One Network Framework (ONF)

Classification Guidance

Waka Kotahi NZ Transport Agency

17 November 2022

Version 1.0

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More information

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More information about the One Network Framework (ONF) is available on the Waka Kotahi website at www.nzta.govt.nz/onf

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Version history

This table shows a record of all changes to this document.

Version	Date	Role and organisation	Reason
1.0	17/11/2022	ONF integration programme – Waka Kotahi	All draft document information and feedback reviewed - Version 1 approved.

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Terminology used in this document

Term	Definition
AADT	Annual average daily traffic
Adjacent land-use	Land-use types that tend to be along the side of and has direct access or contributes to the on-street activity of the road or street being classified.
Classification	Categorising roads based on the main function(s) each category of road performs
Corridor	• The area of land utilised to provide a transport link between two points. Usually constrained within the land area of the road reserve • The collection of routes utilised to provide a transport link between two key points by all available modes which may sometimes be expanded to include off-line modes such as railways and dedicated cycle paths that provide the link
Function	The purpose or role in the network that the road or street performs
Infrastructure Risk Rating (IRR)	A road assessment methodology designed to assess road safety risk, primarily as an input to the speed management process. The road safety risk is assessed by coding each road and roadside feature that feeds into the IRR model so that a risk rating can be determined
MegaMaps	A geospatial tool that Waka Kotahi uses to provide RCAs with speed management information for their network
Movement function	How people and goods move along and across roads and streets by any mode
Network	Collective term for all roads and streets under the control of a Road Controlling Authority • National Network: All roads and streets in New Zealand • Highways Network: All state highways in New Zealand
On-street activity	Significant on-street activity is a combination of pedestrian activity, numbers of people spending time in the area (dwell time) and the density of land-use along the side of the road or street
Place function	The extent to which the land use along the side of a road or street is a destination that people want to visit or spend time in
RAMM	Road Assessment and Maintenance Management software system
Road Controlling Authority (RCA)	A regional council, territorial authority, or public organisation such as Waka Kotahi and Department of Conservation that operates a part of the NZ Land Transport network
Street category	The specific classification assigned to a road or street from the two Street Families based on its intended movement and place function. In RAMM there are two street categories: • Original street category: the category allocated to the road or street through the automated process • Current street category: the current classification of the road or street. This will be the same as the original street category if it wasn't changed through the moderation process or any subsequent classification reviews
Street family	Group of street categories that are grouped according to the urban and rural context they refer to
Traffic calming	measures introduced into a road to encourage drivers to travel at an appropriate speed for their surroundings, and to discourage unnecessary through traffic

Introduction

The One Network Framework (ONF) is a tool to classify roads and streets within the New Zealand transport network.

The One Network Framework (ONF) evolves the One Network Road Classification (ONRC) to a two-dimensional classification framework focused on **movement** and **place**[1].

The ONRC was developed by the Road Efficiency Group (REG) following recommendations from the Road Maintenance Taskforce in 2012. A national road classification with levels of service enabled an operational and cultural change in road activity management and improved prioritisation of investment. This built on the 2011 State Highway Classification to help manage the future State Highway network more effectively.

The **place function** within the transport network acknowledges that roads and streets are destinations and places for people, as well as transport corridors for vehicle movements. It also ensures that the ONF is fit for purpose in more complex urban environments with a range of modes to accommodate and competing demands on limited road and street space.

By introducing a stronger multi-modal focus, the ONF also brings more distinction to both urban and rural networks. It highlights the strategic importance of each mode to the overall objective of moving people and goods efficiently and effectively.

The ONF makes the following key shifts:

- A shift from the volume of vehicles on the network to the network's functional importance for moving people and goods, by any mode.
- It considers adjacent land use, and the role the transport network plays as part of the wider public realm.
- When fully implemented, it will consider both the current and future movement and place function of the network. This will allow gaps to be identified and guide network changes and investment decisions seeking to close the identified gaps.
- It includes walking, cycling, freight, public transport, and general traffic networks, some of which include off-road routes.

Benefits of the ONF

Bringing **movement function** and **place function** together will:

- improve the integration of land use and transport planning
- position an agreed future vision for movement and place at the heart of how we plan, design, and manage maintenance and operations
- support more strategic and informed decision-making
- create a common language for discussing the function of roads and streets – from spatial planning, transport planning and urban design to modal priorities, the ways network's function, and maintenance and operations
- provide an easy-to-understand mechanism to have more informed conversations about the complexity of transport networks, including competing demands, strategic objectives, and potential investment.

Including the **place function** in strategic planning and investment decision-making recognises that shared, integrated planning between transport and land-use will result in better outcomes.

The ONF provides a foundation for nationally consistent conversations. The ONF isn't designed to provide transport solutions, but it helps to establish the **function** of a road or a street. While it contributes to design or investment conversations, the ONF doesn't seek to determine the **form** of a road or street. Other guidance such as the Aotearoa Urban Street Planning and Design Guide is available to support that purpose, alongside local centre plans and street design manuals.

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[1] The ONF was approved by the Waka Kotahi Board in February 2021.

When fully implemented, the ONF can be used to benchmark performance and align performance measures and outcomes.

The ONF also introduces modal layers of walking, cycling, public transport, and freight, recognising that our roads and streets have different functions for different modes.

Context

In 2021, Road Controlling Authorities (RCAs) and Waka Kotahi collaborated in a process that resulted in a fit for purpose ONF current state of the New Zealand RCA[2] network.

The process began with the creation of an automated ONF layer in RAMM that was made available to RCAs. The purpose of the automation was to support RCAs in the classification process – it was estimated that the automation would be around 80% accurate depending on the size and complexity of RCA networks. The automation was based on current ONRC classifications, Annual Average Daily Traffic (AADT) as a proxy for the level of movement function, and generalised land-use based on the Infrastructure Risk Rating Manual to determine place value function.

Each RCA then reviewed (checked, verified, and updated) their area's automated ONF layer. The objective of this review was to use local network knowledge to update the ONF classification categories where necessary, for each section of street or road. RCAs completed this process and confirmed to Waka Kotahi when finalised. The RCAs' current state ONF network was then moderated in a series of online workshops following a high-level review and analysis by the Waka Kotahi ONF team. The results of these regional moderation workshops were then reviewed through a national moderation process over two on-line sessions. This national moderation concluded that the current state ONF road/street network is fit for purpose, providing a baseline for comparison against a future state network classification using ONF, developed by RCAs[3].

As all RCAs have a current state ONF network it's expected any changes will be a result of:

- RCAs needing to classify new roads or streets.
- RCAs reviewing some parts of their current state ONF network because of the vesting of new roads or streets or identification of an anomaly that was not picked up during the review of the automated layer in 2021.
- RCAs making changes as part of the ONF annual review process.
- RCAs amending Stopping Places to their network. The national moderation process found some variability between RCAs in classifying Stopping Places as some didn't classify any while others classified a significant number.

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[2] Including State Highway and Department of Conservation
[3] See ONF National Moderation Summary report, dated 1 March 2022, for more detail on this process and the results of moderation.

Purpose of this document

This guidance provides information on how to classify a new road/street or change the classification of an existing road/street within an RCA's network. It provides guidance for classifying modal network information for a road/street under ONF and outlines details of how to update or add this information within the RAMM system. It should be read in conjunction with the ONF Detailed Design that provides the broader ONF context, an explanation of each road/street category, functional descriptions, and defines attributes and criteria.

Who is this document for?

The information in this document is designed to help practitioners working at RCAs to collaboratively classify their network to ONF in RAMM.

These include strategic transport planners, urban design and land use planners, asset managers, and multi-modal specialists from both local and central government.

Classifying a new road or street

The following steps set out the process for RCAs when classifying a new road or street with an ONF category in RAMM.

Ensure you have the 'carriageway section' layer on.

1. Select the carriageway you want to add an ONF record for
2. Select the 'Add Linked Child' option
3. Choose One Network Framework
4. Click Next
5. Select Not Linked
6. Click Next
7. Click Next[4]
8. Choose the correct road
9. Click Next
10. Use the drop-down options to add:
    a. 'Movement Ranking',
    b. 'Place Ranking'
    c. 'Street Family',

    this will then automatically populate the street category[5].

11. Click Save

A worked example for Riccarton Road, Christchurch is included in Appendix B.

Please do not create ONF classifications for state highways in Local Authority RAMM databases, these will be automatically imported by 2023 based on Waka Kotahi's classification as the state highway RCA.

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[4] Because you selected the carriageway the shape is already provided, so the only thing to do is click Next. Don't change the shape - this ensures that the ONF start and end value is correct, and the shape matches the carriageway and results in a nice simple match when this data is moved into MegaMaps. Some issues have occurred because people are drawing their own shapes and it's harder to match the ONF records to the carriageway when that is done. Following the above process will improve ONF data over time.

[5]If the automatically populated street category is not what you expected to see you can change this manually by using the drop-down arrow, though it is likely an indication that you need to review the movement and place rankings that have been entered.
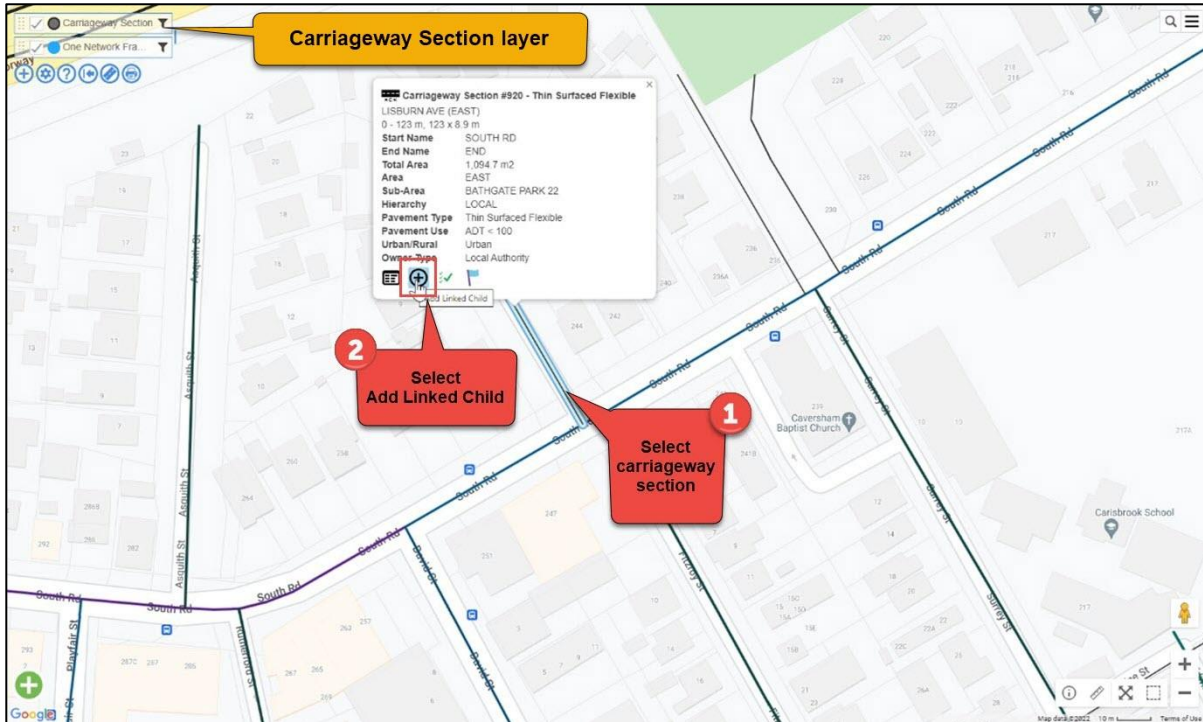
Figure 1 – Step 1 and 2: Creating a new ONF road

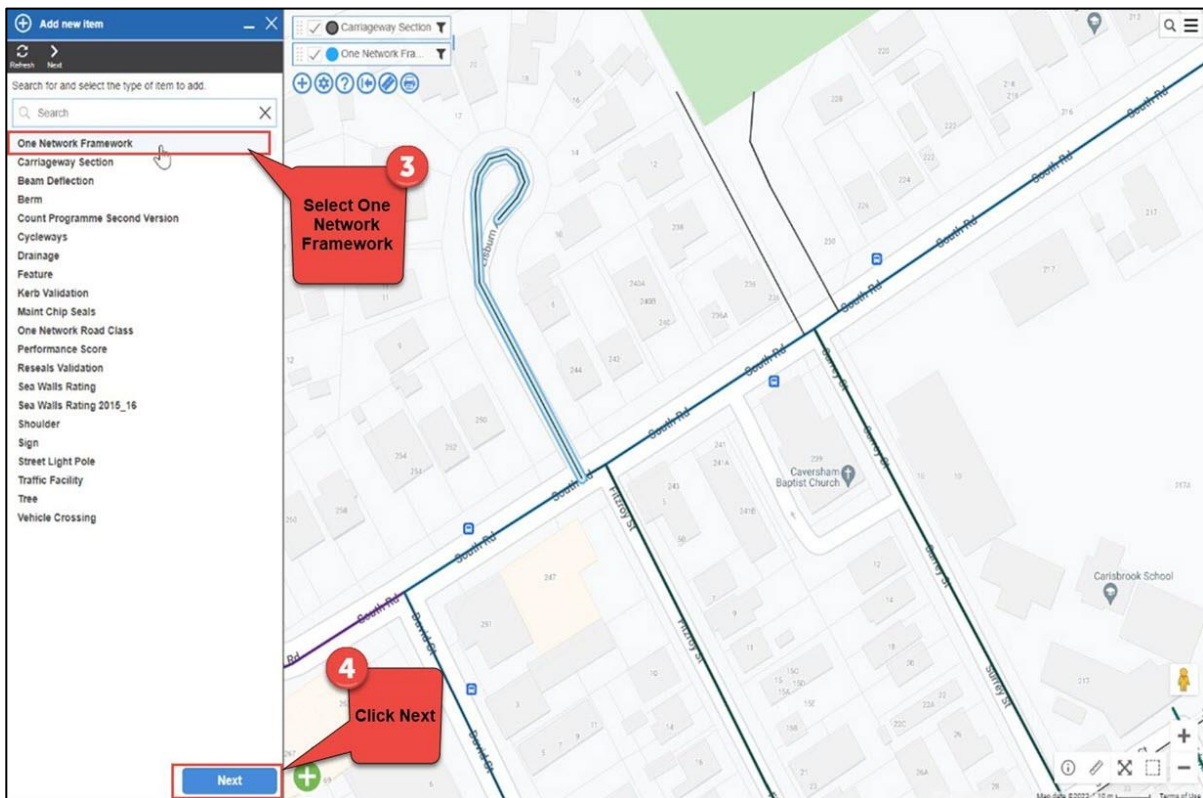Figure 2 – Step 3 and 4: Creating a new ONF road

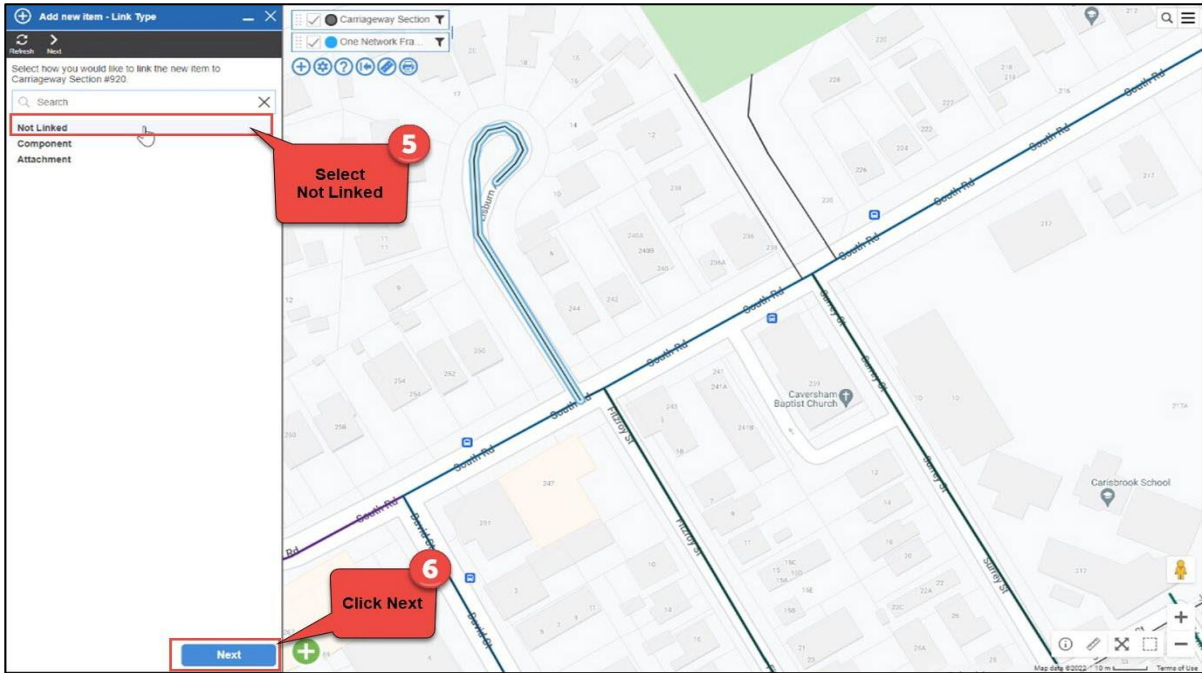Figure 3 – Step 5 and 6: Creating a new ONF road
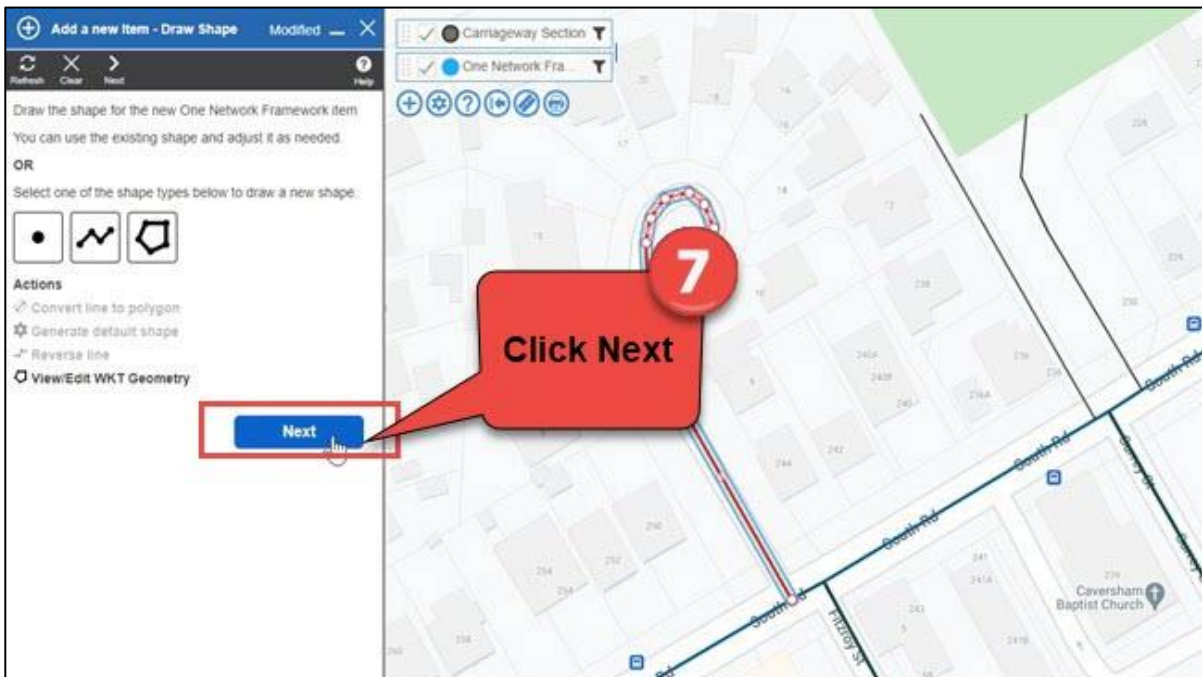

