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DLR Covid-19 Mobility Review: Evaluation and Review of the Phase 1 Covid-19 Mobility and Public Realm Works undertaken by Dún Laoghaire Rathdown County Council

Sarah Rock Dr.

Technological University Dublin, sarah.rock@tudublin.ie

Dave O'Connor

Technological University Dublin, dave.oconnor@tudublin.ie

Lorraine D'Arcy Dr.

Technological University Dublin, lorraine.darcy@tudublin.ie

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Authors

Sarah Rock Dr., Dave O'Connor, Lorraine D'Arcy Dr., and Odran Reid

DLR COVID-19 MOBILITY REVIEW

Evaluation and Review of the Phase 1
Covid-19 Mobility and Public Realm
Works undertaken by Dún Laoghaire-
Rathdown County Council

INTERIM FINDINGS - JUNE 2021

Technological University Dublin

Authored by:

The Sustainable Transport & Mobility Research
Group at the School of Transport Engineering,
Environment & Planning, TU Dublin, City
Campus, Dublin 1

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DUBLIN
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dlr
Comhairle Contae County Council

TU Dublin Project Team:

Principal Investigator: Dr. Sarah Rock

Co-Investigators: David O'Connor, Dr. Lorraine D'Arcy

Project Manager: David O'Connor, Assistant Head of School

Head of School: Dr. Conor Norton

Team Investigator: Odran Reid

Student Investigators: Michael Banim, Brendan Meskell, Colm Walsh

TU Dublin Collaborators: Roisin Murray, Maurice Brady, Jordana Corrigan, Sinead Flavin, Dr. Alan Gilmer, Dr. Nikolaos Valantasis Kanellos, Jill O'Callaghan (Public Affairs Office).

Dún Laoghaire-Rathdown County Council Project Team:

Covid Mobility Works Lead: Robert Burns, Director of Services Infrastructure and Climate Change

Covid Mobility Works Engineer: Conor Geraghty, Senior Engineer

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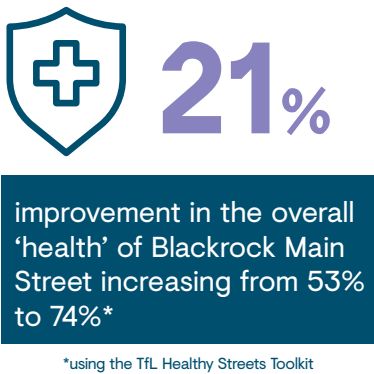
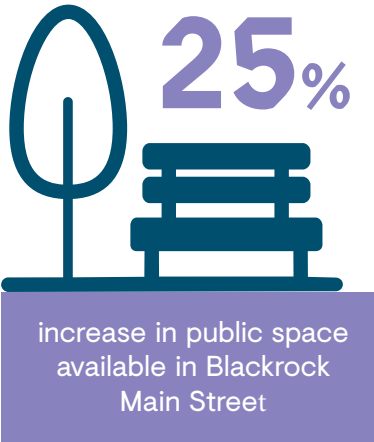
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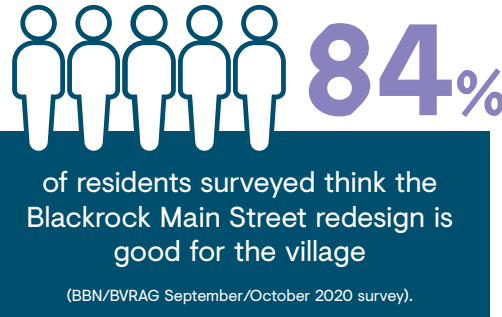
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Blackrock and Coastal Mobility Route research



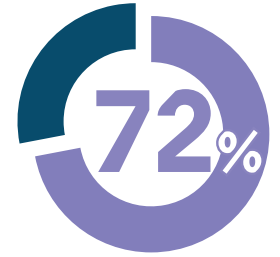
What does the community say?



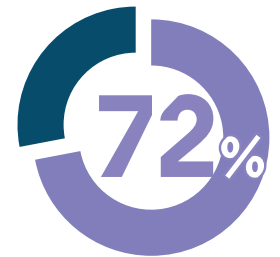
“I think people are sitting outside in Blackrock because people have always wanted to sit somewhere and be where other people are. That's been a big lesson.”

(NTA Representative)

What do businesses say?



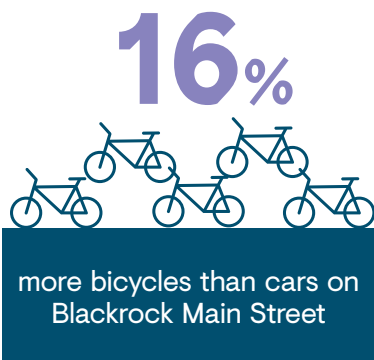
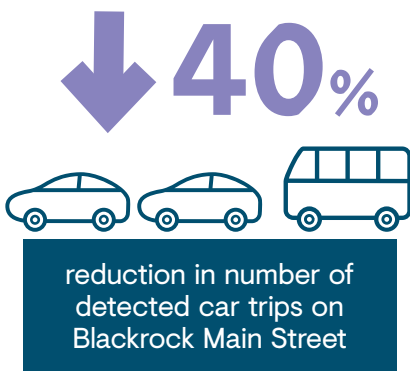
view the new layout as a positive addition to Blackrock Main Street



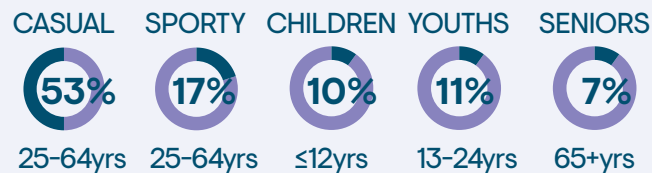
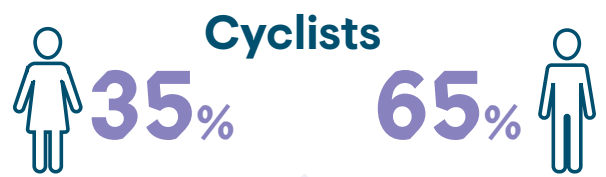
would like the changes to Blackrock Main Street made permanent

(including those with suggestions for further design improvements)

How are people getting about?



Who is using the Coastal Mobility Route?



“Covid has...thrown a spanner in the works, but has given everything a rocket aswell” (Cllr Kivlehan, DLR County Council)

EXECUTIVE SUMMARY

What we did

This study involved an independent explorative review and evaluation of Dún Laoghaire-Rathdown County Council's Covid Mobility and Public Realm Works that were undertaken during Summer 2020 as an immediate response to some of the challenges the Covid-19 pandemic brought to local economies/villages and the transport network. The scope of Phase 1 of this study focuses on the social, economic and mobility impacts of the road space reallocation and associated public realm works in Blackrock Main Street, and on the mobility impacts of the Coastal Mobility Route (CMR).

Although Covid-19 itself brought many challenges to this research, using mixed methods approach we surveyed businesses, interviewed a sample of key stakeholders, undertook a street audit of Blackrock Main Street, observed users of the Main Street and the Coastal Mobility Route, and analysed mobility data over a number of months.

What we found

- High levels of **support from business, elected members and the community** for the temporary redesign and reallocation of road space in Blackrock Main Street, and a desire to make the changes permanent with some suggested design improvements, and expansion into adjacent streets.
- Considerable improvements in the provision and quality of cycling infrastructure within the study area and consequent **significant increases in the number and range of people cycling**. There are signs that a cycle **network effect** is being created as more infrastructure comes on stream in the area leading to further gains in the numbers and range of people cycling.
- Signs of the commencement of a **significant cultural shift** within Dún Laoghaire-Rathdown County Council with a greater understanding of the interlinked role of urban design, urban regeneration and livability, with successful transport and mobility interventions.
- A proactive Local Authority and one that is willing to **experiment, innovate and learn**.
- An approach to **stakeholder engagement that is atypical for an Irish context** – one that focused on speed and action (as driven by the Covid context), and direct on-the-ground engagement, but also one where lessons for the future have been learned.
- **Traffic patterns that have changed** dramatically shifting away from traditional morning peak commuter-based travel, towards higher levels of more locally based day and evening time travel, reflecting international trends associated with Covid-19 and associated restriction levels.

What we recommend

- **Monitoring and evaluation** should form a key component of similar projects in the future, particularly projects where a degree of experimentation is included as part of the aims and objectives.
- **Experimental, temporary or pilot projects should be encouraged** and facilitated for certain projects in Ireland, particularly those where change from the status quo raises major concerns or

uncertainties for key stakeholders, and where placemaking and regeneration objectives are coupled with transport objectives.

- The **impact of the Coastal Mobility Route on travel patterns, modes and habits will evolve over time**, as Covid-19 restriction levels change and the medium-long term consequences of the pandemic translate into peoples' working and schooling arrangements in particular. We recommend that further mobility analysis in and around the CMR is undertaken during 2021 and 2022 to monitor evolving travel patterns. We also recommend that **connecting the missing links of the Coastal Mobility Route** from Blackrock Village to Seapoint Avenue, and from Old Dunleary Road to Queen's Road are advanced in the meantime as this will increase the network effect of the route, as well as more immediate improvements to **pedestrians crossing facilities** at strategic points.
- The development of a **permanent public realm regeneration plan for Blackrock Main Street (and adjacent streets as considered relevant)** on the basis of the success of the Covid-19 temporary public realm interventions. The public should have an opportunity to provide feedback and input on design proposals.



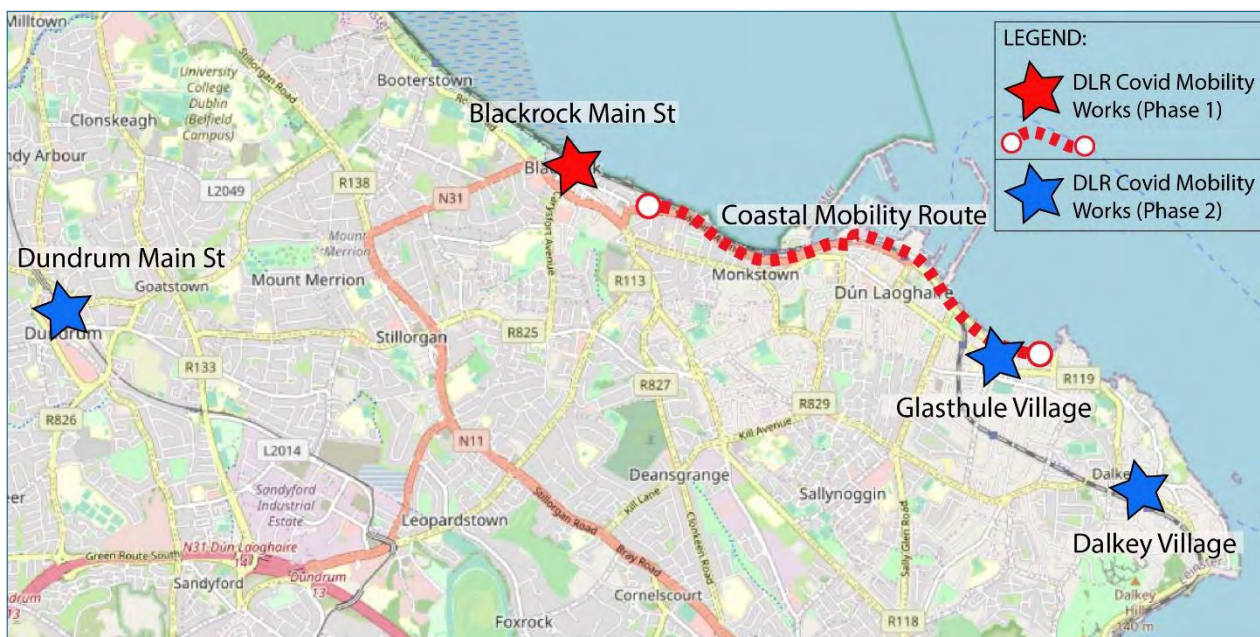
1. INTRODUCTION

1.1 Background

The Covid-19 pandemic has utterly transformed life across significant parts of the world since early 2020. The response has been different around the world, but a key tool to mitigate the severity of the disease and used by many governments, including Ireland's, has been one of widescale societal and economic 'lockdown'. The severity of lockdowns have varied over time and have tended to increase with Covid-19 case numbers. This included closing all but 'essential' retail and educational institutions, as well as the imposition of 'stay-at-home' orders and 'work-from-home when possible' orders. During this period in Ireland (and still at the time of writing of this report) public transport capacity has been severely limited and social distancing protocols put in place for both indoor and outdoor environments¹.

Dún Laoghaire-Rathdown County Council (DLR) were one of the first Local Authorities in Ireland to introduce significant mobility and public realm measures in order to respond to some of the challenges of Covid-19. The objectives of the measures are outlined in Section 1.3. The reconfiguration and redesign of Blackrock Village Main Street and the introduction of the Coastal Mobility Route along the coast road from Seapoint to Sandycove were the first two projects implemented, followed closely by Glasthule Village, Dundrum Village and Dalkey Village (see Figure 1).

Figure 1 Showing DLR's Key Covid-19 Mobility and Public Realm Projects (source map from Openstreetmap.org and adapted by author)



¹ At the time of writing (15 April 2021), Ireland has been in Level 5 (highest level) of lockdown since late December 2020. Public transport capacity is at 25% and there are 2m social distancing guidelines in place. See for more information.

<https://www.gov.ie/en/press-release/81029-government-announces-phased-easing-of-public-health-restrictions/>

Given the significant scale of the projects, and the short timescales for implementation, Dún Laoghaire-Rathdown County Council engaged the School of Transport Engineering, Environment and Planning in Technological University Dublin to undertake a preliminary evaluation and review of the Council's Covid-19 mobility and public realm response (referred to as 'Covid Mobility' from here on in), with Phase 1 of the review focussing on Blackrock Main Street and the Coastal Mobility Route.

1.2 National Context & Government Covid-19 Guidance

Dublin is one of the most congested cities for vehicular traffic in the world, ranking at no. 17 in 2019 and no.21 in 2020 in the Tom Tom world congestion ranking². This severe constraint on road capacity coupled with national policy³ and international climate change obligations⁴ that seek to prioritise sustainable and low carbon forms of transport (such as walking, cycling and public transport) brings particular challenges for the movement of people throughout the Covid-19 pandemic. These challenges became particularly acute with the relaxation of restrictions after respective 'lockdown' periods but with public transport capacity still considerably reduced and continued social distancing requirements.

As a response to these conditions, the Department of Transport, Tourism and Sport (since renamed the Department of Transport) announced funding on the 28th May 2020 for technical and financial support through the National Transport Authority (NTA) to deliver walking and cycling infrastructure across the country⁵. The NTA offered all Local Authorities support for initiatives including:

- widening footpaths to enable queuing and social distancing
- one-way streets and pedestrianisation schemes for social distancing purposes and to support business activities
- altering traffic signals times to reduce pedestrian waiting times and crowding
- temporary cycling facilities
- external space provision to support business activities.

Following on from this, the Government issued an 'Interim Advice Note – Covid 19'⁶ on June 23rd 2020 to provide guidance to Local Authorities in order to assist them in implementing the above-mentioned initiatives. The document advises Local Authorities to *'also consider the longer term alignment with the principles, approaches and measures contained within the Design Manual for Urban Roads and Streets which prioritises sustainable modes of transport (walking, cycling and public transport), advocates a multi-disciplinary approach to street design and promotes the principles of universal design. Local Authorities*

² https://www.tomtom.com/en_gb/traffic-index/ranking/

³ For example, see 'Project Ireland 2040: National Planning Framework', accessible at <https://npl.ie/wp-content/uploads/Project-Ireland-2040-NPF.pdf>

⁴ See Government of Ireland's 'Climate Action Plan 2019' for more information, accessible at <https://www.gov.ie/en/publication/ccb2e0-the-climate-action-plan-2019/>

⁵ <https://www.gov.ie/en/press-release/062bd-minister-ross-announces-nationwide-supports-for-pedestrians-and-cyclists/>

⁶ <https://www.dmurs.ie/what-s-new>

should also consider broader Government policies on road safety, transport planning, accessibility for people with disabilities and climate change, including the National Planning Framework, notably National Policy Objective 27: 'Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments, and integrating physical activity facilities for all ages.' (p.1). The Advice Note suggests that Local Authorities use existing powers available to them under legislation⁷ to address immediate public health concerns regarding space for social distancing in the public realm, and that the Design Manual for Urban Roads and Streets (2019) user hierarchy should be followed which prioritises the needs of pedestrians first, followed by cyclists, then public transport users and then private car drivers. Design measures should also align with the principles of Universal Design.

The reconfiguration and redesign of Blackrock Main Street to help meet the challenges associated with Covid-19 had already commenced (but was not completed) when this Advice Note was issued. Blackrock Main Street featured in the document as an example of a one-way street being implemented to provide additional space for pedestrians and cyclists, and as an example of a 'medium term' plan that could be adapted and formalised over time.

1.3 DLR Covid-19 Mobility and Public Realm Objectives

The primary objectives of DLR's Covid-19 Mobility and Public Realm works are to:

- Increase outdoor social distancing space for pedestrians in villages
- Increase cycling and pedestrian comfort and safety
- Reduce pressure on public transport capacity by providing a sustainable mobility alternative
- Decrease reliance on private vehicles for short journeys, while increasing the use of walking and cycling as transport modes for a wide range of users
- Support economic development in villages/urban centres.

These objectives will form the basis for this evaluation to measure itself against. This is further outlined in Chapters 2 and 7 of this report.

⁷ According to the NTA, the two main legislative provisions are Section 95 of the Road Traffic Act 1961 (as amended by Section 37 of the Road Traffic Act 1994) and Section 38 of the Road Traffic Act 1994.



2. PROJECT OVERVIEW & SCOPE

2.1 Review Scope and Objectives

The scope of Phase 1 of this study is limited to the two major projects that were completed at the time of commencement of this study in September 2020: Blackrock Main Street and the Coastal Mobility Route (CMR). Phase 1 is explorative in nature, reflecting the uniqueness of the wider Covid-19 context and the lack of precedence in Ireland for such an emergency/rapid response in the case of urban mobility and public realm planning, and evaluation there-of.

The objectives of Phase 1 are to:

1. Evaluate the **short-medium term social and economic impacts** of *Covid Mobility* on Blackrock Main Street using an explorative methodology.
2. Assess the **mobility impacts** of *Covid Mobility* on Blackrock village and the Coastal Mobility Route using an explorative methodology.
3. Explore the **engagement approach/process for delivery** of works by Dún Laoghaire-Rathdown County Council.
4. Provide **recommendations for the longer-term future** of the subject projects, and possible future similar projects, including further monitoring and evaluation as appropriate.

This study has taken place during various levels of the Government's *Resilience and Recovery 2020-2021: Plan for Living with COVID-19 (2020)*⁸, including Level 2, Level 3, Level 5 restrictions (and variations thereof). This brings its own set of challenges with regards to evaluation giving the significant impact of these levels on society and the economy. However, the objectives of the works (see Section 1.3) are designed to respond to Covid-19 and the uncertainty around it, thus any evaluation has to take these unique circumstances into account and a flexibility in the review process is required. The increasing levels of restriction throughout the review process also had an impact on the methodology limiting the nature of the study.

Phase 1 of the study focusses on an interim mobility-based analysis of the Coastal Mobility Route only (as well as the socio-economic study of Blackrock Village) and does not include a wider socio-economic or environmental analysis of the CMR. For future phases, it is recommended that the study scope should include further mobility analysis as well as a wider social and environmental study of the impacts of the Coastal Mobility Route in particular, and a socio-economic and cross-comparative studies of the other urban villages within DLR that were also subject to the Covid-19 mobility and public realm works including Dalkey, Dundrum and Glasthule.

⁸ This Plan was subsequently replaced by 'COVID-19 Resilience and Recovery 2021 – The Path Ahead' on 23 February 2021 <https://www.gov.ie/en/publication/c4876-covid-19-resilience-and-recovery-2021-the-path-ahead/>

2.2 Review Structure and Methodology

Figure 2 outlines the key components that feed into TU Dublin’s interim evaluation of DLR’s Covid Mobility and Public Realm Works: (1) a review of the outcomes against the objectives of *Covid Mobility*; and (2) a review of the engagement approach/process for delivery of the works by DLR. The latter is an important component of the overall review as the nature and speed of implementation of the works are unprecedented within the modern planning system in Ireland. These then feed into recommendations for the longer-term future of the subject projects, and possible future similar projects, as well as recommendations for further monitoring and evaluation of *Covid Mobility* and similar works.

Table 1 outlines the key DLR *Covid Mobility* objectives, and the directly associated TU Dublin review objectives and associated methods. Table 2 outlines the additional TU Dublin objectives that inform the wider evaluation of the Covid Mobility and Public Realm Works.

This report is structured as follows: Chapter 3 focuses on business and community feedback to the works in Blackrock Village, while Chapter 4 outlines the results of the street audit undertaken as well as observations of street life in Blackrock Main Street.

Chapter 5 focuses on an analysis of the technical mobility data for both Blackrock Village and the Coastal Mobility Route. Chapter 6 reviews Dún Laoghaire-Rathdown County Council’s approach to public engagement and implementation of the works, with Chapter 7 providing overall conclusions on the interim evaluation and recommendations for going forward.

Figure 2 Phase 1 Covid Mobility Interim Evaluation

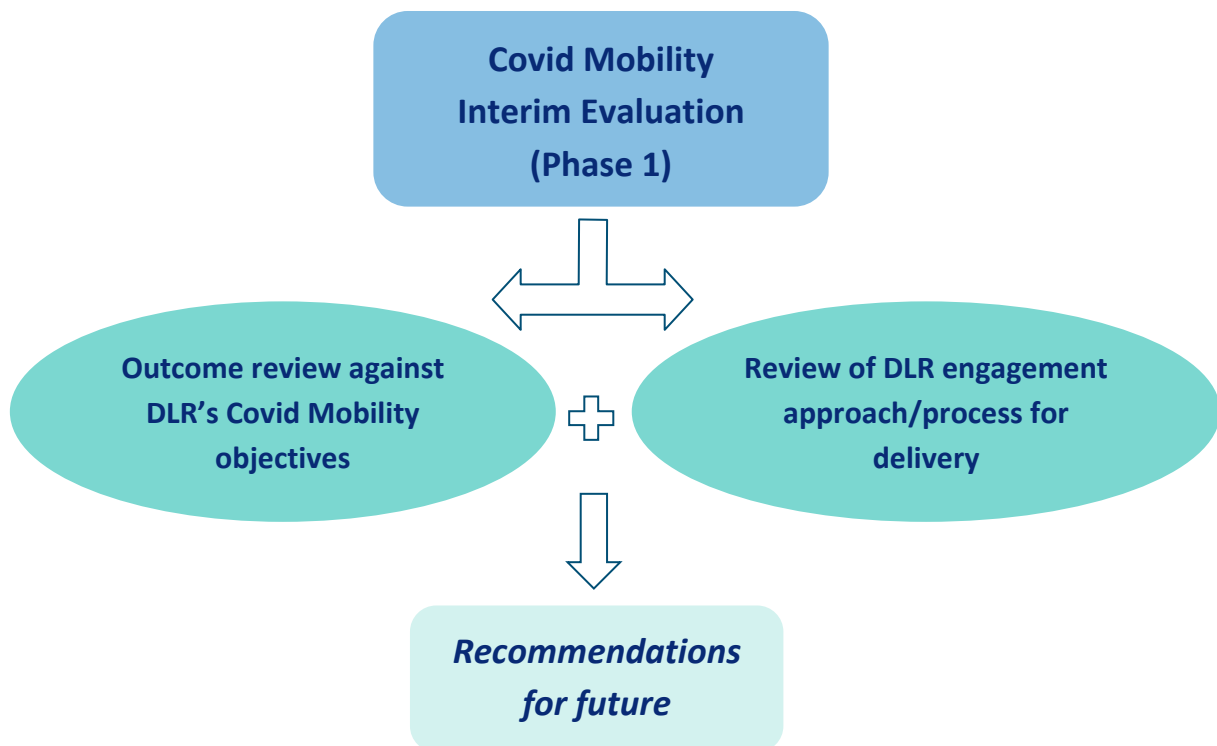


Table 1 Outline of key DLR Covid Mobility objectives and associated TU Dublin review aims and methods

DLR Covid Mobility Objective	TU Dublin Related Review Objective	Data Sources & Methods
DLR1: <i>Increase outdoor social distancing space for pedestrians in villages</i>	TU1: Evaluate the short-medium term social and economic impacts of <i>Covid Mobility</i> on Blackrock Village using an explorative methodology.	<ul style="list-style-type: none"> • Change in quantity of public space
DLR2: <i>Increase cycling and pedestrian comfort and safety</i>	<p>TU1: Evaluate the short-medium term social and economic impacts of <i>Covid Mobility</i> on Blackrock Village using an explorative methodology.</p> <p>TU2: Assess the mobility impacts of <i>Covid Mobility</i> on Blackrock Main Street and the Coastal Mobility Route using an explorative methodology.</p>	<ul style="list-style-type: none"> • Street Audit • Route Range of User Groups observation study • Change in quantity of public realm and road space reallocation towards pedestrians and cyclists • Pedestrian and cycle user counts • Change in vehicle speed & volume counts
DLR3: <i>Reduce pressure on public transport capacity by providing a sustainable mobility alternative</i>	TU2: Assess the mobility impacts of <i>Covid Mobility</i> on Blackrock Main Street and the Coastal Mobility Route using an explorative methodology	<ul style="list-style-type: none"> • Pedestrian and cycle user counts • Bus performance study
DLR4: <i>Decrease reliance on private vehicles for short journeys, while increasing the use of walking and cycling as transport modes for a wide range of users</i>	TU2: Assess the mobility impacts of <i>Covid Mobility</i> on Blackrock Main Street and the Coastal Mobility Route using an explorative methodology	<ul style="list-style-type: none"> • Route Range of User Groups observation study • Pedestrian and cycle user counts • Change in vehicle speed & volume counts • Bus performance study • Vehicular traffic study
DLR Objective 5: <i>Support economic development in villages/urban centres</i>	TU1: Evaluate the short-medium term social and economic impacts of <i>Covid Mobility</i> on Blackrock Village using an explorative methodology.	<ul style="list-style-type: none"> • Stakeholder interviews • Stakeholder survey • Mobility and footfall counts • Street life and use observation • Street Audit

2.3 Data Sources & Collection

Both primary and secondary data sources have been used as part of this study. The main data sources are:

The main primary data sources include:

- pedestrian and cycle user groups observation counts undertaken in October 2020
- Blackrock Village business survey data undertaken in November 2020
- interview data
- street audit data
- car-parking and bicycle parking snapshot data from Blackrock Village undertaken in October 2020.

The main secondary data sources utilised and analysed are:

- historic traffic counts previously commissioned by DLR and made available for this study (these are further outlined in the relevant chapters)
- speed radar data provided by DLR and made available for this study
- historic 'Bus Connects' related traffic counts previously commissioned by the National Transport Authority and made available for this study
- the TomTom Move Dataset, which uses location data from anonymous GPS devices, was used to review how traffic movements, trips and speeds have changed during the period under investigation
- raw pedestrian and cycle counts utilizing DLR's data from their internal cycle counters (Eco-Visio)
- raw bus journey times data between specific bus stops, provided by request from the National Transport Authority
- aggregated public transport passenger data, provided by request from the National Transport Authority
- raw pedestrian, cyclist and vehicular traffic counts on Blackrock Main Street extracted from UCD WeCount Telraam counter and provided on request from a local business
- September and October 2020 survey data from Blackrock Business Network and Blackrock Village Rejuvenation Action Group (Blackrock Business and Community Network)
- road space reallocation data for Blackrock Main Street, commissioned by DLR (undertaken by Barry Transportation) and made available for this study.

2.4 Data Limitations

While every effort has been made to undertake an extensive review and obtain representative data, as with all data collection exercises, there are limitations. The main limitations associated with this project are related to tight study timeframes, resource constraints and the public health restrictions associated with Covid-19. The increasing levels of Covid-19 related restrictions throughout the review process had an impact on the methodology, as face-to-face interviews or customer/user surveys were no longer possible for example.

In addition, December trading can distort surveys due to Christmas trading – this situation coupled with possible pent-up demand for retail post Covid restrictions meant that December could not be used for economic and further social data collection, thus the customer/user surveys of Blackrock Village were not undertaken as the timeframes did not permit this. Instead, a proxy was used utilizing and analysing data that the Blackrock Business and Community Network had collected from a two-week period in late September and early October 2020, during Level 2 restrictions. The major limitation with this data is that it is from an external source, thus there are limitations on quality control.

Data availability, validity and suitability was also a limitation for the vehicular movement analysis in particular. Since March 2020 there has been a variety of mobility restrictions, a continuous roll-out of mobility infrastructure measures across Dún Laoghaire-Rathdown and a number of adjustments to junction layouts and signal timings as adaptive responses to traffic changes during the pandemic. There is also uncertainty as to the medium or long term impacts of the pandemic on mobility patterns, particularly if public transport usage does not rebound quickly and if working from home becomes established for a significant part of the workforce.



3. BLACKROCK VILLAGE: BUSINESS & COMMUNITY FEEDBACK

3.1 Introduction

One of the key objectives of the Covid Mobility and Public Realm works is to support village centre economies, particularly by providing additional public space and an attractive and safe public realm. This is to facilitate safe queuing at businesses and social distancing in public spaces and outdoor dining spaces for cafes/restaurants and take-aways. In order to assess the success of this as well as wider views on Blackrock Main Street redesign, TU Dublin intended to undertake surveys and interviews with some of the key stakeholders including businesses, the community and community representatives. The interviews are outlined in Chapter 6. This chapter contains the results of the TU Dublin business survey. A proxy study was used instead of a direct community survey as the dominance of Covid-19 Level 5 restrictions during the study period meant that a suitable community survey could not be undertaken. The proxy study utilised anonymized data provided by the Blackrock Business Network and the Blackrock Village Regeneration Action Group and is outlined in further detail in Section 3.3 below.

3.2 TU Dublin Blackrock Village Business Survey

In order to ascertain the views of Blackrock Village business owners and employees regarding the Covid Mobility works and to assess the works against DLR's objective to support local economies during Covid-19, an online survey was undertaken of businesses within Blackrock Village. The survey was undertaken between Friday 20th November 2020 and Thursday 3rd December 2020, largely contained within the limited prevailing Level 5 restrictions at the time⁹. The survey was disseminated via the following means:

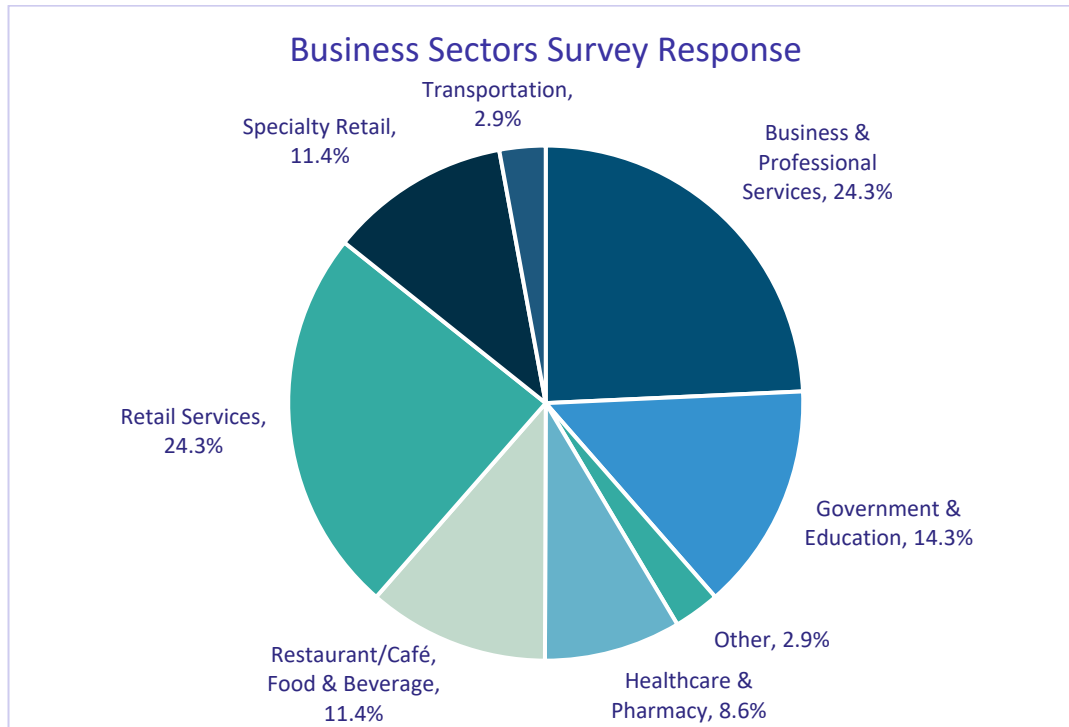
- via the Blackrock Business Network mailing list (with a link to the online survey sent via email) on Friday 20th November, with an email reminder sent on Friday 21st November. This is a large list consisting of c.239 local businesses.
- via a reminder card with a link to the survey distributed to all businesses with an accessible post-box on Thursday 26th November. The reminder card was disseminated to business on Blackrock Main Street and the streets immediately adjacent to Blackrock Main Street including Blackrock Market, a sample of Blackrock Shopping Centre, Bath Avenue, George's Avenue and Carysfort Avenue.
- An option of a paper survey was offered to all businesses (of which one business availed of this option).

