is that 100 pedestrians walking down a street is as valid a means of movement as 84 cars travelling down the same street.

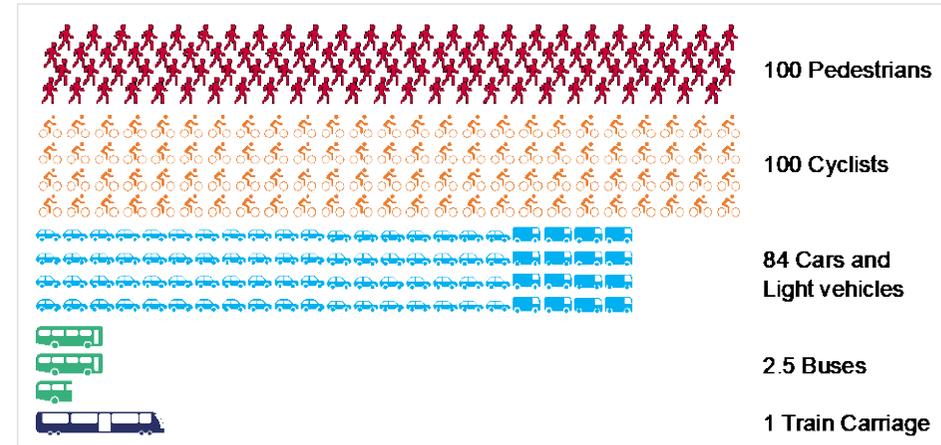


Figure 1: People movement

Linking locations of significance

Other factors for movement need to be considered, such as the intent of the corridor in linking locations of significance. This categorisation factor is known as strategic significance and indicates the importance of the corridor within the transport network. Factors that contribute to strategic significance include the importance of the start and end points of the journey, usually in terms of their contribution to the economy, access to essential services and the distance between these points, for example inter-regional journeys being categorised higher than local journeys. Strategic significance is also designated by network design. This is best demonstrated that in most instances, there are likely to be more than one possible route to connect two locations of significance, but only one will usually be designated as the strategic corridor for that link.

Putting this together with people movement means that a footpath linking a major transport interchange with a metropolitan centre carrying 30,000 pedestrians a day has a similar rating for movement to an urban motorway.

Movement by mode

General Traffic

General traffic will continue to use the 8 levels of classification prescribed by the One Network Road Classification framework.

This approach has the following advantages:

- For much of the network, the current ONRC classification can be directly transcribed over to One Network Framework
- The ONRC classification methodology for general traffic is well known throughout the sector
- Existing approaches to performance monitoring and reporting for carriageways can be retained

The significant difference to ONRC is that the One Network Framework is intended to reflect the aspirational state of the network, i.e. the classification should reflect how the corridor is expected to operate in the medium to long term. This coupled with the fact that the categorisation need only consider the General Traffic mode means that some adjustment to the ONRC measures to align with strategic significance may be justified.

Rural / Urban difference

As for the ONRC, the categorisation for General Traffic will recognise the difference between streets within urban areas, and rural roads, i.e. the threshold to be rated in a particular class will be lower in the rural context than in the urban context.

It is intended that Urban and Rural be differentiated based on adjacent land-use, i.e. if the land the street or road traverses is a rural land-use zone then the road is rural.

Strategic significance

For general traffic, the strategic significance of each class is implicit, with the higher rated classes having greater strategic significance. When classifying general traffic, it will be important to look at the function the corridor is intended to provide, and not simply the volume of vehicles it is expected to convey. For example, urban motorways do not have to be capable of supporting 35,000 cars per day if their primary purpose is to connect to a strategically important location. Likewise, a rural road that is supporting relatively low volumes of traffic could be elevated in status if it is the sole means of connectivity to a remote region to ensure the corridor receives adequate funding to maintain the appropriate level of resilience.

Generally, the methodology for determining the movement classification of the general traffic mode will continue to utilise the ONRC method, which includes consideration of traffic volumes, importance of the link (strategic significance), and differentiating urban and rural contexts. The AADT metrics for each category will be adjusted to reflect people movement rather than vehicle movement, therefore allowing for a base comparison with other modes and the facility to use simple arithmetic to determine an overall movement classification based on all modes.

General Traffic

Class	ONRC Class	Strategic Significance	ONRC Metric / class differentiator	People movement per day
GT1	ONRC - High Volume.	The high volume movement of people nationally or to nationally significant locations. Nationally significant routes.	Urban > 35,000, Rural > 20,000 VPD	Urban > 40,000, Rural > 25,000 VPD
GT2	ONRC – National	The movement of people nationally or to nationally significant locations	Urban > 25,000 Rural > 15,000	Urban > 30,000 Rural > 18,000
GT3	ONRC – Regional	Connectors providing significant movement of people between cities and regions.	Urban > 15,000 Rural > 10,000	Urban > 18,000 Rural > 12,000
GT4	ONRC – Arterial	Connectors providing significant movement of people through or between neighbourhoods and towns.	Urban > 5,000 Rural > 3,000	Urban > 6,000 Rural > 3,500
GT5	ONRC – Primary Collector	Major collectors that link neighbourhoods to townships/districts.	Urban > 3,000 Rural > 1,000	Urban > 3,500 Rural > 1,200
GT6	ONRC – Secondary Collector	Minor collectors that link local areas to neighbourhoods.	Urban > 1,000 Rural > 1,000	Urban > 1,200 Rural > 1,200
GT7	ONRC – Access	Movement within a local area or to access areas outside the local area.	Urban < 1,000 Rural < 200	Urban < 1,200 Rural < 250
GT8	ONRC – Low Volume	Low volume movement within a local area	Urban < 200 Rural < 50	Urban < 250 Rural < 60