Figure 4 – Step 6 and 7: Creating a new ONF road
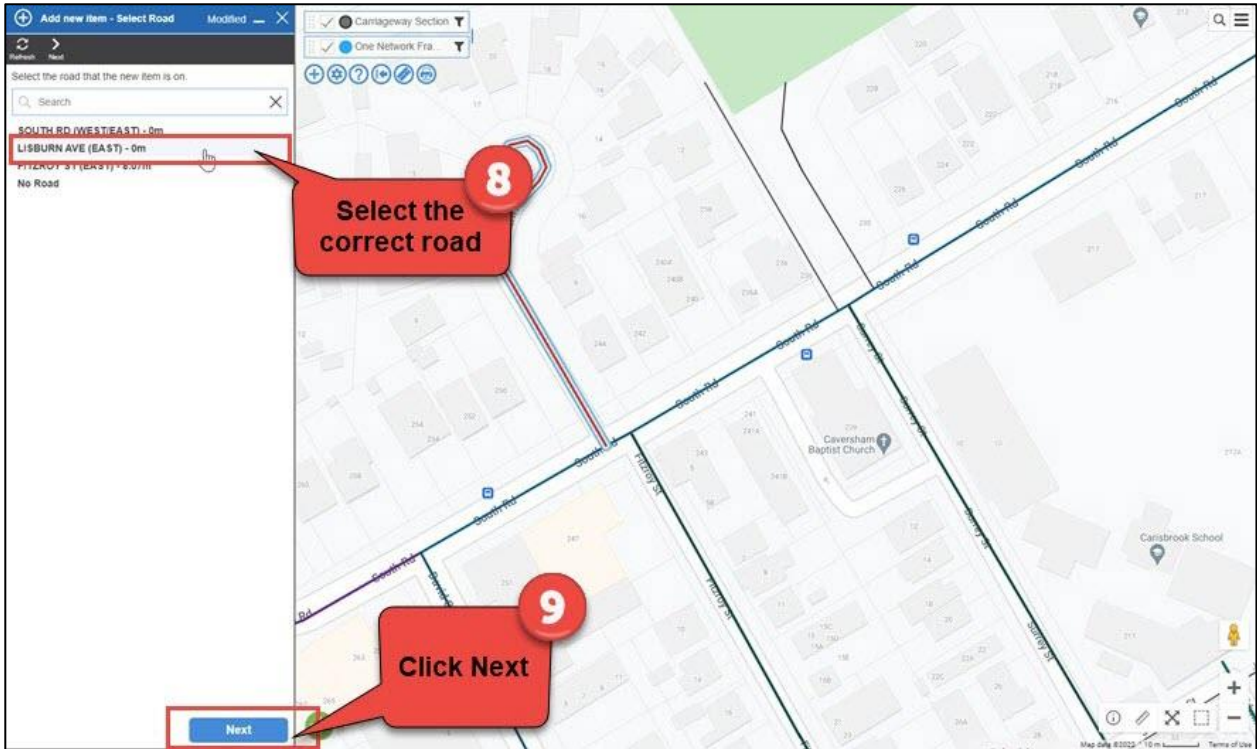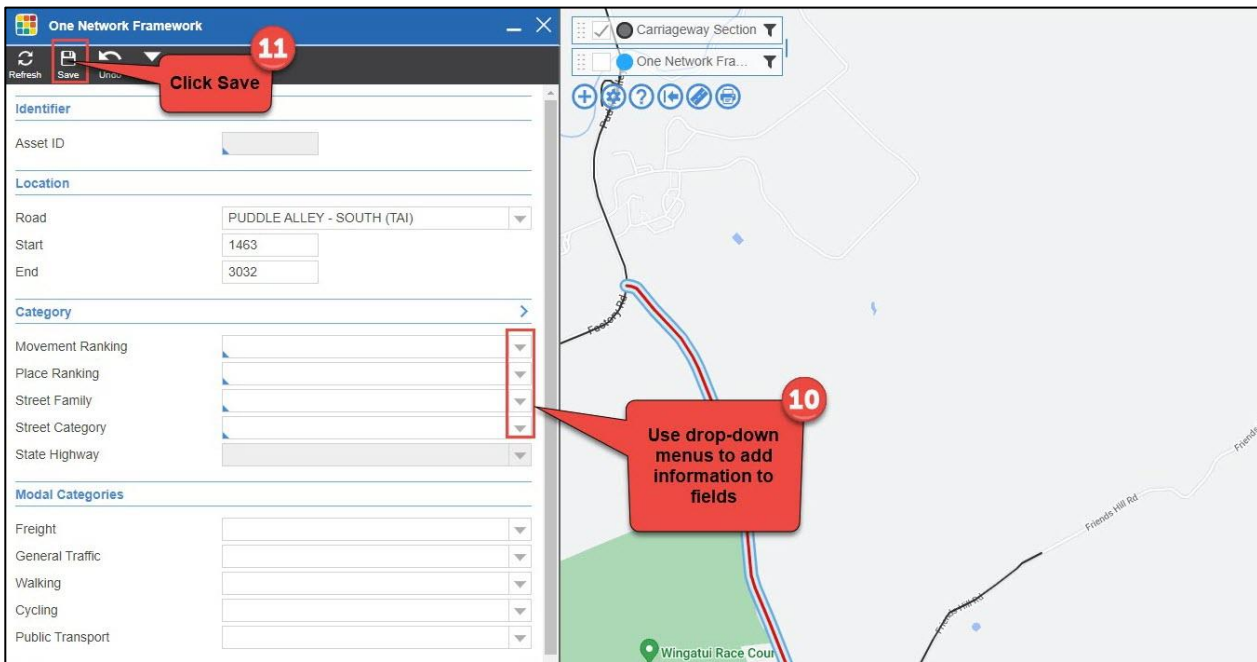
Figure 5 – Step 8 and 9: Creating a new ONF road

Figure 6 – Step 10 and 11: Creating a new ONF road

Considerations for classifying roads and streets in RAMM

Street Family

Choose the appropriate street family for the road or street - whether a road or street is in the urban or rural street family is based on the adjacent land-use and its interaction with and access from the road or street, with the district/unitary plan zone being the significant indicator. For example, if the land the road or street runs through is within a rural land-use zone then the road is rural. If the road borders urban/rural zones use the logical best fit of the on-street activity for that road/street.

Movement and Place rankings

To set the street classification in RAMM the movement and place rankings can be entered, and this will automate the street category. The function of the street category in the Detailed Design should align to the movement and place rankings given.

- Movement relates to all modes (refer to movement table in Detailed Design for scale of people movement) although depending on the function of the road it may also be useful to refer to specific modal tables (see Modal section of Detailed Design).
- The General Traffic and Freight table are particularly relevant for helping to distinguish between Local Streets and Urban Connectors, and Rural Roads and Rural Connectors where the function of the road or street is unclear. It is suggested that in these cases Urban or Rural Connectors would correspond to GT4 and GT5 except for Urban Connectors in some of our major cities that may correspond to GT3.
- It is assumed that most, if not all new roads and streets in urban areas will be local streets which have a place ranking of P3 or P4. The roads and streets with higher place rankings of P1 and P2 are more likely to already exist in the ONF current state, or feature in the future state classifications rather than the current state.
- The type of movement along a road or street can also impact on place. The higher place ranking of P1 and P2 indicates dense on-street activity, and in particular, large numbers of people spending time in the area immediately adjacent to the road or street (e.g., al fresco dining, using street furniture, listening to buskers etc). In these situations, high motor vehicle movement will reduce the place function as people will not want to spend time along the side of these roads or streets. In these cases of high motor vehicle movement (around GT3 and above) it is suggested that the highest place function would be P3.

Street Category

In many cases the category of the road or street will be clear as in the above example of a Local Street. In those cases where the category is unclear start by working out the function of the road or street.

- Refer to the Detailed Design that provides an explanation of each category and sets out functional descriptions and defining attributes.
- There will be cases where a road or street appears to have two functions. In these cases, it is important to determine the predominant or primary function of the road or street. For example, a road with the function of an Urban Connector also has a retirement home, day care centre and park located at intervals along the road.   Although these destinations will generate some on-street activity the predominant function of the road is not changed by these destinations and so the road should be classified as an Urban Connector.
- In other cases, there may be destinations or clusters of destinations, such as a group of shops on both sides of the road, that generate significant on-street activity and people wanting to cross the road. In this situation the predominant function of the road is an Urban Connector but the significant levels of on-street activity and people crossing the road mean that these sections should be classified as Activity Streets. Therefore, the road would be classified as an Urban Connector with sections of Activity Street at intervals where there is significant on-street activity generated by the adjacent land-use.
- Consider the function of surrounding roads and streets or roads and streets that connect to the new road/street – is the function of these roads or streets different to the new road or street or the same? Will the function of the new road or street change the function of surrounding or connecting roads/streets in the network?
- If applicable, also consider what the expected function of the new road or street was in your RCA planning documents and how it fits within the overall network.

Making changes to current classification

There will be instances where an RCA wants to make a change to the classification of a road or street. The following process sets out the considerations for RCAs.

Step 1 - Review the rationale for change

- Has the function of the road or street changed? For example, the development of new housing along a peri-urban road causing it to change to a local street. If needed, refer to the table with functional descriptions and defining attributes for each category in the Detailed Design.
- Has the place function of the road/street increased or decreased? For example, on-street activity from new businesses in a mixed-use zone causing a change from a local to an activity street. Or the opposite where businesses in an activity street relocate thereby making the function of the road/street a local street.
- Consider whether the place function has changed significantly enough to change the current function of the road/street, thereby warranting a change in classification. For example, a small business moving into a local street is unlikely to influence the on-street activity enough to change the function of the street – it is still a local street but now has a small business located on it. In contrast, a decrease in place function due to road widening and increased movement for example is likely to lead to a decrease in place function around the road/street.
- Has the movement value of the road/street increased or decreased? And is this enough to influence the function of the road/street and therefore its classification? For example, traffic calming measures may divert sufficient motor vehicle traffic from an urban connector to mean it may change to a local street or activity street if there is sufficient on-street activity.

Step 2 - Check consistency with surrounding network

- Check the function of surrounding roads, or roads that connect to the road that you think needs to change – is the function of these roads or streets different or the same? Will the change influence the function of surrounding or connecting roads/streets in the network? Is the change consistent with RCA planning documents?
- Make sure there is a relationship of function between the changed road/street and surrounding roads and streets. For example, shorter streets that run off a long Main Street in an urban area are more likely to be Activity Streets than Main Streets due to the difference in function illustrated by lower place and movement values.
- Make sure there is a consistency of function between roads and streets of the same category in your network – that is, a Main Street in one part of your network has the same function as a Main Street in another part of the network.

Step 3 - Making the change in RAMM

The below steps and supporting figures below should be followed to make these changes in the RAMM system once it is confirmed a change is needed. Ensure you have the ONF layer on first, then:

1. Click on the road or street that you want to change.
2. Click on 'Show Detail'.
3. Use drop-down menus to change the relevant fields[6]
4. Add rationale in the notes field for the changes made:
   - You could add date of change, what made the function change, any other detail that will help anyone reviewing the change to understand why.
   - You can expand the notes field for easier viewing/input by clicking the expand button in the corner of each notes field, remember to click apply in the expanded notes area to save the notes correctly when using this feature.
5. Then click 'Save' to save your changes.

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[6] After making changes check that the street family is correct. If the automatically populated street category is incorrect, you can change this manually by using the drop-down arrow, though it is likely an indication that you need to review the movement and place rankings that have been entered.

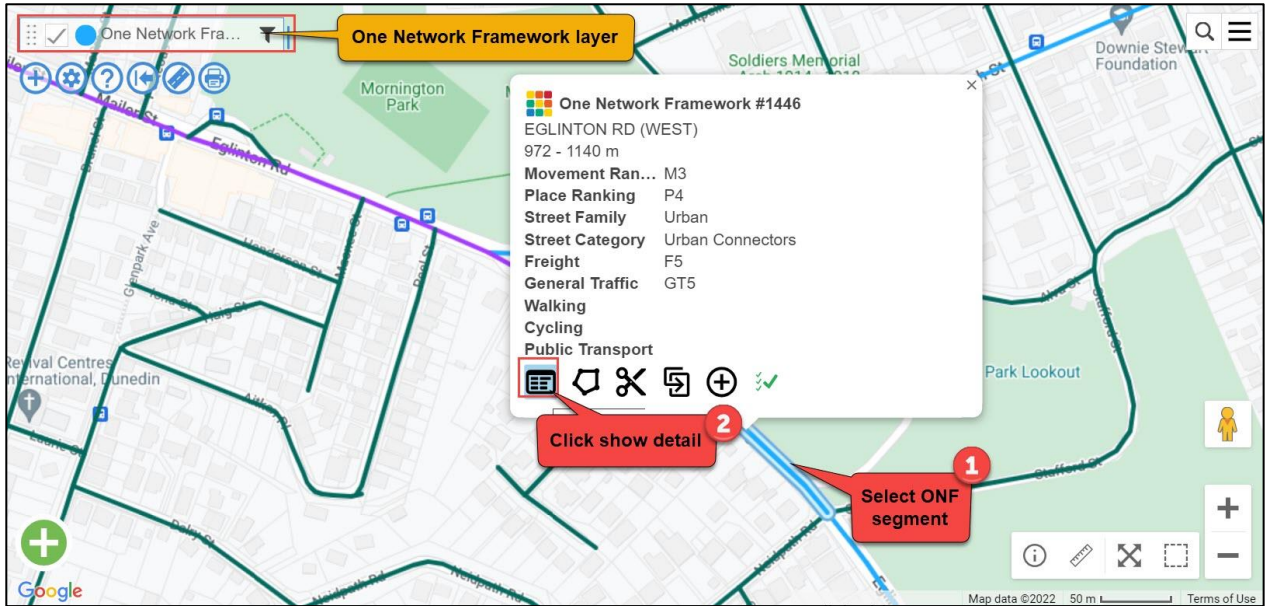Figure 7 – Step 1 and 2: Changing an ONF classification