A satisfactory response rate of 72 responses of sufficient completion were attained. Although it is difficult to ascertain the exact number of businesses in the vicinity of Blackrock Main Street, this represents an

⁹ The rapidly changing nature of the restriction levels and the associated timing of the study meant that there was no 'ideal' time from which to undertake the survey (or length of time that the survey was live for), however this was judged to be the best time period within the circumstances as it was undertaken before the Christmas retail phase got underway and while businesses has recently experienced Level 2 and Level 3+ and its impact. In addition, the survey could not be undertaken too close to the BBN/BVRAG survey (late September/early October 2020) or the release of its findings (early November 2020) in case survey fatigue negatively impacted the response rate.

estimated response rate of 30% of the Blackrock Business Network mailing list. A number of these businesses were closed at the time of the survey and did not have an operational/accessible postbox. Sectoral breakdown of responses are as follows:

Figure 3 Business survey response by sector



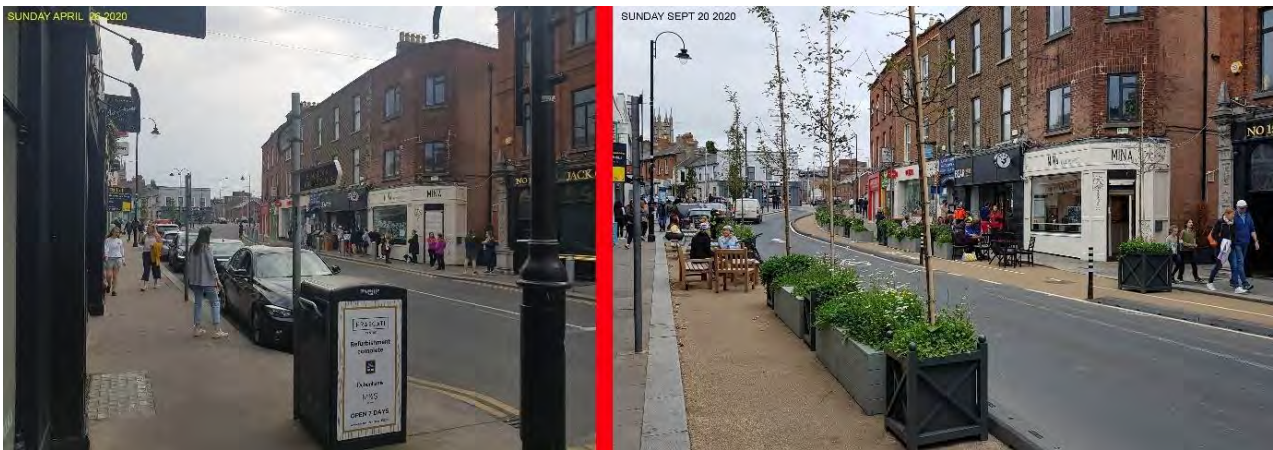
Respondents were reasonably balanced gender wise with 47% male respondents and 53% female. Respondents were also taken from a range of age cohorts with 16.7% under 35 years of age; 63.4% between 35-64 years of age; and 20% over 65.

The findings from the survey are outlined below in relation to the key question areas of:

- How business has been affected by Covid-19.
- Perceptions of business on the impact of the Covid Mobility and Public Realm Works (see Figure 4).
- How businesses generally view the design and layout of the Covid Mobility and Public Realm Works.
- The future design and layout of Blackrock Main Street.

This study is set within the wider context of Covid-19. Across the country, many businesses and business sectors have suffered considerably during Covid-19, with some businesses ceasing trading altogether or only partially trading.

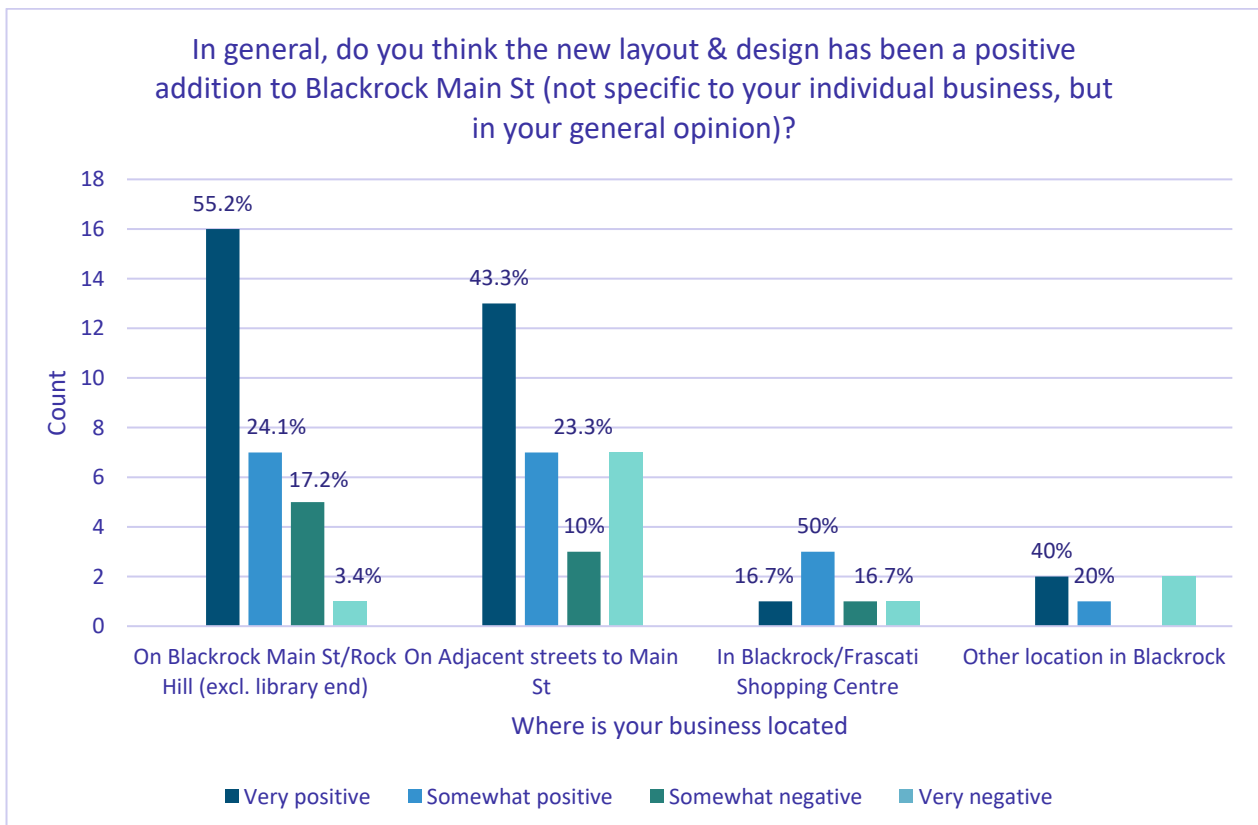
Figure 4 'Before' (April 2020) and 'After' (September 2020) images of road space reallocation, Blackrock Main St



3.2.1 Business Views on Covid Mobility and Public Realm Works

A considerable majority of respondents, 71.8%, think that the new layout and design have been a positive addition to Blackrock Main Street (see Figure 5). The highest percentage of respondents (45%) view the layout and design as 'very positive', while another 26.8% view it as 'somewhat positive'. 15.5% of respondents view it as 'very negative', while a further 12.7% view it as 'somewhat negative'. More female business owners/employees viewed the works as positive (81.3%) than males (67.9%), although the sample sizes are too small to be statistically significant.

Figure 5

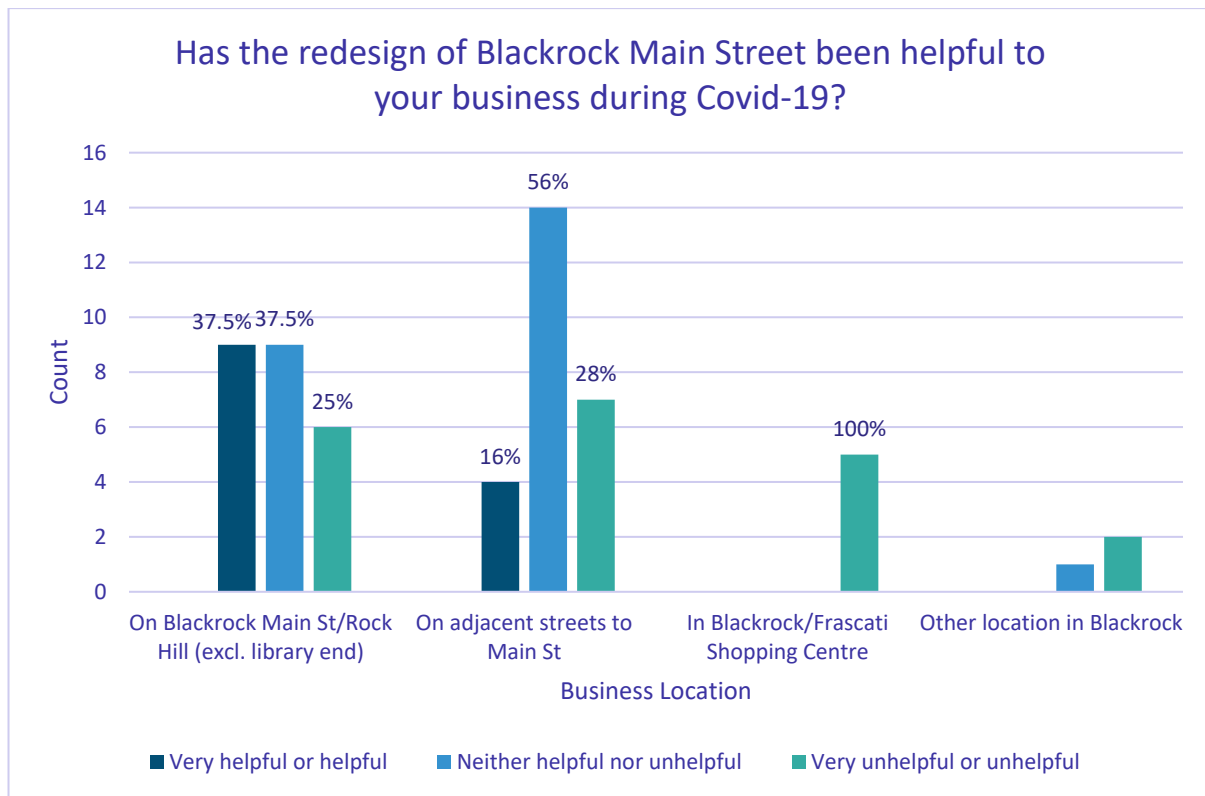


In addition to the above, a number of quotes from the survey respondents are outlined below which outline how many business owners and employees feel about the works, both positive and negative:

- *'Congratulations on bringing life to the village. It is wonderful - keep it!'*
- *'Never been busier in Blackrock! Has revitalised the Village!'*
- *'I think the new layout is great for the village and has really improved the whole look and atmosphere of the Main Street. I really hope it is kept.'*
- *'Love the changes thanks for all your hard work!'*
- *'Well done on the rapid response across the Council area. We are an increasingly densely populated area, and significant investment continues to be required in recreation, green / blue infrastructure, playing pitches (a huge pinch point). Well done to the team on the level of proactivity and brave initiative.'*
- *'Well done DLR... it's made a village of Blackrock. I feel parking issue will improve once shopping centres are finished.'*
- *'We would really appreciate a level playing field for all businesses and to connect the side streets, which have a lot to offer, to the main st. we all pay rates not just the main st.'*
- *'The one way system is causing massive frustration as there is not enough parking spaces so therefore people are circling around constantly & eventually give up & don't enter the village. The filter lights going into the village only allow a few cars at a time causing more frustration. Car parks are too far to walk from to some areas on the main street as people can't get easy parking on the street anymore so have given up entirely coming to the village. It is not good & many businesses are suffering massively.'*
- *'The village is buzzing at times ,when the weather is good and undoubtedly the changes are for the better in many respects, but retailers are feeling the negative effects of the congestion and poor access to parking and egress from the village due to the congestion. But with a little extra imagination these problems should not be insurmountable.'*

Despite a strong majority of respondents being generally positive to the Covid Mobility works in Blackrock Main Street, the views of businesses in relation to whether the redesign of Main Street has been helpful or not to business during Covid-19 is less conclusive and mixed. For example, 37.5% of businesses on Main Street state that the redesign has been helpful or very helpful to their business, but a further 25% state that it has been unhelpful or very unhelpful (Figure 6).

Figure 6



Some of the **helpful reasons** noted by businesses include:

- increased footfall and people coming to the Village
- bringing new people into the Village, including cyclists
- ‘better village feel’, ‘great atmosphere’
- ‘more vibrancy and life around Village’
- ‘good place to meet up for families and friends’
- ‘less traffic and beautiful layout’ liked by customers
- ‘more comfortable feeling’.

The business sectors that noted the works as being helpful or very helpful are retail services; healthcare and pharmacy; specialty retail; food and beverage and government and education. Although the sub-sample size is small here (n=14), 6 indicated that their turnover actually increased between 5-30% during the Summer 2020 compared with Summer 2019 (June-September); 1 noted that turnover had stayed the same; 4 noted a reduced turnover (between 20-50%); and 3 did not know/was not relevant.

As may be expected, less businesses on the adjacent streets noted that the works have been helpful, however it is noteworthy that some businesses (16%) still noted a positive spill-over effect.

The main **reasons cited for ‘unhelpfulness’** are:

- difficulty with deliveries
- vehicular accessibility to the Main Street and Blackrock Shopping Centre
- inconvenience of one-way road system

-
- lack of car-parking, or reduced accessibility to car-parking due to one-way system
 - side streets being at a competitive disadvantage as they do not benefit from the Main St public realm works and associated footfall.

The majority of these businesses noted a decline in their business turnover during June-September 2020 compared with the same period in 2019. The final major grouping of businesses (n=34) are those who are neutral about the works in relation to their own business, or the works were not particularly relevant to their business type. 85% of this group still hold the view that the works are a 'somewhat positive' or 'very positive' addition to Blackrock Main Street, despite not having a direct perceivable impact on their own business.

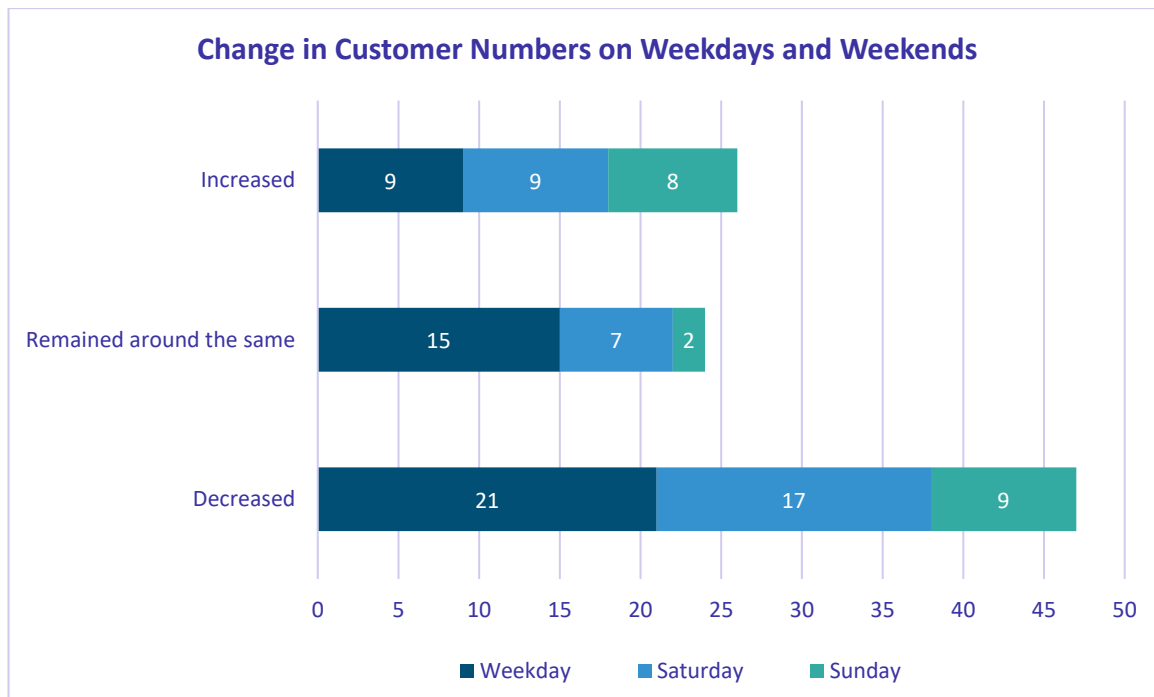
Loading and delivery facilities was an issue raised by a number of business. Out of the relevant business respondents, 46% said that the current loading facilities in Blackrock Main Street and adjacent streets meet the needs of their business, but 54% noted that they do not. Most of the comments relating to loading bays was centred around the inappropriate use of existing facilities by private car users, or the insufficient size of existing loading bays.

3.2.3 Change in Customer Numbers

Covid-19 has posed an exceptionally challenging trading environment for many across the country as well as internationally due to severe restrictions placed on people's movements, fears for public and staff safety in continuing to trade, large scale unemployment, and a complete shift in people's daily movement patterns. The survey sought to investigate whether businesses had perceived a change in their number of customers during the week versus Saturdays and Sundays to assess whether the works may contribute to different types of customers on weekdays versus weekends in particular (for those businesses that trade on weekends).

While it was expected to see a large number of businesses experiencing a reduction in customers overall (47 businesses) given the wider difficult trading context (Figure 7), it was also found that slightly more businesses actually felt their customer numbers either remained the same or increased since the redesign of Blackrock Main Street (50 businesses in total). While some of these customers might be local residents with changing travel patterns (for example due to a large increase in working from home or from living more locally), the increase in Saturday and Sunday customers could possibly indicate a new customer base. The latter consisted of a number of business sectors with retail services, specialty retail and restaurant/café/food and beverage consisting of the largest numbers.

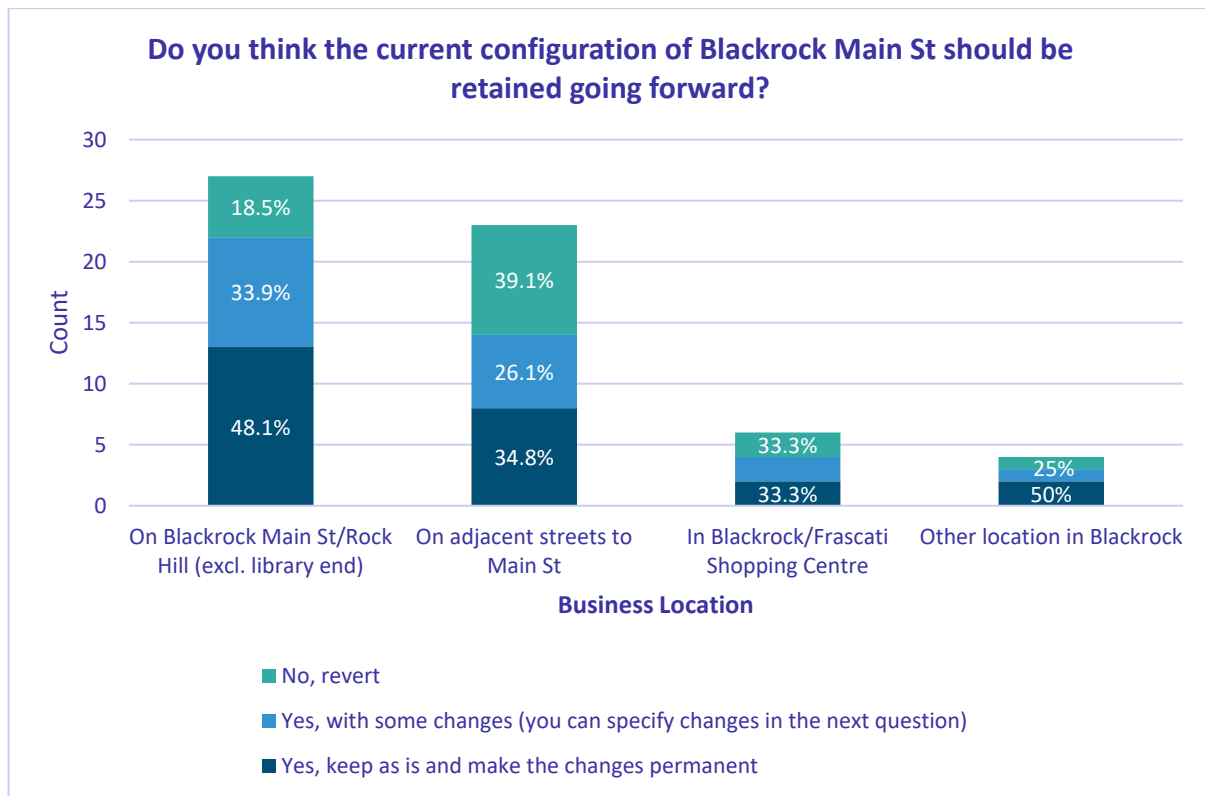
Figure 7 Change in Customer Numbers (as reported by businesses) on Weekdays and Weekends, Blackrock Village



3.2.3 Future of Blackrock Main Street

The majority (72.1%) of respondents (n=44) would like to see the changes made permanent, with 43% of those making suggestions of how the design could be improved/enhanced. 27.9% of respondents (n=17) would like to see the Main Street revert to its previous configuration. Respondents from businesses on Main Street expressed the strongest desire to retain the current configuration at 82% (n=22), followed by 60.9% of respondents from businesses on the streets adjacent to Main Street (n=14). Although only representing a very small sample size, the majority of the business respondents from Blackrock/Frascati Shopping Centres also expressed a desire to retain the current configuration (n=4). More detailed results can be seen in Figure 8, including the percentage of respondents who have suggestions on how to improve the design of Main Street in a more permanent layout. Respondents include business owners, floor managers/supervisors and employees. Out of the *business owners* on Main St, 86.7% would like to see the current configuration retained (n=13); while a majority, albeit a lesser one at 56.3%, of the *business owners* on the streets adjacent to Main St would like the current configuration retained (n=9).

Figure 8



In terms of suggested changes to the design of Main Street if the temporary scheme is made permanent, there is a strong call for the expanded footpaths to be made level with the main footpath, and for the public realm works to be expanded to the adjacent streets to Main Street. There are also calls for additional or expanded delivery/loading facilities. The new seating is popular with calls for higher quality seating, and reviewing the overall location and expanse of seating provision.

There are also calls to ensure the Main Street is more accessible to the mobility impaired including disabled car-parking and level footpaths. There is also a concern regarding the removal of further on-street car-parking bays and ensuring the car-parking pricing is fair and competitive, although suggestions were also made to remove the two-car-parking spaces in Main Street opposite the bus-stop, to perhaps improve private vehicular flow through the Main Street¹⁰.

There are also calls for better planting and higher quality trees, for the kerb separators to the cycle-lane to be more visible, and even for bolder changes including removing the bus terminus from Blackrock Dart Station to Booterstown and the pedestrianisation of part of the Main Street to make a town square.

¹⁰ It should be noted that the current layout gives a movement priority to buses over other vehicles, as buses maintain position within the traffic lane and do not have to wait for other drivers to allow them back into the traffic lane.

3.3 BBN/BVRAG Blackrock Village Survey

The Blackrock Business & Community Network acts as an umbrella group which incorporates the Blackrock Business Network (BBN)¹¹ and the Blackrock Village Rejuvenation Action Group Data (BVRAG)¹². These groups were very active in their call for a reallocation of road space in Blackrock Main Street, in May 2020, in order to facilitate greater space for social distancing within the Village and to provide more public space for pedestrians, cyclists, visitors, and businesses. The Blackrock Business & Community Network undertook a survey of its members and other stakeholders in late September and early October 2020, to seek their views on the Covid Mobility and Public Realm Works implemented in the Village.

This data from this survey was provided to TU Dublin prior to the undertaking of the TU Dublin Blackrock Village Business Survey. It assisted with the decision to prioritise the Business Survey over a wider Community Survey. Rapidly changing Covid-19 restrictions from Level 3 to Level 5, then back to Level 3 and 5 (between October 2020 and March 2021) meant that the wider Community Survey could not be undertaken within the timeframe associated with this Phase 1 Covid Mobility Review, as suitable access to residents and users of the Village was not possible due to public health restrictions and the resources associated with study. The BBN & BVRAG survey did however provide a reasonable proxy for an initial community survey due to the good survey return rate and some associated usable data. It is still recommended however, that further engagement with the wider Blackrock residential community is undertaken before any permanent solutions are implemented in Blackrock Main Street.

The number of responses from the businesses was relatively small and the findings from the businesses raised further questions that we wished to explore further in the TU Dublin survey. The BBN/BVRAG survey consisted of multiple-choice questions related to the Covid Mobility changes in Blackrock, plus two open response text questions. The most reliable and relevant data has been extracted and presented below. 354 valid responses were received, which we divided into two categories: 303 responses categorised as 'Residents'; and 42 as Business Owners and Staff. The latter was made up of 35 Business Owners and 7 Staff responses. The remaining 9 responses were visitors and were not included in the analysis due to the small sample size.

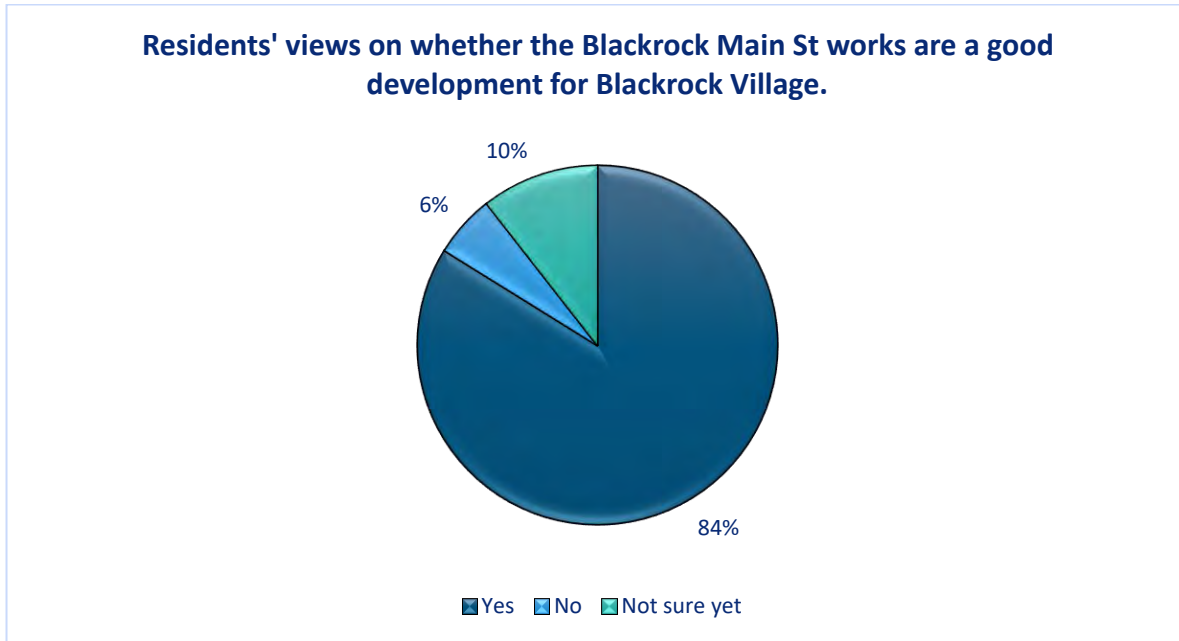
Responses to the Main Street changes were broadly positive, though differences in the responses were observed between the two categories (residents verses businesses). Respondents were first asked (Q1) whether they believed the changes had been a good development for Blackrock Village. Amongst Residents, a very large majority (84%) of respondents answered 'yes', with only 6% responding 'no' and the

¹¹ The BBN is described as a 'non-profit, voluntary body representing the interests of businesses in Blackrock village and the surrounding area. BBN's mission is to maintain, develop and promote Blackrock village as a centre of excellence in which to start, sustain and grow your business' (<https://blackrock.ie/#services>).

¹² BVRAG is described as 'a small focussed action group that works in partnership with key Blackrock Village stakeholders' with an objective 'to help ensure the rejuvenation of Blackrock Village through coherent planning and investment in the public realm, for the benefit and enjoyment of current and future generations of Blackrock residents, businesses and visitors' (<https://blackrock.ie/bvrag/#bvrag>).

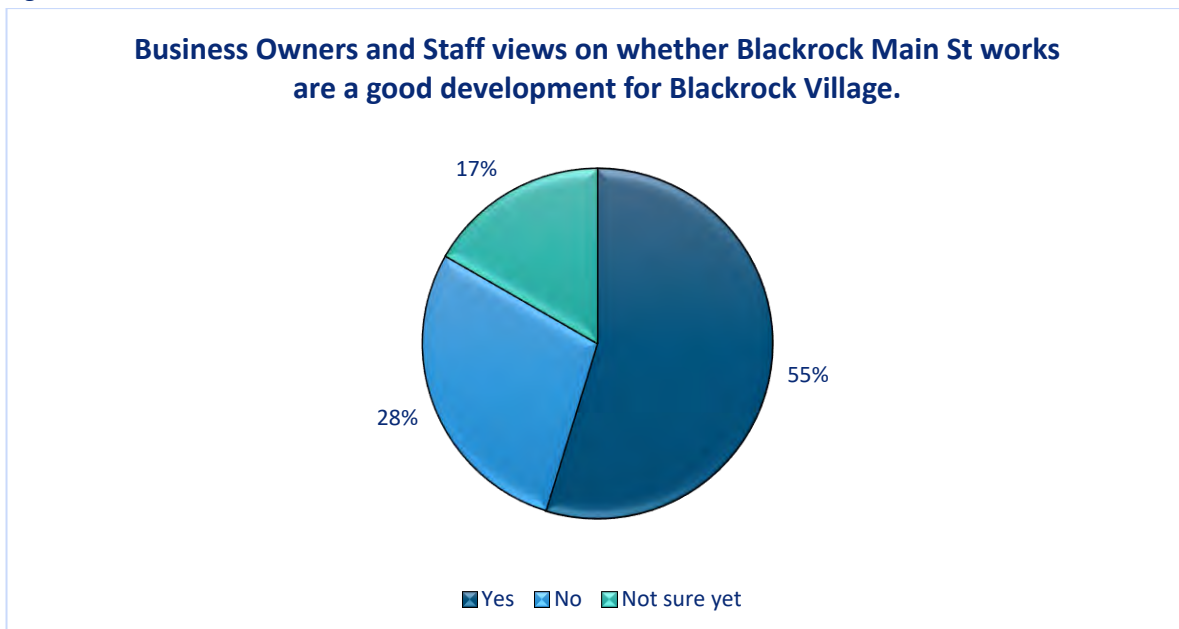
remaining 10% noting they were 'not sure yet' (see Figure 9). There is a difference however amongst Business and Owners and Staff, with 55% of respondents answering 'yes' (but still a majority), 28% responding 'no' and 17% 'not sure yet'. The higher 'not sure yet' is to be expected from the business community as Covid-19 has affected so many businesses in a severely negative way, that a greater timeframe may be needed for some business sectors in particular to come to a clearer view on the works.

