

Title: **ROAD SAFETY ASSESSMENT**

For;

Donabate Urban Framework Plan 2023

Client: **FINGAL COUNTY COUNCIL.**

Date: **December 2023**

Report reference: **R01**

VERSION: **DRAFT**

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INTRODUCTION

This report was prepared in response to a request from Róisín Burke, Senior Planner, Fingal County Council on behalf of Fingal County Council , to carry out a Road Safety Assessment as part of the Donabate Urban Framework Plan.

The Team comprised;

Norman Bruton, BE CEng FIEI, Cert Comp RSA,

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Owen O'Reilly, B.Sc. (Eng) Dip. Struct. Eng., NCEA Dip. Civ. Eng., CEng FIEI

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The Road Safety Assessment comprised an examination of the drawings and other material provided and site visits by the Road Safety Assessment Team.

The weather at the time of the site visits was mainly dry and the road surface was dry.

The scheme has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety. It has not been examined or verified for compliance with any other standards or criteria.

DONABATE MAIN STREET

Donabate Main Street is a Local Road, the L 2170. The road is a single carriageway, two-way road with footpaths provided on both sides of the road along most of its full length. The carriageway is quite wide at various locations along the Main Street, there is a mix of footpath widths and in some instances, these are narrow.

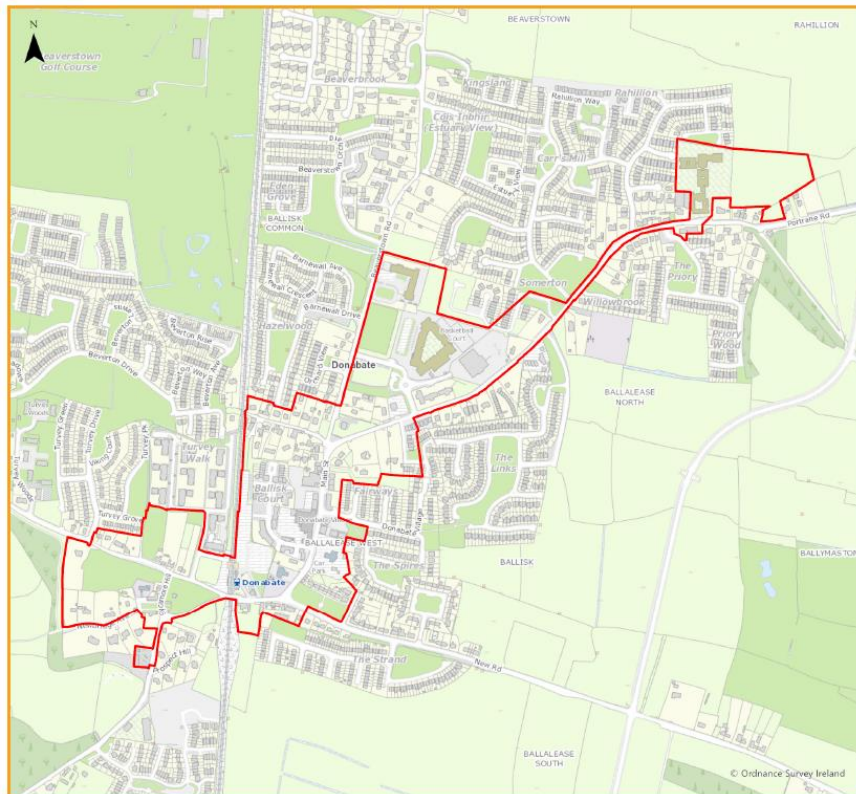
A number of pedestrian crossing facilities are provided along the street however, there are a number of desire lines that do not have formal parallel crossings. There is a deficit of cycle facilities along the street. A high level of car parking is experienced along the Main Street and a lot of the parking is in an irregular pattern, with combinations of parallel, echelon and perpendicular parking along the street and across the footpaths.

The proposed scheme would consist of:

- Realignment and narrowing of the carriageway on Main Street and alterations / rationalising of on-street parking provision to reduce the overall number of spaces.
- Creation of new urban civic spaces, streets, road junctions, pedestrian pavements and cycle routes.
- Active Travel Upgrades along the Main Street

- Construction of new public realm comprising new hardscape surfaces, kerbing, street furniture, public street and feature lighting, soft landscape planting, cycle parking and signage.
- Alterations to the existing car parking layouts/the creation of new public plazas and spaces
- Upgrade and installation of new utility services including electric vehicle charging points.

Map of Public Realm Strategy Boundary.



A number of elements require inclusion in the proposed Donabate Framework Plan and these can be considered as follows and are not to be defined in any particular hierarchy but in an interconnected way.