Freight

For the reasons stated above under general traffic, the ONRC categories for Freight are being maintained. For freight, this means there are 7 categories, as ONRC made no distinction between Access and Low Volume for freight.

Strategic Significance

Generally, the methodology for determining the movement classification of the freight mode will continue to utilise the ONRC method, which includes consideration of vehicle counts, importance of the link (strategic significance). The AADT metrics for each category will remain as they are as they are a proxy for goods movement.

Goods Movement

Converting AADT to goods movement at present is a simple arithmetic exercise of multiplying the number of vehicles by an assumed average load size. To date, no work has been done around quantifying the correlation between tonnage of goods moved and movement of people, and therefore it is difficult to factor goods movement into overall movement. Strategic importance of the route for freight, both in terms of volumes of freight able to be moved and providing links between significant places is still a valid methodology for classifying Freight Movement.

Freight

Class	ONRC Class	Strategic Significance	ONRC Metric / class differentiator	Goods Movement
F1	ONRC - High Volume.	The high volume movement of goods nationally or to nationally significant freight hubs	> 1,200 VPD	> 30,000 tn/day
F2	ONRC – National	The movement of goods nationally or to nationally significant freight hubs	> 800	> 20,000 tn/day
F3	ONRC – Regional	Connectors providing significant movement of goods between cities and regions.	> 800	> 10,000 tn/day
F4	ONRC – Arterial	Connectors providing significant movement of goods through or between neighbourhoods and towns	> 300	> 7,000 tn/day
F5	ONRC – Primary Collector	Major collectors that link neighbourhoods to townships/districts.	> 150	> 3,500 tn/day
F6	ONRC – Secondary Collector	Minor collectors that link local areas to neighbourhoods.	> 25	> 600 tn/day
F7	ONRC – Access	Freight movement within a local area or to access areas outside the local area.	< 25	< 600 tn/day

Public Transport

The classification for Public Transport movement is being developed in consultation with specialists in PT and multi-modal transport within Waka Kotahi. The ONF project will seek to align with other frameworks and approaches in general use across the transport sector, and in this case with how PT practitioners view their network. Some views of the PT network do not correlate directly with how the ONF considers movement and these are outlined in the commentary below. So, for instance, where a classification factor directly speaks to streetscape design, this will be excluded from inclusion in the ONF.

Public Transport Service Level descriptor

The service level descriptor will be included in the ONF as it underpins the cornerstone concept of the ONF of creating a common language for use across all disciplines within the transport sector. The descriptor is a useful short-form label for each of the PT classes that quickly invokes the nature of the PT service or route.

Distinguishing between PT Services and Movement Corridors

In order to standardise the contribution of public transport to the movement function of a corridor, the distinction needs to be made between a Public Transport Service and Public Transport use of a corridor. A PT service has attributes such as headway (the regularity of a particular service), and service start and end points, that do not apply to the corridor. A corridor may also support more than one PT service, so the cumulative result of all services using a corridor will be what defines the PT movement categorisation.

Strategic Significance

Strategic significance describes the extent to which the particular corridor contributes to the Public Transport Network. For PT this ranges from dedicated corridors that support mass rapid transit to corridors where low volumes of targeted PT services operate.

Corridor Headway (at peak)

Corridor Headway is the combined headway of services per hour (at peak) that would be observed for all services passing a point on the section of street being classified. Where the street supports more than one PT service then the corridor headway will be more frequent than for the individual services. For example, if two services which both have a 15 minute headway at peak (4 services per hour) utilise the same street for part of their route, the effective the effective corridor headway would be 8 services per hour along that section of street. Corridor headway then is an indication of the total demand on the street section by public transport. Corridor headway will increase as PT routes get closer to central business districts and key transport interchanges.

Metro Rail

By definition, all Metro Rail lines would be classified as PT1 as they are considered rapid transit corridors irrespective of headway, availability and or volume of people movement. For this reason, all Metro Rail services are described in Corridor Headway as PT1.

People Movement

Public transport is a very efficient means of moving people, with a fully laden 44 seat bus equating to at least 35 private motorcars, even more efficient for higher occupancy PT vehicles like double-decker buses that are becoming increasingly common in NZ. ONF is concerned with people movement rather than traffic volumes. Using the movement of people or freight along a corridor over a period of time (standardised to daily counts) also allows for direct comparisons across transport modes in their contribution to transport outcomes.

School Buses

School buses can be included within the classification consideration of a particular corridor if the route the school bus takes is shared with other public transport services. If the route is only used for school buses, then the corridor would be classified as targeted.