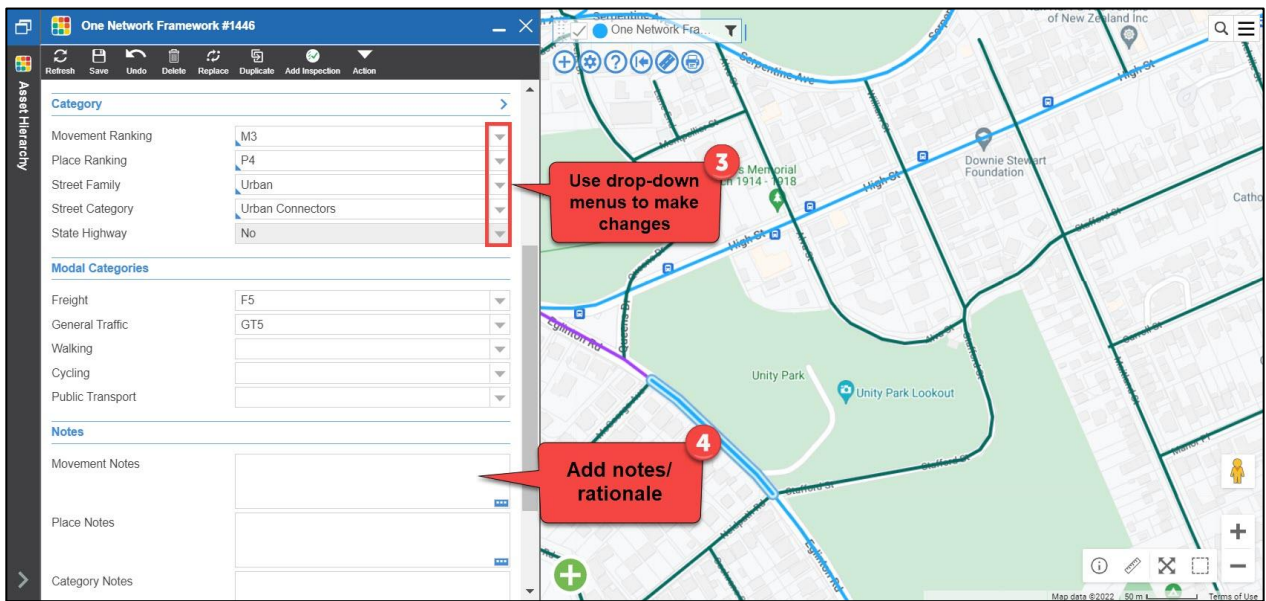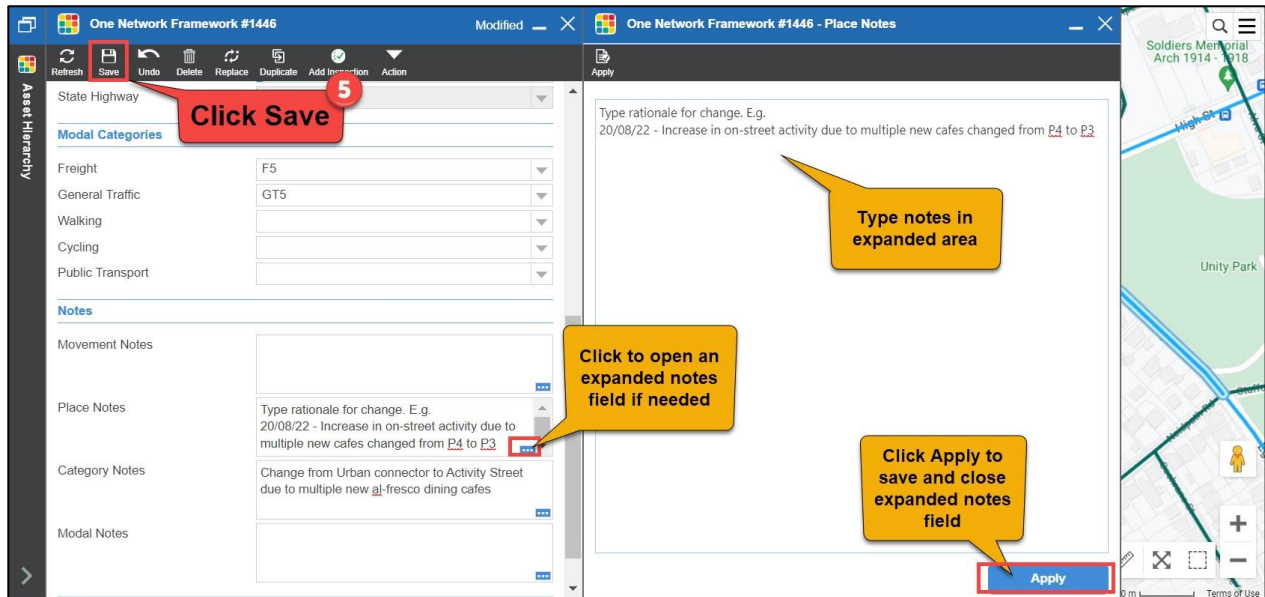Figure 8 – Step 3 and 4: Changing an ONF classification

Figure 9 – Step 5: Changing an ONF classification

Other considerations

The following provides guidance for specific classification considerations relating to lanes, roundabouts, on and off ramps, bridges, overpasses/underpasses, and stopping places:

Multiple lanes

- Multiple lanes on a road or street should be classified with the same Road or Street category.
- Where there is a split carriageway, both sides of the carriageway should have the same classification. If both sides of the carriageway are within the same road reserve, then only one ONF record needs to be created/maintained for that road or street. Regardless of where the carriageway, pathway, or lane is located, if they contribute to overall movement along that road or street with connections to similar start or end points, then they are considered the same street classification under ONF.

Roundabouts

- Where roundabouts and similar traffic installations have been assigned unique road sections, they should be assigned the Road or Street category with the highest place function ranking of the adjacent street category, if they both have the same place value, then consider the one with the highest movement value as well. For example, a roundabout with two approaches classified as Urban Connector and one classified as Activity Street should be classified as Activity Street.

Ramps

- On and off ramps should be classified the same as the road or street they are providing access to or from.

Bridges, overpasses, underpasses, and tunnels

- Bridges, overpasses, underpasses and tunnels should have the same Road/Street category as the adjoining (not intersecting) carriageway section(s) i.e., the section where movement is generated from/to, not the intersecting corridor in the case of over and underpasses.

Stopping places

- National moderation found that there was variability in the use of Stopping Places across the New Zealand network with some RCAs classifying a significant number while others didn't classify any. There was also some inconsistency in the classification of Stopping Places with some RCAs classifying a short section of corridor immediately adjacent to a significant rural destination while others classified long sections of road along the side of a lake or river.
- As a result, it was agreed[7] that Stopping Places '*should only be used for rural destinations that are directly using the road for access and where some type of intervention is required*' – please refer to the Stopping Places category description in the Detailed Design for further detail.

Modal classification

The below section provides information for updating current modal classifications in the RAMM system and guidance on the approach for classifying modal networks under the ONF. It is intended to be used alongside the modal information found within the Detailed Design.

General Traffic and Freight modal classifications have been automatically classified in the RAMM system based on existing ONRC values, which are determined primarily from vehicle volume data. There may be instances where this is not accurate, and RCA's may amend these classifications as required.

The Not Applicable (N/A) classification option

Some parts of the transport network will not cater to a particular mode and therefore will not need to have a classification assigned to the ONF road segment in RAMM. To indicate that a deliberate decision has been made not to assign a modal classification to that part of the network (rather than just having not been classified yet) an "N/A - Not applicable" option has been made available for each modal category in RAMM. If an ONF road segment has not yet been classified for a particular mode, then it is expected that field will remain blank until it is classified.

Examples where the "N/A – Not applicable" modal classification option might be used:
- Roads where Freight or General traffic is not permitted.
- Off-road routes for cyclists and pedestrians where motor vehicles are not permitted.
- Motorways and transit corridors where pedestrian access and cycling is not permitted.

Off-road routes and paths

It is recommended that off-road routes and paths that are of strategic importance to one or more modal networks are classified under ONF.
- Using the Street Family, along with Movement and Place values (see appendix A), you will be able to determine the associated ONF street category, even if the off-road asset or route itself is not considered a road or street.
- In most instances where the off-road route or path does not allow for movement of vehicular traffic the value for movement is likely to be low (M4 or M5) but may still have high place value depending on the interaction with surrounding land use.
- Use the N/A modal classification option to show that the off-road route or path does not cater to General Traffic, Freight, or Public Transport as needed.
- You may choose to add relevant asset-related information, such as it being an off-road route, to the free-text notes fields with RAMM.
- Though it is *not a requirement* for ONF segments to follow carriageway sections within RAMM in order to be classified, for linear referencing/mapping purposes it is preferred to have a carriageway section to start with. Therefore, it is recommended that off-road routes and paths have an ONF segment either added as a "linked child" of a carriageway (if it already exists), or that a carriageway is added before creating the ONF segment. Refer to RAMM help documentation for more information on how to add carriageways and ONF segments.

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[7] During the National Moderation for ONF in Nov 21

Updating modal classifications in RAMM using the map

Updating individual ONF segments

Ensure you have the ONF layer open and selected in RAMM.

1. Locate and select the ONF road segment in RAMM to update.

2. Click the show 'detail button'.

3. Scroll down to the 'modal categories' section and use the drop-down menu next to the mode(s) being classified to select the appropriate classification from the pre-defined options.

4. (Optional) scroll down to the 'Modal Notes' field and add any relevant notes regarding the modal classification.

5. Click the save button.

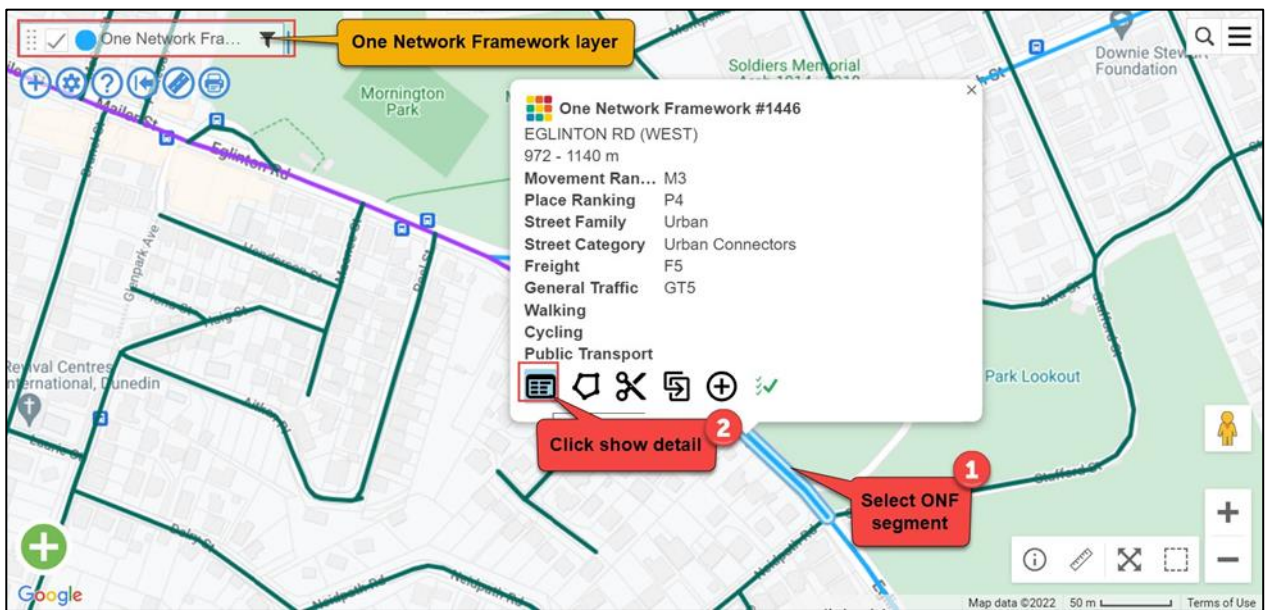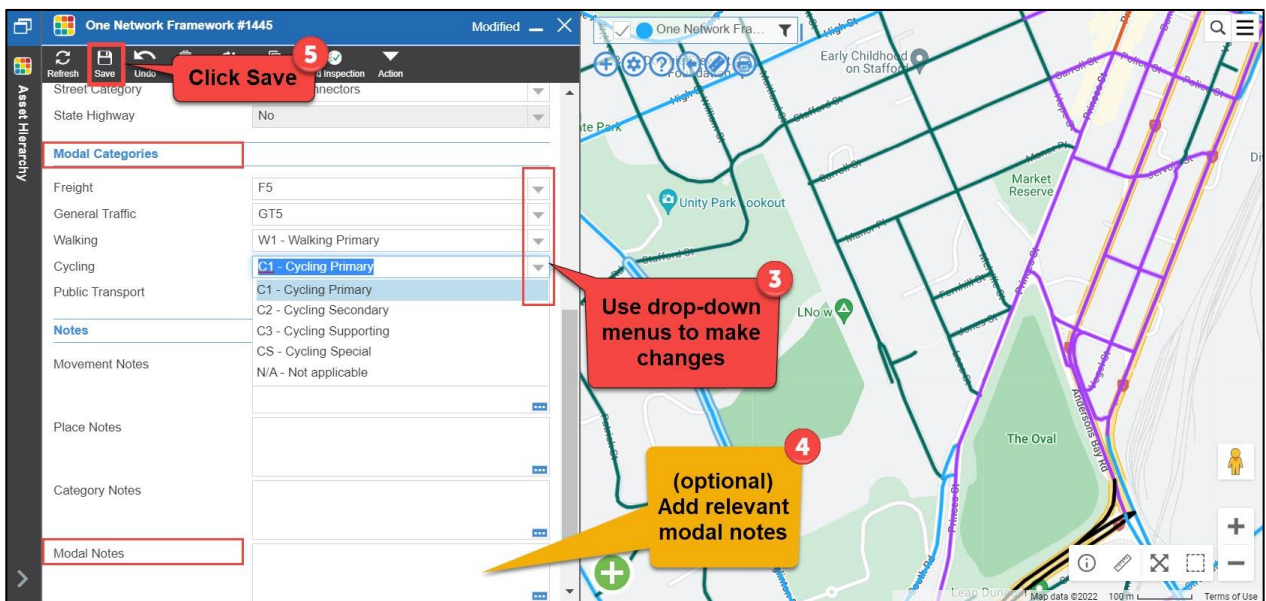Figure 10 – Step 1 and 2: Modal classification

Figure 11 – Step 3 and 4: Modal classification

Updating multiple ONF segments to the same modal classification at once (bulk change)

Ensure you have the ONF layer open and selected in RAMM.

1. Hold the 'CTRL' key on your keyboard and click each ONF segment to add to the current selection, if you click the wrong segment click it again while still holding the 'CTRL' key to unselect it.

2. Click the 'One Network Framework' layer name.

3. Select 'Bulk Change' from the menu.

4. Click the drop-down arrow next to 'column' field and select the mode that you are updating.

5. Click the drop-down arrow next to the 'New Value' field and choose from one of the pre-defined classification values to assign to the selected ONF road segments.

6. Select apply.

7. A confirmation pop-up will appear, select 'yes' to save changes or 'no' to return to editing.

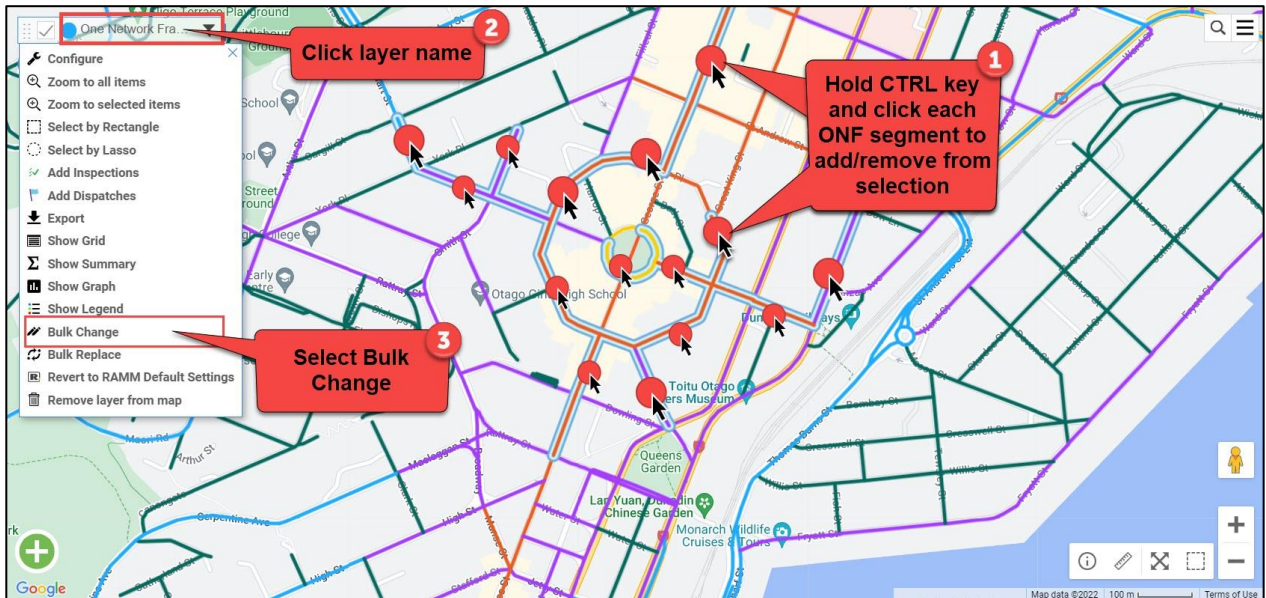Figure 12 – Step 1, 2, and 3: Modal classification bulk change