Figure 9



n = 303

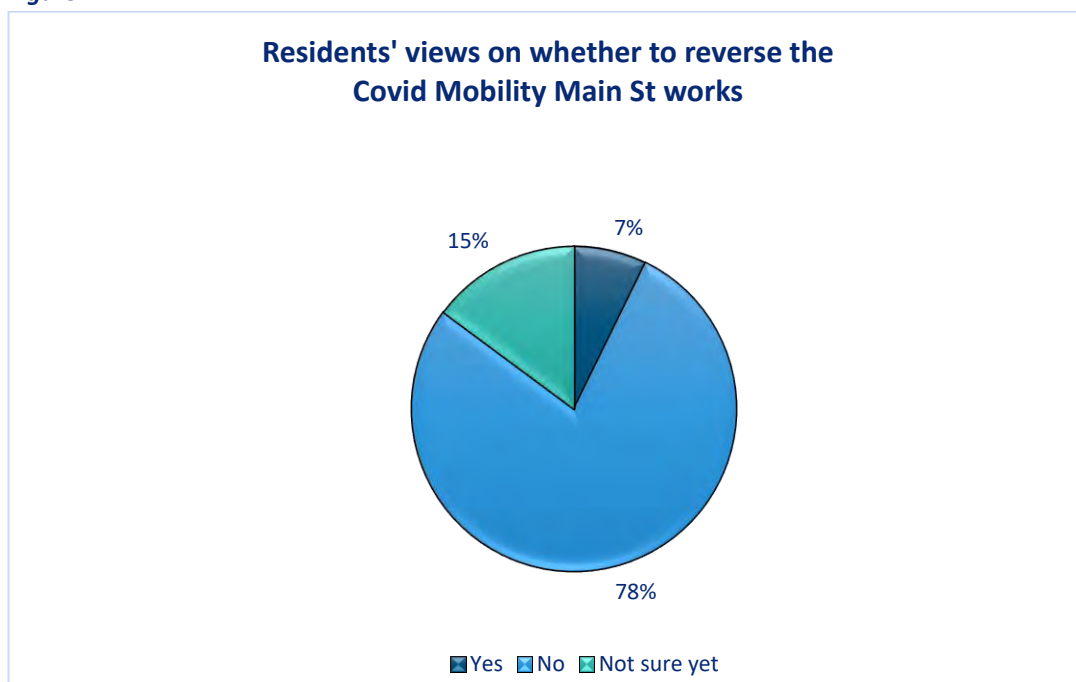
Figure 10



n = 42

Respondents were asked whether they wanted the changes on Blackrock Main Street to be reversed. **78% of residents did not want the changes reversed**, compared to 7% who did; a similar response to the previous question (see Figure 11). Amongst **Business Owners and Staff, 55% did not want the changes reversed**; the same number as those who felt the changes had been good for the village. However, 40% of businesses respondents wanted the changes reversed, with only 5% unsure, compared to the 28% in Q1 who felt the changes were not a good development, and 17% unsure. It is interesting to note how the collective views of businesses changed by the time the TU Dublin survey was undertaken in November 2020, perhaps reflecting the higher response rate of the latter which would have taken into account more business sectors and views, and that research shows sometimes change can be viewed with some skepticism initially and these views can become more positive over time with experience¹³.

Figure 11



The survey also asked if the changes are beneficial for their business (see Figure 13). Of the 33 respondents in the Business Owners and Staff category, 43% (14) responded that the changes were not beneficial; 30% (10) responded that they found the changes beneficial, and 9 responded that they were 'not sure'. However, it should be noted that a 'No' response to this question does not necessarily translate into opposition for the scheme; it could be interpreted as a neutral response (no impact whether good or bad). The TU Dublin Business Survey sought to investigate the nature of the responses to this question in more detail (see Section 3.2).

¹³ For example see Reid, 2020 accessible at <https://www.theguardian.com/environment/2020/nov/16/i-got-it-wrong-since-the-changes-its-become-more-vibrant-life-in-an-ltn>

Figure 12

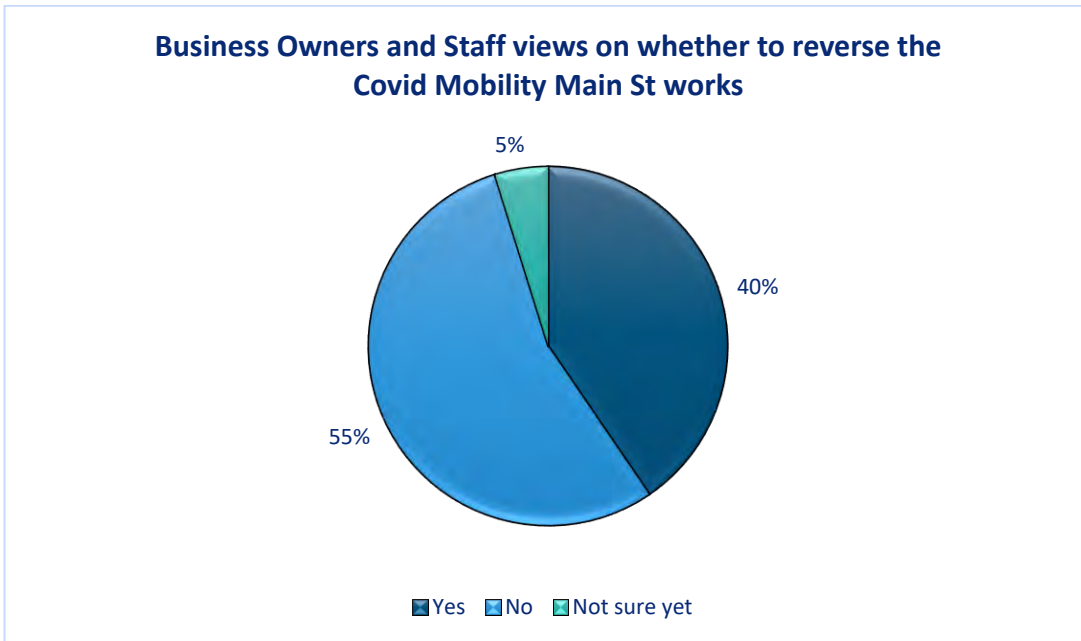
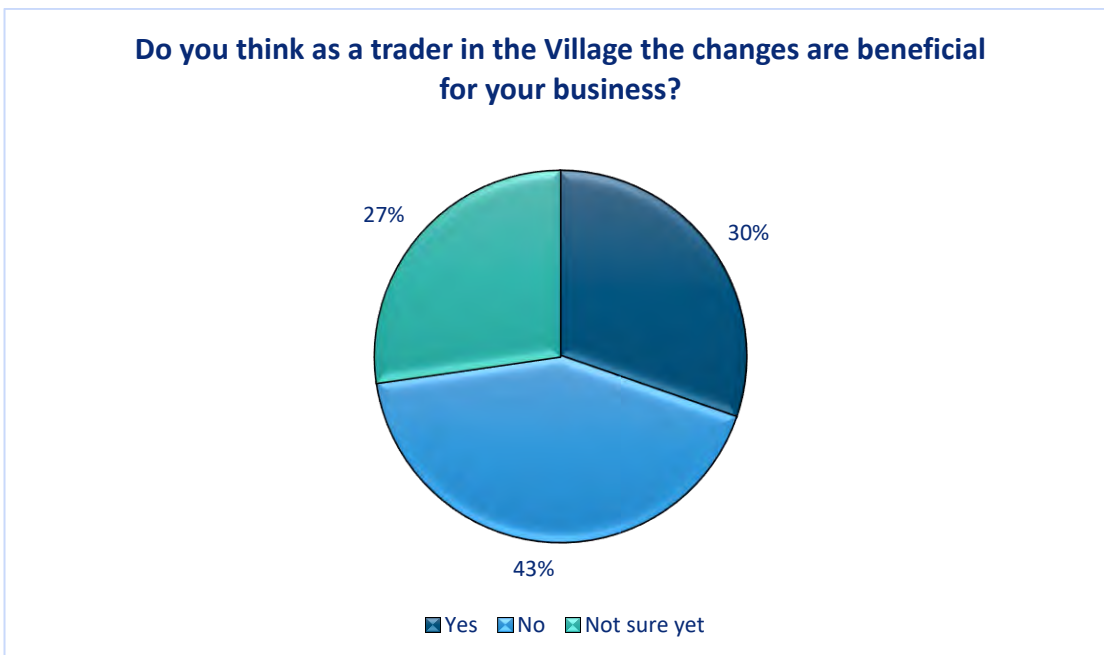
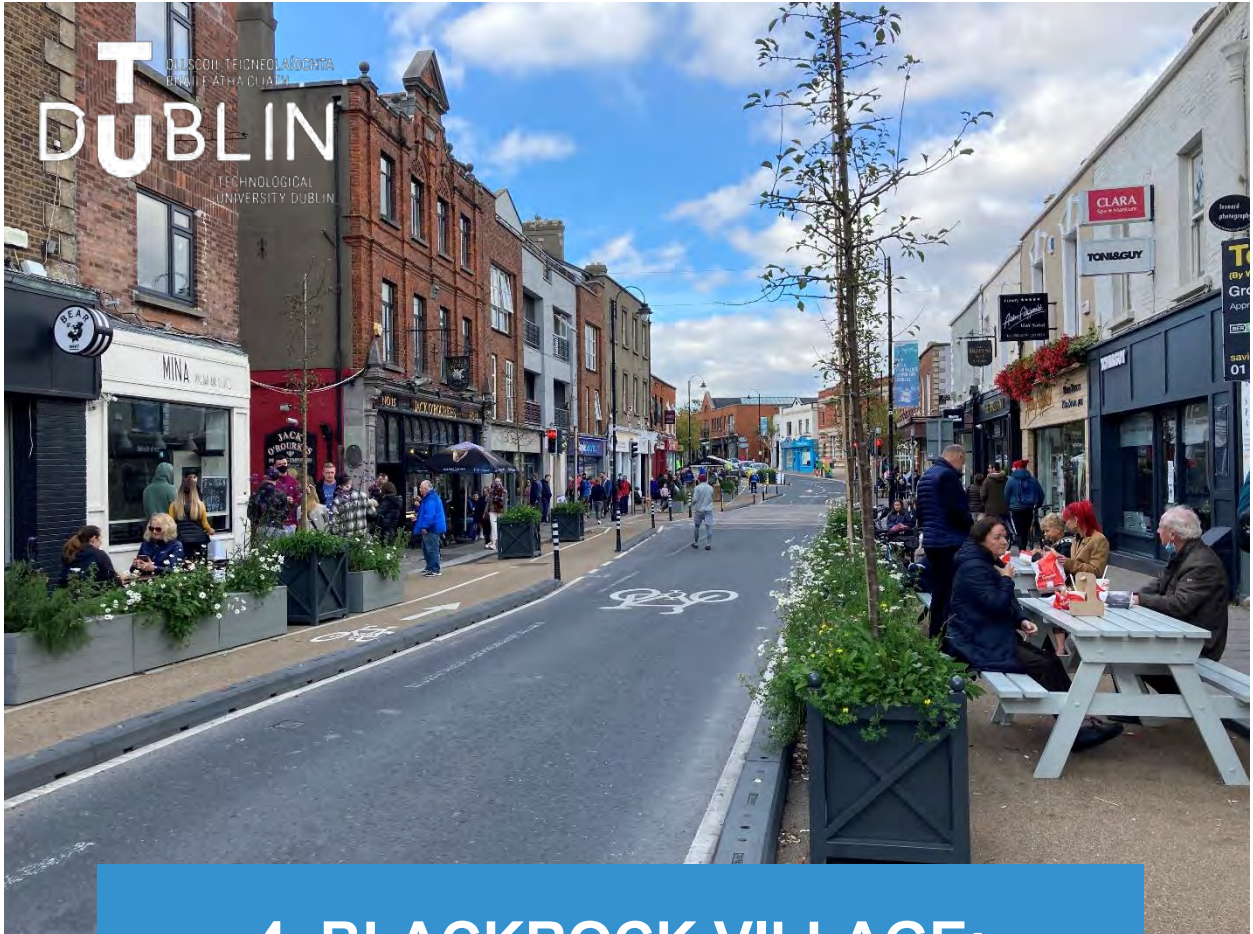


Figure 13



n = 33

The survey also asked respondents two questions which were free/open-text and allowed custom responses. These questions were optional. The first question was **“what do you like about the new configuration?”**.



4. BLACKROCK VILLAGE: STREET AUDIT & STREET LIFE

4.1 Introduction

This chapter focuses on the use, experience and quality of the public space of Blackrock Main Street. Section 4.2 examines the reallocation of road space from carriageway space focused on vehicle movement towards a more rebalanced use of the Main Street by pedestrians, cyclists, public transport and private vehicle users. Section 4.3 examines the reallocation of space against the aims of relevant Covid-19 government guidelines (DMURS Interim Advice Note), while an audit of the health and quality of the street environment is undertaken in Section 4.4 primarily utilising the Transport for London ‘Healthy Street Check’ methodology.

4.2 Use of Public Space

DLR’s Covid Mobility objectives for Blackrock are to increase outdoor social distancing space for pedestrians; increase pedestrian and cycling comfort and safety; and to support the local economy. A total of c.1083sqm of road-space has been reallocated in Blackrock Main Street, resulting in a c.25% increase in public space and a new contraflow bike lane (see Appendix 1).

Before the Covid Mobility works, Blackrock Main Street looked and functioned like many villages in Ireland today, where the majority of the public realm is dedicated to the movement and private storage (i.e. car-parking) of private vehicles. In addition, there was a mix in the quantity of public space dedicated to pedestrians and general village footfall, with much of the footpath space falling well below the minimum width of 3m¹⁴ recommended for such an urban village centre.

Figure 16 Images of Blackrock Main Street before the Covid Mobility works were undertaken (April & May 2020)



¹⁴ See Section 4.3.1 Footways, Verges and Strips in the Design Manual for Urban Roads and Streets (2013, 2018)
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The works increased public space through a simple road space reallocation transferring the roadway to additional footway (albeit at the original lower roadway level and not at the footpath level), planting, outdoor seating and dining spaces, and a contra-flow bike lane. The generalised cross-section as illustrated by DLR is shown in Figure 17 and Figure 18 below, although it should be noted that in many places the expanded public realm exceeds the 1.45m shown in the typical cross-section.

Figure 17 Existing and Proposed Phase 1 (Engineering/Road Space Reallocation Phase), Blackrock Main Street (source: DLR & Barry Transportation)

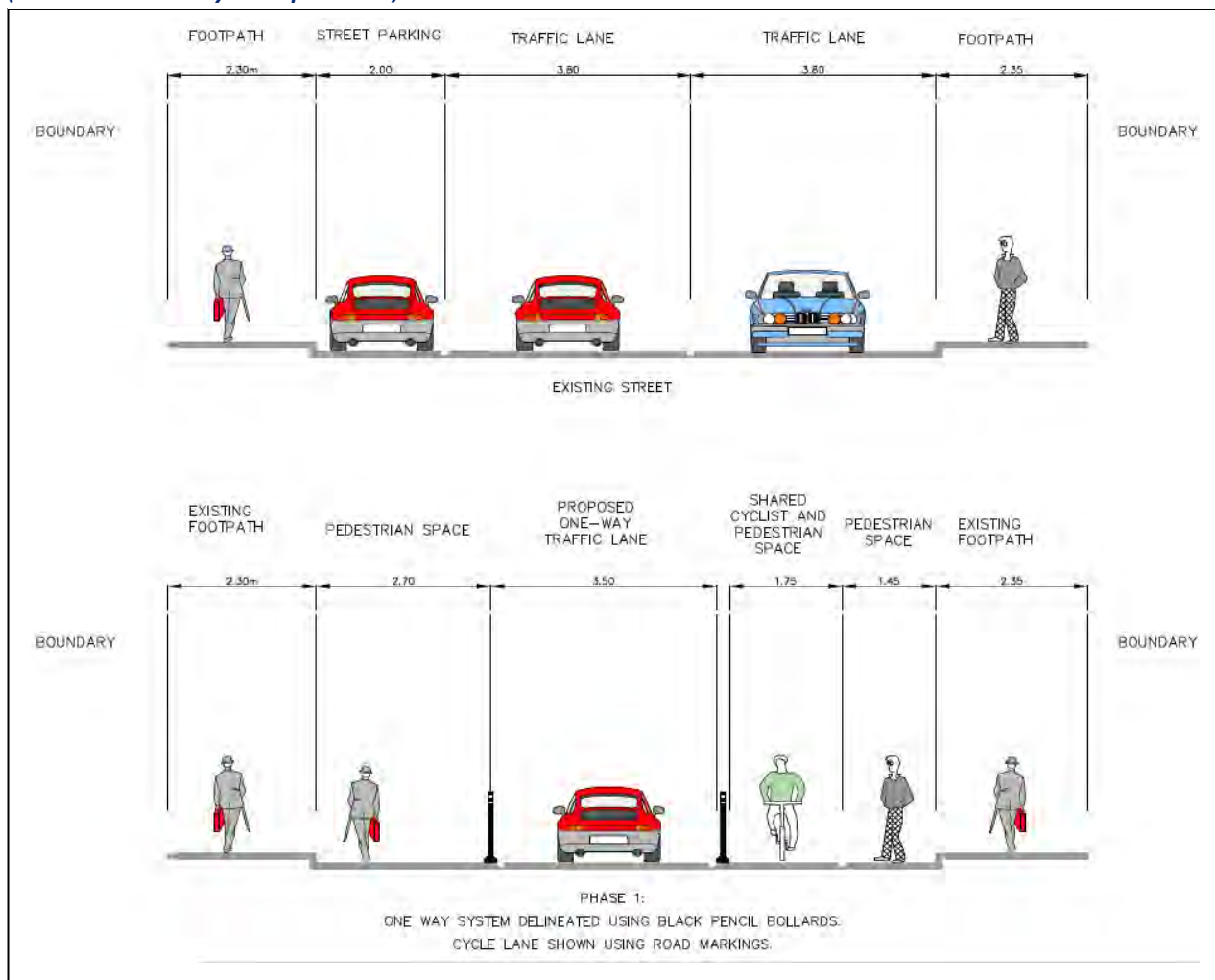


Figure 18 Phase 2 Placemaking Phase of Blackrock Main Street Covid Mobility and Public Realm Works (source: DLR & Barry Transportation)

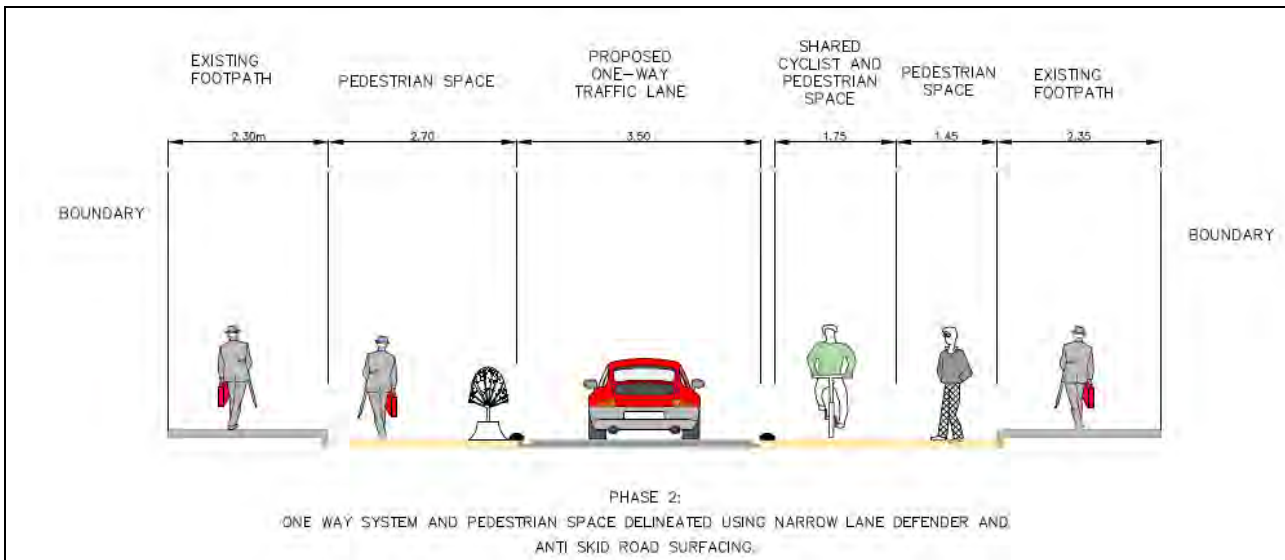


Figure 19 and Figure 20 illustrates two before and after comparisons. There is a considerable improvement evident in the social setting and aesthetics of the Main Street. Previously there was little in the way of social spaces (which was focused on the little square at the south end of the street), and little outdoor street life as there were no facilities to support these activities. Frequent observations demonstrate that the space has been transformed with vibrancy and street life evident throughout all stages of the pandemic, including winter (see Figure 22 and Figure 23). There is also considerable street activity and vibrancy evident during weekends, as well as evenings (when outdoor dining and beverages were permitted during Level 3 Covid-19 restrictions). There has been a clear and substantial increase in the use of the Main Street by cyclists, both in terms of movement and in terms of spending time within the Main Street and utilising the businesses and outdoor facilities (see Figure 24). The above is consistent with the findings from the community and business surveys (see Chapter 3) and well as mobility data (see Chapter 5).

Figure 19 'Before' (April 2020) and 'After' (September 2020) road space reallocation, Blackrock Main Street

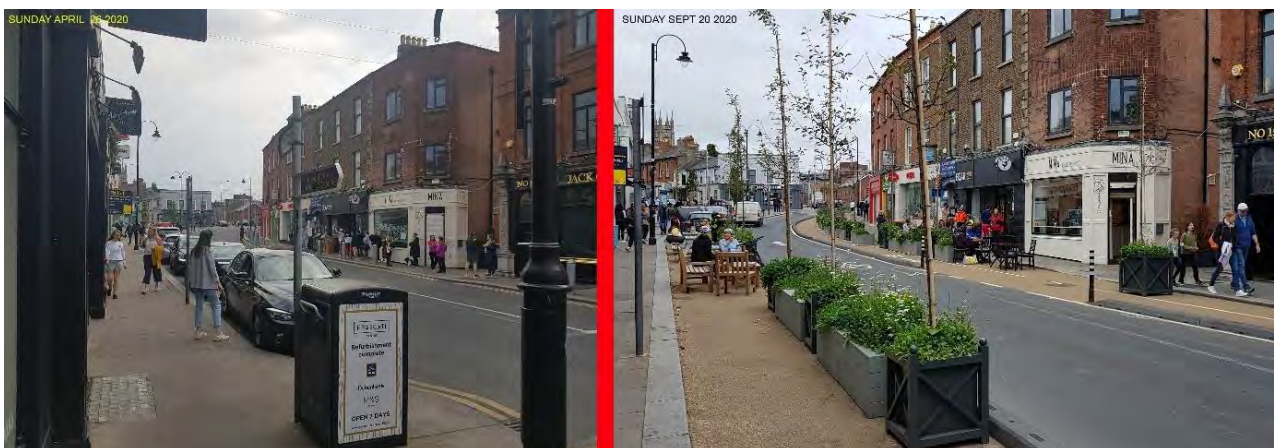


Figure 20 'Before' (May 2020) and 'After' (October 2020) road space reallocation, Blackrock Main Street

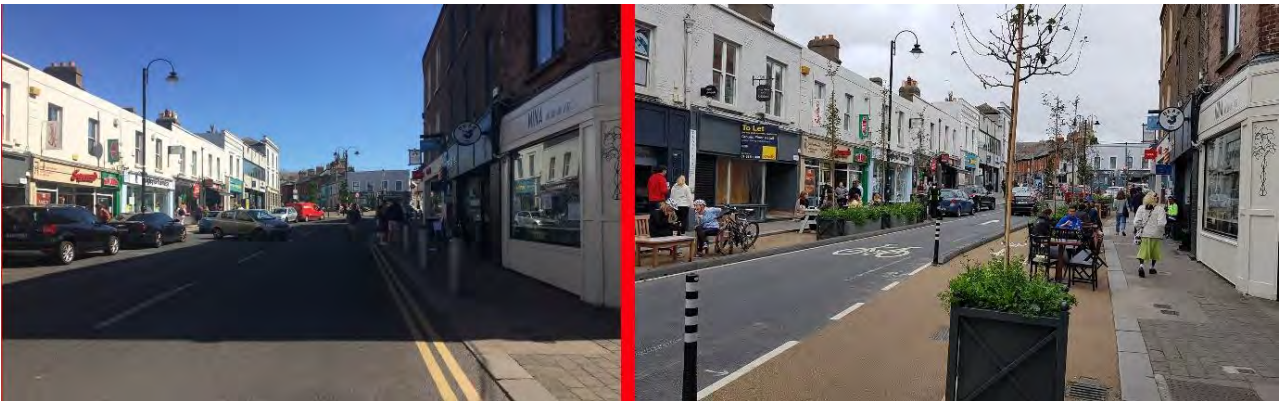


Figure 21 Images of street life in Blackrock Main Street during the summer months when the placemaking phase was being finalised (late July 2020)



Figure 22 Images of street life in Blackrock Main Street during Autumn 2020 (September and October). Images illustrate several businesses utilising the expanded public realm space to facilitate outdoor dining during Level 3+ Covid-19 restrictions.





Figure 23 Images of street life in Blackrock Main Street during the winter months (November 2020).



Figure 24 Cyclists of all ages utilising Blackrock Main Street post Covid Mobility works throughout the Autumn and Winter months 2020-2021.



Figure 25 Images of street life in Blackrock Main Street and adjacent Georges Street in April 2021 (weekend – top; weekday – bottom).



4.3 Street Audit Part A: DMURS Interim Advice Note

On 28th May 2020, the *Department of Transport, Tourism and Sport (DTTAS)* announced funding supports for improved walking and cycling infrastructure nationwide, in response to COVID-19. The Interim Advice Note was published on 23rd June 2020 (Government of Ireland, 2020) following the announcement to complement the existing DMURS guidelines¹⁵. Examples and graphics of measures implemented already in Ennis, central Dublin and Dún Laoghaire-Rathdown were used.

Short term-, medium- and longer-term changes were discussed. The importance of monitoring and evaluating data arising from measures introduced was highlighted if longer term funding might be required. The *National Transport Authority (NTA)* wrote to all 31 Local Authorities offering support implementing these measures. It was recognised that many of our cities and towns would be challenged, with current inherited layouts to provide safe passage for social distancing for pedestrians and cyclists.

The measures suggested by the NTA included:

- *Widening of footpaths, to facilitate queuing at retail points, and distancing.*
- *Pedestrianisation of some streets to accommodate social distancing and support business activities.*
- *Creating one-way systems, where removing traffic was a solution to facilitate footpath widening.*
- *Altering traffic signal times to prevent crowding of waiting pedestrians, also enabling automatic, or motion-sensitive signal push buttons.*
- *Providing additional temporary facilities for cyclists.*
- *Providing additional outdoor space to support local businesses.*

An immediate response was encouraged, to ensure the transfer of space from private vehicles to pedestrians and cyclists. The importance of maintaining business viability in urban centres, and promoting active travel were highlighted. The encouraging of local trade, as opposed to online and out-of-town centres was a concern, to prevent a longer-term switch if urban centres were perceived by some to be unsafe for pedestrians or cyclists.

Blackrock Village plans were already suggested as an exemplar for the type of interventions welcomed under these solutions. The new layout had been commenced, but not completed when the Advice Note was issued (23rd June 2020) following the announcement of funding (28th May 2020) by DTTAS and notification of plans to offer funding by the NTA (22nd May 2020). Table 2 assesses the suggested approach to Covid Mobility works by the Advice Note compared with the approach taken by DLR.

¹⁵ For more information, see <https://www.dmurs.ie/what-s-new>

Table 2 DMURS Interim Advice Note Recommendations for Immediate Covid-19 Mobility Response

	Immediate Response Advice Note Recommendation	Blackrock Main Street Covid Mobility Works	Response level
Pedestrians	Provision of a clear path to facilitate 2m social distancing, including use of car-parking/loading areas	Footpaths are generally between c.2.2-2.5m with an additional c.1.45-2.70 m provided at the level of the carriageway.	Good
	Installation of temporary signage illustrating alternative walking & cycling routes through quieter areas	Largely not applicable in this location.	Not undertaken/ not applicable
	Footpath markings encouraging pedestrians to keep to the left and illustrating 2m distance		Not undertaken
Cyclists	Add segregated cycle lanes on key routes	Provided northbound from Carysfort Avenue to Frascati Road. Mixed with vehicular traffic southbound along the Main street, but road speeds are slower and traffic volumes are lower.	Good
	Maximising Advance Stopping Lines (ASL) at traffic lights for cyclists	Cycle light & entry point at Bath Place and entering the contraflow bike lane from Temple Road and Main St extension, but no dedicated ASL provided for cyclists or turning priority onto Caryfort Ave.	Potential for improvement
	Increase the width of cycle lanes on major routes (or in part where possible) to cater for increased numbers of cyclists (provided sufficient space is also provided for pedestrians).	Addressed by installation of 1.75m northbound segregated cycle lane but mixed with regular traffic southbound (with additional pedestrian space prioritised).	Good
Street Activity	Provide additional space (in addition to that provided above for pedestrian movement) outside shops and adjacent to bus stops to facilitate queuing. Consideration should also be given to the allocation of space for outdoor tables/seating associated with food service.	Increased on both sides of Main Street. Public furniture and picnic tables provided at various points.	Good
Traffic Management	Examine movement within the broader network and identify alternative routes for through traffic.	Main street converted to one-way southbound for motor traffic.	Good
	Minimise the width of vehicular carriageway to calm traffic and increase the space available to pedestrians and cyclists	As above, northbound traffic slowed by lane width.	Good
	Implement one-way systems. Where there is a conflict between maximising space for pedestrians and cyclists and maintaining two-way traffic, a broader traffic management view should be	Good balance of road space reallocation expressed with northbound vehicular lane redistributed c.1.75m for northbound dedicated contra-	Good

	applied. Under such circumstances, contra-flow lanes for cyclists should be provided.	flow cycle lane and c.1.5m to additional pedestrian space, providing a remainder of 3.5m for a shared southbound vehicular lane and cycle lane (noting this pace also caters for large vehicles including buses).	
	Other limited road closures to restrict through movement by private vehicles within a Local Street network	Addressed by the introduction of one-way system and the elimination of northbound traffic.	Largely not applicable to this context
	Adjusting signal timings at busy crossing locations to reduce queuing for pedestrians, including possible automation.	Good pedestrian crossing times at junction of Bath Pl/Main Street, but increased timing could be considered at junction of Main St and Caryfort Ave. No automation introduced, however overall traffic cycle times reduced to reduce pedestrian waiting times.	Potential for some improvement
	Application of Special Speed limits (i.e.) or Advisory Speed Limits as an interim measure (30km/h)	30km/h in place	Good
	Installation of temporary signage advising drivers of changed layouts	New signage in place, along N11, Frascati/Temple Road and other approach roads	Good
Car Parking	Close off on-street parking spaces and loading areas. Loading areas, alternative locations should be provided with directions and signposting where appropriate. Regarding car parking, directions should be provided to edge of centre or other alternative facilities within walking/ cycling distance and/or public transport.	Parking removed along the western side of parking Main Street. Parking available at DART station and Council carparks in addition to on-street.	Good
	Provide 'Park and Stride' facilities on the edges of centre (where people make the first part of their journey by car, park on the edge of a centre, and make the final part of their journey by foot, bicycle or via public transport).	Blackrock village already well served with bus, train and peripheral car-parking, and now with improved cycle access from hinterland. Potential to increase signage, information and enhanced pedestrian connections to 'Park and Stride' car-parking facilities.	Potential for some improvement

4.3.1 Conclusion

The table above summarises the immediate measures outlined and actioned by DLR as a response to Covid-19. Overall, there has been a positive and comprehensive response shown in Blackrock Main Street to the Interim Advice Note. An opportunity exists to refine some of these measures should they become more permanent. The provision of a contra-flow segregated cycle lane northbound is contrasted with the mixing of vehicular and cycle traffic into a shared laned southbound. Recommended practice includes the use of a surface treatment on the road asphalt to indicate a 'shared street' where cyclists and vehicles share the street on a more equal footing and in a low-speed setting. Interfaces of traffic signals and bicycle lanes could also be upgraded with Advanced Stop Lines and right turning priority, and pedestrian crossing times increased at some junctions. As an immediate response to the Interim Advice Note, the measures undertaken have greatly provided increased safety and access for non-vehicular mobility and have by-and-large responded very well to the recommendations of the Advice Note, with 10 out of the relevant 14 recommended measures implemented to a good standard.

4.4 Street Audit Part B: Healthy Streets Check

A street audit of Blackrock Main Street was undertaken on 7 December 2020 using Transport for London's (TfL) 'Healthy Streets Check for Designers' (hereinafter Healthy Streets Check). It contains 31 metrics (that contribute to 10 overall indicators) to ascertain the accessibility, inclusivity, quality, safety and overall 'health' of the street environment.

Healthy Streets Check is a useful tool as it provides a grading system that has been widely used internationally¹⁶ and provides for a replicable methodology that allows for comparison of urban street environments. Many of the Healthy Street Check metrics are also directly relevant to evaluating the success of the aims of Council's Covid Mobility and Public Realm Works including pedestrian and cyclist comfort and safety; quality of public space; and reducing reliance on private motor vehicles.

The Healthy Street Check works by comparing the 'health' of Blackrock Main Street before the Covid Mobility and Public Realm Works were complete and after it. The comparison is done via an estimated percentage of 'health' out of a total of 100%. As this study commenced after the introduction of the Covid Mobility works, additional sources of information and data were used to ascertain measurements of the pre-works layout and estimates of the previous conditions including:

- 'Audit of the villages, towns and local centres of 'Dún Laoghaire-Rathdown County Council, March 2017' - report by Alan Mee Architects (March, 2017)
- Available historic traffic counts
- Google Earth and photographs.

¹⁶ The Healthy Streets Check methodology was reviewed by the University of Westminster on behalf of Transport for London in 2017 with strong support found for the tool. In addition it has been used by the Business Improvement Districts of London (Aldred and Sharkey, 2018) and the approach endorsed by the Greater London Authority, and Auckland Transport in New Zealand (Saunders, 2020).