Public Transport

Class	Public Transport Service Level descriptor	Strategic Significance (Role in Public Transport Network)	Corridor Headway (At peak)	People Movement (Indicative) (Bi-directional)	Description
PT1	Dedicated	Corridors where 'rapid transit' services are operated, providing a fast, frequent, highly reliable, and high capacity form of urban transport along a dedicated PT corridor .	Buses > 40 services per hour Rail > All Metro services	> 5000 per day	Dedicated public transport corridors provide for the fast and efficient long distance movement of people by rapid transit. By definition, they include dedicated busways and all metro rail lines. They are mode exclusive, only providing facility to support public transport (excepting rail lines that can also provide a goods movement function under the freight mode, but which is exclusive use by one or the other at a time).
PT2	Spine	Corridors where many frequent services operate and many different bus services merge together to create very high frequencies and overall passenger movement . Any deficiencies on these corridors affect multiple services and large parts of an urban area.	> 12 bus services per hour	1000 to 10000+ per day	Spine corridors are where many inbound services come together or outbound services originate, usually within city centres or at major transport interchanges, and much of the street space can be dedicated to public transport infrastructure, including significant space utilised for bus stops. Examples are Symonds Street in Auckland central, and Manners Street in Wellington. The Auckland Harbour Bridge would also be considered a Spine corridor.
PT3	Primary	Corridors where frequent public transport services operate, providing regular (generally at least once every 15 minutes) services across most of the day, seven days a week.	> 4 bus services per hour	500 to 2000 per day	Primary public transport corridors occur on the parts of the network where frequent service can be expected. This could be for part of route where the collection of services operating results in a better than 15 minute headway frequency of that part of the route. These corridors are more likely to be on major arterial roads.
PT4	Secondary	Corridors where PT services operate at most times of day , but less frequently. The main focus of PT services using these corridors is to provide basic access and coverage.	< 4 bus services per hour	100 to 1000 per day	Secondary public transport corridors occur in the parts of the network providing local access and coverage, but at reduced schedules. Routes typically traverse local streets and minor arterial roads
PT5	Targeted	Corridors where services only operate at some times of the day (e.g. peak only) or for specific trip purposes (e.g. school buses only).	N/A	< 100 per day	These services provide a basic level of access to public transport, but on a much reduced schedule, typically only once a day return, such as school bus services, and long distance commuter services, or at peak times only.

Note: Not all classes of Public Transport will be applicable to all RCAs. It is expected that only large metropolitan councils will likely have corridors rated as PT1. Some smaller authorities also may not have corridors that would have the required frequency of operation or level of people movement to be classed as PT2 or even PT3.

Cycling

The project team is collaborating with active mode subject matter experts within Waka Kotahi and the transport sector to co-design and develop out the base guide shown in the table overleaf, including any metrics required to assist with classification. The proposed categorisation structure as it is specified overleaf is at the point where the working group for active modes were in agreement that it can be tested with RCAs.

Strategic Significance

For cycling primarily within the urban realm, there are currently 3 suggested classes (C1 to C3) comprised of two classes for the primary and secondary strategic cycle networks and the third class being the ‘everything else’ category. The three classes are intended for utility cycling, i.e. cycling done for the purpose of getting to an activity at the journeys end and therefore for the purpose of transport.

Proposed class C4 is intended for cycling that is not intended for utility cycling, that being cycling for recreational and tourism purposes and predominantly in the rural context. This recognises the significance of infrastructure such as the NZ cycle trail and allows for these routes to be daylighted in overall cycle network planning, including their influence in generating the requirement for movement and access. This class of cycling is conceptual only and requires review by active mode SMEs as to whether it should be included.

People Movement (indicative)

Compared to all other modes of transport, cycling has relatively low thresholds defining each class. Only the busiest primary cycle routes in Auckland and Christchurch exceed 1000 movements per day. As such, cycling is unlikely to ever be a significant contributor to overall movement in a corridor except for routes such as cycleways or shared paths. The people movement numbers are indicative only with classification of active mode networks starting with determining the strategic networks (primary and Secondary) for the mode.

PIKB Definition

The current definitions for primary and secondary cycle networks from the Planning and Investment Knowledge Base (PIKB) have been included to give additional guidance. It should be noted that the definitions are from a relatively old version of the NLTP assessment framework. A scan of the new IDMF documentation did not discover any updated definitions, however it is recommended that alignment is sought between the two frameworks on definitions of strategic cycling networks.