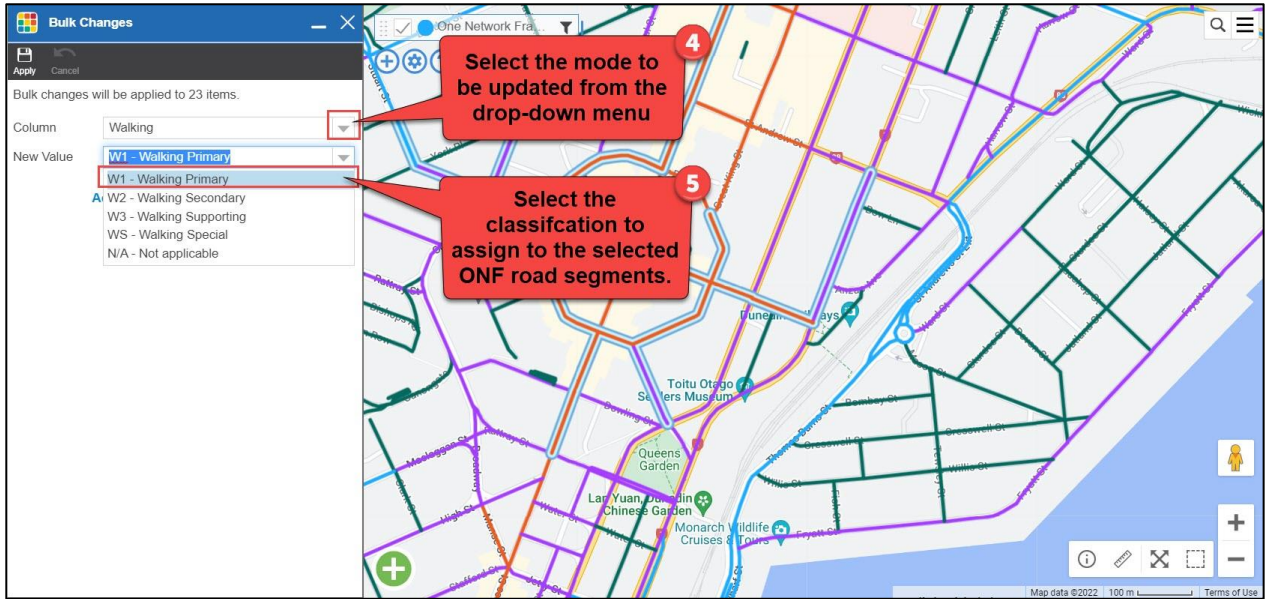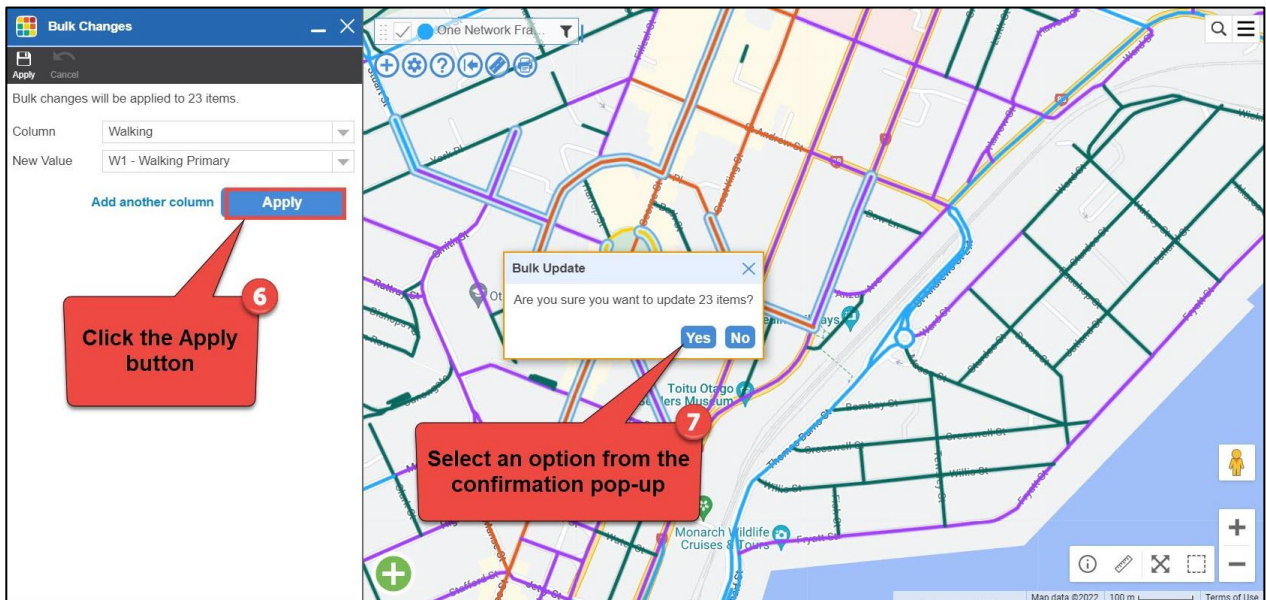Figure 13 – Step 4 and 5: Modal classification bulk change

Figure 14 – Step 6 and 7: Modal classification bulk change

Public Transport

Classifying the Public Transport network is primarily based on the quantity of total services that move along a corridor, as well as the quantity of people being moved, the time of day the services travel, and the total frequency of public transport services (in both directions). Classification of the Public Transport network should be carried out in collaboration with Regional Councils as they will understand the volumes of people travelling on their services and the total volume of services on a particular part of the transport network.

Approach

1. Look over the classification table with a particular focus on familiarising yourself with the 'strategic significance' column.

2. Consider the 'strategic significance' descriptions in conjunction with the 'Indicative vehicle volume' column to begin to classify your network. Note that you are classifying the number of services *per hour* on a certain part of your network in *both directions* and this may include *a range* of public transport routes that use that part of the network. For example:
   a. If services on the corridor only operate at some times of the day (e.g., peak hour service only, weekday services only, school bus services only) then it is class PT 5.
   b. If services operate throughout the day (i.e., 7am-7pm, seven days a week) but with less than 4 services an hour on average along the road, then it is class PT 4.
   c. If services operate throughout the day with at least 4 services per hour on average, then move to step 3.

3. Undertake a second filter to sort corridors carrying higher public transport vehicle volumes between classes 1-3, as follows:
   a. If services operate on a dedicated corridor and meet the standards of a rapid transit service (as outlined in the National Policy Statement on Urban Development8) then it is class PT1.
   b. If at least 20 services per hour operate on the corridor at most times, across several different services, carrying very large volumes of people, then it is class PT2.
   c. If neither of the above points are met, then it is likely PT3.

Notes, examples, and rationale:

- The 'indicative vehicle volume' and 'indicative people movement' numbers have been provided as a 'Rule of thumb', but other columns (such as 'strategic significance' or 'description') may also inform the ultimate choice in public transport classification for each corridor.
- As noted below the table, not all classes of Public Transport will be applicable to all RCAs and it is expected that only large metropolitan councils will likely have corridors rated as PT1 or PT2.
- Devonport Ferry in Auckland is PT4, Secondary, because it operates at frequencies of less than 4 an hour across most of the day, despite operating on dedicated (water) corridor.
- Eastbourne Ferry in Wellington is PT5, Targeted, because it only operates at some times of the day (peak only).
- Lambton Quay or other parts of the 'Golden Mile' in Wellington are classed as PT2, Spine, because they have a significant number of overlapping bus services that well-exceed 20 services per hour.
- Parts of Symonds Street in Auckland are classed as PT2, Spine, because there are a significant number of overlapping bus services that well-exceed 20 services per hour.
- Hutt, Kapiti, Western, Eastern and Southern railway lines in Wellington and Auckland are PT1, Dedicated, because they generally provide a frequent service (averaging around 4 trains per hour across the day) on a dedicated rail corridor and have been classified as such in the NPS-UD.
- Johnsonville Line & Onehunga Branch Line are PT4, Secondary, because they have less than four services per hour on the corridor.
- Northern Busway is PT1, Dedicated, but on-street sections of the Northern Express (NEX) service (e.g., Fanshawe Street) are likely to be PT2 - Spine, or PT3 - Primary, depending on number of services per hour through the corridor (in both directions).
- The Parade in Island Bay would be PT3, Primary, because it has greater than 4 services per hour during most of the day (7am – 7pm).

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[8] Rapid transit service means any existing or planned frequent, quick, reliable and high-capacity public transport service that operates on a permanent route (road or rail) that is largely separated from other traffic " from NPS-UD p.11

Cycling

Classification of the Cycling network (including micro mobility) is predominantly based on the quantity of people using the network, and the connectivity provided by that part of the network to key places/destinations. Most cycling networks do not currently have volumetric data, therefore local judgement and knowledge of the network is needed to determine how each section will be classified.

Approach to classifying the Cycling network

Look over the classification table with a particular focus on familiarising yourself with the 'strategic significance column'. The strategic significance descriptions should be used alongside the descriptions of the various tiers of the cycling network set out below.

Commencing with the C1 - primary network in an urban centre and classifying the network working outwards will usually be the easiest way to undertake the classification, this will also allow for a sense check of the connectivity between the various network classes as you go. The C2 - secondary and remaining network will usually extend out from the C1- primary network.

C1 – Primary
Provides a core network of cycling corridors that connect significant places and key locations of employment and education.

   a. This might include larger hospitals, major employment, shopping precincts and retail areas, universities / polytechnic / colleges, significant civic spaces and facilities, frequent public transport stations and interchanges, and public transport corridors.
   b. The network caters for higher volumes of cycle movement, longer and more efficient journeys (connecting across townships or between suburbs). Average cycling travel speeds are likely to be higher on the C1 network. The volume of use many even require segregation of cyclists from each other, from pedestrians, or from traffic and the volumes may even demonstrate a "cycling peak" for commuting.
   c. C1 networks may include both on-street and off-street facilities but delays will likely be minimised at intersections with crossings, advanced stop boxes, etc.

C2 – Secondary
Supports mostly local, short trips to suburban centres, including important links to stations and other interchanges. They also feed to C1 routes.

   d. Typical destinations accessed from C2 might include, larger primary schools, secondary schools, some colleges, medical centres, local employment and local retail, supermarkets etc.
   e. Cycling volumes will be noticeable. Cycling trips will be taking place throughout the day. Routes will tend to follow direct desire lines, travel speeds for cyclists will be fairly high and the degree of delay experienced by cyclists at intersections will be managed. User facilities may be a mixture of on-road and off-road facilities, this may include some degree of separation. The facility type in C2 will likely mirror the targeted cyclist type. Confident cyclists may well be comfortable riding in cycle lanes whereas the "interested but concerned" may expect segregation from traffic.
   f. This class can also be applied to off-road cycling routes such as cycle paths through parks where the route fulfils the function of a secondary cycling corridor.

C3 – Supporting
Neighbourhood and local links that make up the balance of the cyclable road network that isn't C1 or C2. C3 might provide short connections to C1/C2 routes.

   g. Primarily C3 supports mostly local, short trips to local centres (local schools (usually primary schools), amenities like parks and shops) and local medical centres.
   h. Cycling volumes (and typical traffic volumes) will be low, similarly the general riding speeds and traffic speeds will be low. The network will range from simple quiet local streets, residential roads, traffic calmed parts of the network, shared space environments and may include off road paths through parks etc.
   i. Dedicated cycling facilities are likely to be quite rare and routes are less likely to be direct.

CS – Cycling Special

Mainly a rural network classified around recreational and tourism trips. This recognises the significance of cycling routes, some of which are on a national scale such as NZ Cycle Trail and allows for these routes to be highlighted in overall cycling network planning.

j. They will typically be low volume cycle use, low design speed and provide a quieter more remote cycling environment alongside rivers, across rural landscapes and be features such as rail trails.

k. Whilst generally off-road it should be noted though that CS routes can be on-road and provide for longer cycle journeys that can be utility cycling to school or work or routes known to be popular as training circuits with road cyclists.

Notes, considerations, and rationale:

- Where a cycling route serves both a transport and tourism / recreational function the classification should primarily reflect the transport function and should be classified accordingly.
- Specialist cycling facilities, such as the trails within mountain bike parks that are used for recreation, are generally not considered part of the cycling network as these do not reflect movement for transport purposes.
- CS - routes that traverse urban areas and share their route with the defined urban cycling network should be classified either C1, C2 or C3. This might include sections of rural road where there is a discernible (greater than casual and occasional) use of a particular corridor by cyclists and where connections are made between key destinations or settlements.
- Consideration for connection to public transport - Access by cycle to public transport may include access to bus stops, bus stations and interchanges / hubs, train stations, or ferries. Strategic cycling networks may integrate public transport stops and interchanges, both in terms of cycle parking provision at public transport networks but also being influenced by where buses/trains/ferries that can carry bikes operate.
- Reserves and Parks - Ultimately the scale of the reserve, its location and the number of paths used for cycling will drive how the reserve is dealt with. At this stage, you may choose to not classify these sections. If they are important parts of your cycling networks or provide links between on-road sections, you can determine how they might be classified in relation to the connecting cycling network.
- Service lanes, no exit roads - Might not have been initially classified into a street category under ONF, however it may play part of the strategic cycling network and therefore warrant classification.
- Shared paths, cycle paths, etc. – These are generally an asset that functions with the same movement and place rankings as part of an adjacent street/road corridor rather than being classified separately into its own street category. The exception to this may be something which is quite removed from your "street corridor".

Relationship between cycling and street categories

In the ONF classification process "movement" and "place" levels are used to determine the final street category type. Recognising that certain cycling network types may predominantly be associated with certain street category types then allows the classifier to undertake a rough audit or assessment of the ONF classification in relation to cycling networks (C1-3, CS) against final street category as something of a "sense check" when the classification process concludes.

Table 1 - Indicative cycling and street categories

Class	*Indicative* associated Street Categories
C1[9]	Civic Spaces, Main Streets, City Hubs, Urban Connectors
C2	Activity Streets, Urban Connectors

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[9] C1 and C2 Notes – It should be remembered that some urban connectors might well carry significant volumes of cyclists and those on longer cycling trips (for example cycling to work). The facilities may be no more than a cycle lane or bus lane within the roadway but equally the facility could be quite significant.

C3	Local Streets, Peri-urban Roads
CS	Rural Roads, Rural Connectors, Stopping Places

Walking

Classifying the Walking network is predominantly based on the quantity of people using the network and the connectivity provided by that part of the network to key places/destinations. Most Walking networks do not currently have volumetric data, therefore local judgement and knowledge of the network is needed to determine how each section will be classified. The overall look and feel of a route, the type of "place" combined with the level of walking will allow an RCA to classify the network.

Approach

Look over the classification table in the Detailed Design with a particular focus on familiarising yourself with the 'strategic significance column'. The strategic significance descriptions should be used alongside the descriptions of the various tiers of the walking network set out below.

Commencing with the W1 - primary network in an urban centre and classifying the network working outwards will usually be the easiest way to undertake the classification, this will also allow for a sense check of the connectivity between the various network classes as you go. The W2 - secondary and remaining network will usually extend out from the W1- primary network.

W1 - Primary
Provides a core network of walking route with the highest concentrations of significant walking activity. They are likely to be in central locations within 1- 2km of an urban centre and reinforce the perception of the "20 minute city". The routes will connect to significant places and key locations of employment and education.

  a. This might include larger hospitals, major employment, shopping precincts and retail areas, universities / polytechnic / colleges, significant civic spaces, and facilities.
  b. Frequent public transport stations and interchanges are obvious focal points for walking journeys, key routes within about 500m of a stop or interchange on a PT1, PT2 or PT3 route or within about 1.5kms of a stop on a Metro Rail route, central ferry terminals, or transport interchanges would likely be classified as part of the primary walking network.
  c. The volume of use many even require segregation when the space is shared with cyclists but in general the footpath provision means that users are generally able to move about easily despite large pedestrian volumes.
  d. The network will include both on-street and off-street facilities, but delay will be minimised at intersections and there should be plenty of crossing opportunities mid-block (be that via formal facilities or through traffic managed or traffic free environments). The route will be direct and offer good levels of safety (personal and road).

W2 – Secondary
Supports mostly local, short trips to suburban centres. They also feed into W1 routes in larger central areas.

  e. Typical destinations accessed by W2 might include, larger primary schools, secondary schools, some colleges, medical centres, local employment and local retail, supermarkets, etc.
  f. Walking volumes will be noticeable. Walking activity will be noticeable throughout the day. Routes will tend to follow direct desire lines and the degree of delay experienced at intersections will be managed. Crossing opportunities will be common and formal crossing facilities will common. Shared facilities (with cyclists) may be common in some locations.
  g. This class can also be applied to off-road walking routes such as shared paths through parks where the route fulfils the function of a secondary walking corridor.
  h. W2 will be associated with a variety of public transport network types but will most commonly link to PT 3 or PT4 bus stops for a distance up to about 500m.

W3 - Supporting

Neighbourhood and local links that balance of pedestrian network (i.e., all routes within a suburban or local centre) covering local walking links as well as all residential local streets that aren't part of the W1 or W2 network.

     i.   W3 often provide short connections to W1/W2 routes.

     j.   Primarily W3 supports mostly local, short trips to local centres (local schools (usually primary schools), amenities like parks and shops) and local medical centres.

     k.   Walking volumes will be low. The network will range from simple quiet local streets, residential roads, traffic calmed parts of the network, shared space environments. This can include any off-road routes, such as paths through parks where walking is undertaken for the purpose of getting to a local activity at the journeys end.

     l.   Dedicated walking facilities are likely to be no more significant than an adequate footpath and dedicated crossing facilities may be quite rare.

WS – Walking Special

Walking Special (CS) is mainly a rural network classified around recreational and tourism trips. This recognises the significance of walking routes, some of which are on a national scale such as Te Araroa and DoC tracks and allows for these routes to be highlighted.

     m.   Volumes of user are likely to be low and very sporadic / seasonal.

     n.   The network is likely located beside rivers, creeks and rail lines and is often separated from motor-vehicle traffic.

     o.   Some sections may be shared facilities with cyclists.

     p.   Some parts of the WS network may be no more than the sealed shoulder at the edge of the roadway in a rural area and may be locally used to connect remote settlements.

Relationship between walking and street categories

Walking has a direct relationship to "place' with increased pedestrian activity occurring within more significant places, i.e., places with increased on-street activity. In the ONF classification process "movement" and "place" levels are used to determine the final street category type. Recognising that certain walking network types may predominantly be associated with certain street category types then allows the classifier to undertake a rough audit or assessment of the ONF classification in relation to walking networks (W1-3, WS) against final street category as something of a "sense check" when the classification process concludes.

Table 2 - Indicative walking and street categories

Class	*Indicative* associated Street Categories
W1[10]	Civic Spaces, Main Streets, City Hubs
W2	Activity Streets, Stopping Places
W3	Urban Connectors, Local Streets, Peri-urban Roads
WS	Rural Roads, Rural Connectors

General Traffic

The General Traffic modal network classification has been automatically applied in the RAMM system based on existing ONRC values. There may be instances where the ONRC was not accurate at the time of automation, or RCA's may want to change these classifications for another reason (e.g., updated vehicles counts show change in vehicle volumes, no general traffic access to that part of the network resulting in an N/A classification, etc.). Using the table in the Detailed Design consider the current vehicle

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[10] W1 and W2. It should be remembered that some urban connectors might well carry significant volumes of pedestrians and those on longer walking trips (for example walking to work). The facilities may be no more than a footpath adjacent to the roadway but the strategic importance of these routes should be considered.

volumes and current strategic significance for general traffic for the network being re-classified and change the classification, ensuring to note the reason for change in the movement or modal notes fields provided.