As with any standardised tool, there are some drawbacks too, particularly in relation to the nuances associated with context. An example of a drawback associated with the Healthy Streets Check is that the categories of improvement have a limited range (from 0-3). This meant that some metrics fail to show a category improvement score even though an improvement is clear when an on-site experience is taken in account. For example, even though there is a substantial reduction in vehicle volumes passing through the Main Street¹⁷ (due primarily to the changing of the street from two-way to one-way traffic) the category reference range did not result in a change of score, thus the benefit for pedestrians and cyclists associated with significant reduction in vehicular traffic was not fully considered. In future developmental iterations of the Healthy Streets Check toolkit, we recommend exploring increasing its range from 0-3 to 0-4/0-5, thereby retaining its accessibility but increasing its analytical potential. However, attempts have been made to reduce the impact of this drawback using detailed comments in the audit spreadsheet (see Appendix 2).

The National Disability Authority and Age Friendly Ireland's 'How Walkable is Your Town?' report (2015) was also considered to gain a further understanding of how inclusive the works are regarding the needs of the elderly and the disabled. The report features many shared principles with the Healthy Streets Check, however three additional questions were considered from the report's survey and walkability audit. This was in order obtain greater accuracy in measuring accessibility and inclusivity for elderly and disabled people. The additional issues considered are:

- Extent of obstacles that particularly impede elderly and disabled citizens (this includes narrow pathways and obstacles such as hoardings and parked bicycles).
- Is there enough time for elderly/disabled to make crossing at pedestrian lights?
- Do public seats have a back and arm-rest for people to rest against?

These are further discussed below in Section 4.4.1.

Subsequent to the audit being undertaken for this study, the NTA issued a Universal Design Walkability Audit Tool for Roads and Streets in January 2021 in conjunction with Age Friendly Ireland, the NDA, An Taisce Green Schools, and Smarter Travel Schools. This community focused tool builds on the 2015 NDA/Age Friendly Ireland report findings.

This street audit draws on both quantitative and qualitative data and assessment. A limitation associated with the street audit is that it was undertaken after the works were implemented in the Main Street. The Healthy Streets Check was originally designed to be undertaken before as well as after/proposed works. This meant that some of the 'before works' data was unavailable and proxies had to be used. It is acknowledged though that these works were undertaken in a rapid response fashion to address an immediate need associated with the Covid-19 pandemic, however, it is recommended that future works,

¹⁷ This metric contributes to indicators including 'People feel safe', 'People feel relaxed', 'Easy to Cross' and 'Pedestrians from all walks of life'.

wherever possible, should collect suitable evaluation related data before the project commences (see Chapter 7 for further details).

The street audit focused on Blackrock Main Street. Before moving towards a more permanent design for Main Street, it is also recommended that a street audit is undertaken of the adjacent side streets and main connecting streets to Blackrock Main Street, including George's Avenue, Carysfort Avenue, Bath Place and the portion of Main Street adjacent to Blackrock Library.

4.4.1 Interpreting the Street Audit

Figure 26, Figure 27, Table 3 and Table 4 below illustrate the results of the Healthy Streets Check. The previous street layout and design achieved an estimated score of 53% while the reconfigured and redesigned street achieved an estimated score of 74%. This represents a **significant 21% increase in the 'health' or improvement of the street environment** through the implementation of the temporary Covid Mobility and Public Realm Works undertaken in Blackrock Main Street, compared with the previous arrangement. In addition, all 31 metrics displayed some degree of improvement. Four metrics in the previous layout received the lowest score of zero, where no metrics achieved a zero score in the redesign main street.

Table 4 illustrates that the 10 overall indicators improved in the order of 17-26% from the previous arrangement of Main Street. Indicators showing a considerable improvement include: 'Places to Stop and Rest' (26% improvement); 'People feel safe' (24% improvement), and 'Not too noisy' (20% improvement). Although only an estimate as the supporting scientific data is currently unavailable, there is likely to be a significant improvement in air quality too due to the substantial reduction in vehicular traffic through the main street.

Extent of obstacles that particularly impede elderly and disabled citizens: There were no obstacles of note to impede pedestrians, such as sandwich boards, hoardings, and there are generally sufficient bicycle parking stands provided to reduce 'fly' cycle parking at lampposts during the time of the audit. The additional temporary footpath space allows for a degree of clearance of the primary footpath of obstacles. However, this extra footpath space provided is at the carriageway level, thus may present accessibility issues for some. Any permanent design should ensure that the extended footpath is all at the same level.

Pedestrian crossing times at pedestrian lights: The signalised pedestrian crossings along Main Street are in compliance with the Government's *Traffic Management Guidelines*¹⁸ (2003), however recent UK research shows that older people need longer to cross the road than these standards recommend¹⁹. At the time of this survey, the lights at the Bath Avenue/Main Street junction provide for this additional crossing time

¹⁸ <https://assets.gov.ie/30277/e3faaeaf9f74832947150bd6de1fae2.pdf> (see p. 190)

¹⁹ For example research by Asher et Al. (2012), demonstrates that older people (≥ 65) need more crossing time at pedestrian lights than current standards recommend. Older women's mean walking speed is 0.8m and older men's is 0.9m/s, as opposed to the speed of 1.2m/s that is currently used (in conjunction with the standard 6 seconds of green time).

recommended, as well as the crossings at the one-way arms of the Main St/Carysfort Avenue junction, however additional crossing time is recommended at the two-way/wider portions of the road here. This could be implemented immediately.

Public seating with back and arm-rests: The redesigned Main Street provided for a substantial increase in temporary seating opportunities for people through informal planter-box seating and picnic benches. The existing seating in the Main Street Square are all high quality with arm and back rests, although these are all currently confined to this location. It is recommended that a number of additional seating opportunities with arm and back rests are installed in other parts of Main Street and adjacent streets in any permanent design.

Given the temporary nature of the works on Blackrock Main Street, any permanent works should also strive for improvements (in addition to those discussed above) in the below-mentioned areas to increase the overall Healthy Street Check scoring:

- **Shade and Shelter** – apart from the new trees, which have modest canopies at this stage, there are no obvious canopies, or permanent screening from sun or precipitation, apart from private doorways and entrances to shopping areas.
- **Pedestrian Crossings** – an additional mid-block level/step-free access crossing point should be considered on Main Street, particularly in the stretch of roadway between Bath Place and Carysfort Avenue. This will improve accessibility for those with reduced mobility and those with buggies etc. In addition, improvements are recommended on ease of crossing side streets, with greater priority given to pedestrian movement including the use of step-free raised crossings.
- **Shared Surface** – as cyclists heading southwards currently share the carriageway with vehicles via conventional black-top surface treatment, it is recommended that the carriageway surface is given further traffic calming and surface treatments so that cyclists are not disadvantaged.

Figure 26 Healthy Streets Check Spider Diagram, Blackrock Main Street

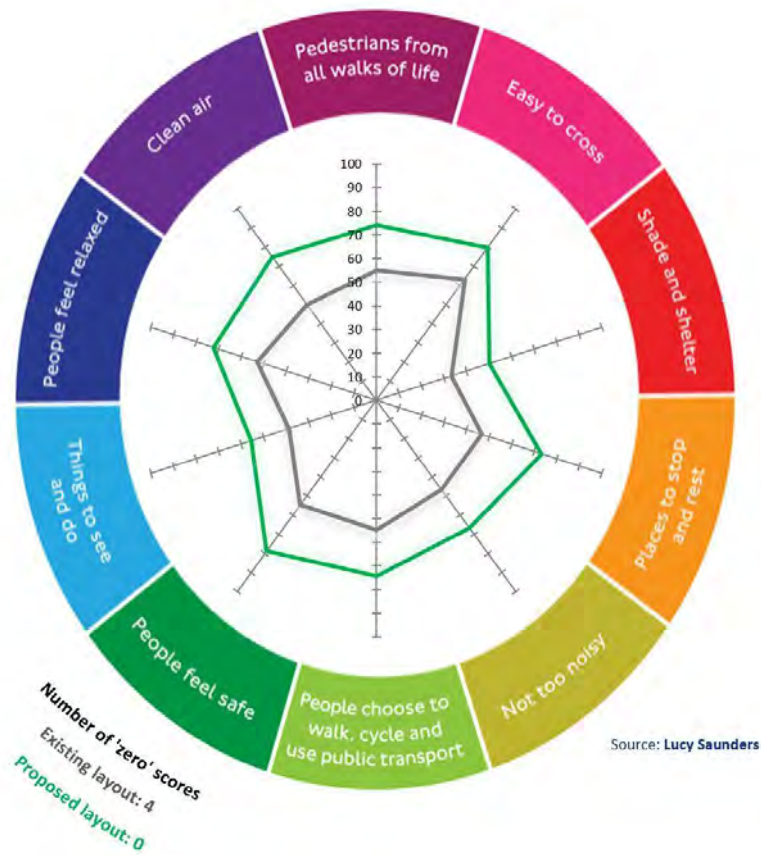


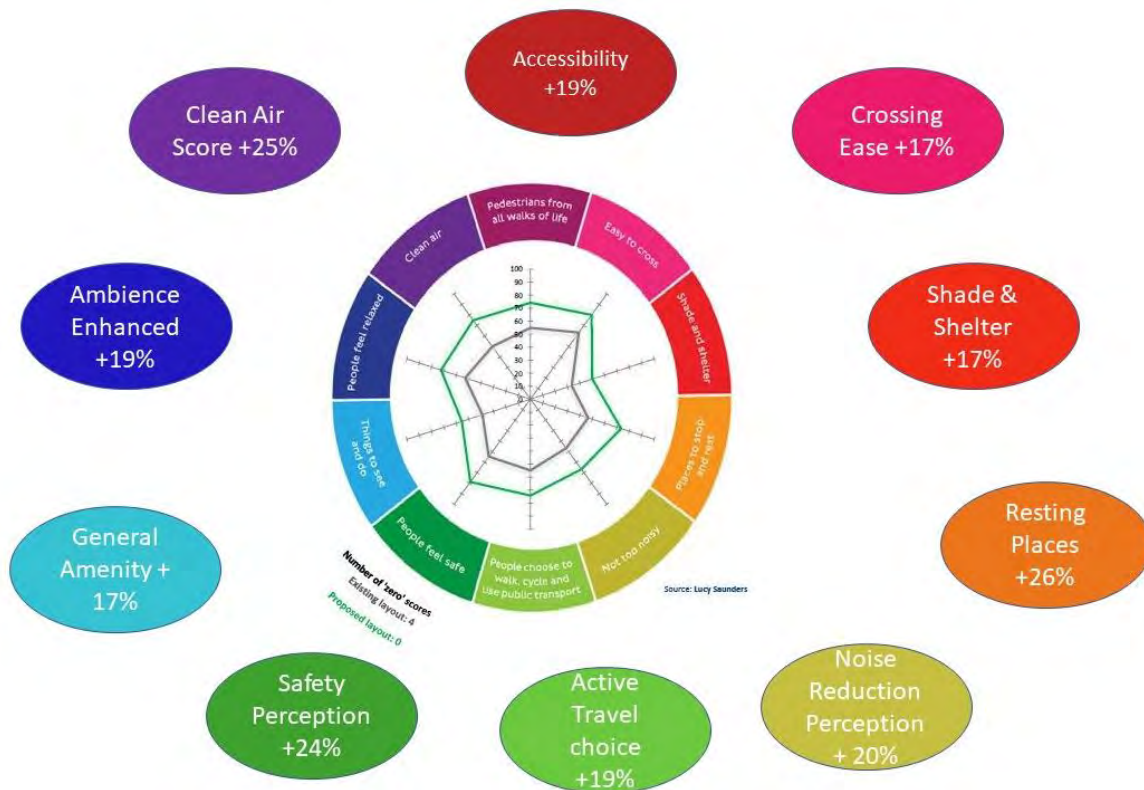
Table 3 Healthy Streets Check Summary Improvement, Blackrock Main Street

	Original layout	New layout	% Point Change
Overall Healthy Streets Check score	53%	74 %	+21 %

Table 4 Healthy Streets Indicators' scores, Blackrock Main Street

	Original Layout	Covid Temp. Layout
Pedestrians from all walks of life	55	74
Easy to cross	63	80
Shade and shelter	33	50
Places to stop and rest	47	73
Not too noisy	47	67
People choose to walk, cycle and use public transport	55	74
People feel safe	55	79
Things to see and do	39	56
People feel relaxed	53	72
Clean Air	50	75
Overall Healthy Streets Check score	53	74
Number of 'zero' scores	4	0

Figure 27



4.5 Conclusion

The Covid Mobility works in Blackrock Main Street have resulted in a significant 25% increase in public space. This reallocation of road space partially away from private vehicles and towards pedestrians and cyclists, coupled with the introduction of street furniture and planting that support and encourage outdoor socialisation and use of public space has led to a considerable increase in the public life of Blackrock Main Street. This vibrancy and activity is acknowledged by both the businesses and wider community as a tangible benefit to the works, as described in Chapter 3.

As an immediate response to the government's Covid-19 mobility Interim Advice Note, the measures undertaken have greatly provided increased safety and access for non-vehicular mobility and have by-and-large responded very well to the recommendations of the Advice Note, with 10 out of the relevant 14 recommended measures implemented to a good standard.

The street audit also reveals a substantial 21% improvement in the 'health' of Blackrock Main Street utilising the Heath Streets Check approach. The Covid Mobility works also aligned very well with the government's recommended approach for such rapid works (DMURS Interim Advice Note). While room for improvement has been identified in places and should be taken into account in any proposals for a permanent design for Blackrock Village and Main Street, the considerable achievements of these temporary and rapidly constructed works deserve due recognition.



5. TECHNICAL DATA: MOBILITY ANALYSIS

5.1 Introduction

The COVID-19 pandemic has led to an unprecedented shift in mobility patterns, both in Ireland and internationally. Some of the biggest changes include substantial reductions in the use of public transportation, the reduction in traditional peak-hour travel, and an increase in daytime and more locally based trip making. These shifts can be largely attributed to ‘work-from-home’ orders, significant capacity limitations on public transportation²⁰ and the imposition of travel limits such as 2km and 5km exercise limits. Coupled with the reduction in public transport capacity was a drop in ridership confidence leading to people choosing private alternative modes of transport for necessary trips (NTA & DCC 2020). In addition, the Irish government asked that people walk and cycle where possible, so that public transport capacity could be prioritised for essential workers.

On the 12th March 2020, all schools, colleges and childcare facilities were closed. This is significant since, according to the National Household Travel Survey 2017 (NTA, 2018), 20% of trips (excluding return trips) are for education purposes. Schools and Colleges remained closed until September 2020 and closed again in December 2020 and remained so until a phased re-opening between March and April 2021. Non-essential workplaces also closed in March 2020 with many people continuing to work from home a year later.

In this unprecedented global pandemic, the changing restriction levels and adaptations to the levels as we learnt more about the virus, has meant that the methods of traffic modelling typically used to determine the impact of a change in infrastructure or traffic management on traffic and transport systems are unreliable. Usually, baseline traffic data is collected pre-intervention, post-intervention and a number of months post intervention. The latter is particularly important in the case of active travel interventions as modal shift behaviour change can happen gradually (UKCRC, 2017) as individuals go through a process of (i) contemplation of change, (ii) preparedness for change, (iii) action and then (iv) maintenance of the behaviour as the new habit forms. The effort to change from private car usage to public transport or active travel modes requires more effort for the user in environments (such as Ireland’s) where transport infrastructure has traditionally been designed to optimise the movement of vehicular traffic, sometimes to the detriment of walking, cycling and public transport trips.

Pedestrian footfall is recognised as a predictor of economic activity on high (main) streets. Studies in the UK show that where the pedestrian experience is improved on high/main streets, footfall can increase by 20-35%, bucking the UK trend of a 22% decline in footfall on main streets between 2007-2017 (Living Streets, 2018). Therefore, pedestrian numbers and behaviours are particularly important to note in the context of the Blackrock Village intervention.

The vehicular traffic assessment in this study differs from traditional traffic impact assessments. The complexity of the changing mobility patterns, the number of emergency response mobility measures being

²⁰ For example, there is a 25% capacity cap on public transportation associated with Level 5 Covid-19 restrictions in Ireland, and a 50% cap associated with Level 3 restrictions (<https://www.gov.ie/en/publication/2dc71-level-5/#transport>).

rolled out across the county and public health restriction levels during the COVID pandemic required an alternative to traditional pre- and post- intervention traffic counts and associated traffic distribution analysis. A number of datasets were consulted to undertake this analysis. The majority of the analysis was undertaken using TomTom O/D Analysis (Origin/ Destination) and traffic statistics accessed through the TomTom Move Dataset. This allowed a review to be undertaken of how traffic movements, trips and speeds have changed during 2020 and early 2021, although further analysis is recommended as restriction levels change and new mobility patterns emerge

The dataset contains a high volume of location data from anonymous GPS devices such as TomTom (connected) GPS devices, connected cars, and anonymous GPS-equipped mobile phones. Globally TomTom collects over 61 billion location measurements daily which it analyses to recognise patterns and sequences from a single device which define the concept of a trip with a start point and end point. Trips are anonymised and the start and end of trips are trimmed to prevent individuals being identified. In the analysis undertaken for this report, locations of interest along routes were selected and defined by the system so that when a vehicle passed through one of the defined areas it is detected as an 'Origin', the final area that is passed through is listed as the 'Destination'²¹.

5.2 Blackrock Village - Mobility Analysis

This section looks at the movement of people and motorised vehicles in the Blackrock Village area.

5.2.1 Walking

Baseline pedestrian and cyclist counts were not available for Blackrock Main Street pre-Covid Mobility works. The data used for this analysis is from counts undertaken between June 22nd-28th 2020, September 30th-October 6th 2020, and for most of March 2021. In addition, a pedestrian count for Dundrum Main Street taken during the same period in June 2020, before any Covid Mobility works (Figure 28). The Dundrum Main Street June 2020 counts are a useful baseline comparator in the absence of suitable pre-works counts. Figure 28 illustrates that footfall was higher in both June and September/October 2020 in Blackrock than in Dundrum Main Street in June 2020. There were no Covid Mobility interventions undertaken at this time in Dundrum. Dundrum also has a higher population catchment given its inland location as compared with Blackrock.

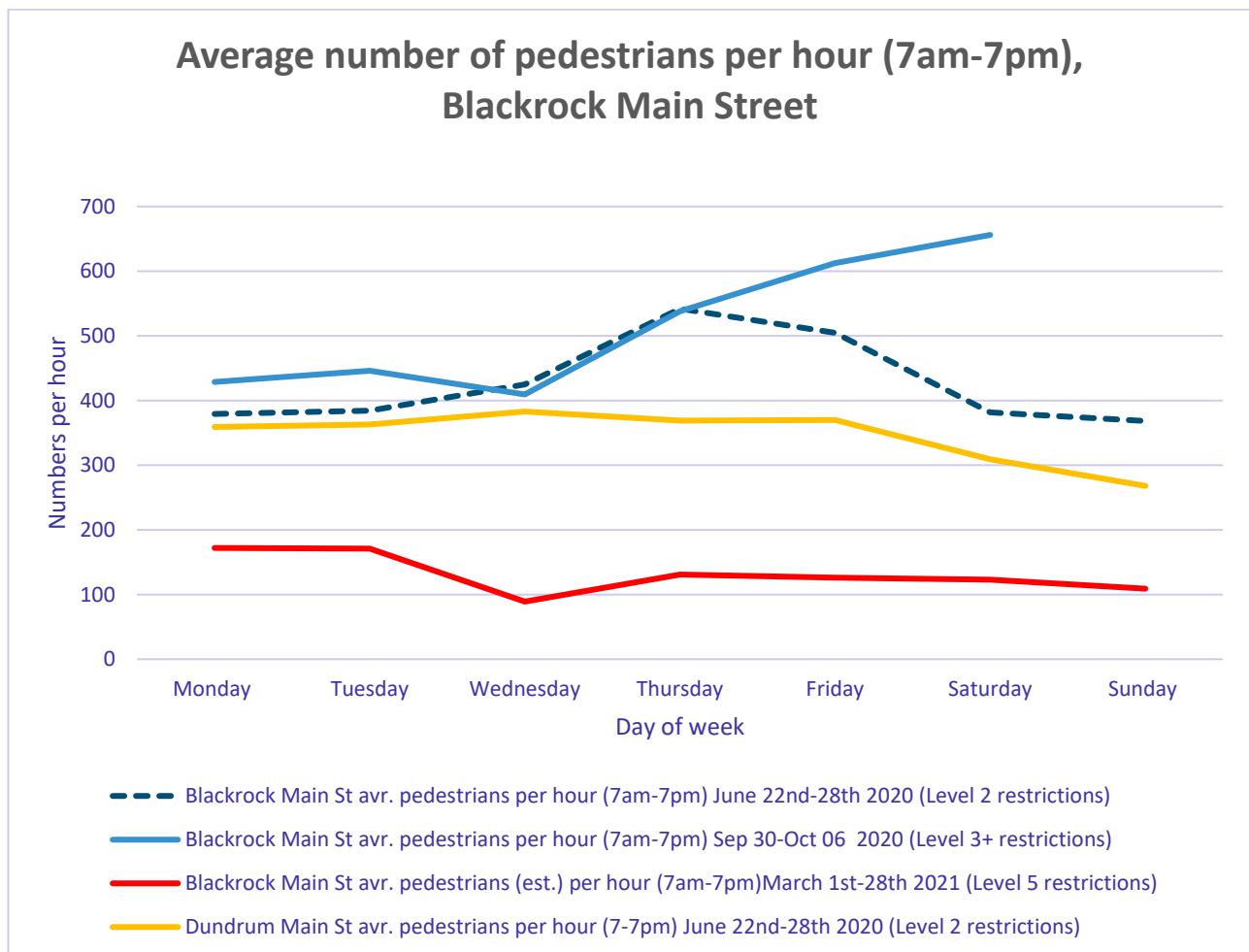
When comparing footfall in Blackrock Village across the three time periods, the impact of the Level 5 restrictions where non-essential retail outlets, schools and workplaces were closed is evident (Figure 28). This is comparable to vehicular traffic movements which will be discussed later in this chapter. There are interesting differences in weekend footfall with a large increase in weekend activity observable at the end of September 2020. It is noteworthy that this was at a time when the Covid Mobility works were complete and the Level 3+ restrictions in place at the time allowed for outdoor dining²². This was a restriction level

²¹ <https://www.tomtom.com/products/origin-destination-matrix-analysis/>

²² <https://www.gov.ie/en/press-release/bcb4a-dublin-city-and-county-placed-on-level-3-of-the-framework-for-restrictive-measures/>

that the food and beverage sector could cater for relatively well in Blackrock Main Street due to the increased amount of outdoor seating and associated tables. At this time footfall levels were generally on par or higher than in June 2020, with a large increase on the sample Saturday, when footfall levels were 172% of that seen in the sample Saturday on June 23. This increase in weekend activity was also found in the Blackrock Business Survey (see Chapter 3), where some businesses have reported an increase in their Saturday and Sunday customer base. However, a degree of caution should still be exercised when drawing conclusions from snapshot counts as they are particularly susceptible to factors such as weather, for example.

Figure 28 Average footfall on Blackrock Main Street in June 2020, Sept 2020, March 2021 and Dundrum Main Street June 2020



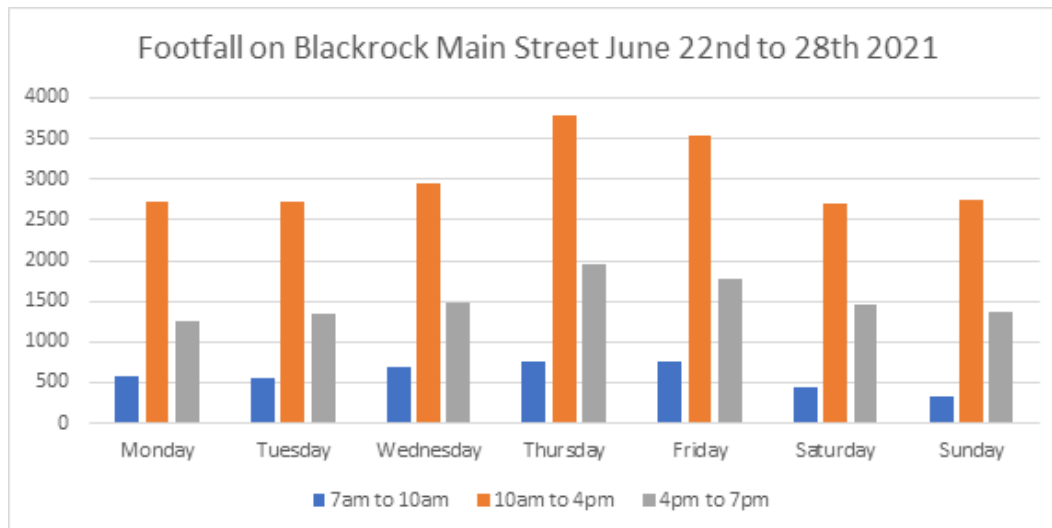
* Note Storm Alex had a major impact on ped/cyclist numbers on Sunday 6 Oct 2020, thus this data was removed from sample.

* June and September 2020 counts taken at Main St/Bath Place/George's Ave junction, whereas March 2021 counts taken from point outside Centra on Main St. March 2021 counter currently undercounts pedestrians on the east side of street, and undercounts cyclists heading north (a small number are miscounted as vehicles), thus the counts have been adjusted to take account of this.

*Not all hour data available for March count, including only one Wednesday during count time period.

The majority of footfall on the Blackrock Main Street was observed between 10am and 7pm with the highest number of pedestrians on Thursday. The low footfall between 7am and 10am corresponds to lower vehicular traffic observed at this time from reduced work trips. Many retail outlets do not open until after 10am and hence trips generated by these outlets are not observed until then (Figure 29).

Figure 29 June 2020 footfall, Blackrock Main Street



Dún Laoghaire Rathdown County Council commissioned a pedestrian observation study²³ in Blackrock Main Street and along the Coastal Mobility Route undertaken between the 15th and 21st December 2020. 61,234 pedestrians were observed over the week of which only 1% (646) were children. The majority of crossings observed happened at the designated crossing points denoted in red on the photographs in Figure 30. The blue lines illustrate other locations where people frequently crossed highlighting additional desire lines within the village area. In areas of the street where there are no designated pedestrian crossings, pedestrians crossed at multiple points within each stretch of road. This indicates that there is a desire to cross the road along these stretches of the street. Further exploration of locations for additional pedestrian crossing points within the village is warranted.

²³ IDASO Pedestrian Observations Report 175 20385 DLR Dublin December 2020

Figure 30 Pedestrian desire lines, Blackrock Main Street (Photo: IDASO Innovative Data Solutions)



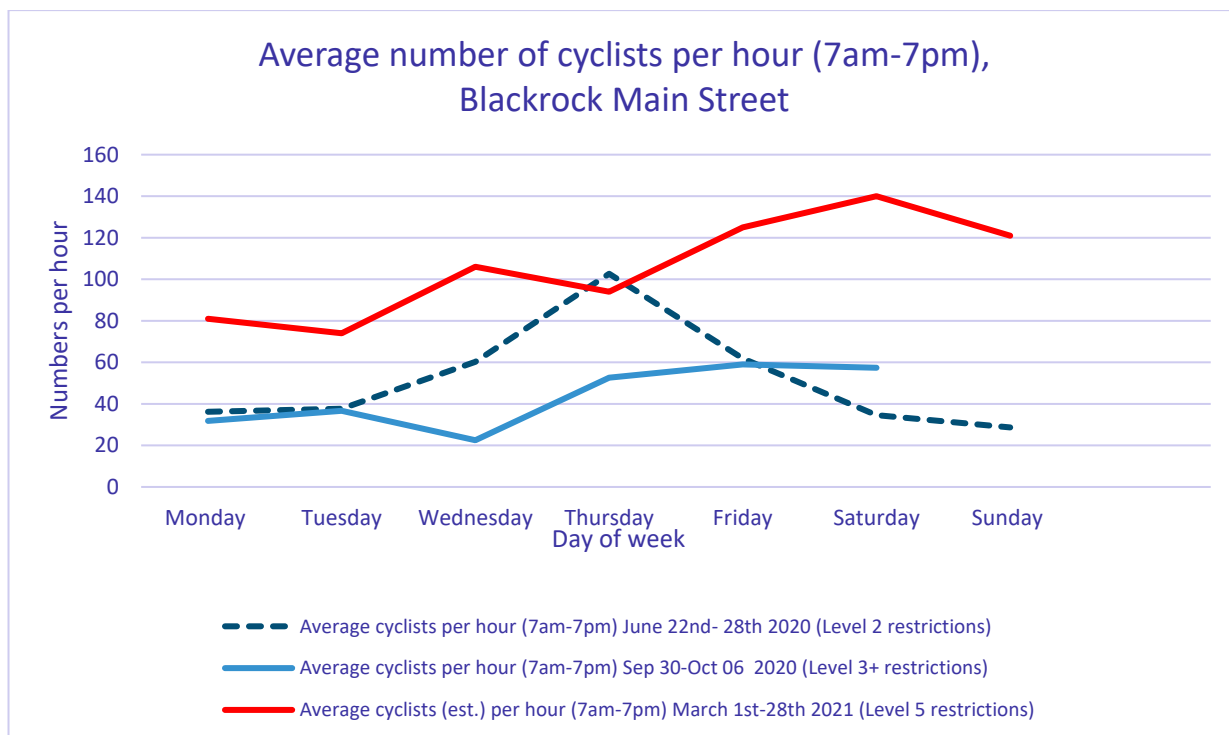
5.2.2 Cycling

The change in average cycling numbers per hour reveal that cycling numbers through Blackrock Main Street are growing, with a particular increase at weekends. This is also reflected in the Coastal Mobility Route usage trends. While cycling numbers tended to be somewhat lower during the snapshot week in September/October than in June 2020, the Saturday figures were higher. This may be because schools and some businesses had reopened. By March 2021, both midweek and weekend average hourly usage had increased substantially, mostly doubling (from September). Overall, the **number of cyclists increased on average by 32% along Main Street from June 2020 to March 2021** (Figure 31).

It is also noteworthy that the **northbound contraflow bicycle lane on Blackrock Main Street attracts c.8.5% more cyclists than the shared southbound vehicle lane and there are 16% more bicycles than cars using Blackrock Main Street (up to March 2021)**. It is expected that pedestrian and cycle numbers will increase as Covid-19 restrictions decrease. There are already some signs that this may have commenced, with Saturday 17th April 2021 and Saturday 24th April showing the highest numbers of cyclists (2457 min., 2644 min.²⁴) through Blackrock Main Street since recording of the data began (and the April completion of this report).

²⁴ On Saturday 17th April 2020, a minimum of 2457 cyclists used Blackrock Main St and on Saturday 24th April, a minimum of 2644 cyclists used Blackrock Main St according to data from the Telraam counter on Main St. The figures are unadjusted minimums as a small percentage of the Telraam counters undercount bicycles and overcount cars (by miscalculating a large bike or a group of cyclists as a car) in this location due to the one-way road system.

Figure 31 Average cycling trips per hour on Blackrock Main Street in June 2020, September 2020 and March 2021



* Note Storm Alex had a major impact on ped/cyclist numbers on Sunday 6 Oct 2020, thus this data was removed from sample.

* June and September 2020 counts taken at Main St/Bath Place/George's Ave junction, whereas March 2021 counts taken from point outside Centra on Main St. March 2021 counter currently undercounts pedestrians on the east side of street, and undercounts cyclists heading north (a small number are miscounted as vehicles), thus the counts have been adjusted to take account of this.

*Not all hour data available for March count, including only one Wednesday during count time period.

5.2.3 Range of Cyclist User Groups: Blackrock Main Street

An observational survey was undertaken in Blackrock Main Street into the range of users of the cycling facilities (both contra-flow and shared lane) in order to gain a greater insight into the inclusiveness of the facilities. Specifically, this survey sought to gain insights into assessing the following DLR Covid Mobility objectives:

- increase cycling and pedestrian comfort and safety,
- reduce pressure on public transport capacity by providing a sustainable mobility alternative, and
- decrease reliance on private vehicles for short journeys, while increasing the use of walking and cycling as transport modes for a wide range of users.