Cycling

Class	Strategic Significance	People Movement (Indicative)	PIKB definition	Description
C1	Primary strategic cycling network, intended to support high volumes of cyclist movement	> 500 /day	A primary corridor is the highest classification level route in a cycling strategic network that carries the largest volume of cyclists and has the greatest potential to attract cyclists. Primary corridors provide for trips across town and between suburbs.	The primary strategic cycle network provides the backbone of the overall cycle network catering for higher volumes of cycle movement, longer and more efficient journeys (connecting across townships or between suburbs), and connecting to key locations of employment and education. Primary cycle networks will usually be dedicated cycle paths or cycle lanes to allow for efficient journeys.
C2	Secondary strategic cycling network, providing key connections to schools, community facilities, or employment.	> 100 /day	A secondary corridor is an identified component of a cycling strategic network that connects potential users to the primary corridors. Secondary corridors provide for trips across suburbs or between destinations (i.e. schools, workplaces).	The secondary strategic cycle network provides the collector function within the network, joining local streets and roads to the primary strategic cycle routes. They also support key local cycle movement providing connections to Schools, local shopping centres, and suburban workplaces. Typically occurring on higher volume connector roads, secondary networks generally share the carriageway with vehicular modes.
C3	Every other street or path that supports cycling but is not part of the strategic cycling network. Localised cyclist movement along and across residential streets, first/last kilometre to provide link to primary and secondary cycling networks.	< 100 /day		This class covers all other routes that could support cycling not identified as primary or secondary strategic networks. On-street cycling along quiet residential streets where the volume and average speed of traffic means a relatively safe environment for cycling, as well as along busy urban arterials where no special allowance for cycling has been made and the cyclist must share the road with care. This class also includes any off-road routes, such as paths through parks where cycling is permissible. Normally little or no specific interventions are used to support cycling on these routes. The type of journey undertaken on these routes is primarily utility cycling for the purpose of getting to an activity at the journey's end.
C4	Special rural routes used primarily for recreation or tourism (Less of a transport journey function). NZ Cycle trails. Excludes specialist cycling facilities such as mountain bike parks.			These routes occur mostly in the rural context and are used for cycling activity that is undertaken for the purpose of recreation or tourism, i.e. to experience the journey rather than to reach the destination, and therefore not utility cycling. These routes include all the off-road section of the NZ cycle trail, as well as the touring stages of that network, the pieces of the road network that provide link between the off-road portions. This class can also be used for routes known to be popular as training circuits with road cyclists. Excluded from this class and from inclusion in the cycle network overall are specialist cycling facilities such as mountain bike parks.

Walking

The project team is collaborating with active mode subject matter experts within Waka Kotahi and the transport sector to co-design and develop out the base guide shown in the table overleaf, including any metrics required to assist with classification.

Pedestrians are also a significant contributor to the place value of a road or street, generating on-street activity that interacts with vehicle movement where lateral movement is undertaken. Pedestrian volumes also contribute to the nature of place by creating a sense of community where there are significant numbers of people using the street. Further information is contained within the Street Families section of this document on the contribution of pedestrian move to the nature of place, and how that would be observed in the various Movement/Place classifications of the street families.

Strategic Significance

For walking primarily within the urban realm, there are currently 3 suggested classes (W1 to W3) comprised of two classes for the primary and secondary strategic walking networks and the third class being the 'everything else' category. The three classes are intended for walking undertaken for the purpose of getting to an activity at the journeys end and therefore for the purpose of transport.

Proposed class W4 is intended for walking that is undertaken for recreational and tourism purposes and predominantly in the rural context. This recognises the significance of infrastructure such as Te Araroa and Department of Conservation tracks, and allows for these routes to be daylighted in overall walking network planning, including their influence in generating the requirement for movement and access. This class of walking is conceptual only and requires review by active mode SMEs as to whether it should be included.

People Movement (indicative)

The people movement numbers are indicative only with classification of active mode networks starting with determining the strategic networks (primary and Secondary) for the mode.

PIKB Definition

The current definitions for primary and secondary walking networks from the Planning and Investment Knowledge Base (PIKB) have been included to give additional guidance. It should be noted that the definitions are from a relatively old version of the NLTP assessment framework and are probably more relevant to cycling than walking. A scan of the new IDMF documentation did not discover any updated definitions, however it is recommended that alignment is sought between the two frameworks on definitions of strategic walking networks.

Walking

Class	Strategic Significance	People Movement (Indicative)	PIKB definition	Description
W1	Primary strategic walking network, intended to support high volumes of pedestrian movement	> 5,000 /day	A primary corridor is the highest classification level route in a walking strategic network that carries the largest volume of pedestrians and has the greatest potential to attract new pedestrians. Primary corridors provide for trips across town and between suburbs.	The primary strategic walking network provides the backbone of the overall walking network catering for higher volumes of pedestrian movement, more efficient journeys, and connecting key locations of employment and education to transport hubs. Primary walking networks will usually provide for pedestrian priority over other transport modes.
W2	Secondary strategic walking network, providing key connections to schools, community facilities, or employment.	> 1000 /day	A secondary corridor is an identified component of a walking strategic network that connects potential users to the primary corridors. Secondary corridors provide for trips across suburbs or between destinations (i.e. schools, workplaces).	The secondary strategic walking network provides the collector function within the network, joining local streets and roads to the primary strategic walking routes. They also support key local pedestrian movement providing connections to schools, local shopping centres, and suburban workplaces. These routes are likely to have footpaths engineered for increased volumes than those on residential streets.
W3	Every other street or path that supports walking but is not part of the strategic walking network. Localised pedestrian movement along and across residential streets, first/last kilometre to provide link to primary and secondary walking networks.	< 1000 /day		This class covers all other routes that could support walking not identified as primary or secondary strategic networks. This class also includes any off-road routes, such as paths through parks where walking is undertaken for the purpose of getting to an activity at the journeys end. At a minimum these routes should have a formed footpath for use by pedestrians. Localised walking trips along and across residential streets, connecting to locations of local significance, and first/last kilometre to provide link to primary and secondary walking networks.
W4	Special rural routes used primarily for recreation or tourism (Less of a transport journey function). Te Araroa, DoC tracks.			These routes occur mostly in the rural context and are used for walking activity that is undertaken for the purpose of recreation or tourism, i.e. to experience the journey rather than to reach the destination. These routes include all Department of Conservation walking tracks, and Te Araroa.