Freight

The Freight modal network classification has been automatically applied in the RAMM system based on existing ONRC values. There may be instances where the ONRC was not accurate at the time of automation, or RCA's may want to change these classifications for another reason (e.g., a strategic freight network plan has become realised - with a shift in freight from one corridor to another, no freight access to that part of the network resulting in an N/A classification, etc.). Using the table in the Detailed Design consider the current freight vehicle volumes, total volume of goods being moved (where data is available), and current strategic significance for freight to determine the correct freight classification. Update this in RAMM and note the reason for change in the movement or modal notes fields provided.

Displaying the Modal Map Layers and Filtering in RAMM

A map layer has been created for each of the different modes so that you are able to view these in the map. The below steps outline how to open and filter the information within these map layers.

1. Click the Add Layer icon.
2. Type ONF in the search bar.
3. Under the Map Layer section select the modal layer that you want to open.
4. Ensure the modal layer you want to view is ticked; this will display that modal network on the map.

Continue the below steps if you want to further filter the information shown based on the classification values. This is useful if you only want to view a particular class, e.g., filter by W1 – Primary to display ONF segments that have been classified as part of the primary walking network.

5. Click the filter icon next to the name of the map layer.
6. Click the area where classification values are displayed, this will open the select values area.
7. Untick the classifications you do not want to show, so that only the classifications you want to view remain selected.
8. Click Apply.
9. Click X to close the filter section (if Auto Apply is not already ticked, then click on the apply button before closing the filter section).

This will now show the filtered classification on the map.

If the map is showing a clustered view, refer to appendix 3 "The ONF map – Clustered to Standard view" for steps for changing to standard view.

Note that these are templated map layers that will revert to all values displayed (removing the filtering) each time the map layer is opened.

Figure 15 – Step 1: Viewing a Modal Map Layer and filtering
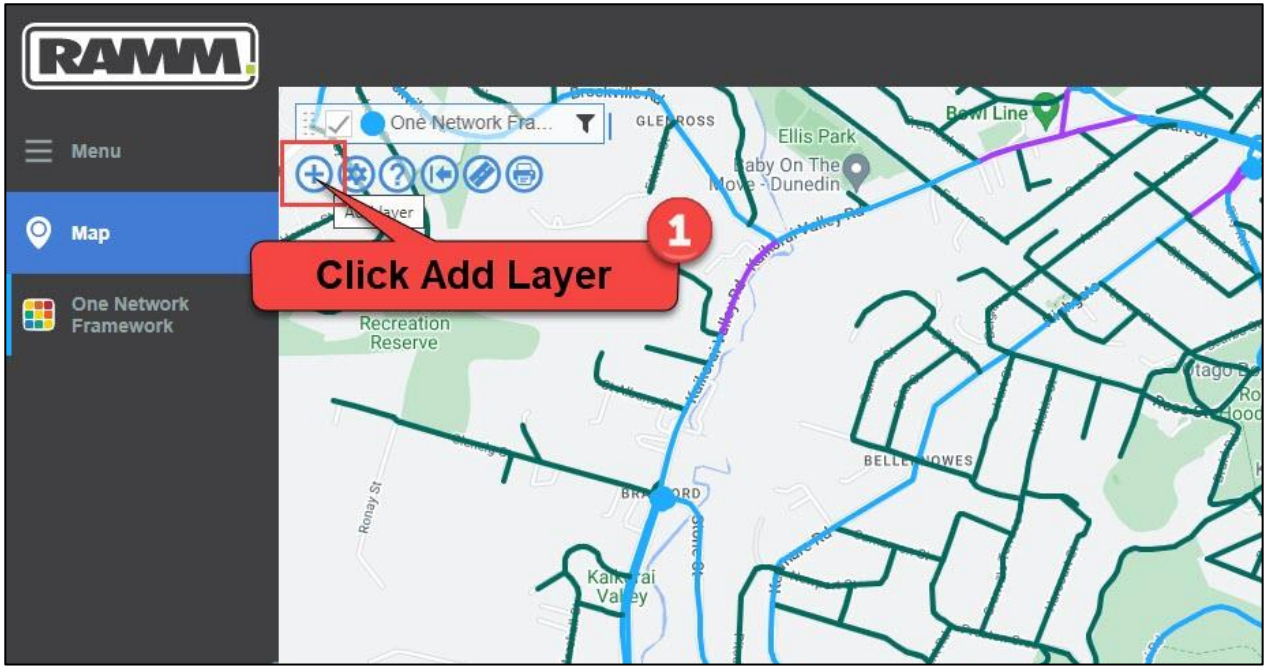
Figure 16 – Step 2 and 3: Viewing a Modal Map Layer and filtering
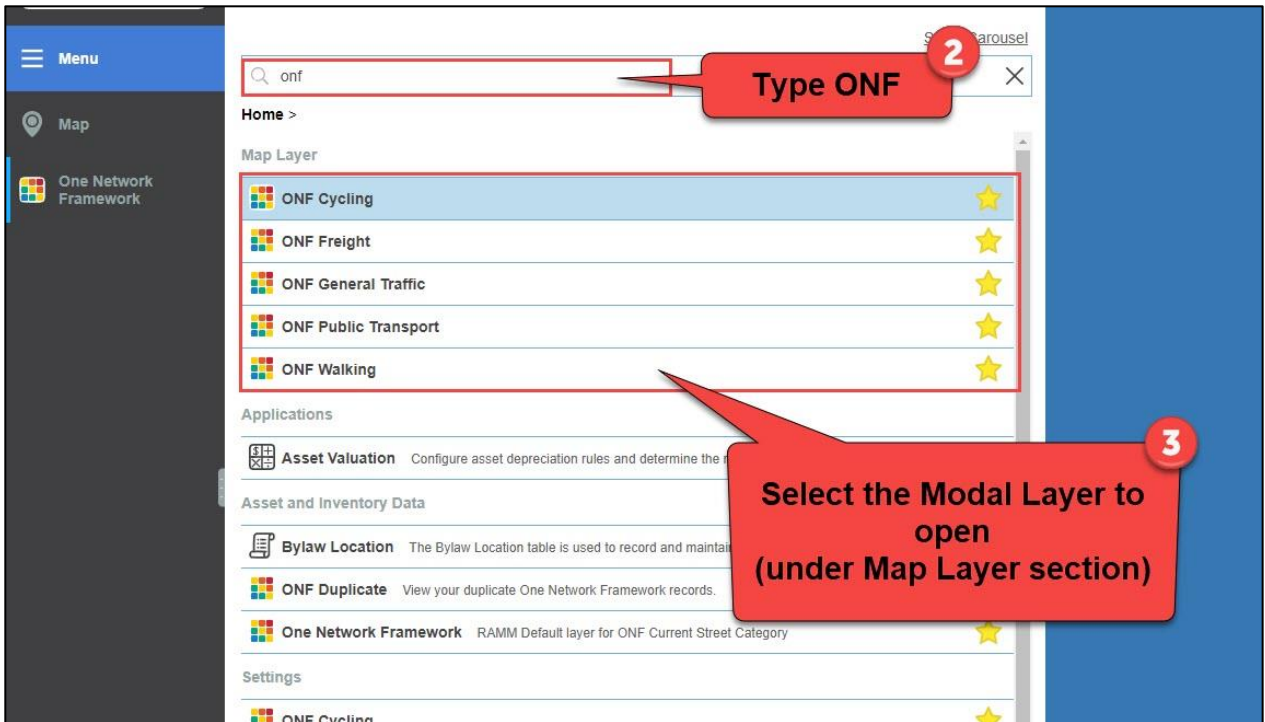
Figure 17 – Step 4: Viewing a Modal Map Layer and filtering
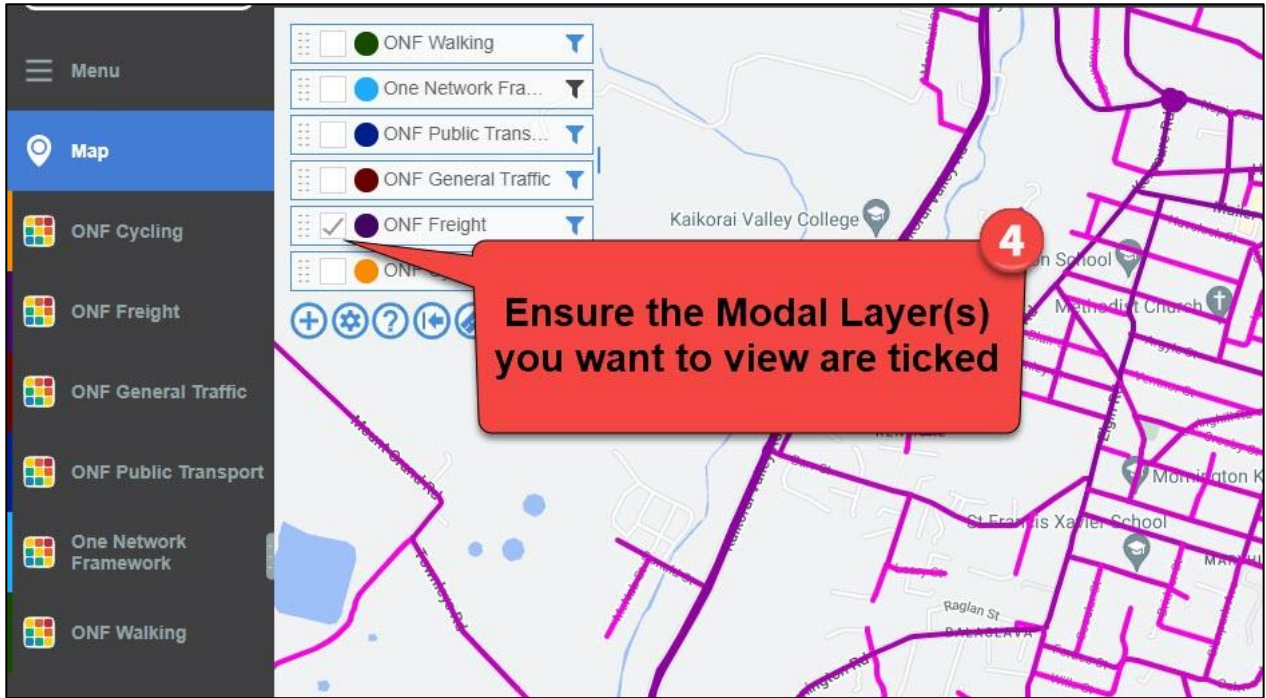
Figure 18 – Step 5: Viewing a Modal Map Layer and filtering
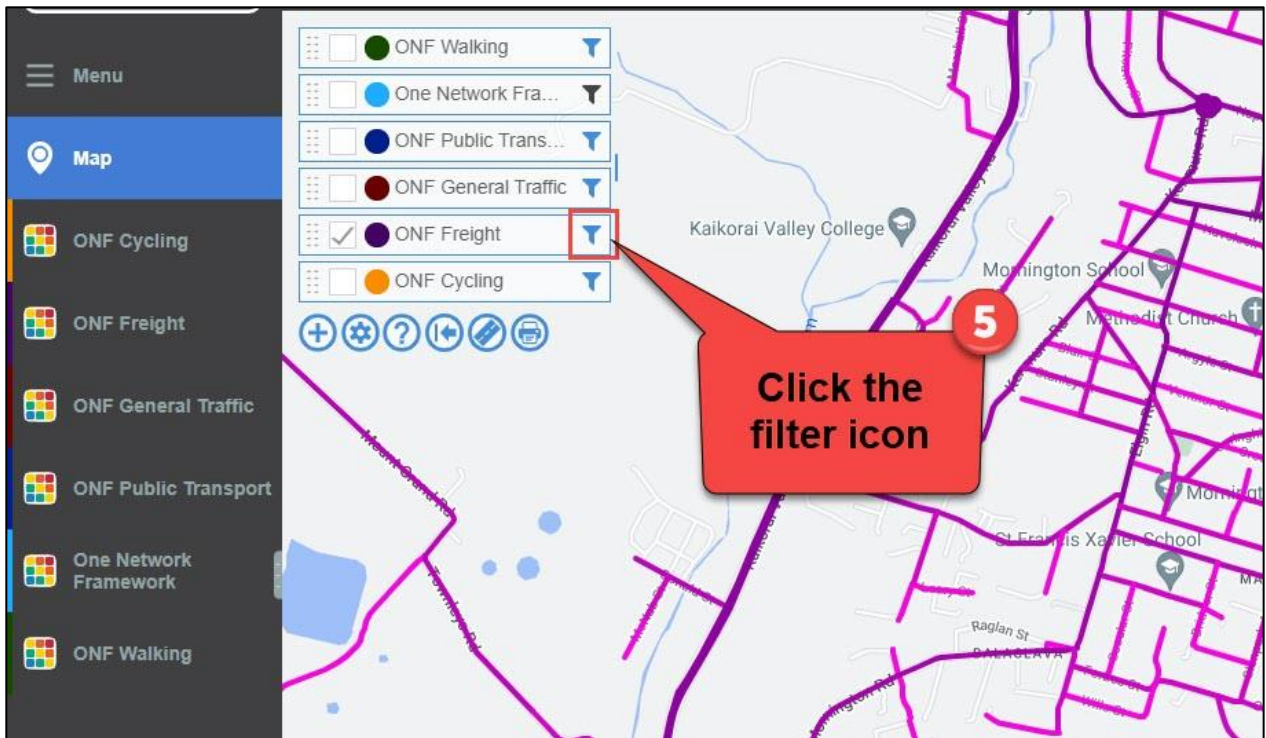
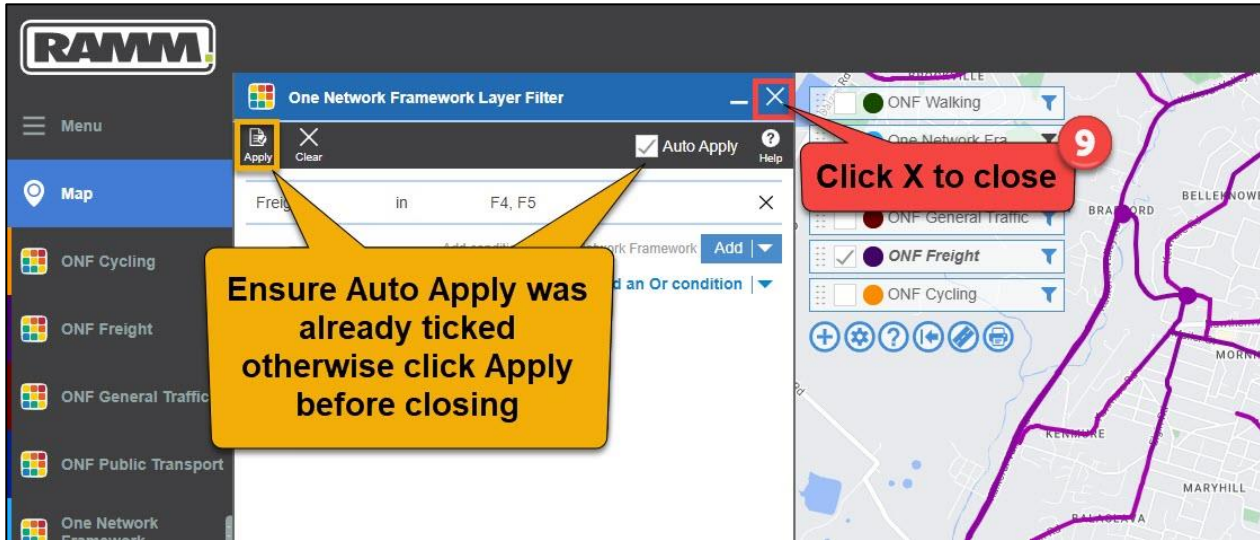Figure 19 – Step 6, 7, and 8: Viewing a Modal Map Layer and filtering
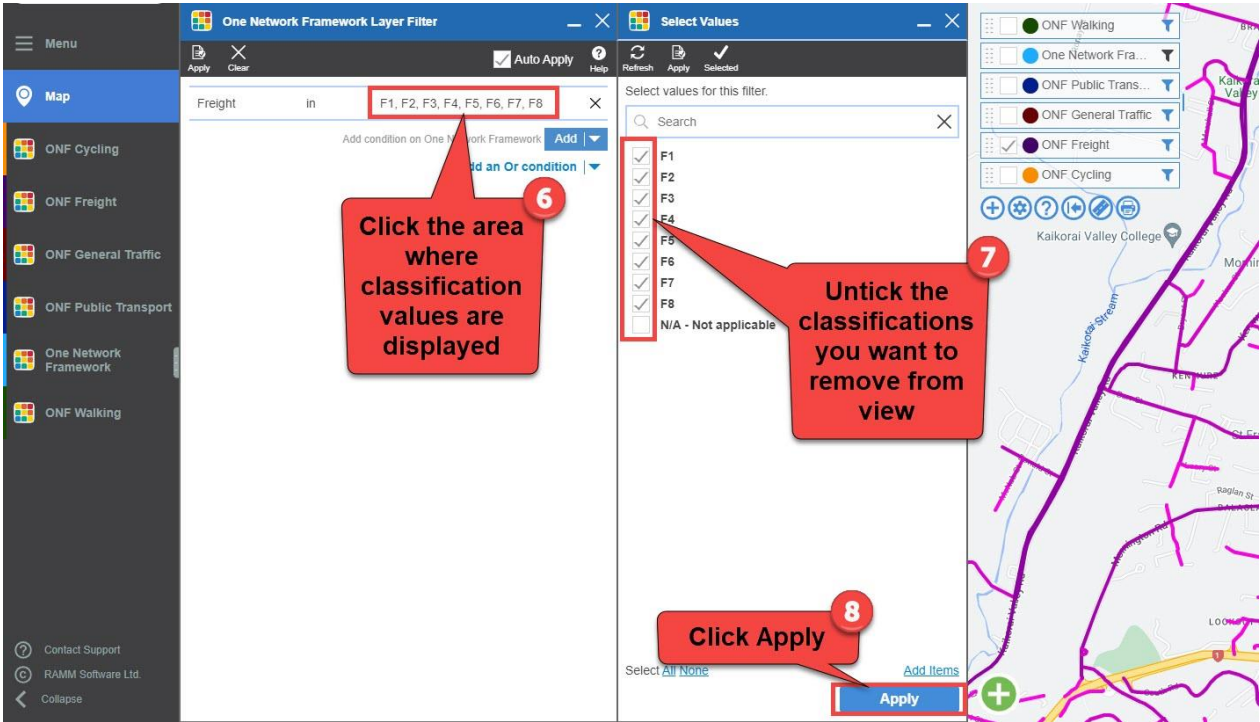
Figure 20 – Step 9: Viewing a Modal Map Layer and filtering