The entry speed to the area on most approaches was observed to be high with high volumes of vehicles, cyclists and pedestrians entering the Main Street. The number of cyclists using the route from across the North Fingal area was very evident.

There is considerable interaction between pedestrians and vehicles and vehicle speeds appeared to be high. This was a visual observation only, but it is recommended that a speed survey be conducted to

determine the speed of vehicles travelling through the town from all main entry points particularly Hearse Road at the Bridge, Chapel View/ New Road and Portrane Road.

This survey will determine mitigating measures to be introduced to reduce speeds. Consideration should be given to reducing speed limits across the Main Street and introducing traffic calming measures in the overall plan. This is most notable at the Bridge, Portrane Road and Chapel View.

The intersection junctions at the locations of entry to the town center are too wide, encouraging high speeds at main merge areas. This makes it difficult for pedestrians to make safe crossings at wide junctions.



Wide Junctions with high entry speed from Portrane Road



Long Uncontrolled Pedestrian Crossing Points



Long straight wide carriageway leading into Junction



Cyclists merging at Chapel View with traffic at wide junctions.

Footpaths vary in width across framework plan area and frequently do not meet minimum standards. Street furniture, lamp posts, signs and utility services reduce these widths and cause pedestrians and the mobility impaired to move onto the carriageways. Some of these areas are significant arteries for pedestrians.



Footpath width reduced by poles, posts and litter bins.

A major consideration in the plan should include for the provision of covered bicycle parking areas to include adequate widths for bicycles and pedestrians. All street furniture should be set back an adequate distance and height to prevent the catching of handlebars and pedals.



The use of incorrect tactile paving is evident throughout the town and approach roads, it is damaged, aligned incorrectly in places, poorly maintained and holding water at other locations and laid too steep in other locations.

All pedestrian crossings and footpaths should be in accordance with DMURS as part of the scheme.

The proliferation and location of signage is to be considered as part of the plan. Some of the signage is low and the use of cranked arms at standard height should be considered in some locations.



Incorrect use of tactile paving which is badly maintained, can lead to trips and falls.

There are a number of desire lines that need to be incorporated into the plan and some of these will require the provision of new footpaths in order to provide continuity.



Desire line indicating the use of a grass verge which can become wet and slippy and cause slips and falls.



Desire lines, large radii junctions with undefined pedestrian routes close to Town Center Facilities and the lack of pavement contrast leave pedestrians, the visually impaired and mobility impaired isolated at primary crossing places.

Parking in and around the Main Street consists of parallel, perpendicular and random parking. Overhanging boots and engines reduce the footpath widths causing passing pedestrians to move onto carriageways and make it impossible for prams and the mobility impaired to pass and will force them to use the carriageway. It is essential that all car parking spaces, footpaths and carriageways are standardised as part of the plan.



Perpendicular parking with inadequate widths for car overhang can cause damage to existing posts and signs.
Colour contrast and consistency is required across the scheme.

Although the framework plan promotes vulnerable road users and active travel there is a risk that the reduction of parking areas will lead to illegal parking on the footpaths and cycle tracks thereby rendering them unsafe for vulnerable road users.

It is recommended that sufficient alternative parking spaces be provided close to the Main Street to facilitate those trading in the area. Signage to direct drivers to these parking areas may be required until they are well established by those who can no longer park along the Main Street.

EV charging spaces and E Scooter spaces should be provided in the scheme. EV spaces should be larger than standard parking spaces and should be similar to disabled car parking spaces.

Side entry cables should be considered, and buffer zones should be included.

Loading Bays should be provided along the Main Street close to commercial & retail premises. If loading bays are remote from shops this may lead to delivery vehicles parking on the cycle tracks and footpaths thereby blocking the routes for cyclists and pedestrians leading to those vulnerable road users entering the carriageway and being at risk of being struck by passing vehicles.

It is recommended that an assessment be carried out for the need for additional loading bays along the scheme and they should be provided as required.