Street Families

Street families bring together the movement and place elements to determine an overall movement and place classification for the road or street. In order to limit the number of possibilities within the framework, street families comprise of regions within the movement and place grid. As an evolution of ONRC framework the objective of the street family classes is still to ensure consistent infrastructure funding and as a means for comparative analysis across the entire land transport network in New Zealand.

The street families are designed to be intuitive, so that as a first pass when thinking about the corridor under consideration a particular street family is envisioned in the mind's eye of those undertaking the classification. This is then checked against what the metrics and factors are indicating an appropriate classification for the corridor should be.

Two sets of street families are provided, one for use in the urban realm and one for rural. This recognises that both the level of people and goods movement for a particular class, and the factors that designate place are different for each context.

Name

Each street family name suggests the nature of a particular road or street when both the level of movement of people and goods and the nature of the place are factored into the classification. They will form part of the common language to be used when referring to similar classes of streets and roads and be easier to remember than technical alphanumeric codes like M2P3.

Street Families can also undertake additional functions that are not immediately invoked by the Street Family name, and which would appear to be completely different from each other in both function and form, but have in common similar levels of movement and place significance. An example of this is industrial areas when compared to Local Streets and Urban Connectors, where the amount of activity defining the place component is similar, and the level of people and goods movement is comparable.

Description

The descriptions of each street family describe the general characteristics of the street family in terms of the levels of movement, the amount of on-street activity, and indicative adjacent land-use. They provide a summary of all the classification factors for the specific family.

Nature of Place

The three significant factors that make up the place classifications the street family spans are described here, with some additional depiction of the specific character for the particular street family.