Appendices

Appendix A – Movement and Place Tables

Table 3 - Place

Place function ranking	Level of on-street activity	Typical adjacent land-use	Level of on-street activity – pedestrian volume
P1	• Very high on-street activity – very high numbers of pedestrians • Very high numbers of people spending time in the location • Major movement across the carriageway	High rise office blocks and apartments, central city shopping and entertainment, major commercial centres, streets with this level of place are most likely to be located within the CBD of major cities	>1000 /hour at peak > 5,000 /day
P2	• High/very high on-street activity – high numbers of pedestrians • High numbers of people spending time in the location • Significant movement across the carriageway	Office blocks, low rise apartments, entertainment venues, retail, commercial businesses, community facilities	>2,500 /day
P3	• Medium to high on-street activity • Some people spending time in the location • Some movement across the carriageway	Office blocks and low-rise apartments, retail, entertainment venues, commercial/trade businesses, community facilities, industrial	>1000 /day
P4	• Low to medium on-street activity related to people going about their lives • Limited movement across the carriageway	Residential, schools, community facilities, low intensity commercial/industrial	<1000 /day
P5	• Little discernible on-street activity	Mostly rural except for State Highways (motorways/ expressways) in urban areas	Negligible pedestrian movement

Table 4 - Movement

Considerations to determine Movement Significance		Nature of Movement	Scale of People Movement (all modes)
M1	Major	Mass movement of people and/or goods on roads or streets that are of major importance in urban areas, within and between regions or nationally.	Typically > 20,000 per day
M2	Significant	Movement of people and/or goods on inter-regional routes or primary roads and streets linking main centres or significant destinations and travel hubs within a city/town or region.	10,000 – 25,000 per day
M3	Moderate	Movement of people and/or goods around a city, town or region	3,000 – 12,000 per day
M4	Minor	Local movement by people making short trips or connecting to connector roads	300 – 4,000 per day
M5	Low	Local movement by people going about their daily lives	Typically < 500 per day

Appendix B – Worked example, Riccarton Road, Christchurch

This worked example focuses on Riccarton Road, Christchurch, between Clarence Street and Matipo Street (see figure 21).

Riccarton Road is situated west of the Christchurch city centre, Hagley Park, and Botanic Gardens.

Street Family: Urban

Function – Riccarton Road provides:

Access to shops and commercial businesses.

Major connection from the western suburbs to Christchurch city centre, Hagley Park/ Botanic Gardens.

Core bus route for the city.

Place assessment:

High levels of on-street activity due to shops and nearby Riccarton Mall.

High levels of pedestrians moving along and across the road.

Some on-street amenities – street furniture, planting.

Figure 21 – Riccarton Rd
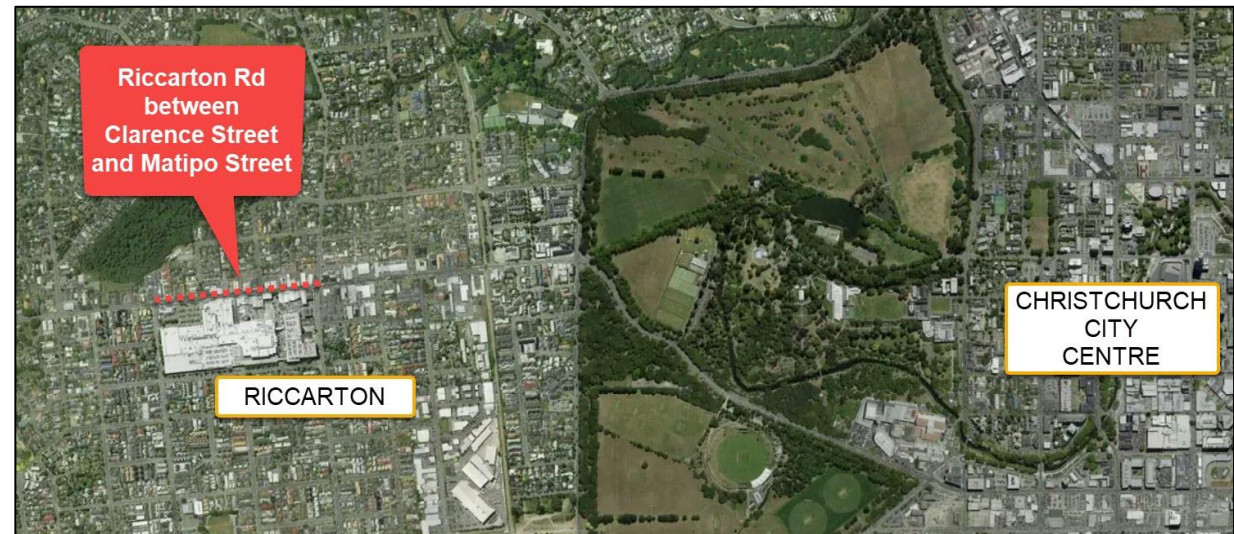
Figure 22 – Riccarton Rd – Street view to east

Movement assessment:

All modes – core bus route, major route for motor vehicle drivers accessing Christchurch City Centre, high pedestrian numbers, cyclists.

Regular crossing opportunities as high pedestrian movement across road to access shops and businesses.

Place value:

P1 for section between Clarence Street and Rimu Street due to commercial activity, residential density, and proximity to Canterbury University.

P2 for the remainder of the road as high on-street activity and high pedestrian numbers.

Movement value:

M2 as key bus route and major connection for motor vehicle drivers into the city centre, moving lots of people through corridor.

Final Road/Street category:

Main Street.

Figure 23 – Riccarton Rd Classification

Modal classifications:

Public Transport: PT2 – Spine (nine different bus services merge on this part of the corridor, with ≥20 buses per hour (total combined in both directions)).

Cycling: C1 – Primary (proximity to shopping precinct, marked cycling lane/facility, cycle parking facilities, and connection to PT2 bus stops).

Walking: W1 – Primary (proximity to shopping precinct, high volume of on street pedestrian activity, and connection to PT2 bus stops).

Freight: F4 - (1,100 heavy vehicles per day, connector providing significant movement of goods through or between neighbourhoods and towns, >300 VPD).

General Traffic: GT4 - (13,950 AADT, connector providing significant movement of goods through or between neighbourhoods and towns.

Appendix C - Working with ONF in RAMM

Finding the ONF map in the RAMM Menu

To open the ONF map layer in RAMM:

1. Click on the RAMM Menu.
2. Type 'ONF' or 'One Network Framework" in the Search tool.
3. Click on 'One Network Framework' under Map Layer.

The ONF map – Clustered to Standard view

To see individual roads with their associated ONF categories on the map rather than the 'clustered' view:

1. Click on the 'One Network Framework' layer name on the map.
2. Click 'Configure'.
3. Click on 'Type'.
4. Click 'Standard'.
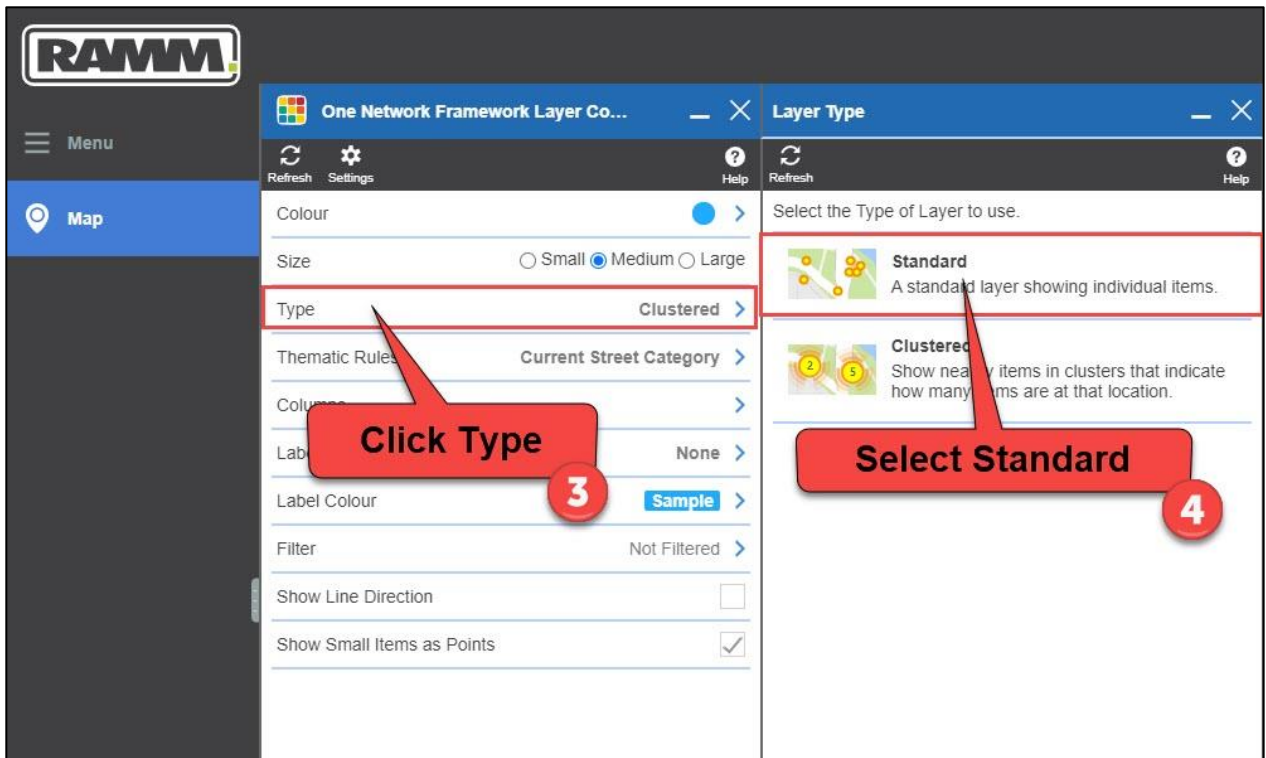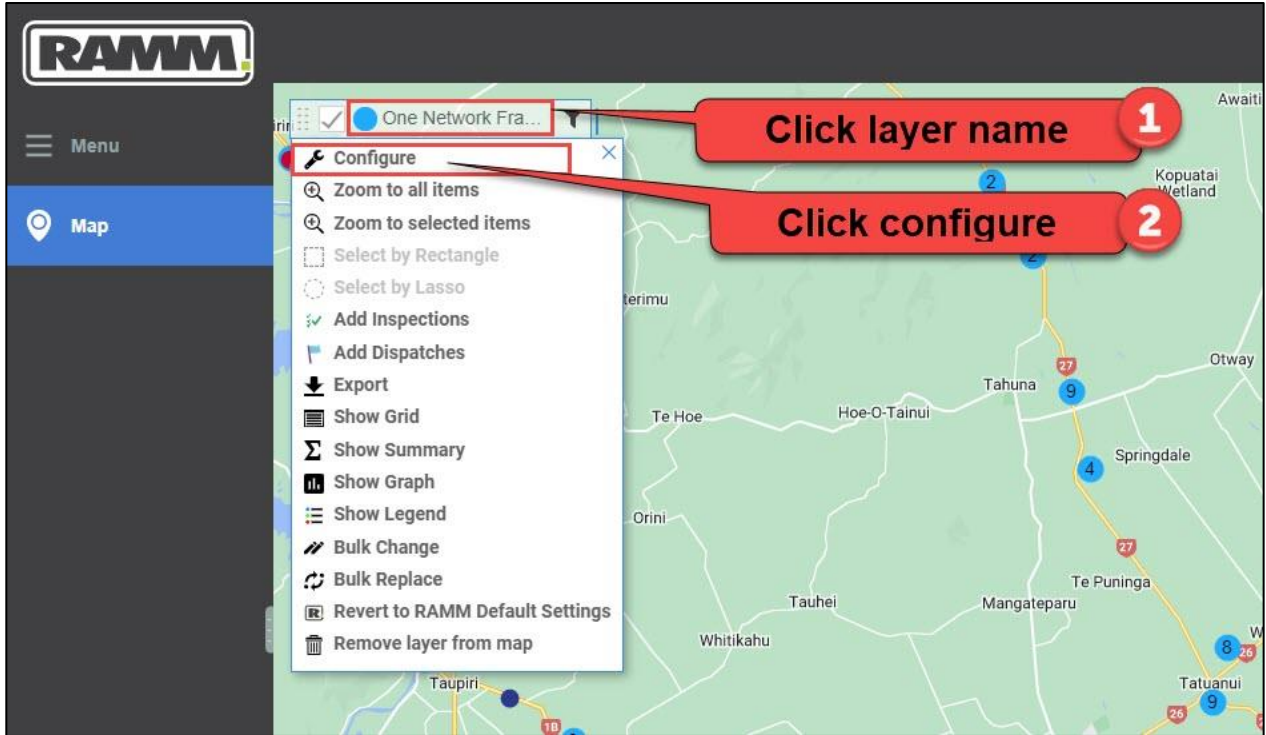
The ONF map – Displaying map legend

To bring up the map legend showing each of the ONF categories and associated colours:

1. Click on the 'One Network Framework' layer in the map.
2. Click 'Show legend'.
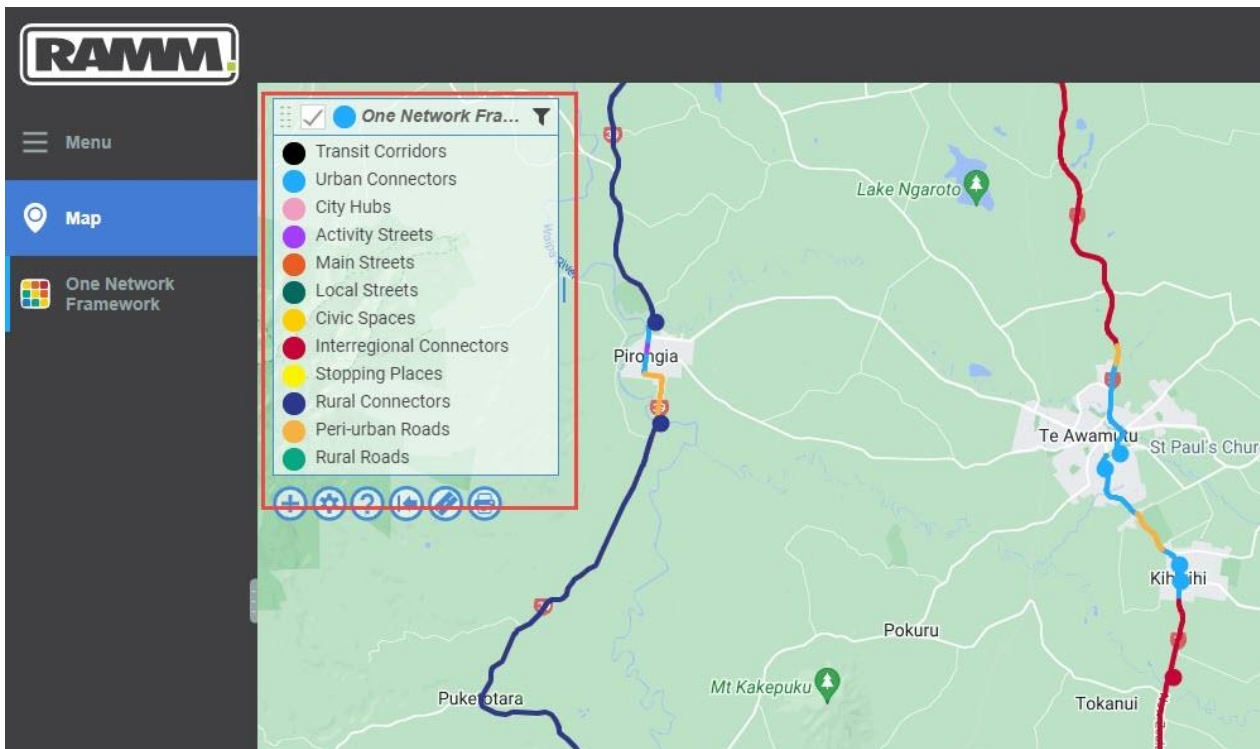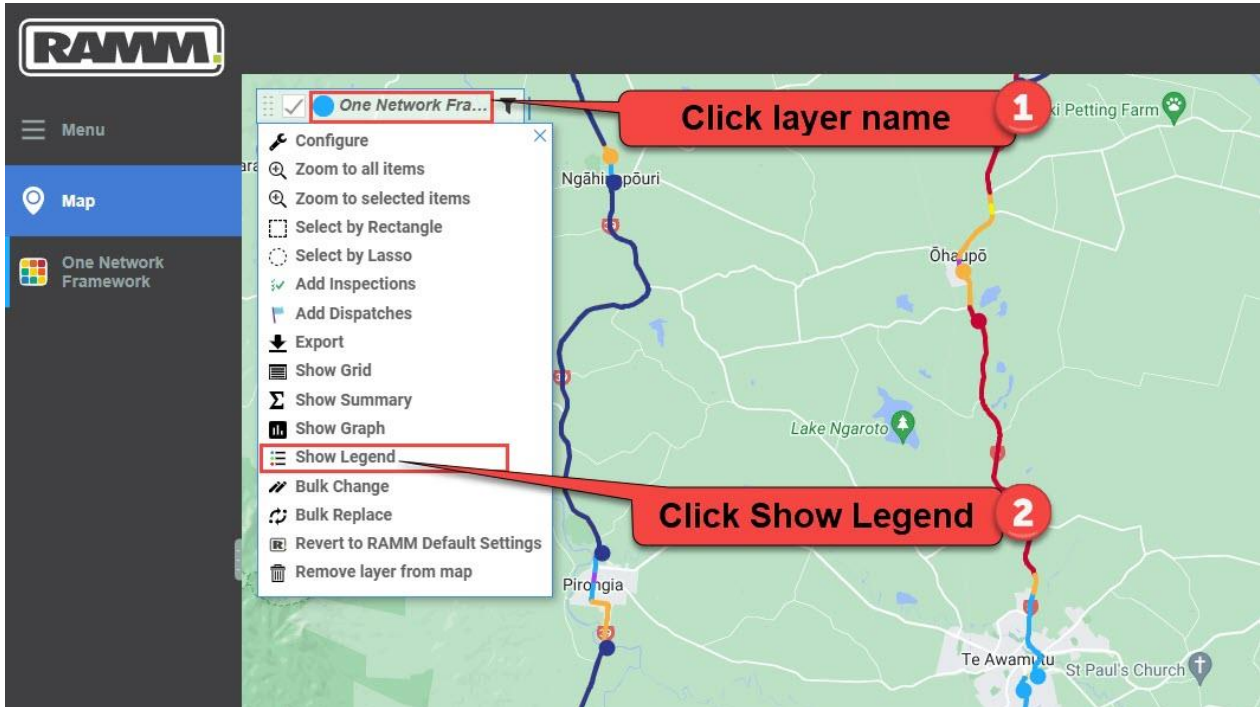
The ONF map – Change the basemap