KEY PROJECTS

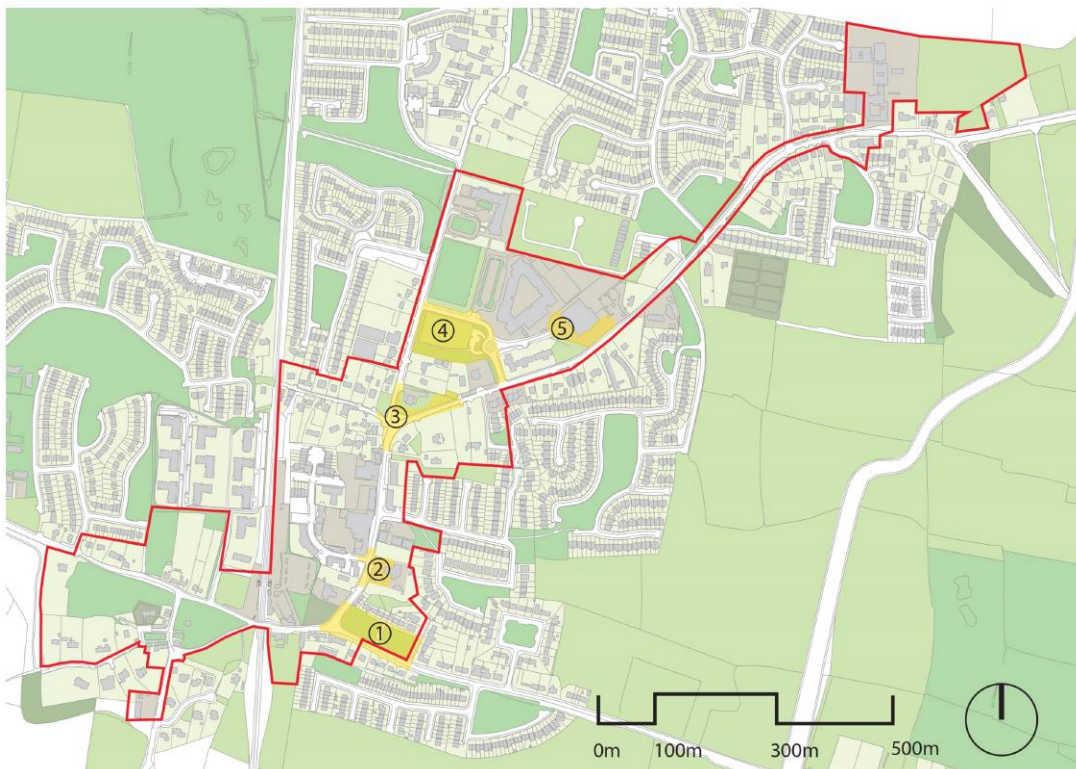
Part of the framework plan is to create a number of Key Projects including

1. Donabate Village Green
2. St. Patrick's Square
3. The Hand Pocket Park
4. Educate Together Recreational Hub
5. Community Centre Public Plaza

As with the main street the Road Safety Principles apply and can be summarised as follows

- Reduce Speeds by introducing Traffic Calming Measures
- Reduce Carriageway Widths
- Create Pedestrian Links to form continuity with existing Pedestrian Routes
- Standardise crossings and accommodate Desire Lines
- Change Horizontal and Vertical Geometry to make new spaces safer and easy to traverse by all users of these spaces
- Provide good light and drainage
- Provide Clear signage, street marking and lining
- Ensure all street furniture and facilities are designed to cater for safe use and
- Encourage the use of Active Travel