On-street activity

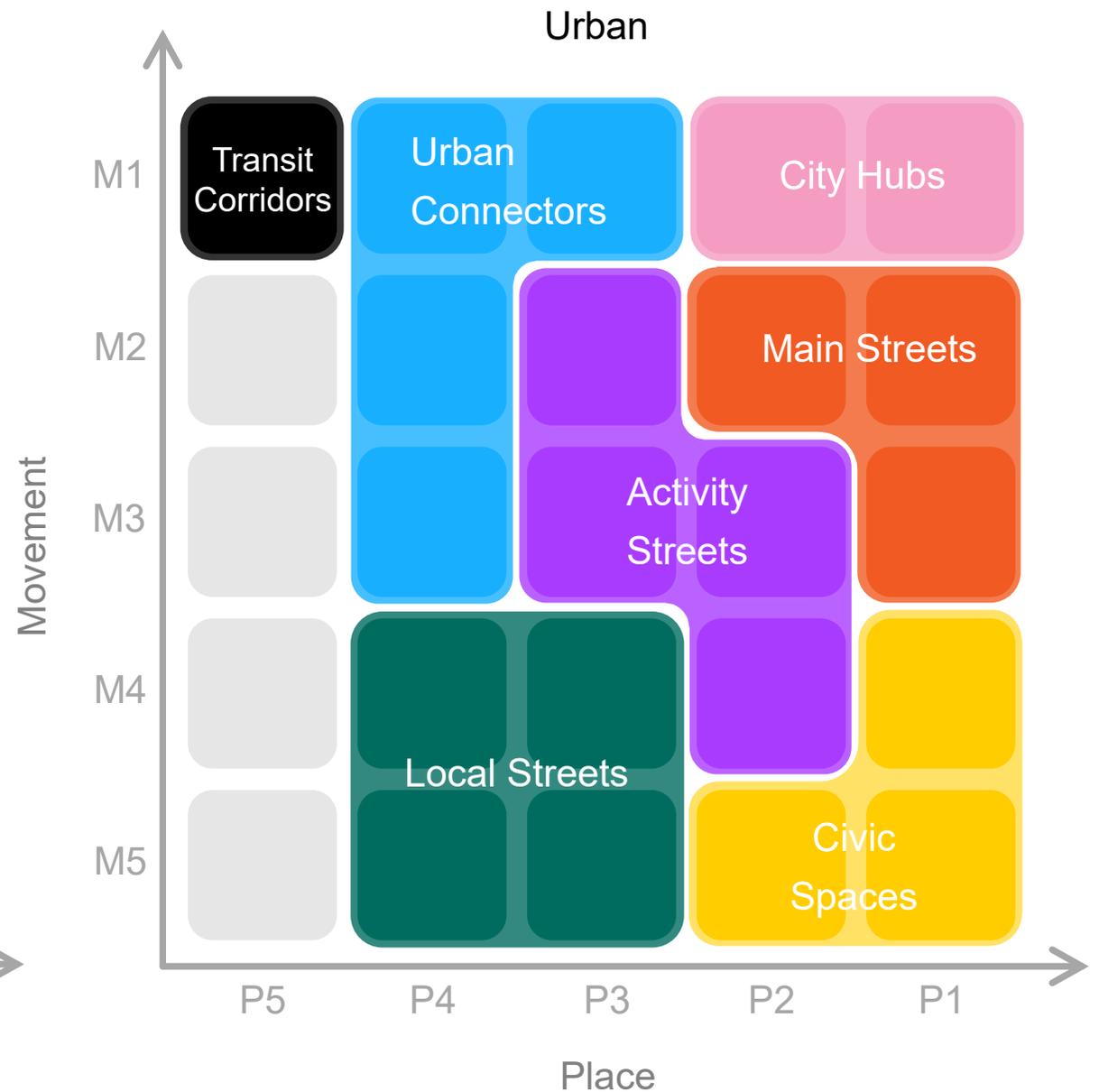
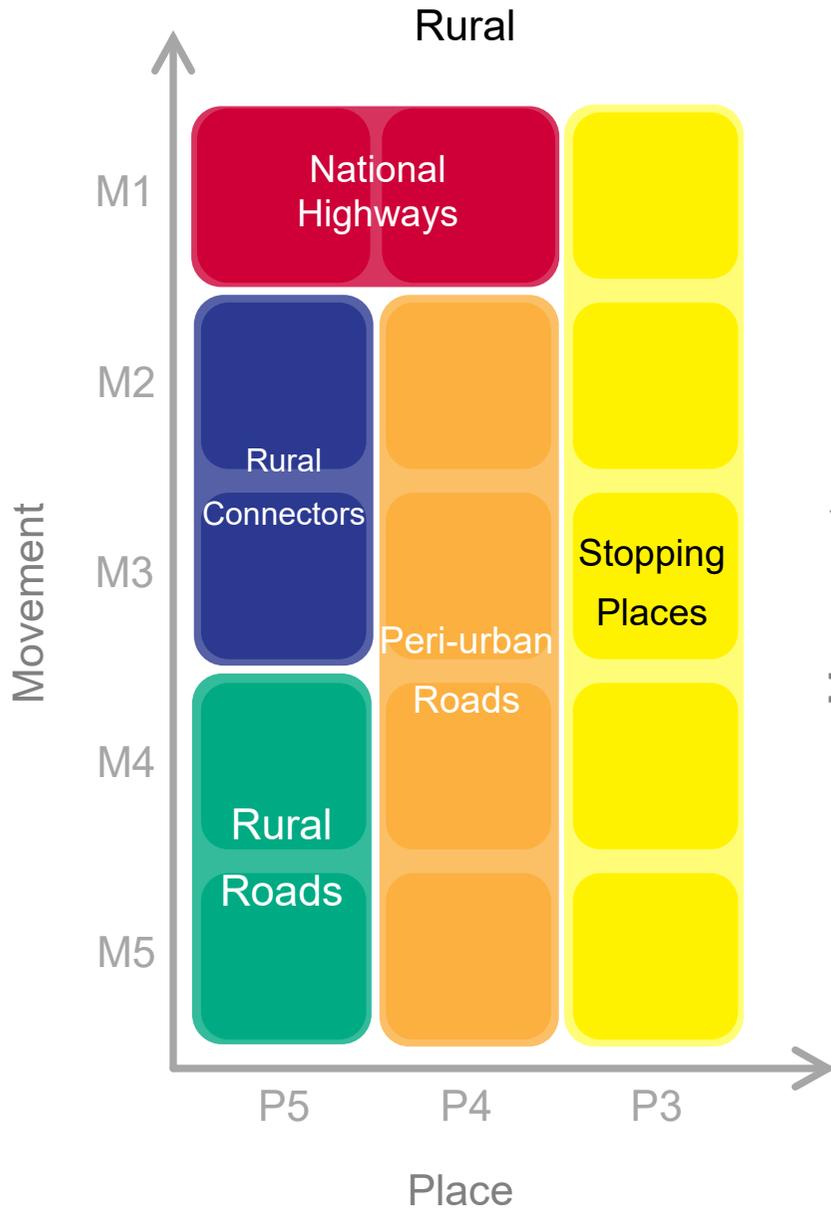
For the specific street family this describes what a casual observer would experience in terms of the level of activity along and across the street and some indication of the opportunity for lateral movement.

Adjacent land-use

Describes the nature of the adjacent land-use that is generating the requirement for access to the corridor, and therefore contributing to on-street activity and generating movement. The density of residential or commercial properties adjacent to the corridor is also stated.

Street Family Classification matrix

The current configuration of the street family zones overlaid on the movement and place matrix is shown overleaf. The colours used are those being recommended for use on maps and within GIS systems to provide contrast between different classes likely to appear adjacent to each other. The colours have also been chosen to provide colour contrast for people with the common forms of colour blindness.