To change the map view to 'Satellite', 'Satellite with labels' or 'Customise':

1. Click on the 'Menu' icon at the top right-hand side of the map.
2. Choose your preferred basemap.
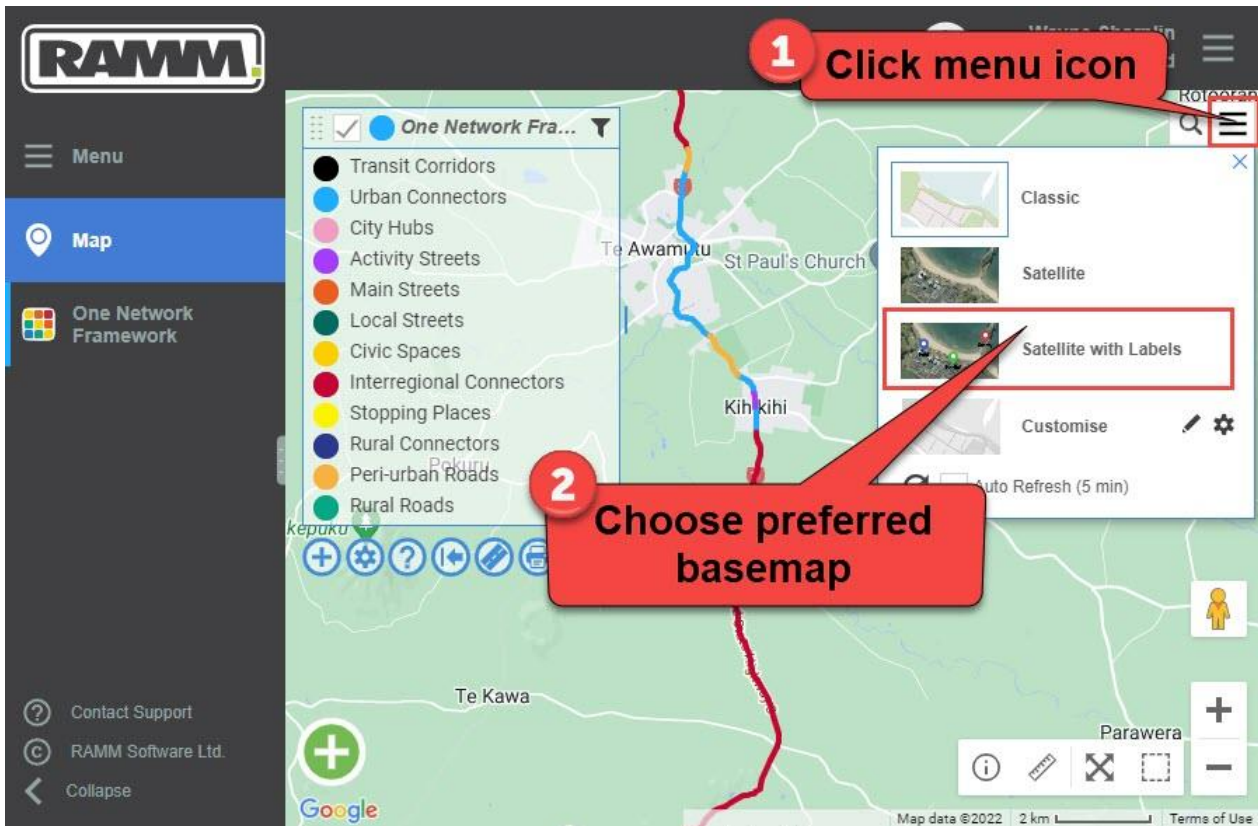
Finding and filtering missing streets in RAMM that lack an ONF classification

To find any roads that are missing an ONF classification:

1.   Click on the RAMM menu.
2.   Type in 'Carriageway'.
3.   Click on 'Carriageway Section'.

     The map will then show all carriageway sections. Remember to change the view to 'Standard'
     from 'Clustered' to show the individual carriageways (same steps as "The ONF map – Clustered
     to Standard view" noted above).

4.   Click on the 'Carriageway Section' layer in the map.
5.   Choose 'Show Grid'.
6.   Click 'Filter' on the Carriageway Section table. The Carriageway Section Filter will appear
7.   Click on the drop-down arrow.
8.   Choose 'Add condition in a related item' the Related Table Condition will appear.
9.   Select 'do not have'.
10. Click on 'Select Table' and Select Related Table will appear.
11. Type in One (or One Network Framework) in the Search function.
12. Select One Network Framework.
13. Select 'displacement overlaps'.
14. Click 'Apply'.
15. Then switch back to the map.

Ensure the Carriageway Section layer is on and the roads or streets with missing ONF classifications will
be shown.

9 Select "do not have"

10 Click "Select Table"

11 Type ONE in the seach bar

13 Select "displacement overlaps"

12 Select "One Network Frameworks"

14 Click Apply

Ensure carriageway section layer is on

15 Click Map

Missing ONF classification
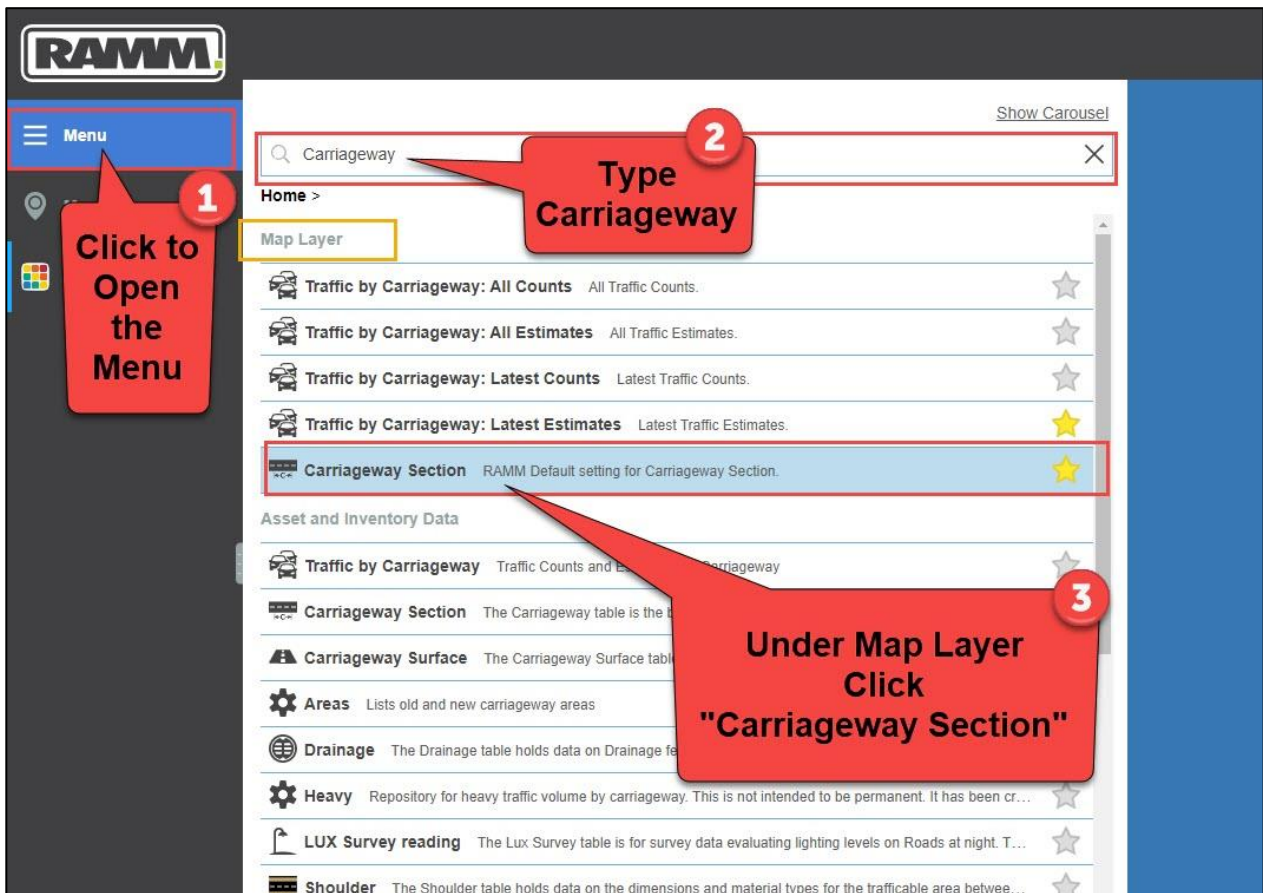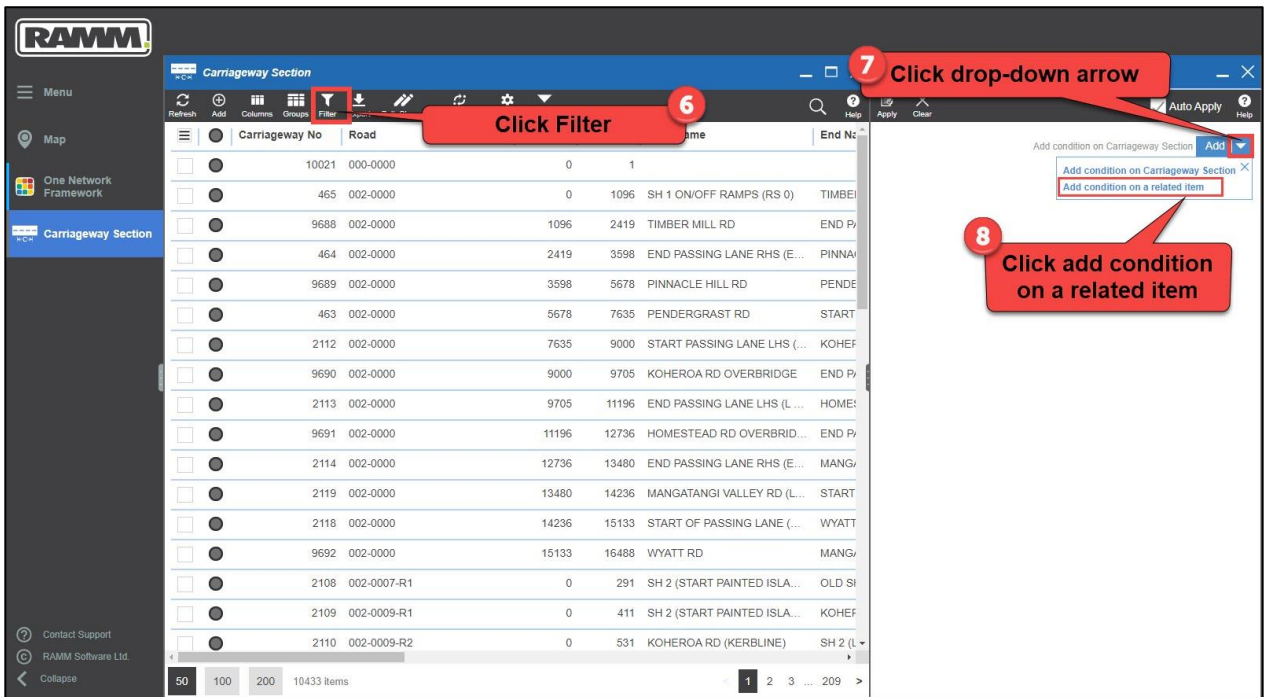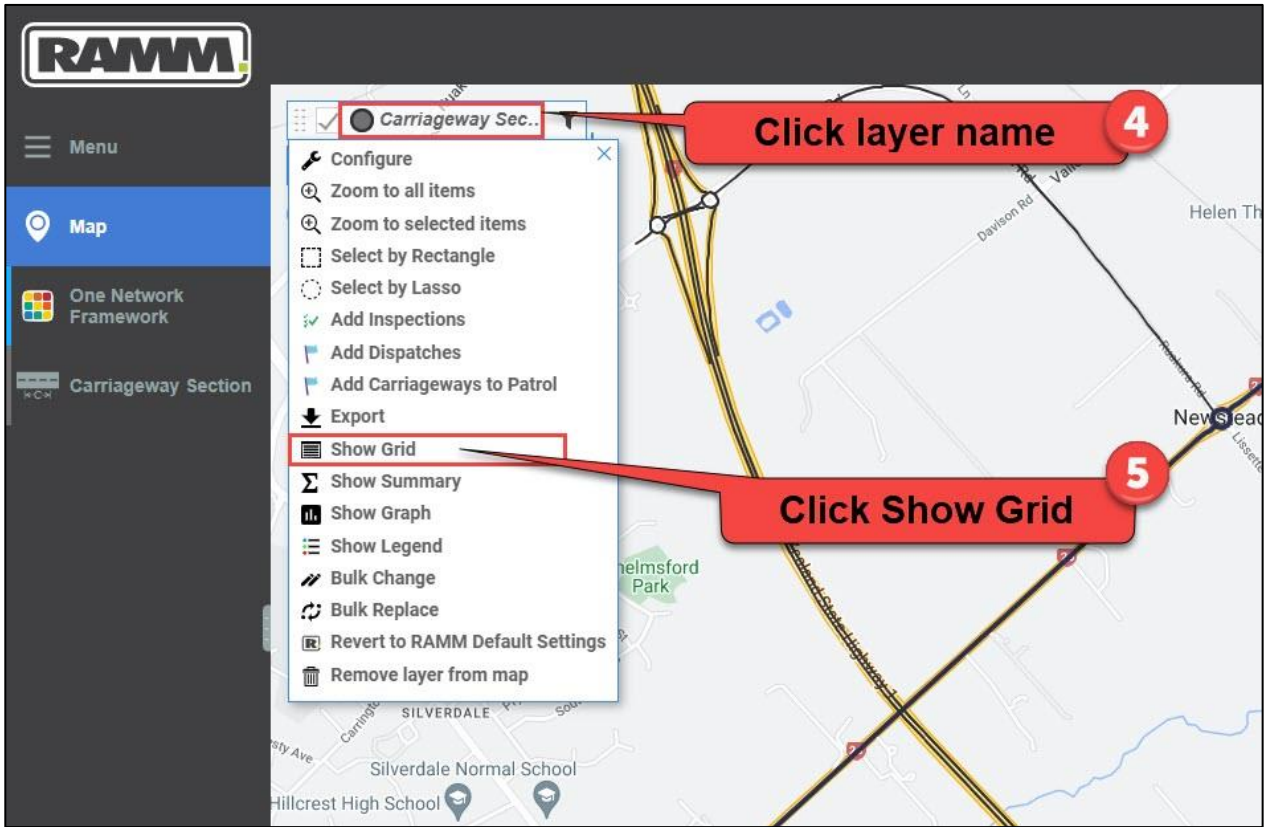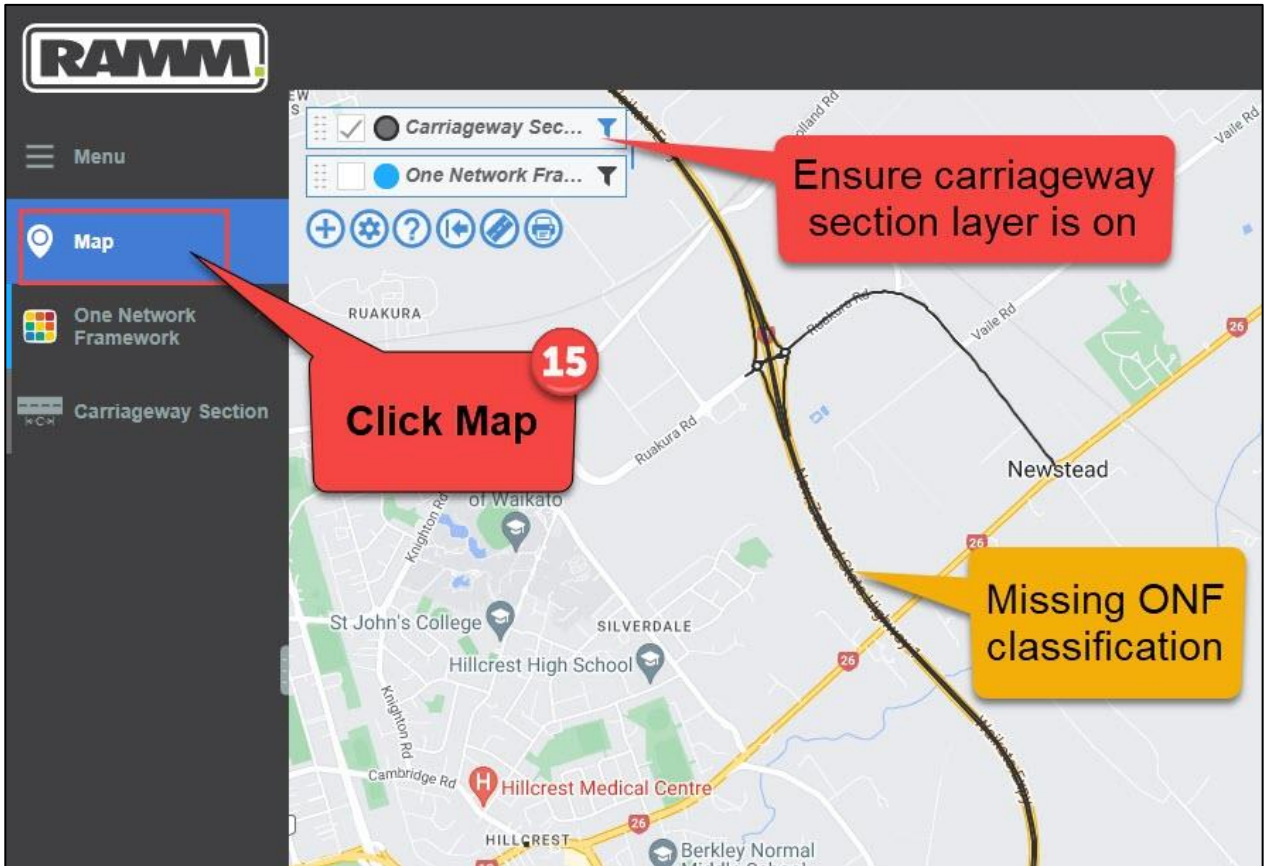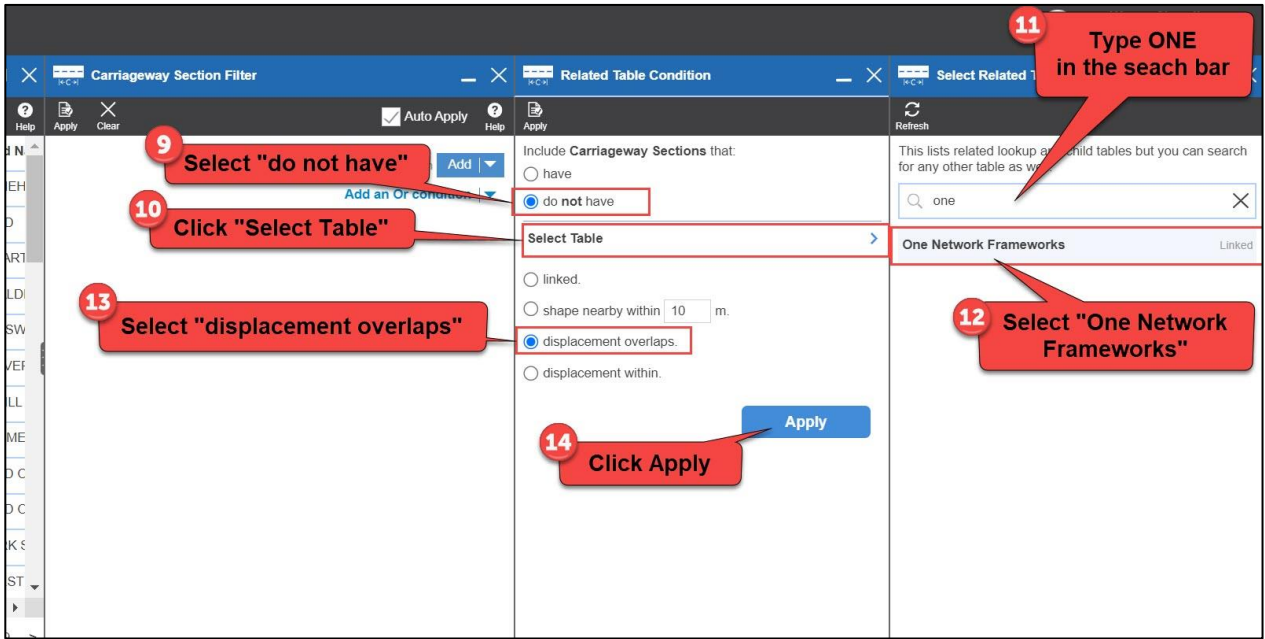
Splitting road sections to add an ONF category