The study sought to investigate user groups based on gender, age group, family composition, casual verses sporty users, disability bikes, scooters, joggers etc. It should be noted that the study was observational in its nature, thus certain assumptions had to be made. For example, with the categorisation of gender of those who were observed, it was solely based on the assumption/understanding of gender by the observer who most likely follows the social norms of appearance for each gender. 'Sporty' cyclists were generally

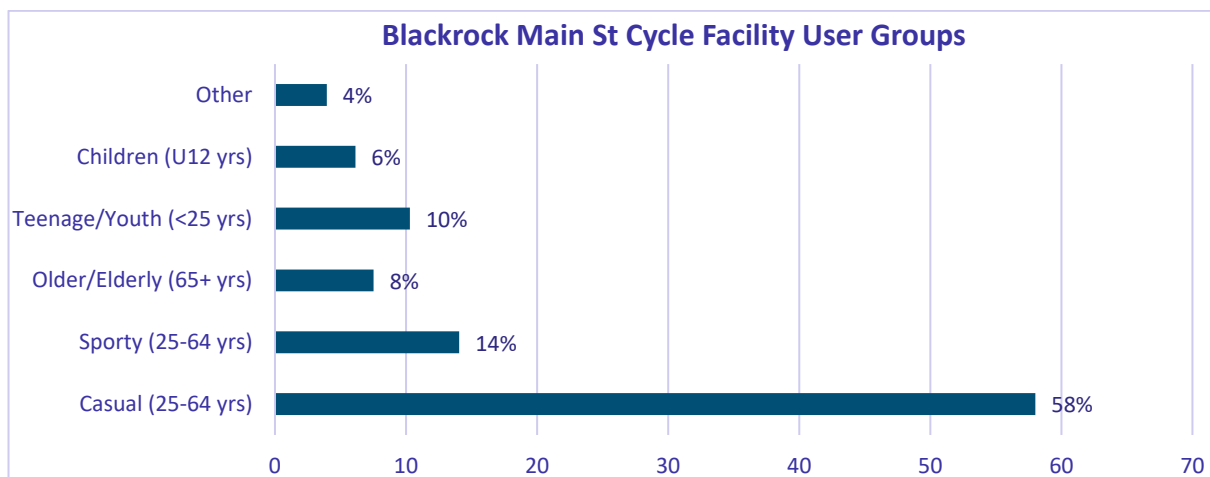
categorised as such if they wore sporty clothing and were on a sporty bicycle, with ‘casual’ cyclists identified as wearing more casual clothing, and travelling in a non-sporty bicycle.

The ‘Range of User’ data was manually collected between the 6th and 15th October 2020 on Blackrock Main Street, during a variety of weather conditions. Data was recorded between 8am and 9am, and 1pm and 2pm on weekdays (Tuesdays and Thursdays), and between 1.30pm and 2.30pm on Sundays.

Of 507 cyclists and bike lane users recorded during data collection on Blackrock Main Street, **35% were female, and 65% were male**, showing possible indications of a small improvement in the gender split compared with previous studies. Analysis of the 2016 Census of Population for the shows a gender split of use of a bicycle as a mode of transport to work/school at 74:26 male:female²⁵ in the Dún Laoghaire Rathdown Local Authority area whereas the NTA’s Bike Life 2019 study notes that in Dublin (across the city region), 32% of people who cycle weekly are female, while 68% are male. There are many complex reasons surrounding women’s travel choices, however cycle safety is a consistently raised concern, of which a network of segregated cycle facilities is of particular importance (NTA, 2019; TII, 2020).

Users of Blackrock Main Street are divided into several categories, a simplified version of which is presented in Figure 32. The largest cohort were casual users, aged between 25 to 64 years (58%). Users noted as ‘sporty’, also in this age range, make up the second largest group at 14%. 10% of the users are teenagers/youth, with a high number of secondary school children noted using the route. 8% of users were observed to be in the c.65+ age group, and 6% as children (aged 12 and under). No obvious disability bicycles were observed during the study timeframes, and the remaining 4% make-up scooter users, joggers etc.

Figure 32 Range of user groups along contraflow bike lane and shared carriageway, Blackrock Main Street



²⁵ See Central Statistics Office database number E6011 (<https://data.cso.ie/>)

5.2.4 Bicycle Parking Audit: Blackrock Main Street and Surrounds

While much of the research on the determinants of cycling have focused on road and track infrastructure, Heinin and Buehler (2019) note that bike parking has been poorly researched despite evidence that bicycle parking supply and quality appear to be a determinant of cycling for current and potential cyclists. A snapshot audit of bicycle parking was carried out in the study section in and around Main Street²⁶, Blackrock Village in 30-minute intervals across five days. There was one morning audit 09:30-10:00, two late morning 12:00-12:30 and two afternoons 14:30-15:00 (including weekdays and a Sunday) in October and December 2020. The audit considered free bicycle parking spots, 'informally' parked bikes, rental (Moby or BleeperBikes) and total number bikes parked. Across each of the days the weather conditions were normal cool/cold autumnal, early winter weather, no extremes.

The findings are summarized as followed:

- Average weekday bike parking occupancy was 36%.
- Peak bike parking usage was recorded on Sunday afternoon with 70% occupation.
- Rental bikes parking occupation averaged 10% of available stands.
- Low levels of informal or 'fly' parking (4%).
- Bicycle parking is spread across clusters, is open access, unsheltered, and generally well visible (with the exception of the 2 Sheffield stands on George's Avenue which are somewhat hidden from easy view).

In general, there is good usage of the bike stands evident, with minimal informally parked bikes. The latter is important to keep the footpaths clear of obstruction for the mobility or sensory impaired pedestrian. Subsequent to the audit, two additional sets of Sheffield bike-stands were added to the Main Street outside the entrance to Blackrock Shopping Centre (10 spaces) and on the opposite side of the street outside Blackrock Cellars (4 spaces) leading to a better distribution of cycle parking along the length of Main Street. **The weekday bicycle parking appears currently sufficient, although as cycle numbers increase particularly at weekends (as described in Section**

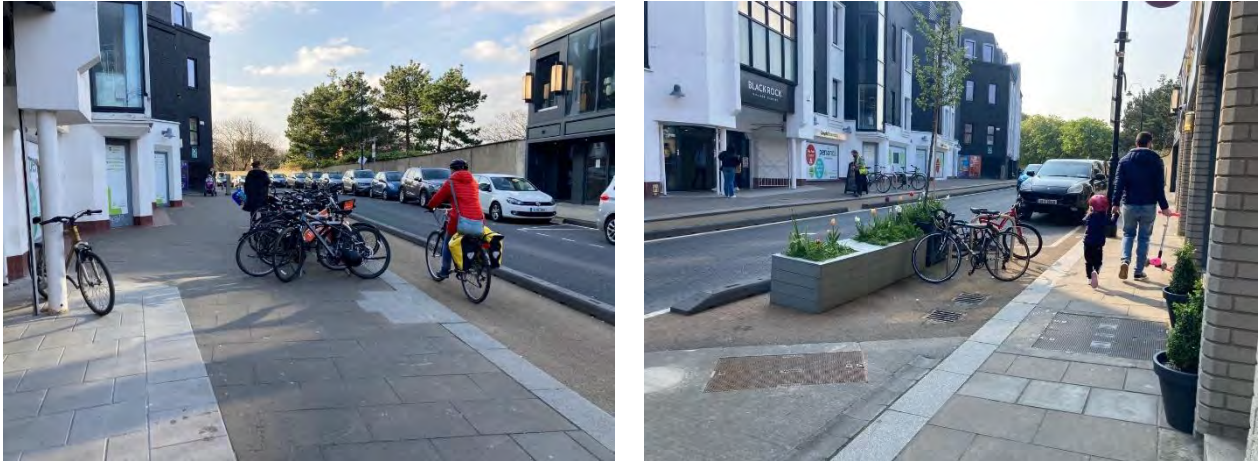
Figure 33 Image of a typical high demand weekend bicycle parking at the square on Main Street (October 2020)



²⁶ The streets audited included Blackrock Main Street (including Main Street Extension), George's Avenue, and Bath Place, totaling at the time of the survey 108 potential bike parking spots. The bicycle parking at the DART station was not included in this phase of the study due to the significant reduction in public transport users (as described further in later sections).

5.2.2), there may need to be additional bike parking provided within a close visual link of Main Street, particularly at the higher demand southern ends of Main Street (such as along Temple Rd, Main Street Extension, and George’s Avenue), and further encouragement to use the bike stands available outside of Blackrock Library.

Figure 34 Recently added cycle parking in the northern/Rock Hill end of Main Street (weekday image, April 2021)



5.2.5 Public Transport & Bus Performance

Blackrock Village and Main Street are served by a number of licensed public passenger transport services. These include: -

- Route 7 / 7A (operated by Dublin Bus)
- Route 17 (operated by Go Ahead Ireland)
- Route 114 (operated by Go Ahead Ireland)

Route 7 / 7a is a high frequency arterial route operating from Mountjoy Sq. Towards Brides Glen Luas Stop, and passes one-way southbound through Blackrock Main Street. There was no change to route 7 / 7a as a result of the Covid Mobility measures, although its running environment on sections of Blackrock Main Street was altered.

Route 17 is a major south-city, suburban orbital route, starting in the inner suburb of Rialto and terminating at Blackrock Station. There was no change to route 17 as a result of the Covid Mobility measures, although its running environment on sections of Blackrock Main Street was altered.

Route 114 starts in Ticknock, passes through Sandyford, down Newtownpark Avenue, on to Carysfort Avenue and terminating at Blackrock Station. Route 114 was redirected inbound via Rock Hill towards Blackrock Station. This was to accommodate the new one-way traffic system installed on Main Street. Its outbound running environment on sections of Blackrock Main Street was altered as a result of the Covid Mobility measures.

Journey Time analysis was warranted to assess the impact of public realm measures on the speed and reliability of bus routes through sections of the village of Blackrock which were modified as part of the Covid Mobility public realm interventions. Bus journey time reliability data for services through Blackrock village were requested, including data for routes 17 and 114 between the following stops: Stop 3085 (Outside Blackrock Train Station) – Stop 3082 (Carysfort Avenue). These stops bookend the short route from Blackrock Train Station along Bath Place, up to Blackrock Main Street and onto Carysfort Avenue, prior to its intersection with Frascati Road (see Figure 35).

Bus journey data was accessed for the following monthly time periods: -

- May - October 2019 (weekdays)
- May - October 2019 (Saturday & Sunday)
- May - October 2020 (weekdays)
- May - October 2020 (Saturday & Sunday)

Figure 36 Patronage on Dublin City Bus Services – lockdown March 2021 to April 2021 (source: adapted from NTA)

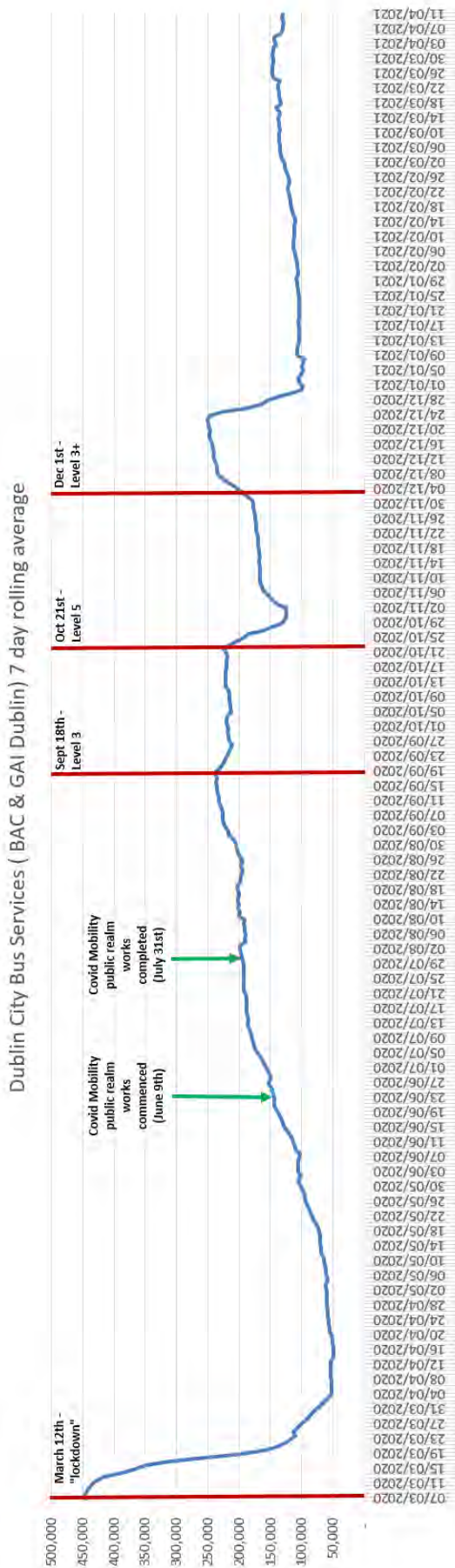


Figure 36 also illustrates the wider context for mobility analysis in the study demonstrating the dramatic decrease in public transport usage of the course of the pandemic. **Under Level 2-3 restrictions in September 2020, Dublin bus services saw an average c.53% decline in its passenger numbers (as compared with late February/early March 2020), with weekend passengers remaining higher than weekday passengers. By February 2021, under Level 5 restrictions, passenger numbers had declined by c.74% of their pre Covid-19 average.**

The declines for Irish Rail were even greater (Ireland wide), with an average c.87% decrease in passenger numbers during February 2021 and 62% decline during September 2020. ²⁷

Table 5 shows the difference in average actual running time (in seconds) for services 17 and 114 from Blackrock Station to Carysfort Avenue between May - October 2019 and May - October 2020. It should be noted that Blackrock Station is a terminal stop. Journey times are commenced as soon as doors open. Buses normally wait at a layover space a short distance (c.20 metres) from the stop and proceed to the stop to collect passengers at the scheduled time.

Figure 37 Bus layover at Blackrock Train Station



Table 5 shows that journey times over this short route segment (from Blackrock Station to Carysfort Avenue) have increased across all but one time period (September weekend days) under assessment. This is most likely as a result of traffic signal timing alterations at the junction of Bath Place and Main Street. Following the initial covid-19 emergency restrictions, there was a general reduction in traffic signal cycle times by the local authority, to promote better conditions for walking and cycling. In some cases junction cycle times were reduced from 120 seconds to 80 seconds. The monthly difference in year-on-year average journey times, if anything, decreased – if only by a marginal amount – following the implementation of the covid mobility works in Blackrock during June/July 2020.

²⁷ Data extracted with permission from NTA PSO passenger data set (April 2021).

Table 5 Bus Average Running Time Differences (seconds) from Outside Train Station to Carysfort Avenue between 2019 and 2020 (Weekdays and Weekends)

Comparative Time Period	Average Running Time Difference between 2019 & 2020 (Weekdays)	Average Running Time Difference between 2019 & 2020 (Saturday & Sunday)
May	6	35
June	11	25
July	17	16
August	17	14
September	12	-2
October	6	5

From the dataset in Table 6, there is no evidence that the public realm changes have been a disbenefit to bus users. From August 2020 onwards with the Covid Mobility works in place, bus journey times through the village can be seen to normalise and return to pre-Covid levels. While this is more to do with signal time alterations, it is evident that the street layout alterations have not had a material or negative impact on the running time or vehicular movement of public transport vehicles. In fact, overall they may have proven a benefit as the new public realm layout has provided an improved environment for pedestrians without having any negative impact on bus users (who may also be pedestrians prior to boarding).

Figure 38 Bus service no. 17 at Bath Place, Blackrock



A high proportion of services to and from Blackrock are operated by Go Ahead Ireland, a licensed public transport operator. A Senior Managerial Representative of Go Ahead Ireland was interviewed to assess the impact of the interventions on aspects of the bus services, provided by this operator. Mr. Derry O’Leary, Transport Consultant to Go Ahead Ireland Group was interviewed on Tuesday 16th March 2021. The interview took place virtually on MS Teams. During the interview the operator provided the following viewpoints: -

-
- The covid-19 public realm measures in Blackrock village had little or no material impact on safety, patronage and general bus operations for any services operated by Go Ahead Ireland through Blackrock village;
 - a route change (route 114 eastbound, which was redirected onto Rock Hill) had to be made which “in this case wasn’t too material”, as it was approaching the end of a line;
 - advance engagement with public transport operators may have helped to resolve some issues more quickly and could have led to a smoother implementation;
 - these included issues which were eventually dealt with on the ground, including relocating bollards and kerb-lines to accommodate bus turning movements.

Overall, the operator’s response to the scheme was positive insofar as the company, an international public transport operator, sees itself as one with strong sustainability principles. According to Mr. O’ Leary, *“any actions to improve the operating environment of the ‘slow modes’ generally tend to improve the operating environments for buses as well so absolutely a big tick, a positive tick [for interventions that improve the pedestrian and cyclist environment]”*.

While any minor issues which were encountered appear to have been ironed out relatively easily, based on this feedback from an operator, earlier engagement with regard to any public realm redesign schemes could lead to cost savings and smoother implementation. The operator made the additional point that while works may be temporary, *“bus services have to operate every day”* so it is important that their needs are considered. The National Transport Authority also plans the routes, which are contracted out to operators, making the need for advance engagement all the more necessary.

5.2.6 Vehicular Analysis Baseline – Blackrock and Coastal Mobility Route

As part of the interim data analysis, two periods of time were focused upon for the vehicular traffic movements in this analysis. For movement comparisons using the TomTom dataset a pre-COVID date of February 2020 was selected to compare to February 2021. However, in February 2021 Ireland was under Level 5 restrictions and schools were closed which meant school and non-essential work traffic was not being captured by the data. An additional period in September/ October 2020 was also reviewed and compared to the same period in 2019. This was six months into the pandemic, the country was under level 3+ restrictions and schools were open. However it should be noted that the Coastal Mobility Route was only completed during the Summer 2020, diversion routes were in place, traffic signals were still being adjusted thus movement patterns would still be in flux at this time. It is proposed that additional timeframes are added into the analysis as restriction levels and seasons change.

While specific traffic counts were not done before the rapid installation in Blackrock and CMR, data was available from the National Transport Authority Bus Connects Project which undertook a comprehensive traffic survey in various locations along the proposed routes in the county in February 2020. This data was used to establish an estimate of what proportion of vehicle trips were captured by the TomTom system. In Blackrock this was 9% in February 2020.

A comparison study was also undertaken for the Stillorgan area. This area was selected in consultation with DLR as it has had the least amount of infrastructural change between February 2020 and February 2021 of the comparable towns and villages in the county. It was observed that traffic flows in February 2021 were 63% of their 2020 volumes in the area observed (which was the same for the CMR region at 63%, and very similar to Blackrock at 62%). A comparison of traffic volumes on the Stillorgan Dual Carriageway at the Talbot Hotel between TomTom MOVE data and the Bus Connects data on Wednesday the 11th March 2020 give the TomTom data a sample size of 7% of the traffic flows in the area. These values are within the range 5-15% range of representation of trips within the TomTom dataset. The validation comparison was also done on a single day's traffic count - TomTom note that the wider the date range in the analysis the greater the proportion of trips captured. Therefore, monthly ranges were used in the analysis to increase the validity of the tool and also capture variances in travel that may be associated with a weather event or similar.

A route between Clonskeagh and Stepside, via Overend Way in Dundrum, was selected to provide a baseline to compare changes observed in traffic speed (as a trip time proxy) on the N31 and R119 route.

The baseline route selection was based on the following criteria:

- Route is within the boundaries of DLR (due to data availability)
- Route provides a similar radial function for access to Dublin City
- Similarity of route length and traffic speeds
- Proximity to a major rail or tram line
- Proximity to major trip generators such as urban villages or shopping centres
- Road types (older roads were considered more comparable than modern distributor roads or motorways)
- Overlap with walking and cycling baselines (Rock Road and Clonskeagh Road)

Figure 39 Baseline route, Stepaside to and from Clonskeagh (source map from Openstreetmap.org and adapted by author).

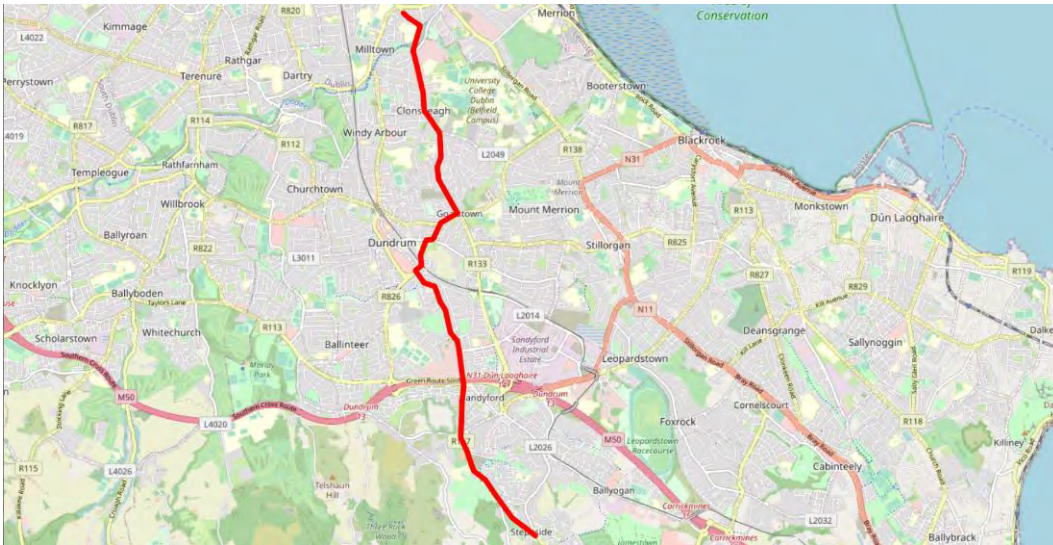


Figure 40 N31/R119 alternative CMR-adjacent route. The southbound route diverts via Crofton Road and Marine Road (source map from Openstreetmap.org and adapted by author).

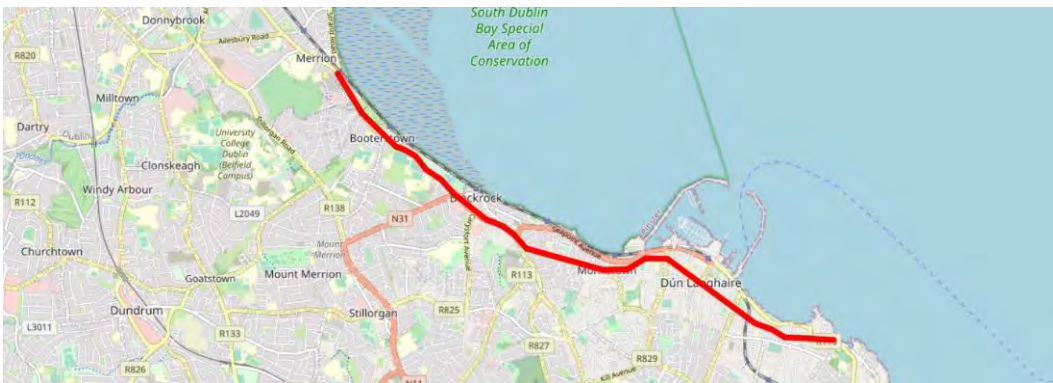


Table 6 illustrates the proportion of vehicular traffic detected at the identified locations compared to pre-Covid vehicular traffic levels a year earlier in September/ October 2019 and February 2020. Two key observations are notable. Firstly, the level of government Covid-19 restriction levels is apparent. Traffic in February 2021 was during level 5 restrictions, with 5km travel limits, closed schools and high Covid-19 case numbers, reducing traffic volumes to 63% of pre-Covid levels. Whereas, during level 3+ in September 2020, when schools were open and wider travel was permitted (although public transport was limited to 50% capacity), vehicular traffic was over 90% of previous levels. Secondly, in all but one scenario the traditional AM Peak traffic (7-10am) was the lowest proportion of traffic observed, and day time (10am-4pm) traffic was higher. This is consistent with observations from other jurisdictions, including internationally²⁸.

²⁸ For example, see publictransportresearchgroup.info/wp-content/uploads/2020/11/Monash-C-19-Impacts-VicStiq-Priso-Updated-10-11-20.pdf

Table 6 Proportion of vehicular traffic for Sept/Oct 2020 v's Sept/Oct 2019, and February 2020 v's February 2021

	All Day	7am-10am	10am – 4pm	4pm – 7pm	All Day	7am-10am	10am – 4pm	4pm – 7pm
Location	September /October 2020*				February 2021*			
Stillorgan Area	93%	87%	103%	92%	63%	53%	72%	64%
Blackrock Area	91%	86%	98%	93%	62%	54%	72%	70%
CMR Region	98%	99%	95%	94%	63%	56%	64%	71%
Dún Laoghaire Area	100%	92%	107%	102%	66%	54%	73%	72%
Clonskeagh Area	97%	90%	104%	98%	60%	50%	67%	64%

**Percentages provided for Sept/Oct 2020 and February 2021 are in comparison to a 100% 'baseline' figure for Sept/Oct 2019 and February 2020.*

Dún Laoghaire Rathdown County Council undertook vehicular traffic queueing surveys in August and November 2020. The council reported improvements in junction queueing times after signal timings were altered between August (before schools re-opened) and November. The scope of the analysis undertaken in this study did not include detailed junction design or specific local issues as the Local Authority were continuously addressing these and adapting the functionality of junctions within the system. A notable positive feature of the Covid Mobility works in DLR was the responsive and reactive nature in dealing with challenges that occurred during the project. These signal timing changes would have also contributed to shifting mobility patterns throughout the study area and time period, thus it is recommended that further additional analysis is undertaken as restrictions levels ease and new mobility patterns emerge.

5.2.7 Vehicular Traffic Movements – Blackrock

Catchment Analysis Blackrock Village

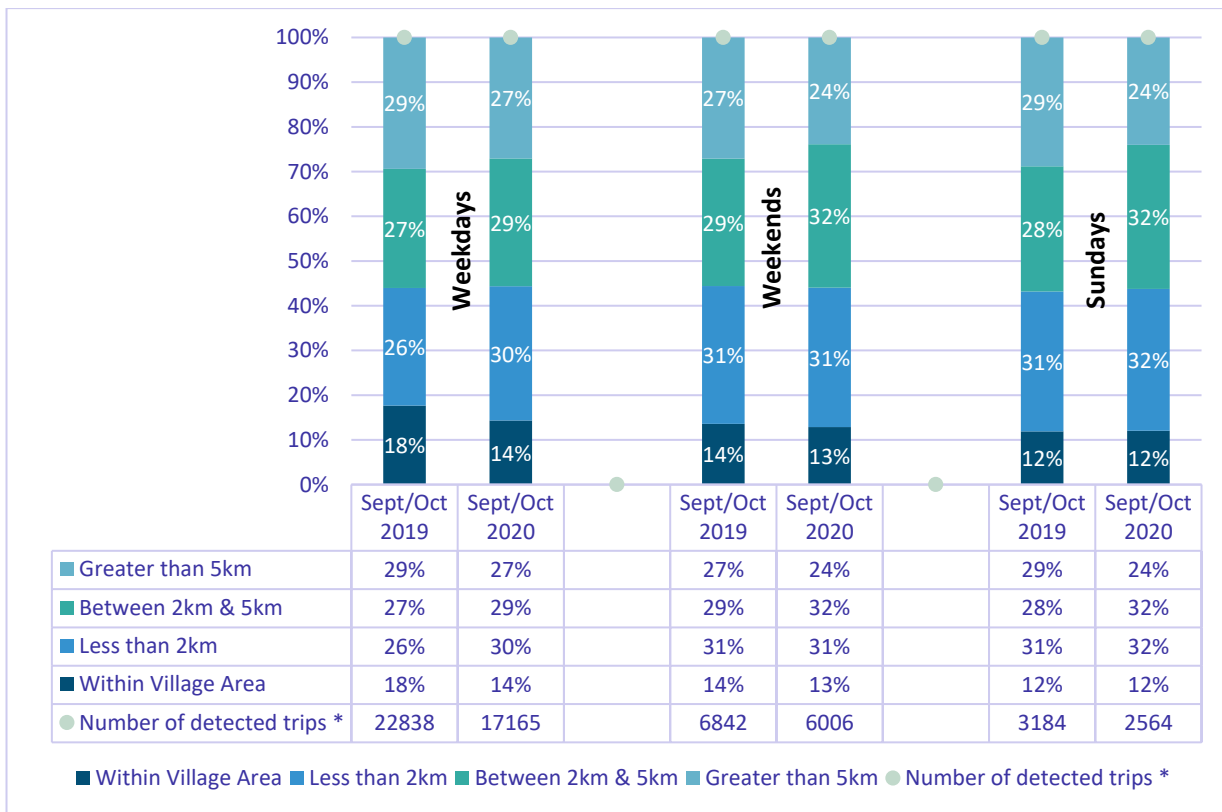
A Catchment Analysis was undertaken for Blackrock Village showing what proportion of a sample of trips to Blackrock Village originated within the village; less than 2km from the village; between 2 to 5 km and greater than 5km (see Figure 41, Table 7 and Table 8).. A reduction in motorised vehicle trips with origins and destinations within the village area have been observed, particularly for weekdays post implementation of the Covid Mobility works. Compared with other time periods over the week, there is relatively more detected trips within the village on weekends post works.

The number of trips originating 5km from the village decreased considerably in February 2021, which was to be expected with the 5km travel restrictions during level 5 Covid-19 restrictions. This high proportion of trips within the village area and outside 5km were on weekdays pre-Covid-19 and may have been individuals previously parking for work and then visiting another location in the village to shop or similar. Alternately it is possible that this cohort are now walking or cycling for short trips since the implementation of the village improvements. It is not surprising that the lowest period for trips greater than 5km was during the February 2021 level 5 restrictions that did not permit non-essential trips greater than 5km. Supermarket shopping trips were permitted in these periods and the shopping centres are included in the analysis. The higher proportion of trips originating outside the village area but within 5km are at the weekends post-Covid interventions. These variance observations are for whole day total trips captured by the TomTom MOVE O/D dataset.

Figure 41 Catchment Analysis, Blackrock Village (basemap extracted from Tom Tom Move)

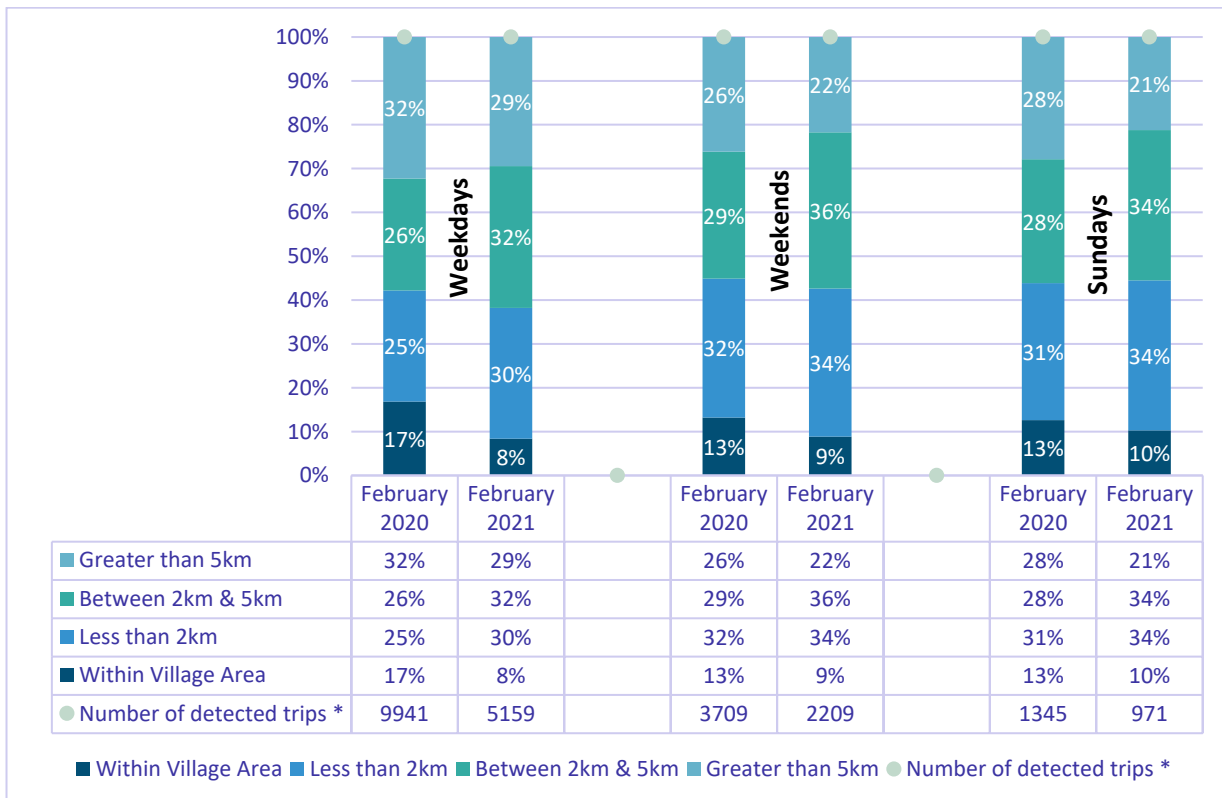


Table 7 Proportion of detected trip catchments from within and to Blackrock Village for Febuary 2020/21



*This vehicular traffic sample could range from 5-15% of all trips according to the TomTom MOVE Database

Table 8 Proportion of detected trip catchments from within and to Blackrock Village for Sept/October 2019/20



*This vehicular traffic sample could range from 5-15% of all trips according to the TomTom MOVE Database

Traffic Distribution in Blackrock Village Area

Figure 42 - Figure 44 demonstrate the changes to the vehicular traffic movements in the vicinity of Blackrock Village and the Frascati Road and Temple Hill junctions. 93% of the trips in the defined area observable in the dataset pass through the selected locations shown on the schematic diagrams²⁹, while a smaller number of trips (7%) enter the zone but don't pass through the study points. This includes the observed trips that go via Frascati Road or through Blackrock Village. Comparative values for these locations from the TomTom MOVE Database were shown to represent 9% of the traffic on a day in February 2020 (which is consistent with the estimation of a sample of between 5 to 15% of the total traffic in the area in the dataset). While this may be perceived as a low representation of the flow volumes, the key purpose of this OD Matrix (Origin-Destination) is a representation of the directional flow. Furthermore, traditional modelling approaches would generally have used a single day or week of counts, whereas this dataset covers a longer period of time and allows for a greater range in the analysis.