Street Families

Name	Description	Nature of Place	
Urban		On-street Activity	Adjacent Land-use
Local Streets	Local Streets provide quiet and safe residential access for all ages and abilities and foster community spirit and local pride. They are part of the fabric of our neighbourhoods, where we live our lives and they facilitate local community access. Their local Place significance derives from the on-street activity being associated with those who live on these streets. Movement classification is low with most trips locally generated. Local Streets are the most common and most diverse streets in urban areas. They are generally important components of walking and cycling networks and should support these transport choices for local trips.	Low levels of on-street activity associated with residents going about their daily lives. Due to the low levels of vehicle movement, lateral movement can be undertaken at any point along the corridor to coincide with desire lines. In some particularly quiet streets the carriageway can often be used as a play area by local children.	Primarily suburban low density residential use.
Urban Connectors	Urban Connectors provide safe, reliable and efficient movement of people and goods between regions and strategic centres and mitigate the impact on adjacent communities. These streets have a lower Place classification associated with the reduced level of on-street activity and resulting from the adjacent land use. The higher Movement classification indicates that the street may be an important route for freight, public transport, private vehicles or cyclists. The purpose of Urban Connectors is to provide for efficient movement of people and goods from A to B. There are low levels of interaction between the adjacent land use and the street. Separation between modes is likely to be required as speeds and volumes tend to be higher. Servicing adjacent land has a lower priority, as the key role of these streets is to move along them rather than accessing adjacent properties. Industrial area streets are also most likely to fall within the Urban Connectors family.	Low levels of on-street activity associated with people needing to pass through an area. Requirement for lateral movement usually confined to intersections with adjoining streets.	Low to medium density residential and commercial use. Some routes provide for main connectors through industrial areas. Servicing adjacent land has a lower priority, as the key role of these streets is to move along them.
Activity Streets	Activity Streets provide access to shops and services by all modes. There is significant demand for movement as well as place with a need to manage competing demands within the available road space. Activity Streets aim to ensure a high quality public realm with a strong focus on supporting businesses, traders and neighbourhood life. Activity streets are where people spend a significant amount of time, working, shopping, eating, residing, and undertaking recreation. Examples range from neighbourhood shopping centres to waterfront esplanades.	Increased levels of on-street activity associated with the requirement for access to adjacent stores, businesses and community facilities.	Moderate density of commercial, retail or industrial activities or medium to high density residential properties
Civic Spaces	Civic Spaces are roads and streets with high demand for pedestrian activity combined with a much lower requirement for vehicle movement. They are places communities value, and intended for visitors to enjoy. These are spaces that people are encouraged to spend time in, and where people on foot can relax and move freely. There is usually street furniture and other amenities to encourage and support people lingering and spending time in these spaces. These streets have a higher Place classification representing the increased level of on-street activity and adjacent land use generating that activity. The lower Movement classification indicates that these streets are mainly intended for localised on-street activity with little or no through movement. The lateral movement of pedestrians is usually given priority in these spaces. Examples include pedestrianised streets, plazas and low speed shared streets.	High levels of on-street activity. These spaces provide pedestrian priority over vehicle movement. Civic spaces allow for safe lateral movement at any point along the route.	Community based facilities that bring people together. Sports arenas, concert venues, theatres, parks, restaurants and bars particularly those providing al-fresco dining. Tertiary education campuses, tourist attractions
Main Streets	Main Streets provide a pedestrian friendly environment. They aim to support businesses, on-street activity and public life while ensuring excellent connections with the wider transport network. While not having the level of through movement of City Hubs, they provide a similar function, needing to balance the interaction between people and goods movement and on-street activity. Examples include rural townships and provincial cities where the main through road also doubles as the main commercial centre.	High levels of on-street activity associated with the requirement for access to adjacent stores, businesses and community facilities. The requirement for lateral movement is tempered by the need to support increased levels of traffic movement.	Diverse mixed use, low rise apartments, special zones or high density commercial and retail.
City Hubs	City Hubs are dense and vibrant places that also have a high demand for people movement. They are also places providing focal points for businesses and culture. These Streets should aim to reduce the impact of high traffic volumes while accommodating high pedestrian numbers, multi-modal journeys and access to public transport and essential emergency services. These streets have both a higher Place and Movement classification. They are busy spaces with lots of activity from people visiting the location due to the adjacent land use activity, and a high amount of through movement of people travelling by all modes. The large number of competing demands within City Hubs require careful consideration to ensure that this competition between the significant Movement and Place functions is managed. These streets have a high number of people moving through and across them and so require efficient modes of transport, and lateral movement access to be prioritised to mitigate the impacts of congestion, and ensure a safe environment. Examples include major city centre streets such as Queen Street in Auckland and Lambton Quay in Wellington.	Highest levels of on-street activity associated with the requirement for access to adjacent stores, businesses and community facilities, and generated by the high density residential and commercial adjacent land-use. To provide a safe environment for lateral movement, regular controlled crossing opportunities are usually required.	Very high density office and residential tower blocks, central city shopping malls. Central business precincts of major cities.
Transit Corridors	Transit Corridors provide for the fast and efficient long distance movement of people and goods on within the urban realm. This includes motorways and urban expressways. They are mode specific and use by other modes than those intended is discouraged or even prohibited. By definition all dedicated, high movement and mode specific transport corridors such as heavy rail networks and busways are included in this classification.	Active modes of transport are specifically excluded from using these corridors	These corridors can traverse the entire range of urban land-use zones. As there is no provision for access, adjacent land-use is not a generator of a requirement for access.