Map Indicating Key Projects



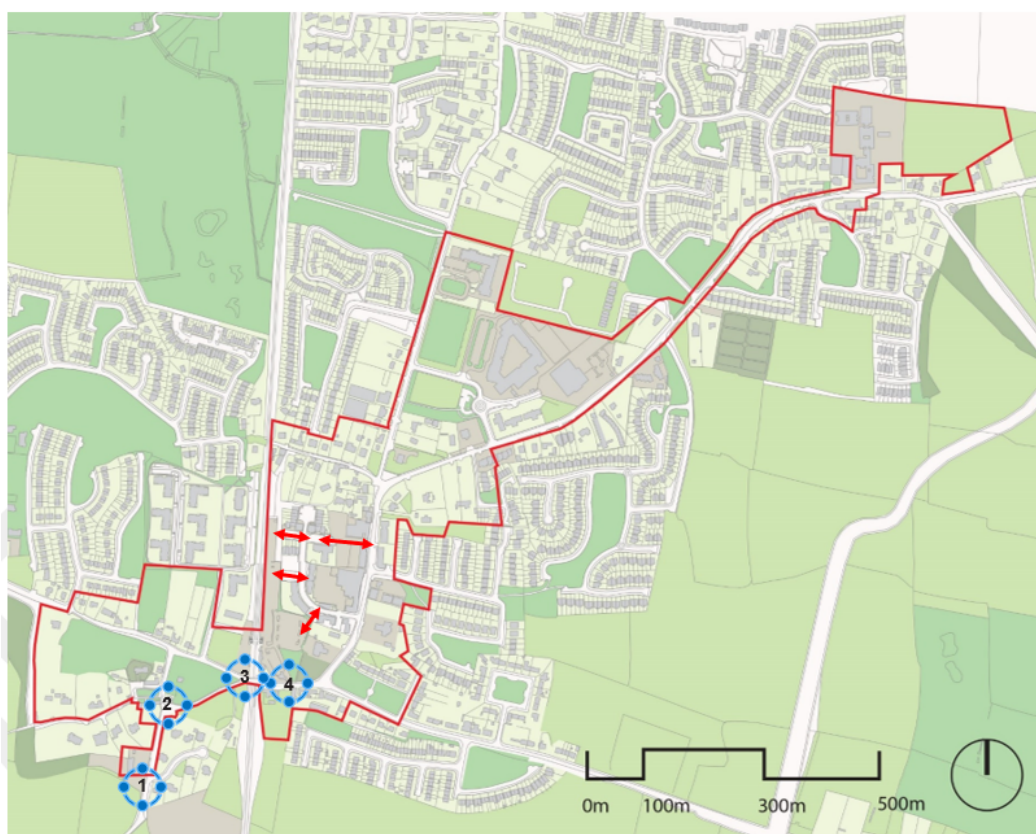
Connecting Spaces

Possible links are identified at Semple Wood and Hearse Road, The Square and Hearse Road, Smyth's Pub, Railway Station and Corballis and Turvey Road, Hearse Road and the Bridge.

The core principles for Road Safety as identified in the Main Street and Key Projects apply with a greater emphasis been placed on lighting, horizontal and vertical alignment, and widths to accommodate all combinations of users.

The framework plan is a great opportunity to provide additional off street car parking by forming new links with existing car parks and the possibility for creating improved parking for the Mobility Impaired, Electric Vehicles, E Scooters and Bicycle Parking Facilities.

Connecting Spaces Map



- Strategy Boundary
- Connecting Spaces
- Potential Pedestrian Links

CYCLE ROUTES

The design of cycle route choice will be determined by volumes and speed surveys and the available widths and geometry. The core principles are contained in the Cycle Design Manual and a good design including any departures will be based on the information acquired from these surveys.

The core principles for the design of cycle routes and facilities should follow the principles outlined in the Cycle Design Manual including the following extracts from the manual which indicate the dependence on volumes and speeds.

Network approach Focus on the delivery of coherent and connected cycle networks i.e. a series of interconnected routes joining all main origins and destinations without gaps or interruptions in provision.

Pedestrian and cycle facilities on roads and streets, other than quiet streets (i.e. those with low vehicular speeds and volumes), should be segregated from traffic and from each other. There is a growing body of evidence which shows that the provision of segregated, safe cycle infrastructure is crucial to attract people to switch to cycling as a regular mode of transport.

Table 2.1 - Cycle facilities selection guide

Speed Limit ¹	Two-way traffic flow (peak hour pcus)	Remote Cycleway/ Greenway	Standard cycle track (incl. two-way tracks)	Stepped cycle track	Protected Cycle Lane	Mandatory Cycle Lane	Mixed Traffic
20 km/h	< 200	Green	Green	Green	Green	Green	Green
	200-400	Green	Green	Green	Green	Green	Green
	> 400	Green	Green	Green	Green	Orange	Orange
30 km/h	< 200	Green	Green	Green	Green	Green	Green
	200-400	Green	Green	Green	Green	Green	Orange
	> 400	Green	Green	Green	Green	Orange	Black
40 km/h	< 200	Green	Green	Green	Green	Orange	Pink
	200-400	Green	Green	Green	Green	Orange	Pink
	> 400	Green	Green	Green	Orange	Pink	Black
50 km/h	< 200	Green	Green	Green	Green	Orange	Pink
	200-400	Green	Green	Green	Green	Pink	Pink
	> 400	Green	Green	Green	Orange	Pink	Black
60 km/h	Any	Green	Green	Orange	Pink	Black	Black
≥ 80 km/h	Any	Green	Pink	Pink	Black	Black	Black

- Provision should be suitable for most users.
- Provision may not be suitable for all and may exclude some potential users (Departure required).
- Provision not recommended as it's unlikely to be suitable for a range of users (Departure required).
- Provision not suitable.

Notes:

1. If the 85th percentile motor traffic speed is more than 10% above the speed limit, the next highest speed limit should be applied.