The key observations are:

- The proportion of trips originating from the Rock Road reduced from 33% (Sept/Oct 2019 and Feb 2020) to 29% (Feb 2021). This may be indicative of reduced work and school trips as a further reduction is observed between September 2020 and February 2021.
- The proportion of detected local trips that travel through Blackrock Main Street has reduced by c.40% (14864 detected vehicular trips through Blackrock Main Street Sept/Oct 2019 and 8982 detected vehicular trips Sept/Oct 2020).
- 64-68% of the trips in the area pass through Frascati Road or Blackrock Main Street - this has remained fairly consistent with pre-Covid periods. .
- Despite Seapoint Avenue remaining open to vehicular traffic westbound, a 5% reduction was noted in the proportion of vehicular trips utilising the route. Proportionally more trips within the system were noted utilising Monkstown Road (+9-11%) and Stradbroom Road (+1-4%) during the study period than pre-Covid.

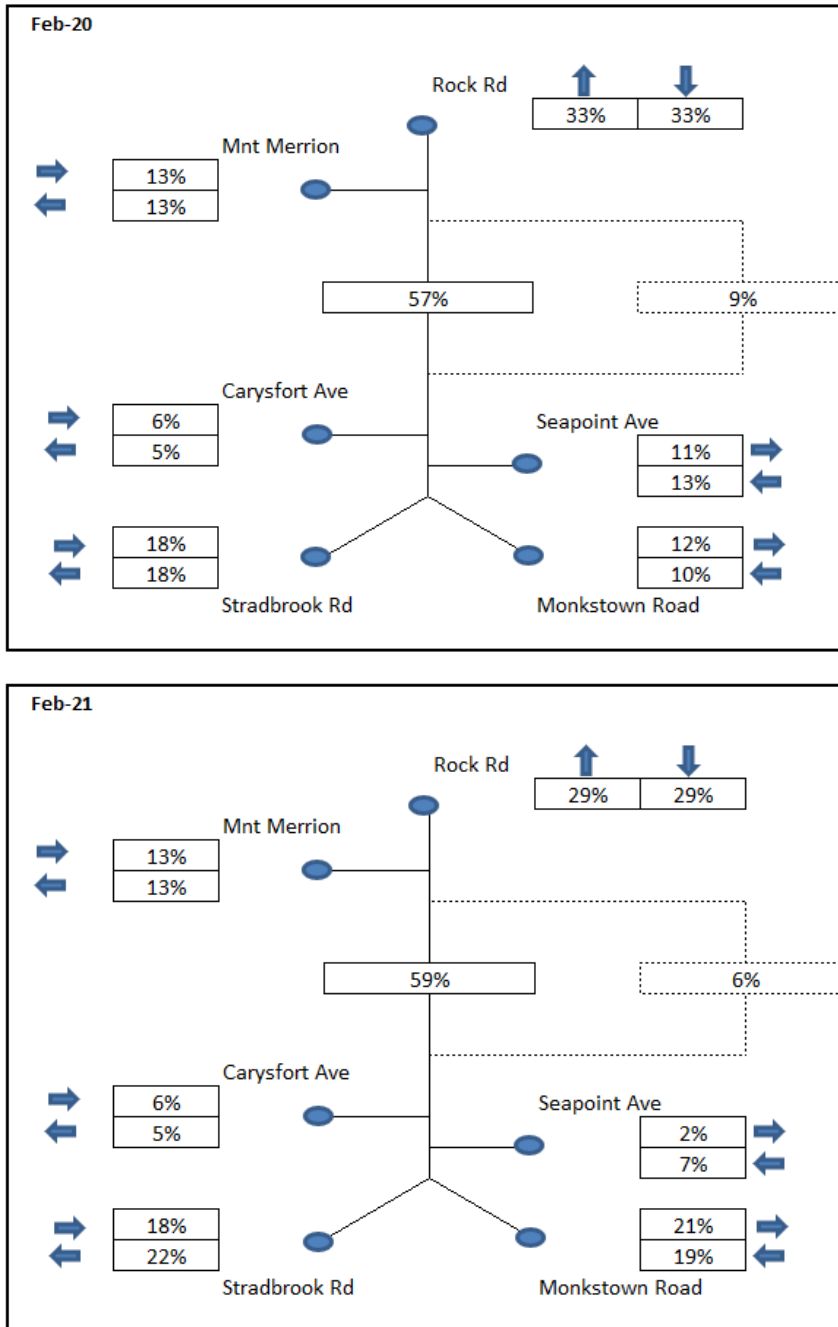
It is important to note that the above interim findings are within the context of a c.53-87% reduction in public transport usage (see Section 5.3.5) and an overall reduction in background traffic levels (see Section 5.2.6) which may have freed up capacity on certain links. Given the parallel route to the DART line and the 4/7/7a bus routes, we may also be observing trips that were previously taken by public transport. In addition, Monkstown Road was signposted and designated as a 'diversion route' as part of the traffic management plan associated with the implementation of the CMR.

The percentage values represent the distribution of the observed trips within the network. Reduced vehicular traffic numbers, such as the 62% of pre-Covid values for February 2021, translate to less overall trips on the network. Although drawing clear conclusions are difficult at this early stage, modal shift, or

²⁹ This includes Frascati Road, Rock Road, Mount Merrion Avenue, Carysfort Avenue, Seapoint Avenue, Stradbroom Road and Monkstown Road.

traffic evaporation³⁰, may have occurred on Seapoint Avenue and the Rock Road in particular as noted by the significant increase in pedestrian and cycling trips noted along the CMR, Rock Road and in Blackrock Village.

Figure 42 Proportion of trips originating from or going to key local routes , February 2020 and 2021



³⁰ Traffic evaporation refers to vehicular traffic reduction after an intervention. Although it may seem counter-intuitive to some, research shows that traffic levels can reduce when road space is reallocated away from private cars towards pedestrians, cyclists and public transportation. For further information see https://ec.europa.eu/environment/pubs/pdf/streets_people.pdf

Figure 43 Proportion of trips originating from or going to key local routes ,September/ October 2019 and 2020

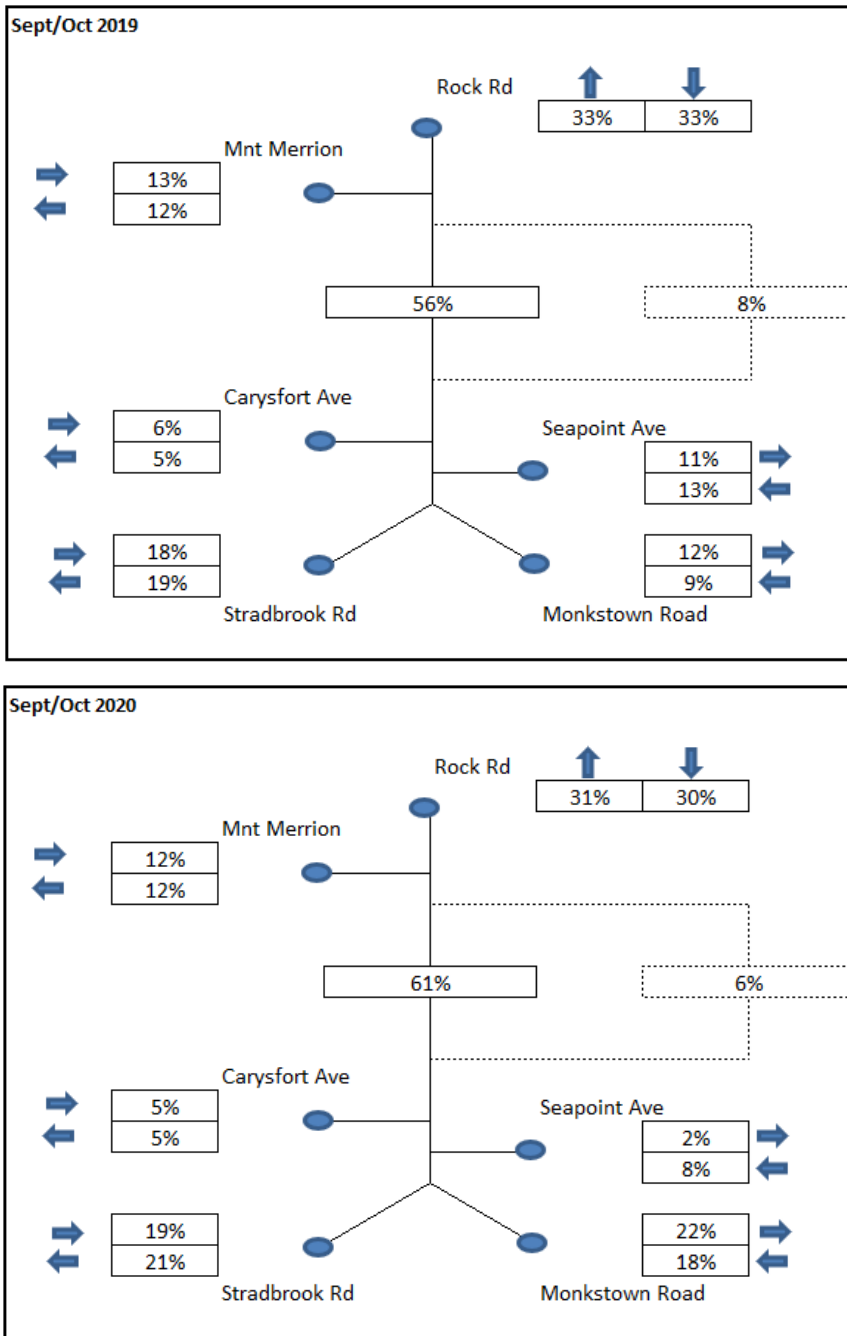
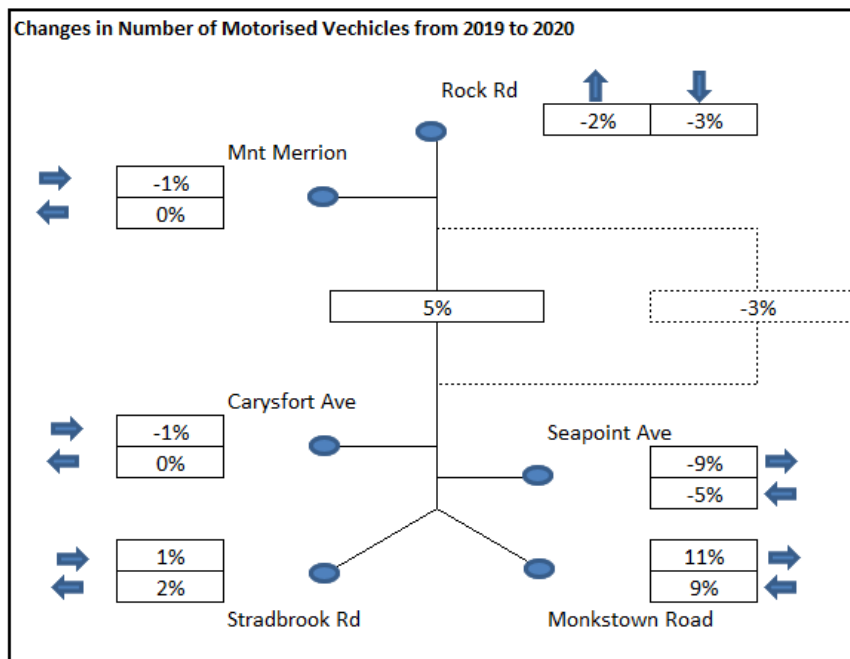
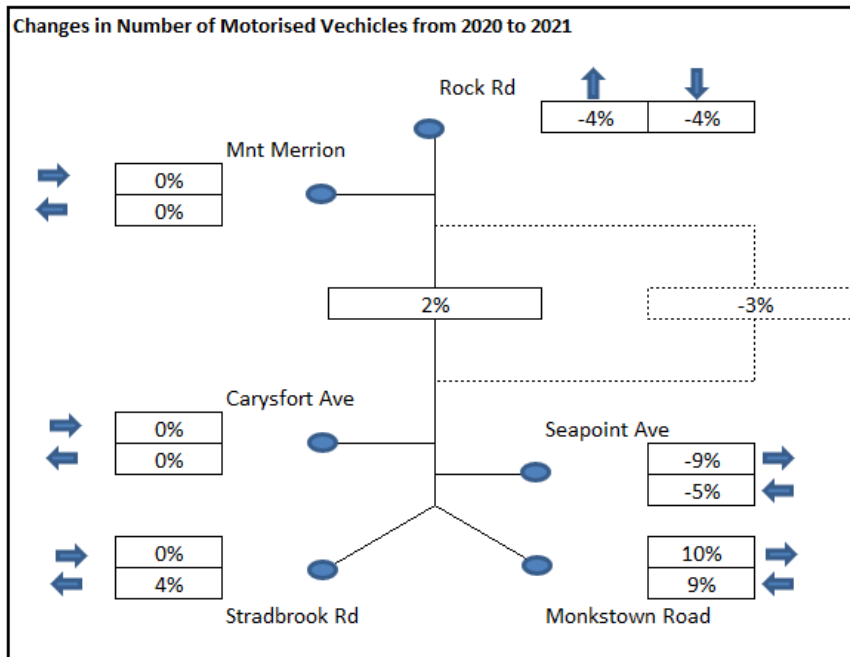


Figure 44 Changes in the proportion of local trips originating from or going to key local routes over the year, February (top), September/ October (bottom)



5.2.8 Car Parking: Blackrock Main Street & Surrounds

Blackrock Village has a considerable level of car-parking provision, including parking in the two shopping centres, 3 Council car-parks, a park 'n' ride car park for the DART service, as well as on-street parking and Church grounds car-parking. A snapshot audit of on-street car parking and local authority surface car parks in the vicinity of Blackrock Main Street was undertaken in five intervals across three days to assess their utilisation. Two weekday morning audits 09:30-10:00, two weekday late morning 12:00-12:30 audits and a weekend afternoon audit 14:45-15:15 between the 6th and 11th of October 2020³¹ were undertaken.

The survey area included:

- the Main Street, commencing at the northern end to the College of Further Education/library building at the southern end, and directly opposite the library.
- the Council public carparking, at Bath Place
- the Council public carparking at Carysfort Avenue
- the public carparking at the DART station
- George's Avenue at the Main street end
- Carysfort Avenue at the Main street end, and
- Temple Road, at the Main street end up to Flash Harry's.

A general audit was undertaken of car parking places available, including disabled parking bays. There was a total of 183 general spaces and 11 disabled spaces audited. Notes were also taken of illegal parking, loading bay use, taxi rank use. Illegal parking in loading bays, bus stops, disabled spaces, taxi ranks and on double yellow lines was prevalent on each visit.

This audit study concluded that on-street parking was popular in and around Main Street, however there was car parking availability within close proximity of the Main Street during all audited time periods, particularly in the Council car-parks on Carysfort Avenue, Bath Place and the DART Station. Overall, weekday general use car-parking bays had an occupancy rate of 81%, while disabled bays had an occupancy rate of 23%. On the Sunday survey, general use parking bays had an occupancy rate of 77%, while the disabled bays had an occupancy rate of 18%. Loading bays were regularly observed to be used by private cars, thus greater enforcement of car-parking on the Main Street may be warranted. In addition, greater public signage and information encouraging drivers to park at the peripheral car-parks to the village centre should be considered (park 'n' stride), and improved access and egress to the Council car-park on Carysfort Avenue/George's Place in addition to a review of parking demand management in terms of long v's short stay parking.

³¹ Level 3+ Covid-19 restrictions were in place at this time, thus commuter all-day parking is reduced, particularly adjacent to the DART station.

5.2.9 Conclusions

This section reviewed mobility data for Blackrock Village using available walking, cycling, public transport and private vehicular data. Further analysis focused on the Coastal Mobility Route is detailed in Section 5.3. Pedestrian footfall was shown to increase in Blackrock Main Street post installation of the Covid Mobility and Public Realm works in September/October 2020, however Level 5 Covid-19 restrictions are shown to have a negative impact on pedestrian numbers. Cycling numbers have not followed the same trend, with evidence of a continual increase in cyclists using Blackrock Main Street over the study period. There is also evidence of a diverse range of cyclists, albeit still not representative of population demographics (thus giving rise to further opportunity for improvement).

The bicycle and car parking audit showed that weekday bicycle parking appeared sufficient at the time of the audit, although as cycle numbers increase there may need to be additional bike parking provided within a close visual link of Main Street. There was also car-parking vacancy at the time of the audit, however there may be opportunity to review and improve upon parking demand management. In addition, greater enforcement of loading bays may be required as these were observed to be regularly used by private cars.

The analysis shows that more people now access Blackrock Main Street by bicycle than by private car. There is also evidence that the volume of vehicular traffic passing through the village has decreased as well as the level of car use for local trip making within the village. A 40% reduction in the number of detected vehicular traffic in Blackrock village is significant. This is especially so when traffic on Frascati Road and has remained relatively constant. Balanced against positive feedback from the business community, an increase in cycling numbers and a decrease in public transport capacity, this is an indication of effective traffic demand management and probable traffic evaporation.

Vehicular traffic within the wider Blackrock area also shows some redistribution (in both directions) from Seapoint Avenue to Monkstown Road and Stradbroke Road. However these effects are also within the context of the implementation of 'diversion routes' along Monkstown Road as part of traffic management associated with the implementation of the CMR; possible newly available capacity as a result of changing background traffic levels and traffic signal changes; and a major reduction in public transport capacity on both bus and DART services, both a direct result of Covid-19 government restrictions on movement.

5.3 Coastal Mobility Route – Mobility Analysis

This section looks at the movement of people and motorised vehicles in the vicinity of the Coastal Mobility Route (CMR). The Coastal Mobility Route involved the reallocation of one direction of vehicular traffic away from vehicles and towards cyclists (and to a lesser extent other micro-mobility such as scooters) through the implementation of a two-way segregated and dedicated cycle-lane. The route runs along the coast road for 3.6km with segregated cycle facilities, and 4.5km in total from Seapoint to Sandycove via Dún Laoghaire. There is a portion of the route from Old Dunleary Road/Coal Quay Bridge through Harbour Road to Queen’s Road in Dún Laoghaire that is shared with vehicular traffic and not segregated (Figure 45).

Figure 45 Simplified diagram illustrating the Coastal Mobility Route running from Seapoint to Sandycove (source map from Openstreetmap.org and adapted by author)



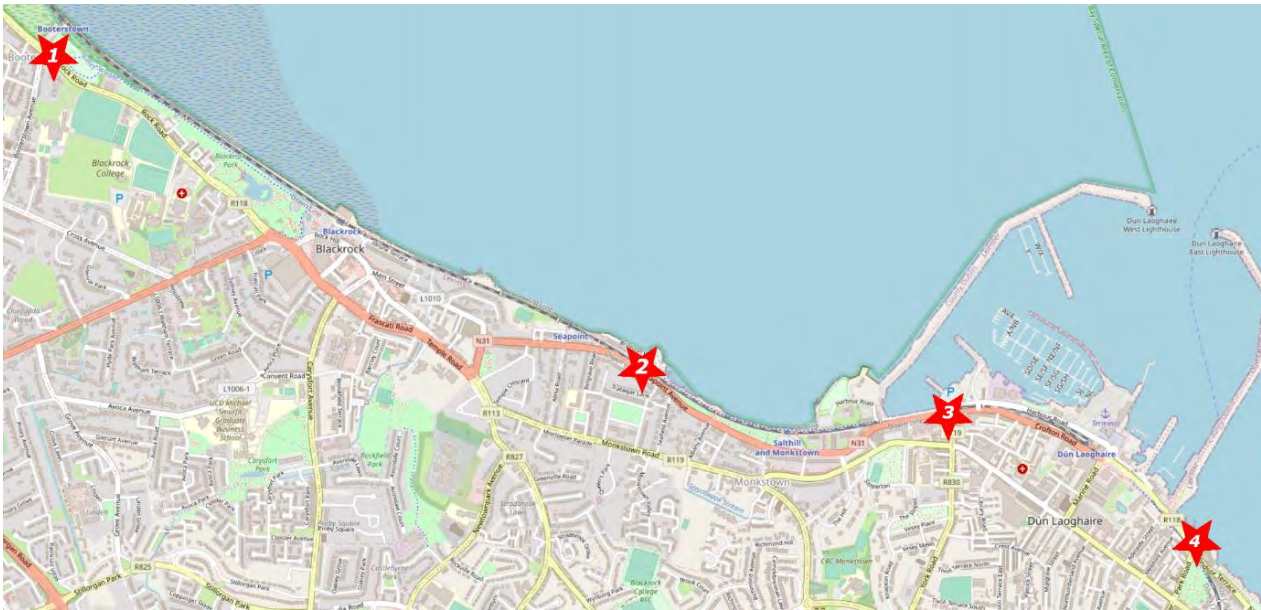
5.3.1 Walking & Cycling

Rock Road Usage Patterns

Walking and cycling count data for the CMR alignment is limited prior to September 2020. However, the Rock Road (

Figure 46) is a useful proxy for the CMR as it occupies the same continuous route and data has been collected for it for several years. As introduced in Section 5.2.2 a baseline was established by comparing 2019 daily cyclist counts at three counter locations on the Rock Road to those for the Clonskeagh Road, where the Clonskeagh Totem measures cyclists travelling in both directions. Data in 2019 for both routes shows comparable patterns of 500 – 3000 two-way trips per day on both routes, with some seasonal variability. Figure 47 shows the 2020 adjusted data, for both roads. The arrival of Covid-19 in Ireland and the closure of schools on the 12th of March (and subsequent working from home for many) has a clear impact on patterns. Overall the usage pattern is much less regular; there is greater variance in busy days compared to quiet days, and the weekends are not necessarily quieter than weekdays.

Figure 46 Rock Road and CMR counter locations. 1 (Rock Road), 2 (Seapoint Avenue), 3 (York Road), 4 (People's Park). (source map from Openstreetmap.org and adapted by author)



Data Collection

Cycle usage of both Clonskeagh and Rock Road is heavily reduced during the first wave of the Covid-19 pandemic, which continued until mid-May 2020. Though restrictions related to the pandemic were extended until May 18, usage had already begun to rise, and subsequent restrictions implemented for later waves do not appear to have had the same impact. It is noticeable that the Rock Road is consistently the busier of the two roads under the post-covid usage patterns. **Total cycling usage on the Rock Road increases from 2019 to 2020 by 13.6%³², whereas the Clonskeagh Road usage falls by 32.3%** (see Figure 47). Figure 48 shows the longer-term context for this increase; **cyclist numbers on the Rock Road had not seen substantial changes during the previous four years (2016 to 2019)**. The annual totals in this period varied between 638,622 and 651,411; prior to the 13.6% increase in 2020, the annual totals changed by -1.3% in 2017, +0.5% in 2018 and 1.5% in 2019.

³² Note: The Rock Road Park counter data was offline and is missing from 15 September 2020 - 14 February 2021, thus an estimation based on activity during the previous months was used.

Figure 47 Daily cycling counts, 2020, Clonskeagh Road and Rock Road³³

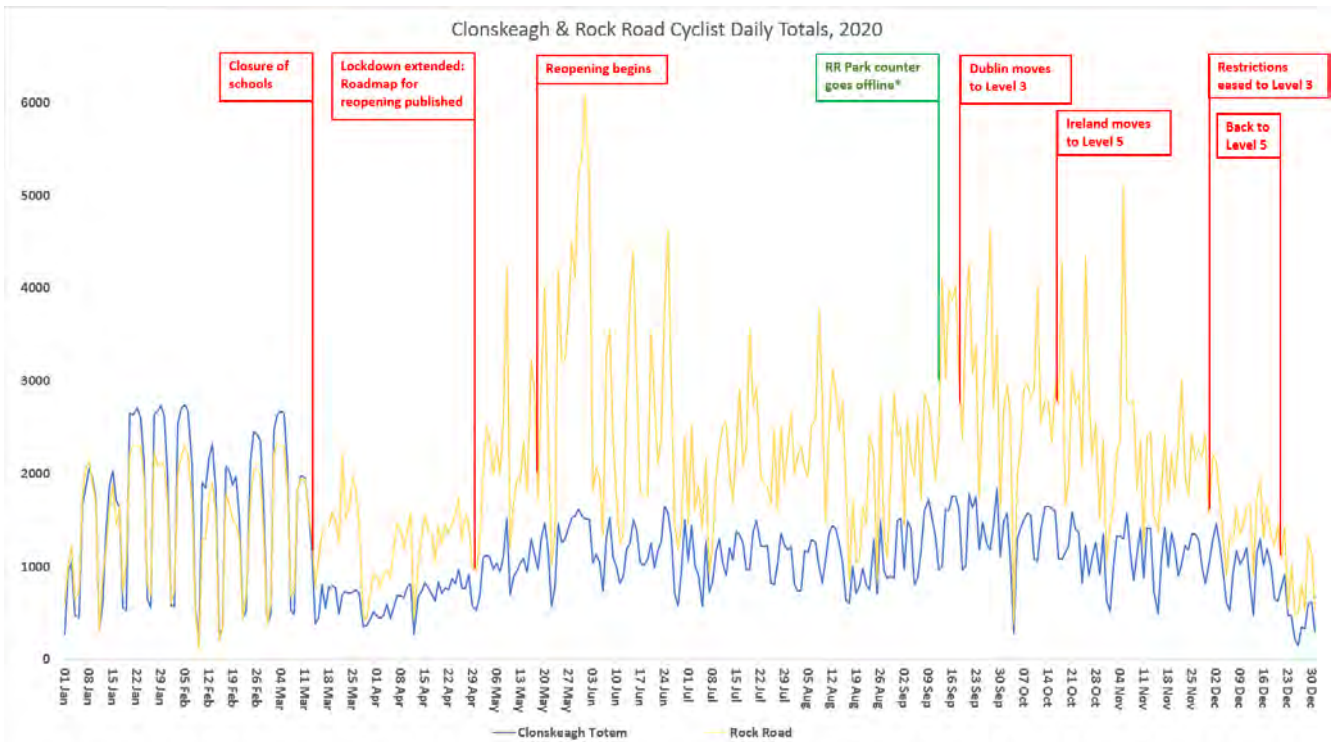


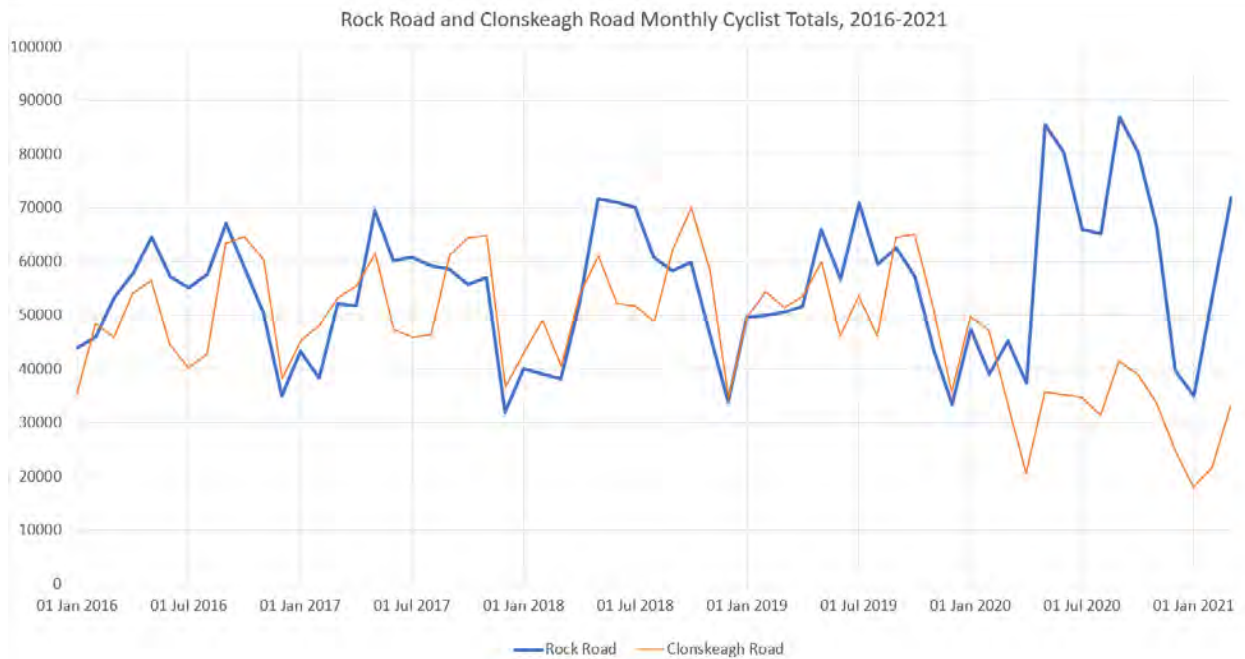
Table 9 Annual cyclist counts

	2016	2017	2018	2019	2020	Change 2019 to 2020
Rock Road	647,000	638,622	641,693	651,411	739,702 ³⁴	+13.6%
Clonskeagh Road	594,769	630,199	625,872	631,403	427,488	-32.3%

³³ Rock Road data was adjusted to account for periods when some counters were not in operation.

³⁴ Rock Road data was adjusted to account for periods when some counters were not in operation.

Figure 48 Monthly cycling totals on Rock Road and Clonskeagh Road, 2016 to date. (Note: estimated counts were included for the 'Park counter' portion of the Rock Road for the period 15 Sep 2020 to 14 Feb 2021)

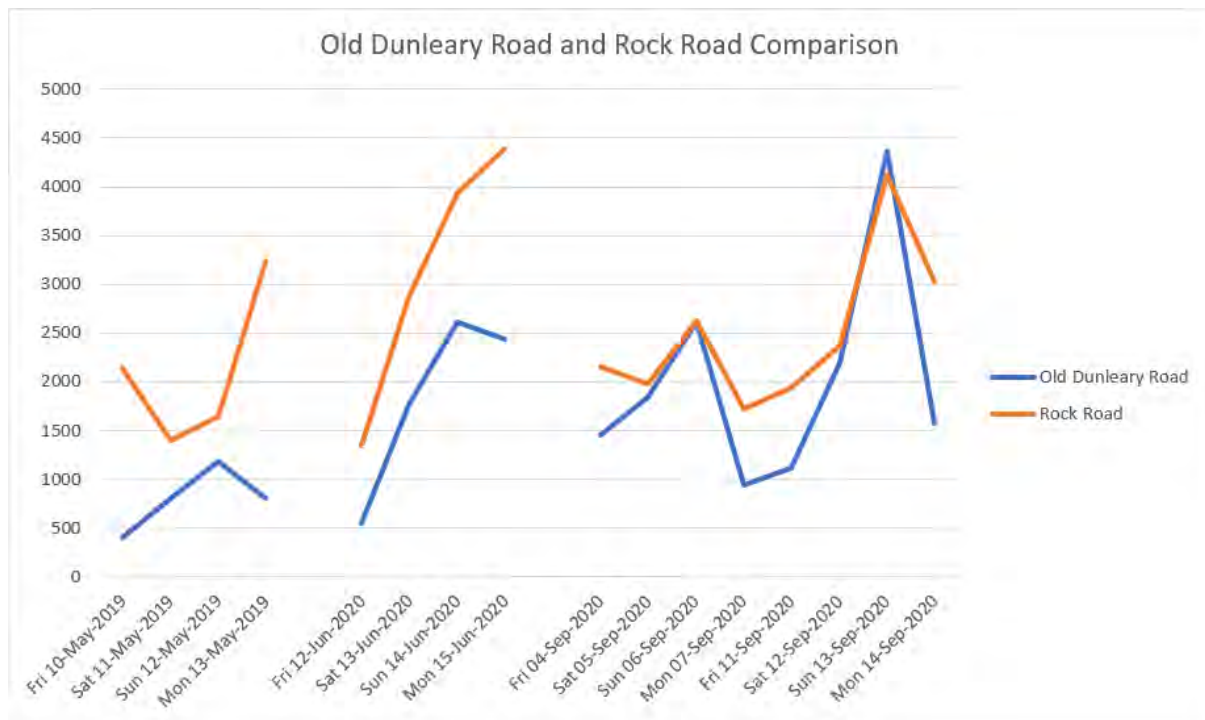


Whereas the consistent 2019 patterns on the Rock Road suggested that usage was driven by routine trips, such as commuting and school runs, the reasons for increased and more variable journey patterns in 2020 on the Rock Road are less clear. It could be argued that the weekday pattern pre-Covid reflected the primarily commuter-based nature of cycling on the Rock Road, which shifted to more discretionary/mixed journey types from mid-March. If the journeys being made are more recreational than utilitarian, seasonal weather conditions might explain the greater decline in numbers observed on the Rock Road towards the end of 2020. The influence of weather will be explored in further detail below.