There will be instances where a road or street needs to be split due to the different sections having differing functions.

For example, the section of road in the map below will need to be split at the intersection and changed to Activity Street due to the significant on-street activity generated by the shops and public pool.

Road sections also need to be split to add Stopping Places as in the example below:
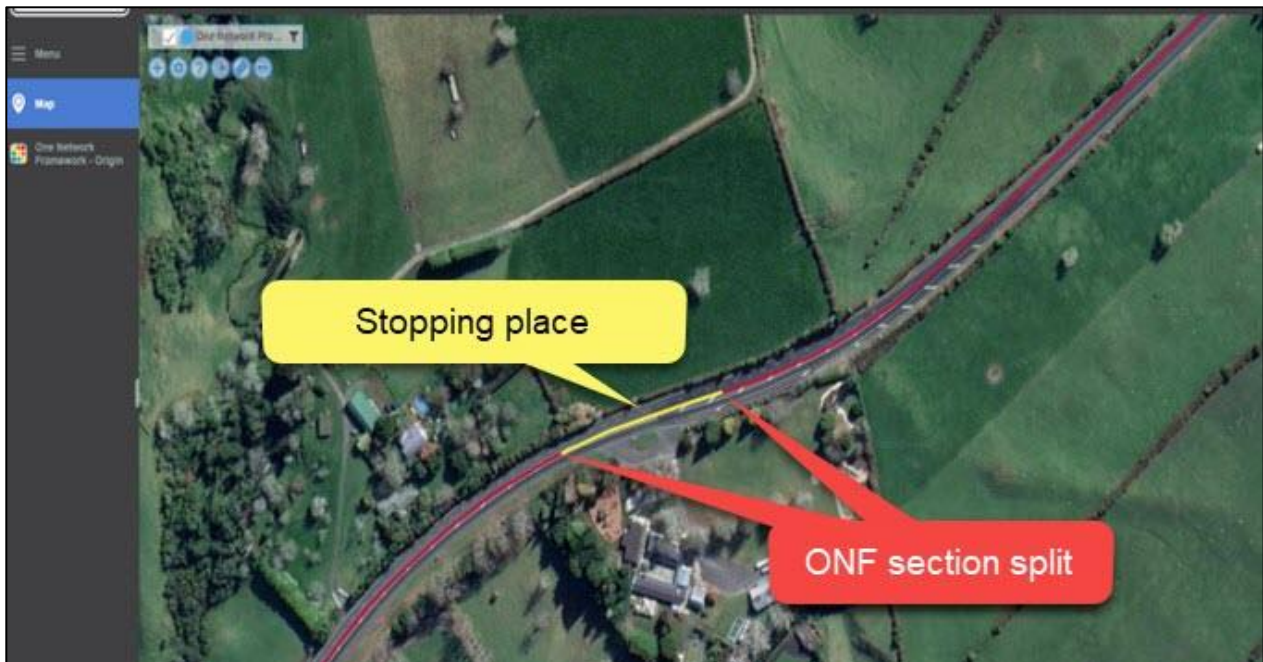
To split a road section to add an ONF category follow these steps.

Ensure you have the One Network Framework layer on:

1. Click on the road or street in the RAMM ONF map layer and click the scissors icon.
2. Click on one side of the road or street then click on the other to draw a line through the road at the point where you want the split to be.
3. Click next.
4. If the black line shows the two lengths of the split street or road correctly click "save" to save the change. If it doesn't click "try again".

When you've saved the change the ONF for the road or street is now split (Note, this only splits the ONF section and not the underlying carriageway section).

Click on the new split section, click show detail and update the ONF classifications as needed (refer to "classifying a new road or street" section for detailed steps).

Choose Save or Try Again

Completed split ONF section with 2 different street categories
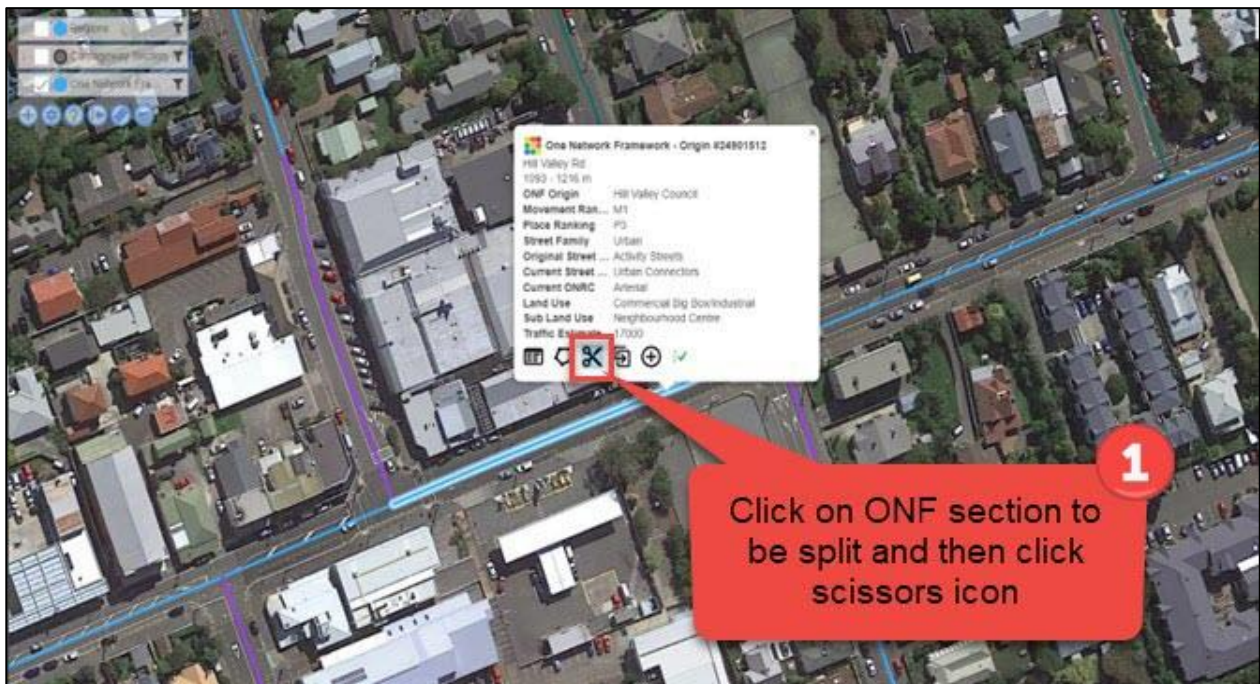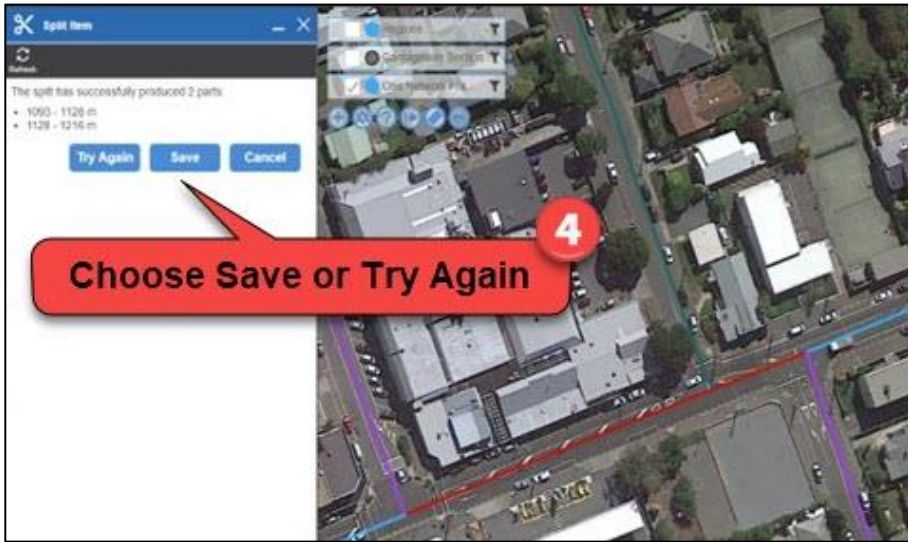
Appendix D - Importing District Plan geospatial or shape files

To add the District Plan layer to the Map, place the District Plan files in a directory:

1. Click Layer Import to open External Map Data.
2. Press Upload.
3. Drag and drop the District Plan files into the dotted box. The files will take a moment to load. RAMM will then recognise the files and assign names under 'Type' and 'Projection'.
4. Give the layer a name in the 'Description' box.
5. Write any relevant notes in the 'Notes' box.
6. Then click the red 'Colour' circle.
7. Choose a colour and change opacity to 2%.
8. Click 'Apply'.
9. Click Load.

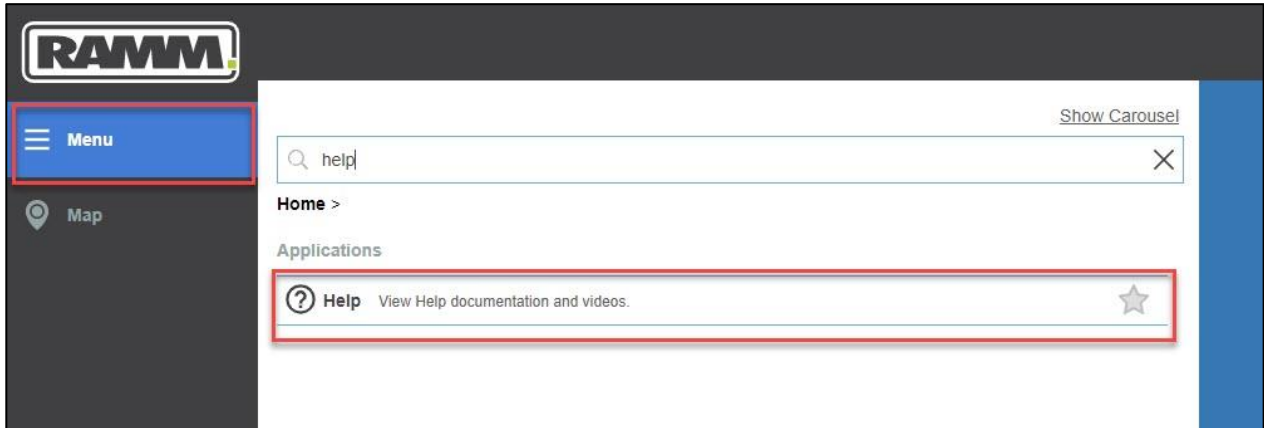Then you can check your ONF classification of roads and streets against the District Plan zone boundaries.
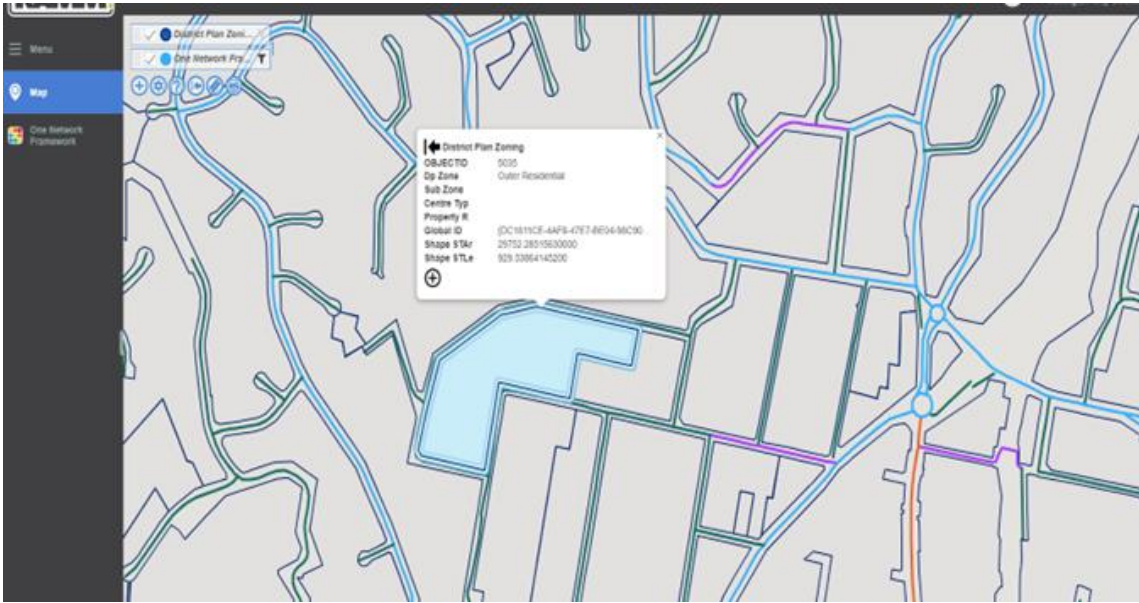
Appendix E - Finding the ONF 'Help' function in RAMM

1. Click on 'Menu' and type 'help' in the search function. Click on Help.
2. In the RAMM Help search function type in One Network Framework then click ONF.
3. Click on 'One Network Framework (ONF)' and then 'ONF in RAMM'.