Name	Description	Nature of Place	
		On-street Activity	Adjacent Land-use
Rural			
Rural Roads	Local Roads primarily provide access to rural land, for those that live there, and in support of the land-use activity being undertaken. Local Roads are the most common and most diverse roads in rural areas. They have no appreciable on-street activity occurring and in many parts of the country are unsealed. Some rural roads are important for freight, collecting dairy and forestry products from their source, while others, where volumes of vehicular traffic are very low, can provide safe and pleasant recreational and tourism routes, including the New Zealand Cycle Trail and Te Araroa (New Zealand's walking trail). In some parts of New Zealand, rural roads are utilised more by horses than by vehicles.	These corridors usually demonstrate no discernible on-street activity, as no provision is made to support pedestrian movement. Some casual use of roadsides is made for localised movement. On occasion, the corridor may be used for activities such as mustering stock.	Usually zoned rural production or general rural. The vast range of agricultural, horticultural, viticultural, forestry and other productive land uses. National parks and other non-productive natural areas
Rural Connectors	Rural connectors provide the link between local roads and national highways. They support an increased level of through traffic, while also providing access from the adjacent land they pass through. Examples include feeder roads into townships and roads to regionally significant tourist attractions.	These corridors usually demonstrate no discernible on-street activity, as no provision is made to support pedestrian movement. Some casual use of roadsides is made for localised movement. On occasion, the corridor may be used for activities such as mustering stock.	Usually zoned rural production or general rural. The vast range of agricultural, horticultural, viticultural, forestry and other productive land uses. National parks and other non-productive natural areas
Peri-Urban Roads	Peri-urban Roads primarily provide access from residential property on the urban fringe, where the predominant adjacent land-use is residential, but usually at a lower density than that found in urban residential locations. On street activity is discernible and local in nature but also at lower levels than in urban areas. The level of movement on peri-urban roads can range from low volume through to regional.	Low levels of on-street activity associated with residents going about their lives. Some activity associated with first/last kilometre of trips to and from adjacent urban areas.	Adjacent land-use is residential on larger lot properties and lifestyle blocks. Nearer urban areas and in small hamlets and settlements the size of properties may reduce to appear almost urban in nature.
Stopping Places	Stopping Places are where people gather in a rural setting. There is adjacent land-use generating on-street activity, and lateral movement across the carriageway can be expected. They have levels of on-street activity or adjacent land-use generating activity that is above the level normally generated by local residents, for example, rural schools, community halls, marae, and sites of scenic interest. The movement classification around Stopping Places covers the entire range from M5 to M1.	Increased on-street activities, usually for a short section of corridor to access key designations immediately adjacent to and accessed from the corridor. Can occur on routes of any movement class. Some type of intervention is usually required on the higher movement corridors to ensure safe and efficient access.	Special use areas such as rural schools, community halls, marae and tourist attractions.
National Highways	National Highways provide safe, reliable and efficient movement of people and goods between regions and strategic centres in a rural context. The focus of National Highways is to provide for efficient movement of people and goods from A to B over significant distances, and therefore these roads will usually have reduced land use access along them, many being designated as Limited Access Roads (LARs).	These corridors usually demonstrate no discernible on-street activity, as no provision is made to support pedestrian movement. Some casual use of roadsides is made for localised movement. Some C4 level cycling activity is possible on routes that connect the NZ cycle trail, or by cycle tourists.	Usually zoned rural production or general rural. The vast range of agricultural, horticultural, viticultural, forestry and other productive land uses. National parks and other non-productive natural areas

Approach to classification

Classification of streets and roads is undertaken to:

- Provide the means for describing the various components of the transport network based on their intended purpose and function
- Ensure the provision of consistent service levels on similar function roads
- Recognise that the various classes of streets and roads provide differing levels of utility within the transport network
- Differentiate service performance aspiration by class
- Guide planning, operation and investment decisions
- Aid in understanding the function and characteristics of different corridors, and the service outcomes which can be expected from users of that corridor
- Allow for comparative analysis and benchmarking of the performance of transport networks across RCAs and the country.

In order to achieve all of these desired outcomes it is important that the classification framework is applied consistently across the country within all Road Controlling Authorities.

Usually a blunt instrument like rigorously defined metrics for each class would be used and enforced so that consistency was almost assured. This approach does not work as well when considering the aspirational view of the network, i.e. what the network may look like in 10 years' time, as any numbers assigned to factors such as people movement will be predictive only.

There is a desire to build a framework that is easy to use, intuitive, and avoids being overly prescriptive. With Street Family classification in particular, it is recommended the approach be to determine the function of the road or street first, and then if appropriate adjust the classification based on metrics.

This means placing more weight on the classification factors such as strategic significance, and how a street or road will provide for the economic and social outcomes being sought through providing transport connections to important destinations or providing liveable community spaces, and less on the quantitative metrics

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■ ■ ■ FRAMEWORK

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