Relationship with Coastal Mobility Route

Cycling data for locations along the route of the Coastal Mobility Route is limited prior to the installation of three permanent counters in September 2020. Snapshot counts were previously taken on a four-day period (Friday to Monday) in May 2019 and again over a four-day period in June 2020 on Old Dunleary Road. These are compared to cycling counts on the Rock Road in Figure 49.

Figure 49 Old Dunleary Road and combined Rock Road cycling daily totals



An increasing pattern of usage is apparent between 2019 and 2020. Taking the York Road counter as a comparison to the Old Dunleary Road snapshot count, there are **2.73 times more cyclists** using the route in September 2020 compared with May 2019. It is also notable that the counts on the Old Dunleary Road location are closer to the Rock Road counts on the September 2020 days, following the installation of the CMR, potentially showing the development of a cycle ‘**network effect**’ associated between the linking of high quality cycling infrastructure. This is where the economies of scale and interconnectivity of the cycling network can lead to further usage and growth³⁵.

Figure 50 and Figure 51 further demonstrate a close relationship between Rock Road and CMR cycling levels. There is a particularly strong correlation in counts between Seapoint Avenue and the Rock Road. The Rock Road counters (including the Blackrock Park counter) indicate the Rock Road tends to be slightly busier than the CMR during the week (Monday-Thursdays), but less on from Friday-Sundays. This may suggest that there are more discretionary trips on the CMR.

It is also noteworthy that the Dunleary Road/York Road counter (in operation from September 2020 onwards) is located at the end of the protected Blackrock/Dún Laoghaire segment of the CMR and at the start of the unprotected Crofton Road/Harbour Road segment. **Counts at this location were 26% lower than at the Seapoint Avenue counter for the same period**, which counted marginally higher number of cyclists than on the Rock Road for the same period. By April 2021, a small improvement in this difference between the two counters was noted, however York Road is still 20% lower than Seapoint.

³⁵ For more information see McLeod et al. (2020) and Mees (2010).

Figure 50 Daily cycling totals, Seapoint Avenue and the combined Rock Road locations, September 2020

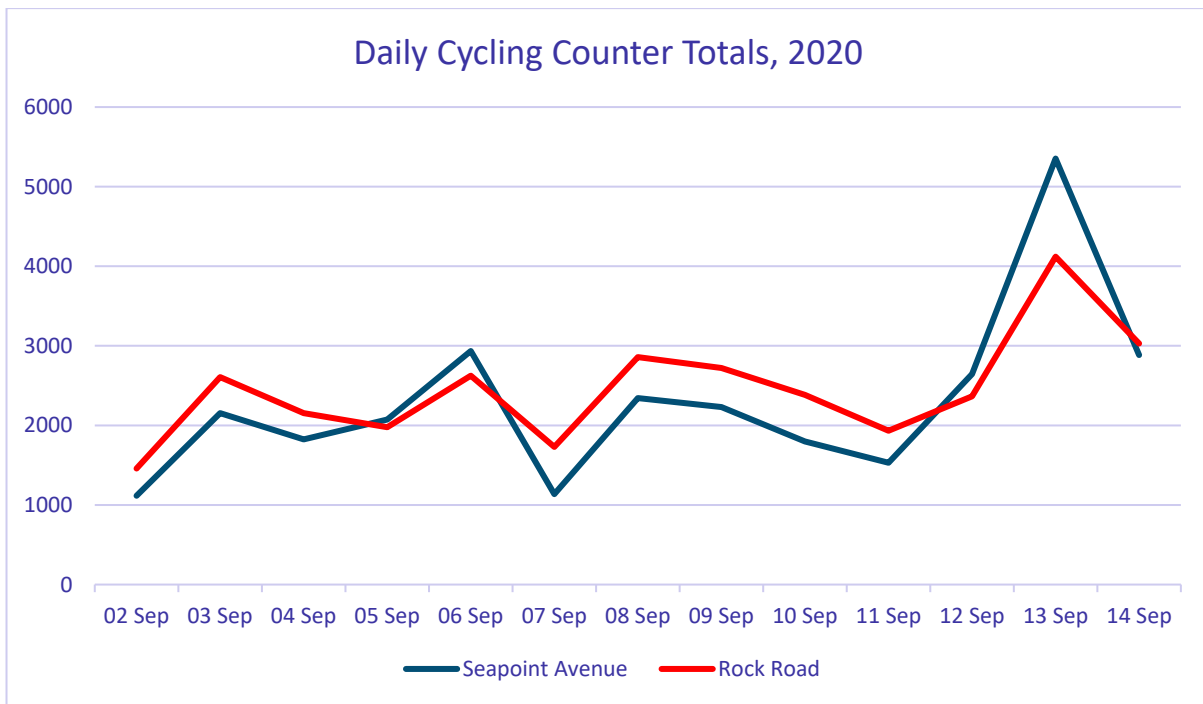
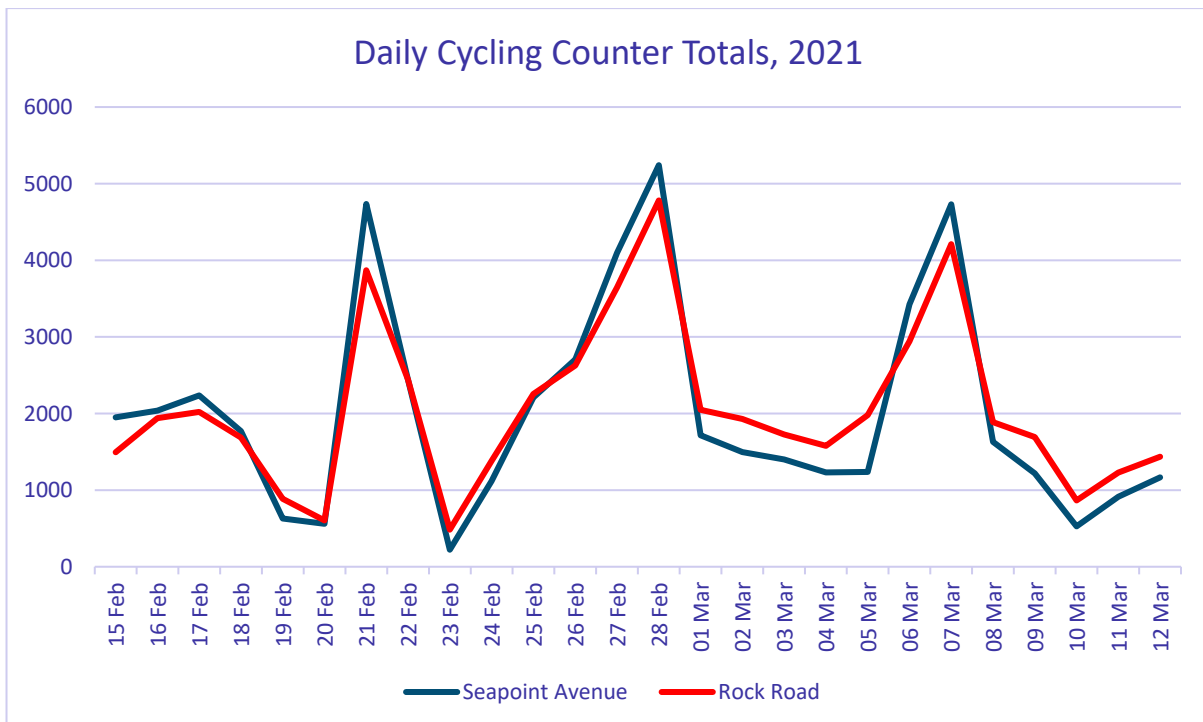


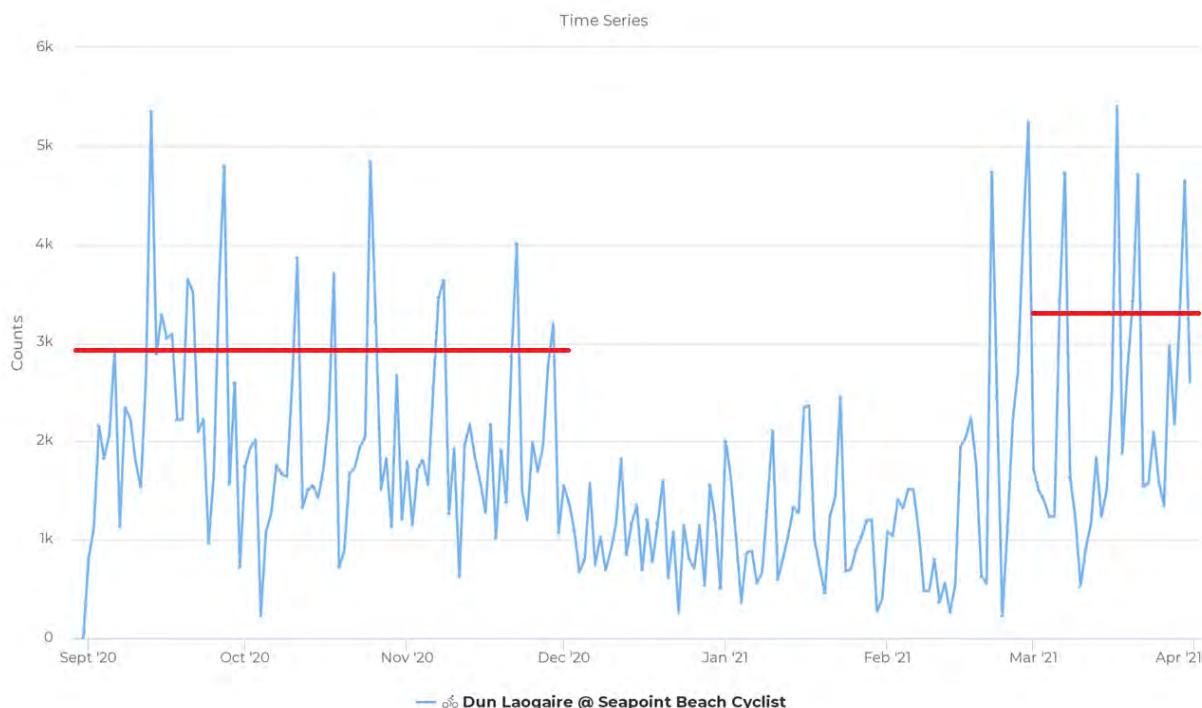
Figure 51 Daily cycling totals, Seapoint Avenue and the combined Rock Road locations, Feb-March 2021



As shown in Figure 52, between September 2020 and November 2020, there was an average of 2939 cyclists a day at Seapoint. A sharp decline in usage on the CMR was recorded in December to mid-February, which could be due to seasonality, though the increased Covid-19 restrictions and high Covid-19 case numbers must be noted at this time (particularly January and February 2021). However, these figures have shown a considerable increase and growth in April 2021 (the most recent available data at time of report completion) with an average of 2,679 cyclists per day recorded at Seapoint; 2143 at York Road and 2205 at People’s Park. **This represents a further 9% growth in comparison with September 2020 figures³⁶, when the daily average recorded 2,457 cyclists. During this same period, York Road experienced an 13.1% growth in usage and People’s Park a 9.1% increase.**

Figure 53 shows a much less pronounced reduction in usage amongst walkers during the December to February period. Average daily pedestrian counts recorded from September 2020 and April 2021 are 915 at Seapoint; 730 at York Road and 3347 at the People’s Park, Dún Laoghaire. The weekly trends illustrated in Figure 54 illustrate the general resilience and importance of walking throughout the pandemic, with upward trends noted across all three counters from mid-late February 2021 onwards. It is interesting to note that Irish research also shows that investment in cycling infrastructure can also increase walking levels (AECOM, 2018).

Figure 52 Daily Cycling Totals, Seapoint Avenue, 2020 and 2021. September, October and November (2020), and March (2021) daily averages indicated by the red lines (Source: adapted from DLR Eco-Visio counter)



³⁶ The recent CMR cycling numbers also perform well when compared with the cycle superhighway network in London. More information can be accessed via content.tfl.gov.uk/travel-in-london-report-13.pdf and <https://content.tfl.gov.uk/cycling-trends-update.pdf>

Figure 53 Daily walking totals, Seapoint Avenue September 2020-April 2021 (Source: DLR Eco-Visio Counter)

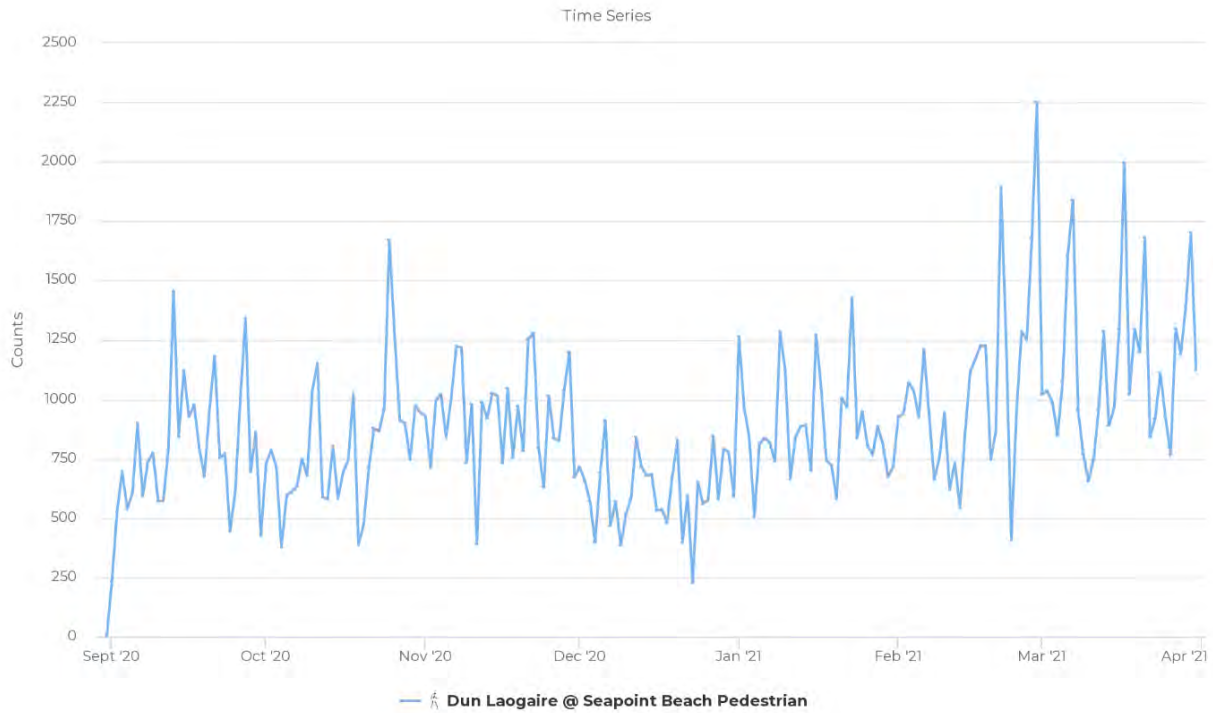
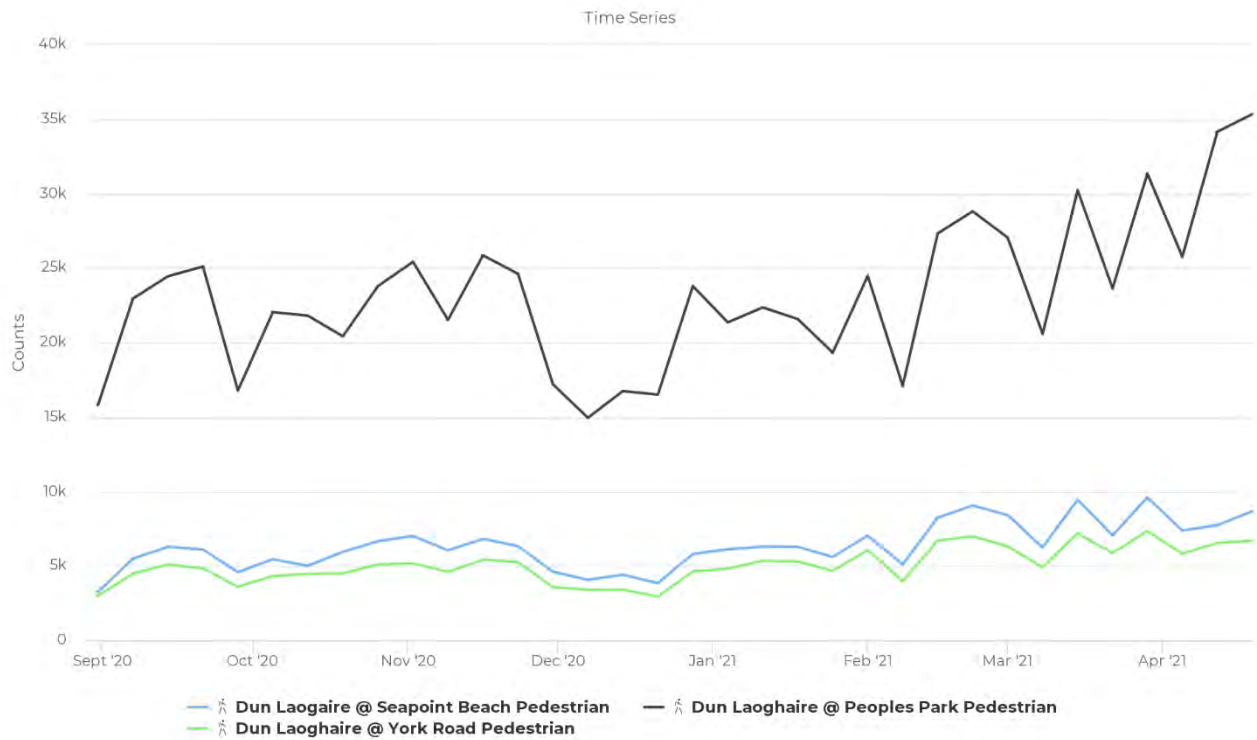


Figure 54 Weekly pedestrian totals along the CMR at Seapoint, York Road and the People’s Park September 2020 – April 2021 (Source: DLR Eco-Visio Counter)



5.3.2 Weather and Seasonal Analysis: Walking and Cycling

A range of studies suggest that air temperature, precipitation, hours of sunshine and wind speeds are the most significant weather determinants for bicycle usage, with utilitarian or commuter cyclists being the least affected³⁷. Weekly cycling patterns observed in the 2019 counts for Clonskeagh Road and Rock Road support this.

Rainfall

Table 10 examines pedestrian and cyclist traffic on the CMR categorised by daily rainfall level. There is a decline in both pedestrian and cyclist numbers as the volume of rainfall increases through five daily rainfall categories. The impact on cycle numbers is more pronounced, with 52-54% declines in cycling numbers observed between no rain days and heavy rain days, compared to 32-39% declines in walking numbers. However, over 52% of days in the study period (2nd September 2020-31st December 2020) fall into either the 'no rainfall' to 'very light' rainfall categories.

Little difference in the fall off in cycling numbers on the heaviest rainfall days is evident between weekdays and weekend days. Wider evidence suggests that cyclists are put off by sustained periods of moderate rainfall, while a short, heavy rainfall has a temporary effect.

Table 10 Pedestrian and cyclist counts at each CMR counting station, categorised by daily rainfall level (Phoenix Park station³⁸), for the period from September 2 to December 31 2020.

CMR Rainfall	No. of days	as %	Average Daily Totals					
			Pedestrians			Cyclists		
			Seapoint	People's Park	York Rd	Seapoint	People's Park	York Rd
Daily Average: 2.25mm	124	100%	779	3024	619	1809	1481	1427
No rainfall	28	22.6%	914	3822	746	2496	2087	1978
V. Light: 0.1mm to 1.0mm	37	29.8%	820	3214	652	1997	1653	1595
Light: 1.0mm to 2.25mm	20	16.1%	740	2706	561	1543	1238	1191
Moderate: 2.26mm to 4.5mm	22	17.7%	690	2504	548	1333	1041	1032
Heavy: 4.6mm	17	13.7%	625	2344	502	1201	963	939
Percentage decrease from No Rainfall to Heavy			32%	39%	33%	52%	54%	53%
Percentage decrease from No Rainfall to Very Light rainfall			10%	16%	13%	20%	21%	19%

³⁷ For example, see Thomas et al. (2013); Helbich et al. (2014); An et al, (2019); Böcker & Thorsson (2014); Nankervis (1999)

³⁸ Rainfall levels locally in Dún Laoghaire would differ very slightly from recordings at the Phoenix Park station. Full local data was not available at the time of analysis.

Wind

High wind speeds are considered to have a negative impact on cycling, and wind generally plays a more significant impact in coastal areas than inland areas (Helbich et al., 2014). Table 11 shows the hourly total number of cyclists recorded on the CMR, mapped against hourly wind speeds, and divided into categories based on the Beaufort Scale. **Comparison of the hourly cycling counts to hourly wind speeds suggests that wind speeds of up to 10.4 knots (a ‘Gentle breeze’) do not discourage cycling.** Cyclist numbers begin to decline in the Moderate breeze category.

The drop off is greatest when moving into the ‘Strong breeze’ category (wind speeds over 20.9 knots). This is in line with other findings which suggest that wind mainly has an impact above a particular threshold, and that light breeze has limited effect.

Cross-comparison with rainfall data for the same period shows that the fall off in cycling numbers moving into the ‘Strong breeze’ category is much more pronounced on days with rainfall, though the sample sizes are relatively small.

Table 11 Cyclist totals and hourly average (8am to 5pm, all 3 CMR stations combined) categorised by Wind Speed (data provided by Dún Laoghaire Harbour), Sep 3 to Mar 1.

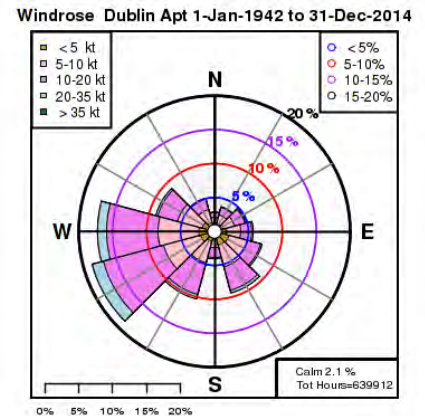
Beaufort Scale Category	Pcl Total	# Hours	% of Total	Pcl p/h	Change
0 / 1 --- Calm / Light air	26051	54	4.70%	482	
2 --- Light breeze	92347	215	16.60%	430	-10.8%
3 --- Gentle breeze	196551	449	35.30%	438	+1.9%
4 --- Moderate breeze	157852	460	28.40%	343	-21.7%
5 --- Fresh breeze	64483	225	11.60%	287	-16.3%
6 --- Strong breeze	14734	78	2.60%	189	-34.1%
7 / 8 --- Moderate / Fresh gale	4729	41	0.80%	115	-39.2%

When wind direction is taken into account, hours with easterly, south-easterly and southerly winds have the lowest cyclist usage. The data from Dún Laoghaire similarly shows that westerly winds are by far the most common, though south-easterlies occurred more frequently than the historic averages during the monitoring period and may be indicative of different local conditions. This might point to a particular issue with the geography of the coastline in Dún Laoghaire-Rathdown, with users of the CMR being more exposed to winds coming in from the Irish sea.

Table 12 Number of cyclists recorded, by hourly wind direction, wind speeds greater than 10.4 knots (moderate breeze or greater).

Wind Direction	# hours	Total Pcl	Avg Pcl p/h	Avg Speed
Northerly	29	9090	313	18.6
North-easterly	38	12118	319	17.8
Easterly	62	15438	249	22.4
South-easterly	135	24078	178	17.3
Southerly	42	9775	233	13.2
South-westerly	62	24112	389	12.7
Westerly	383	130547	341	15.3
North-westerly	53	16640	314	14.8

Figure 55 Historic wind direction (%), Dublin Airport. Source: met.ie



Daylight and Temperature

Research suggests that hours of sunshine/daylight is an important variable for explaining variations in cycling throughout the year (Thomas et al.,2013). Figure 56 and Figure 57 show the clear impact of reduced hours of sunlight in winter months on walking and cycling journey patterns on the CMR. Sunrise and Sunset hours, taken mid-month, are indicated by the red bars. Journeys in September are more evenly spread throughout the day than in December.

Figure 56 Walking and cycling usage (percentage of daily total), September 2020, People’s Park.

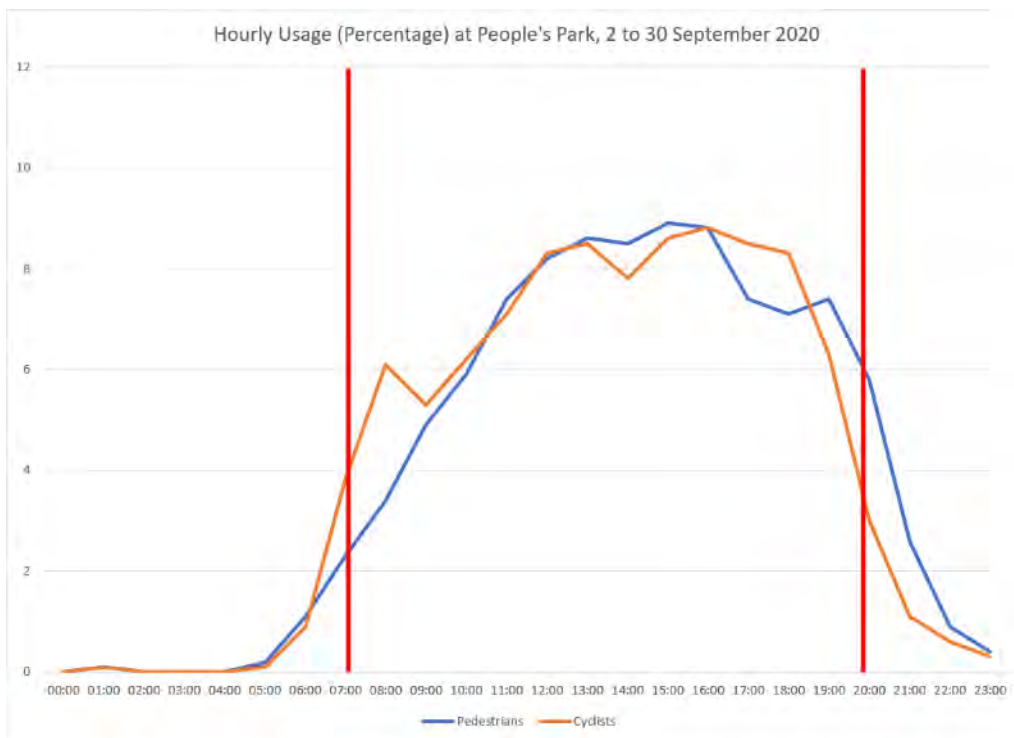
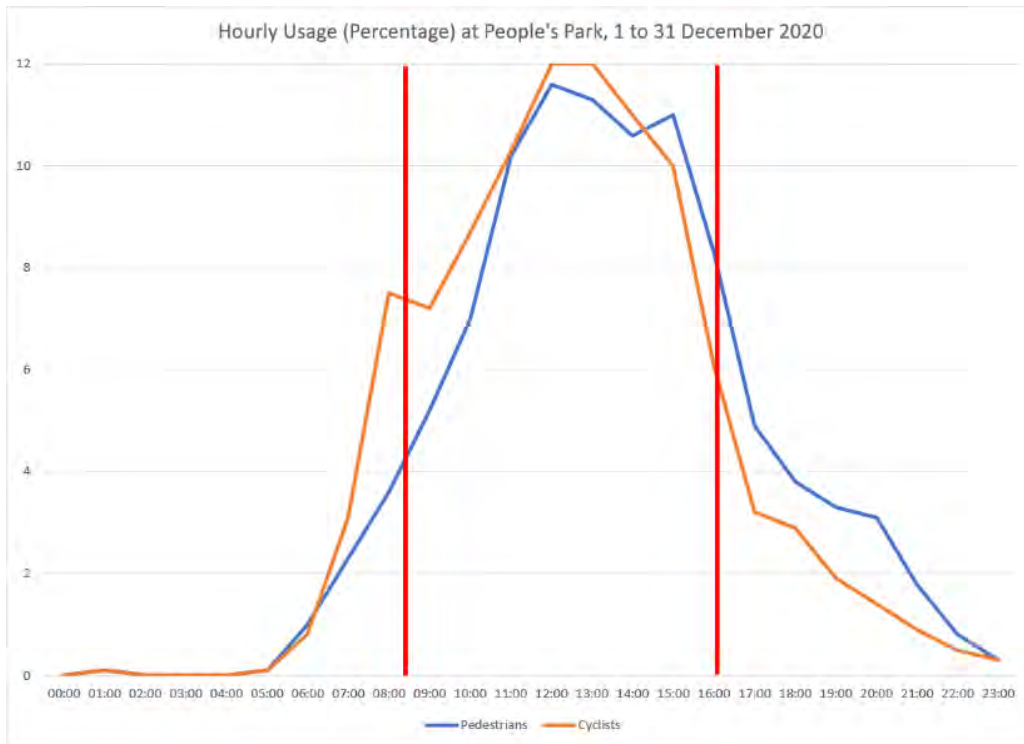


Figure 57 Walking and cycling usage (percentage of daily total), December 2020, People's Park.



The profiles for walking and cycling are broadly similar. There is a noticeable early morning spike for cycling in both months, while pedestrians use the route in proportionally greater numbers slightly later into the evening.

Evidence suggests that temperature can influence cycling rates, but this is generally in climates prone to more extremes (both hot and cold), than would be expected in a milder Irish setting. Nonetheless, a brief analysis of cycling and temperature levels on the CMR was performed. Dry days were selected, and after adjusting for the number of daylight hours, a slight correlation between falling temperature and cyclist numbers was observed. However, falling numbers of cyclists also correlated with increasing wind speeds, and there were many cold days with high numbers of cyclists. Overall, it appears that temperature is not a key determinant in cycling usage on the CMR.

5.3.3 Range of User Groups: Coastal Mobility Route

An observational survey was undertaken on the Coastal Mobility Route at Seapoint into the range of users in order to gain a greater insight into the inclusiveness of the facilities. Specifically, this survey sought to gain insights into assessing the following DLR Covid Mobility objectives:

- increase cycling and pedestrian comfort and safety,
- reduce pressure on public transport capacity by providing a sustainable mobility alternative, and
- decrease reliance on private vehicles for short journeys, while increasing the use of walking and cycling as transport modes for a wide range of users.

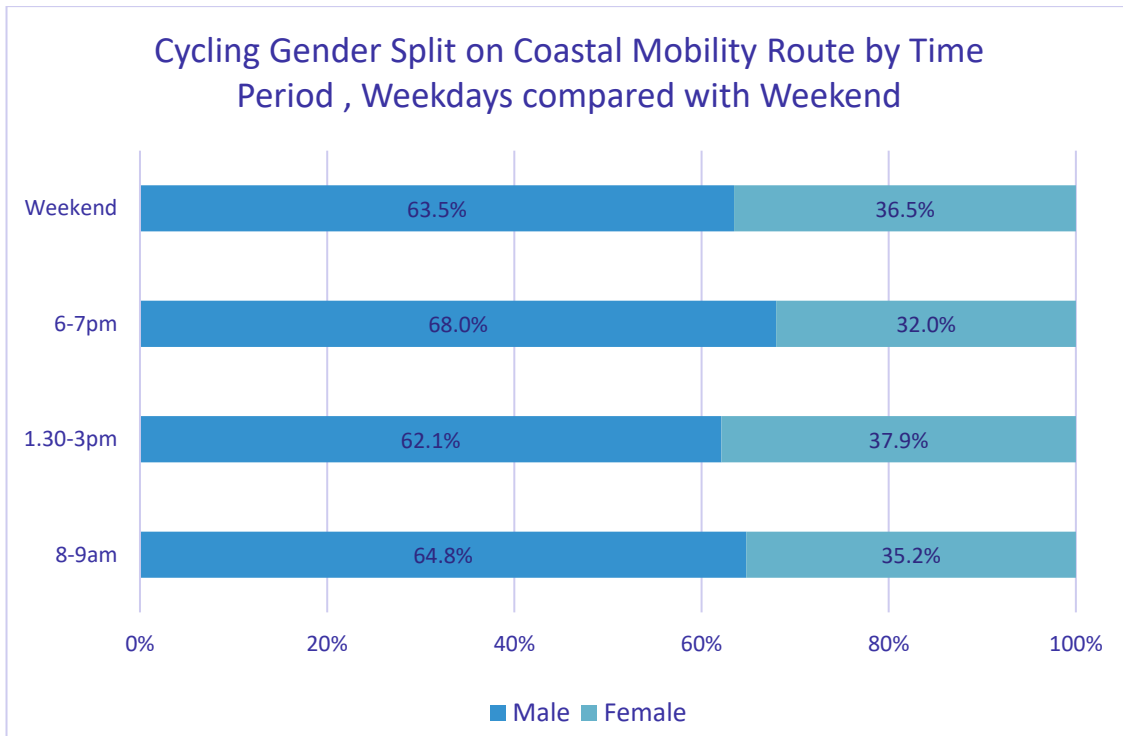
The study sought to investigate user groups based on gender, age group, family composition, casual versus sporty users, disability bikes, scooters, joggers etc. It should be noted that the study was observational in its nature, thus certain assumptions had to be made. For example, with the categorisation of gender of those who were observed, it was solely based on the assumption/understanding of gender by the observer who most likely follows the social norms of appearance for each gender. 'Sporty' cyclists were generally categorised as such if they wore sporty clothing and were on a sporty bicycle, with 'casual' cyclists identified as wearing more casual clothing, and travelling in a non-sporty bicycle.