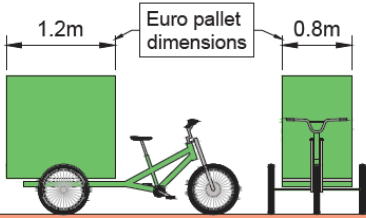
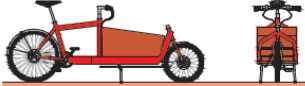

Standard Bicycle	Wheelchair Bicycle	Child Trailer Bicycle
 <ul style="list-style-type: none"> • 1.8m length • 0.65m width • 1.65m turning circle 	 <ul style="list-style-type: none"> • 2.65m length • 0.66m width • Additional turning circle requirements up to 3.2m 	 <ul style="list-style-type: none"> • Additional turning circle requirements up to 3.2m • Trailer attached (up to 1.3m long)
Cargo Bicycle	Front Loading Cargo Bicycle	Tricycle / Handcycle
 <ul style="list-style-type: none"> • Trailer can be attached (extra 1.6m long) 	 <ul style="list-style-type: none"> • 2.0m - 2.5m • Up to 0.85m wide • Additional turning circle requirements up to 2.65m 	 <ul style="list-style-type: none"> • Additional turning circle requirements up to 2.65m • Lower eye height for visibility • Lower clearance to kerbs and other objects

Figure 2.8: Typical types and dimensions of cycle vehicles.

Table 2.2 - Width Calculator

A. Inside Clearance				
Feature	Additional width required (m)			
Flush or near-flush surface including low and splayed kerbs up to 60mm high	0.00			
Kerbs 61mm to 150mm high	0.20			
Vertical feature from 151mm to 600mm high	0.25			
Vertical feature above 600mm high	0.50			
B. Central Width				
Type of Facility	Flow (cycles per peak hour)	Desirable minimum width (m)	Absolute minimum width (m)	
One-way cycle track	<300	2.00	1.50*	
	>300	2.50	2.00	
Two-way cycle track	<300	3.00	2.00	
	>300	4.00	3.00	
Cycle lane	All	2.00	1.50	
Shared Active Travel Facility	<300	4.00	3.00	
	>300	5.00	4.00	
C. Outside Clearance				
Feature	Additional width required (m)			
Flush or near-flush surface including low and splayed kerbs up to 60mm high	0.00			
Kerbs 61mm to 150mm high	0.20			
Vertical feature from 151mm to 600mm high	0.25			
Vertical feature above 600mm high	0.50			
D. Buffer Width				
Speed limit (kph)	One-way cycle track		Two-way cycle track	
	Desirable min buffer (m)	Absolute min buffer (m)	Desirable min buffer (m)	Absolute min buffer (m)
≤30	0.00	0.00	0.50	0.30
40/50	0.50	0.00	0.50	0.30
60	1.00	0.50	1.00	0.50
80	2.00**	1.50**	2.00**	1.50**
100	3.50***	1.50***	3.50***	1.50***

Including any hard strip * Excluding any hard shoulder

Notes:

- Desirable minimum widths should be used when calculating required widths of facilities. Where desirable values cannot be achieved, incremental reductions towards absolute minimum values may be considered.
- The use of widths less than the above guidance should be avoided. In exceptional circumstances where widths cannot comply with the guidance, the designer should seek a departure from standard and this should be approved by the relevant Sanctioning Authority prior to incorporation into the design.
- On gradients greater than 3%, cycle track width should be increased by 0.25 m to allow for greater lateral movement.
- Where gullies are present on a cycle track that do not allow cycles to easily overrun, the cycle track width should be increased by the widths of the gully.

Universal Design and Inclusive Mobility Cycle facilities should be designed to be useable by people of all ages and abilities using a variety of different types of cycles and wheeling equipment. It is worth noting that there has been a noticeable increase in recent years in the use of non-standard cycle equipment such as cargo bikes, tricycles, electric bicycles etc. and it is anticipated that their popularity will continue to increase as our cycle networks become more developed.

The use of motorised wheelchairs and mobility scooters is also permitted on cycle tracks and it would be similarly anticipated that as our cycle networks are developed further, more people using wheelchairs and mobility devices will be encouraged and enabled to use the networks as is commonly seen in other countries with more mature cycle networks. It is also worth noting that legislation to allow the use of Powered Personal Transporters e.g.

E-Scooters, on Irish Roads including cycle facilities, was enacted in June 2023. It is anticipated that further guidance in relation to the accommodation of these devices on cycle infrastructure will be issued in due course.

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CONCLUSION

The Donabate Framework Plan includes many of the principles identified in the Road Safety Assessment. However, a detailed design would benefit from a volume and speed survey. This information will form the basis for the choice of widths required to provide a good design. There are a few pinch points in the scheme and at these locations specific detailed designs will be required to produce a Road Safety Audit. These areas include the area directly outside Donabate Town Centre entry from Hearse Road, the railway Bridge and the Brige/Railway Station to the Main Street.