Range of user data was manually collected between the 6th and 22nd of October 2020 on Seapoint Avenue. Cycle data was recorded between 8-9am, 1.30-3pm and 6-7pm on weekdays, and between 1-2.30pm on Sundays. A smaller sample of pedestrians were taken for gender ratio comparison purposes.

Of 1896 cyclists and bike lane users recorded during data collection on the CMR, **35% were female, and 65% were male**, showing possible indications of an improvement in the gender split compared with previous studies (although some distance from the 50:50 split that needs to be worked towards). Analysis of the 2016 Census of Population shows a gender split of use of a bicycle as a mode of transport to work/school at 74:26 male:female³⁹ in the Dún Laoghaire-Rathdown Local Authority area whereas the NTA's Bike Life 2019 study notes that in Dublin (across the city region), 32% of people who cycle weekly are female, while 68% are male. There are many complex reasons surrounding women's travel choices, however cycle safety is a consistently raised concern, or which a network of segregated cycle facilities are of particular importance (NTA, 2019; TII, 2020). Some variations were noticed in the gender ratio by time and weekday and weekend, the highest percentage of females being during the weekday (at lunch time and primary school pick-up times) and on weekends. This may reflect the findings in the '*Travelling in a Woman's Shoes*' report (TII, 2020), which found that women spend significantly more time providing care on average.

³⁹ See Central Statistics Office database number E6011 (<https://data.cso.ie/>)

Figure 58 Gender cycling ratio on Coastal Mobility Route by time of day



N = 602, 264, 381, 649

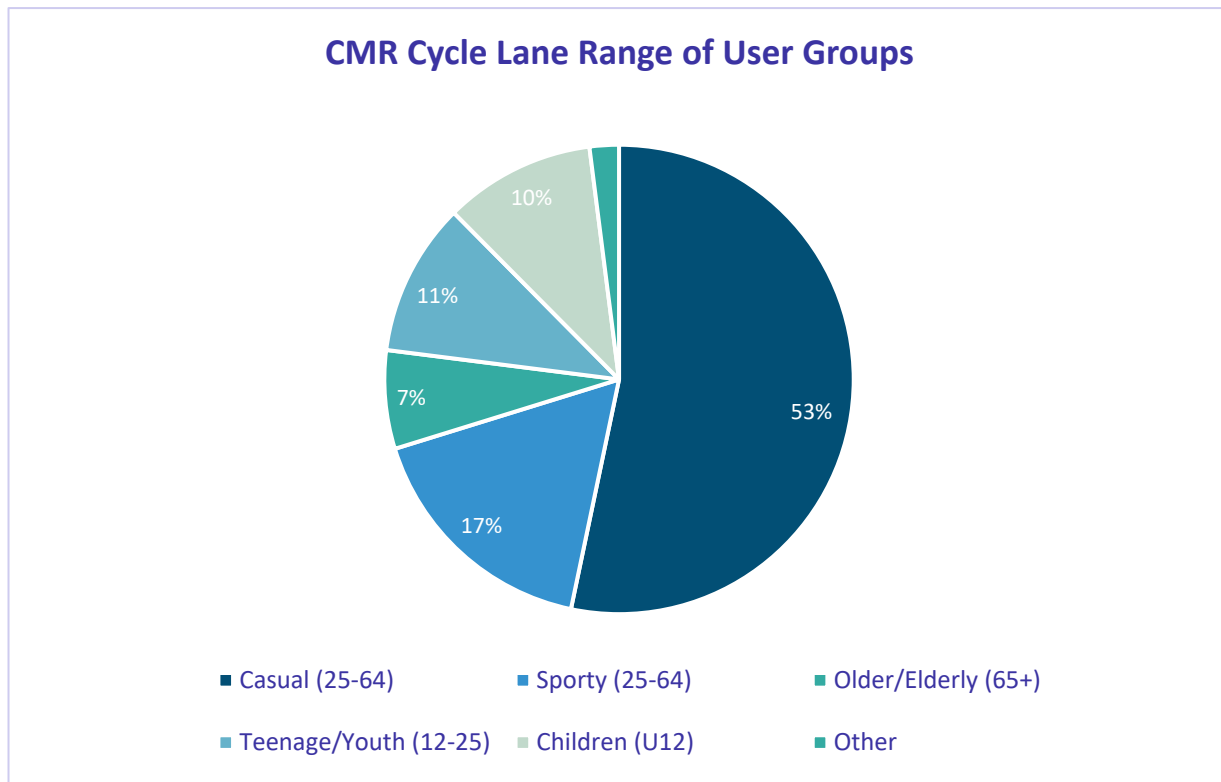
Users of the cycle route were divided into several categories (Figure 59). The largest cohort were casual users, aged between 25 to 64 years. Users noted as ‘sporty’, also in this age range, make up the second largest group. These groups were then followed by teenagers and youths (under 25 years of age), the elderly, children (male and female), parents, and so on. Other includes people with physical disabilities, joggers, e-scooter users, wheelchair or mobility scooter users, etc. The gender split in the ‘Parent’ categories was similar (51% male, 49% female). However, overall it is noted that the route attracts many different types of users, including disability cyclists (albeit at small numbers), and non-standard cycles such as cargo bikes and bicycles with carrier seats are common, as well as other micro-mobility devices such as scooters. 14% of all the cyclists recorded were part of family groups.

Figure 60 presents a simplified view of the categories, showing a number of categories merged. It is noted that Casual users (25-64 yrs) make-up 53% of users, followed by sporty users at 17%, teenage/youth at 11%, children at 10%, and 7% of users being 65+ years. Other (2%) includes, joggers, e-scooter users, people with physical disabilities and any others not previously included.

Figure 59 Range of cycle user groups recorded on the Coastal Mobility Route



Figure 60 Simplified CMR cycle facilities user groups



N = 1931

33% of teenagers and youths recorded were female. Although not a direct comparison, the CSO Census of Population (2016) recorded only 1.4% of 13-18 year old females cycled to school within DLR compared with 11% of male 13-18 year olds⁴⁰. However more females of the same age group walked to school (21.1% compared with 17.1% for males). More females (59%) were also found to be walkers along the Coastal Mobility Route (adjacent footpaths).

An interesting point of note is that a higher number of male children (c.12 years and under) were observed cycling independently, particularly to and from school, in comparison to female children. This is not surprising as research shows that male children are given more freedom than female children (Brown et al, 2008). As noted in TII's 'Travelling in a Woman's Shoes' Report (2020), 'Unlike driving or taking the bus, fewer women are introduced to cycling at a young age and are able to practice and build the confidence needed, in large part due to unfriendly road design. Without adequate infrastructure and experience, the perceived danger of cycling is a stressful and unappealing proposition, ultimately outweighing any appeal of health benefits.'(p.25). Active efforts working with schools, parents and advocacy organisations such as An Taisce's 'Green Schools', as well as the continued development of a network of safe segregated cycling infrastructure should help overcome this issue.

⁴⁰ Data from CSO Census of Population 2016 E6011 database.

The IDASO Pedestrian Observation Study commissioned by DLR (2020), outlined in the Blackrock Village, considered additional sites which included Seapoint View, Link Road in Dún Laoghaire and Glasthule Village. At Seapoint View there were no predominant crossing areas noted outside the designated pedestrian crossings in which a total of 4,311 crossed over a week. It is interesting to note that in all locations only 1% of the crossings were made by children. Approximately 22% of the DLR population are aged under 18⁴¹ and therefore, it would be reasonably expected to observe a greater proportion of children walking. Further consideration should be given to the low number of children observed crossing the street and in what locations, villages and connecting routes, is the presence of children walking and cycling independently observed. Further exploration of actions to improve the ratios of female users and other vulnerable users such as disabled users are recommended.

It was observed in some locations that informal crossing points (for cyclists and pedestrians) along the CMR do not align with footpaths (Figure 61). An evaluation of pedestrian crossing points along the CMR is warranted to ensure crossings are optimised for both pedestrians and cyclists.

Figure 61 Alignment of side street CMR entry points



⁴¹ Data from CSO Census of Population 2016

5.3.4 Public Transport & Bus Performance

There are no public transport routes directly along the Coastal Mobility Route (CMR) itself. Nor were any service route alterations made as a result of its implementation. However, the CMR does run through Dún Laoghaire and along the seafront. Dún Laoghaire acts as a major public transport hub with a large number of bus services interchanging with the DART urban rail service.

Dún Laoghaire is served by a number of licensed public passenger transport services. These include:

- Route 7 / 7A (operated by Dublin Bus)
- Route 45A / 45B (operated by Go Ahead Ireland)
- Route 46A (operated by Dublin Bus)
- Route 59 (operated by Go Ahead Ireland)
- Route 63 / 63A (operated by Go Ahead Ireland)
- Route 75 / 75A (operated by Go Ahead Ireland)
- Route 111 (operated by Go Ahead Ireland)

A high proportion of bus services to and from Dún Laoghaire are operated by Go Ahead Ireland, a licensed public transport operator. A Senior Managerial Representative of Go Ahead Ireland was interviewed to assess the impact of the interventions on other aspects of the bus services, provided by the operator. Mr. Derry O’Leary, Transport Consultant to Go Ahead Ireland Group, was interviewed on Tuesday 16th March 2021. The interview took place virtually on MS Teams during which the operator provided the following viewpoints: -

- increased queuing has been noted at the junction of George’s Street / Glenageary Road Lower / Park Road / Glasthule Road (the “People’s Park town corner”); this was particularly on the George’s Street and Glasthule Road arms;
- delays have been noticed by controllers at stops on George’s Street itself;
- queuing has also been experienced in the opposite direction past the Sandycove DART Station and further into Glasthule Village itself;
- these have been quite material delays with buses sometimes taking several traffic signal phases to clear the junction.

It was noted that the Coastal Mobility Route had the potential to affect services through places like Monkstown Road and Dún Laoghaire. Even though the works are temporary in nature, it was noted that *“the traffic levels have been at a temporarily low level as well” due to the Covid-19 movement restrictions.*

It was the operator’s view that *“there has been a shift in traffic from the coast road to the likes of Dún Laoghaire and onto the next available parallel road, which in this case is Georges Street heading south towards the People’s Park in Dún Laoghaire”*. The operator posited that this may potentially be temporary in nature, commenting that *“this could be coming from people coming into Dún Laoghaire for the first time and not knowing what’s happened and ... basically finding their way around it again”*.

Following discussions with the operator, a basic bus journey time analysis was undertaken to assess the impact of public realm measures on the speed and reliability of bus routes through George’s Street, Dún

Laoghaire – and the junction of George’s Street / Glenageary Road Lower / Park Road / Glasthule Road (the “People’s Park town corner”).

Bus journey time reliability data was requested from the National Transport Authority for routes 45 / 45A / 59 / 111 between the following stops on either side of the People’s Park town corner: -

- 59 & 111: 3047 – 3048 (southbound)
- 45 & 45A: 3240 – 3068 (northbound)

The above bus journey data was accessed for weekdays and for the following monthly time periods: May - December 2019 (weekdays); and May - December 2020 (weekdays).

Key milestone dates pertaining to (a) government Covid-19 restrictions and (b) DLR public realm interventions are noted in Section 5.2.5 above.

Table 13 shows the average actual running time differences (in seconds) between 2019 and 2020 for southbound and northbound services through the People’s Park town corner. Year-on-year average journey times have mostly decreased for southbound services and mostly increased for northbound services over the selected time-period. The rate of year-on-year dissonance reduces over time, with a noted rise in December 2020 for northbound services.

It is known that DLR undertook signalisation changes at the junction to reduce delay times and balance traffic flows through the junction. These appear to have been largely effective with some possible directional imbalances in journey times continuing to occur. This has to be considered in the light of continued uncertainty over background traffic levels as a result of covid-19 travel and behaviour restrictions.

It should also be noted that the journey-time data relates to relatively short distances through a single junction. Therefore, inferences into the data are limited. For this reason, feedback from public transport operators, and in particular from service schedulers can be highly valuable.

Table 13 Bus average running time differences (in seconds) for southbound and northbound services through the People’s Park town corner between May - December for 2019 and 2020

Comparative Time Period	Average Running Time Difference between 2019 & 2020 (southbound services)	Average Running Time Difference between 2019 & 2020 (northbound services)
May	-19	-18
June	-10	14
July	2	8
August	-7	2
September	-4	7
October	-9	0
November	-8	6
December	-4	13

Overall the importance of maintaining public transport priority on routes that may be adjacent to or affected by traffic management measures (such as the CMR) has to be emphasised. Feedback from operators can be valuable, particularly at design stages but also through early implementation as traffic levels and behaviour adjusts.

Relevant international studies⁴² demonstrate that where schemes like the CMR have been put in place, actually very little traffic redirects onto nearby streets. Research shows that traffic levels on adjacent streets usually stay about the same, and in many cases even reduce. A key part of overall traffic reduction is consequent changes on people’s behaviour and mode shift towards public transport is a key part of this. As public transport capacity increases, and people return to more regular public transport usage, there is likely to be further shifts in travel and traffic patterns.

⁴² A useful meta-study is provided in: Atkins, S. and Goodwin, P., 2002, March. Disappearing traffic? The story so far. in *Proceedings of the Institution of Civil Engineers-Municipal Engineer* (Vol. 151, No. 1, pp. 13-22)

5.3.5 Vehicular Traffic Movements – CMR Area

It is difficult to infer causation of changes in trip patterns due to the highly changeable circumstances of the Covid-19 pandemic. Movement restrictions implemented by government have had a clear impact on traffic volumes and these circumstances have changed continually throughout the monitoring period. Additionally, it is clear from both the vehicular traffic analysis and the analysis of walking and cycling data that travel patterns have also changed dramatically. The types of journeys and journey purposes are likely to also have changed. How these trends will continue is unclear, so predictions of future patterns are challenging to make. An analysis similar to that undertaken for the Blackrock Village area will be outlined for the area in the vicinity of the CMR. Vehicular traffic redistributions and vehicle trip catchments are discussed alongside trip duration and traffic speed data for the region. Changes in traffic distribution on the network, rather than traffic volumes, has been the focus of this interim analysis. This is in order to gain initial insights into any changes in the use of the network during Covid-19 and its associated mobility interventions. Changes in vehicular traffic volumes on particular routes as well as the wider network will become more relevant and meaningful as Covid-19 restriction levels reduce, work from home guidelines lift and public transport capacity increases.

The study periods in this interim analysis are limited to February 2020 compared with February 2021, and September/October 2019 compared with September/October 2020. In the latter time period in particular, it would be expected that there would be a disruption to local traffic as people adjusted their travel routes, travel modes or travel times due to the recent implementation of the CMR. It is recommended that additional analysis over a longer time period is undertaken, particularly to take account of changing restriction levels, and shifting mobility patterns and travel behaviours. In addition, the impacts of periods of significant roadworks and other road closures etc should be taken into account.

Figure 62 Locations reviewed in Coastal Mobility Route wider area traffic distribution analysis (basemap extracted from Tom Tom Move)



As previously outlined in Section 5.2.6, traffic levels in February 2021 were at approximately 63-66% compared to February 2020. In this analysis the all-day traffic flows over the full week for September/ October 2020 were at c.98% of the traffic volume for September/ October 2019. Table 14 and Table 15 show the percentage changes observed at 17 locations in the vicinity of the Coastal Mobility Route on weekdays and weekends, taking a system approach to traffic distribution (Figure 62).

It is important to note that while there is a drop in the proportion of traffic using Seapoint Avenue, there are other locations where equal or greater drops were observed. Interestingly two of the main distributor roads in the area, 1. Rock Road and 5. Stillorgan Dual Carriageway, both recorded proportionally large drops as both origins and destinations for trips in the area. This was greater at the Stillorgan Dual Carriageway site on the weekends than the weekdays. It is possible that the reduction of trips passing through these locations is an indicator of less commuter trips to the city or into the region. Higher level Covid-19 public health restrictions limiting trips to within 5km in February may also account for the greater reduction in this period compared to September/ October 2020. The only other location showing a drop in the proportion is on Seapoint Avenue along the CMR where one direction of traffic has been removed. There is a relatively even distribution of locations which have shown an increase in the proportion of trips. The greatest increase in trip distribution observed is on Tivoli Road which showed increases of 3- 4% of the redistributed vehicular traffic. The impact of this increase will be further discussed in the vehicular traffic speed section later in this chapter.

Table 14 Relative Changes to Vehicular Traffic to and from the CMR Region: Weekdays

	February 2020-2021		Sept/Oct 2019-2020	
	Origin	Destination	Origin	Destination
1 Rock Road	-2%	-2%	-2%	-1%
2 Seapoint Ave	-2%	-3%	-2%	-4%
3 Church Hill	1%	1%	1%	1%
4 Carysfort Ave	0%	0%	0%	0%
5 Stillorgan DC	-5%	-5%	-3%	-3%
6 Stillorgan Park	0%	1%	0%	0%
7 Stradbroke Road	0%	0%	0%	0%
8 Newtown Pk Ave	0%	0%	0%	0%
9 Kill Lane	1%	0%	1%	1%
10 Monkstown Rd	1%	2%	1%	2%
11 Rochestown Ave	1%	1%	0%	0%
12 Glenageary Rd Up	1%	1%	1%	1%
13 Tivoli Rd	1%	2%	2%	3%
14 Glasthule Rd	1%	1%	1%	1%
15 Newtown Pk Ave W	1%	1%	0%	1%
16 Ulverton Rd	0%	0%	0%	0%
17 Glenageary Rd Lwr	1%	1%	0%	0%

Table 15 Relative Changes to Vehicular Traffic to and from the CMR Region: Weekends

	February 2020- 2021		Sept/Oct 2019- 2020		
	Origin	Destination	Origin		Destination
1 Rock Road	-2%	-2%	-2%		-1%
2 Seapoint Ave	-2%	-4%	-2%		-4%
3 Church Hill	2%	2%	1%		1%
4 Carysfort Ave	0%	0%	0%		0%
5 Stillorgan DC	-7%	-7%	-4%		-4%
6 Stillorgan Park	1%	1%	0%		0%
7 Stradbroke Road	0%	0%	0%		0%
8 Newtown Pk Ave	0%	0%	0%		0%
9 Kill Lane	1%	1%	1%		1%
10 Monkstown Rd	1%	2%	1%		2%
11 Rochestown Ave	1%	1%	0%		0%
12 Glenageary Rd Upr	1%	1%	1%		1%
13 Tivoli Rd	1%	2%	3%		4%
14 Glasthule Rd	1%	1%	1%		1%
15 Newtown Pk Ave W	0%	1%	0%		0%
16 Ulverton Rd	0%	0%	0%		0%
17 Glenageary Rd Lwr	1%	1%	0%		0%

Catchment Analysis Coastal Mobility Route

A similar catchment analysis to that undertaken for the Blackrock Village area was undertaken for the CMR for illustrative purposes. The length and linear nature of the CMR make the distances reported more variable. However, the underlying concept is the same, a determination of what proportion of the trips to the CMR area originated locally (either on the CMR or within 2km) or further afield (up to or beyond 5km).

Figure 63 Catchment analysis Coastal Mobility Route (basemap extracted from Tom Tom Move)



Prior to the installation of the Coastal Mobility Route and the Covid-19 pandemic, 24% of the weekday car trips within the immediate area of the CMR were made by local car-trips. However, by Sept/Oct 2020, this had reduced to 21% of the car trips within the area and the volume of detected traffic reduced by c.48%. Proportionally more car-trips came from people travelling within 2km than previously, however there is also evidence of a c.26% reduction in traffic volumes to the CMR. Similar patterns are evident at weekends, however the percentage reduction in over traffic volumes is less.

The weekend values outlined in Table 16 and Table 17 include Sundays which are also reported separately. It is proposed that Sunday trips in the area are more likely to be recreational trips. Pre-Covid, 32% of trips to the area on Sundays were from greater than 5km away. Discounting the February 2021 value when Level 5 travel restrictions were in place, the September / October 2020 value indicates that 28% of Sunday trips to the CMR are from greater than 5km away.

Table 16 Proportion of Trip Catchments within and to the Coastal Mobility Route (Sept/Oct 2019 versus Sept/Oct 2020)

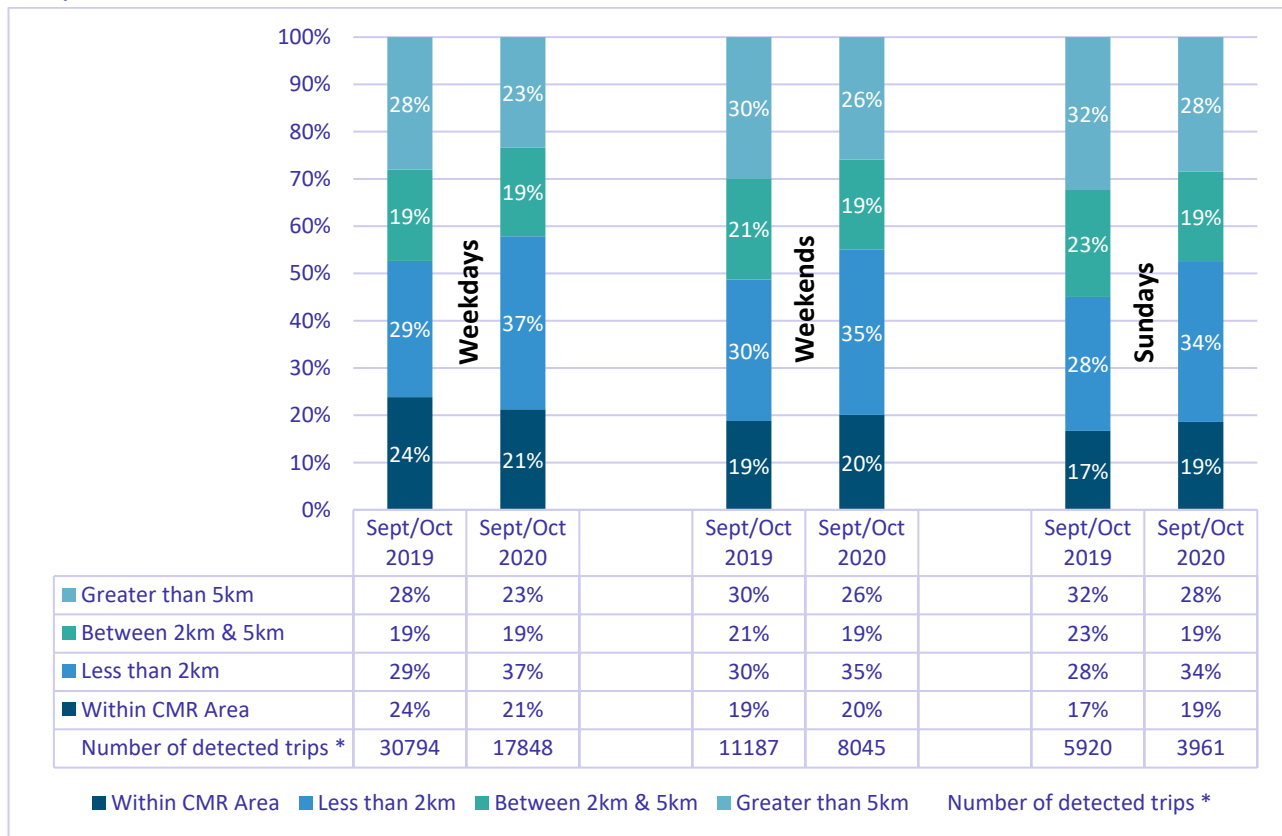
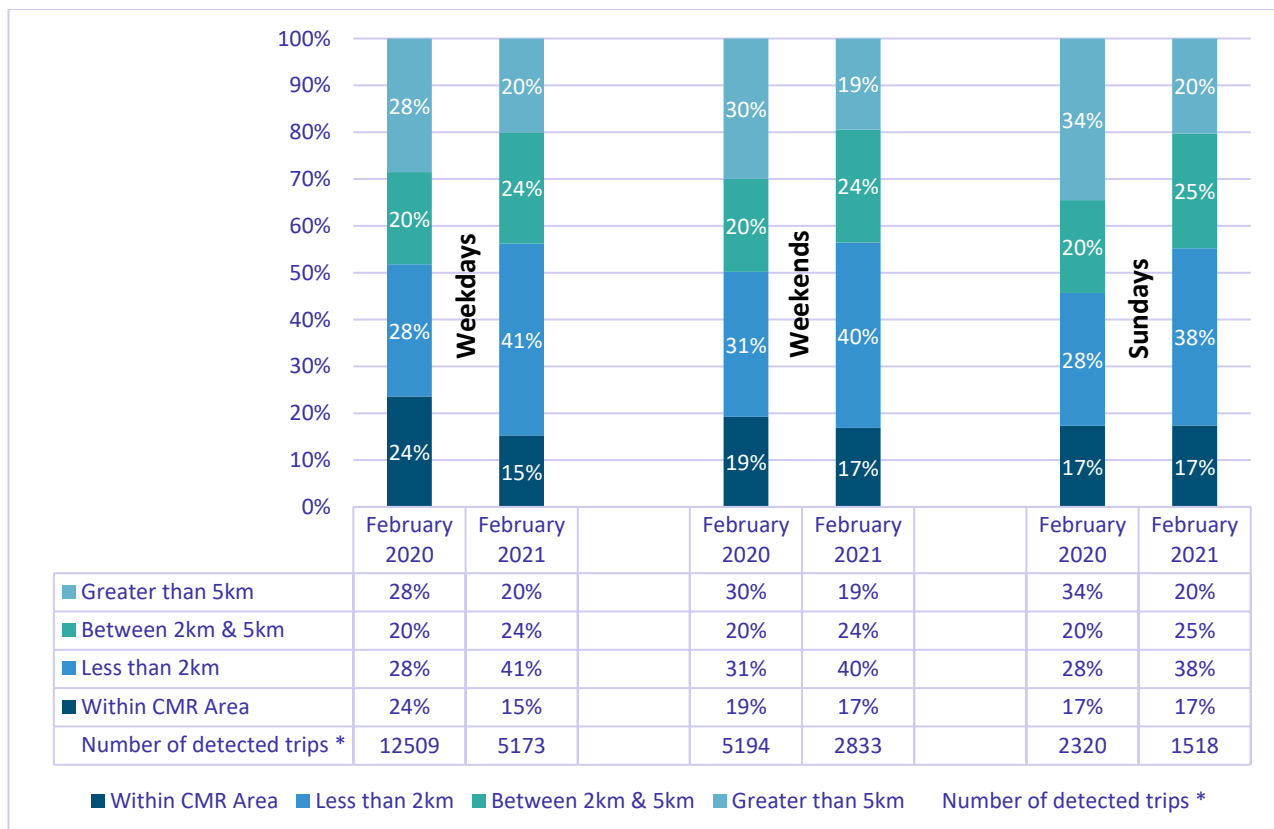


Table 17 Proportion of Trip Catchments within and to the Coastal Mobility Route (Feb. 2020 versus Feb. 2021)

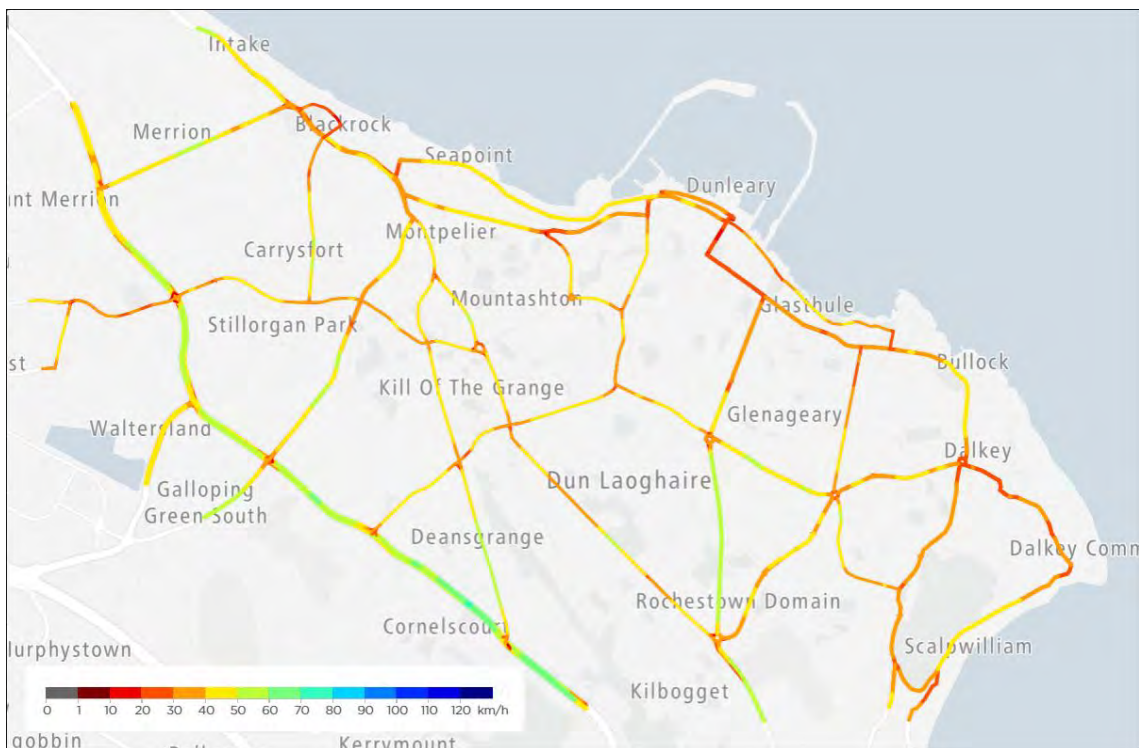


5.3.6 Vehicular Traffic Speeds and Trip Times: Blackrock and Dún Laoghaire Region

Analysis of traffic speeds and travel times in this section assess the impact of the installation of the Coastal Mobility Route and Blackrock Village interventions on travel times and traffic speeds on other streets in the DLR wider area.

Pictured in Figure 64 is a visualisation of traffic speeds in DLR in February 2020 (pre-pandemic). The slowest traffic speeds are observed in and around the centres of Blackrock, Dún Laoghaire and Dalkey. Blackrock and Dún Laoghaire are the primary focus of this analysis, in particular the routes and junctions adjacent to Blackrock and the Coastal Mobility Route: Frascati Road, Monkstown Road, George’s Street Upper and Glasthule Road. The scenario presented is typical where vehicular traffic moves slower on traditionally narrower village streets and at traffic lights compared to wider, straighter roads built to service the area. Ease of movement along these routes can contribute to congestion at lights and narrow roads in locations where funneling has not occurred along the route from pedestrian crossings and other traffic management measurements such as lower traffic speed limits. Lower speed limits can also enhance the public realm and increase safety for pedestrians and cyclists which in turn leads to greater numbers of people taking this option over the private car for short journeys (Carroll et al. 2019). Traffic evaporation is the term used to describe observed reduction in traffic levels when these measures are introduced. However, if measures are not taken to make walking and cycling safer along these routes the modal shift will be minimal. This is particularly true for women, children and older people (Fraser and Lock 2010, Aldred et al. 2017).

Figure 64 Median (most common) traffic speeds in the Dún Laoghaire-Rathdown County Council area surrounding the Coastal Mobility Route, February 2020, 8am to 8pm. Image © TomTom 1992 – 2021



As outlined in ‘Section 5.2.6 Vehicular Analysis Baseline – Blackrock and Coastal Mobility Route’, a route between Clonskeagh and Stepside, via Overend Way in Dundrum, was selected to provide a baseline to compare with changes observed on the N31 and R119 routes. Travel times and speed data were collected for the months of September and October in 2019 and 2020, and for February and March 2021.

In general, the Clonskeagh route shows reductions of up to 4 minutes in vehicular travel times during morning and evening rush hour, and smaller changes, both positive and negative, in off-peak travel times (10am to 4pm) and at weekends. Travel times during the sampling period in 2021 are lower than 2020, but also 2019: by between 1% (7-10am Weekends, 21 secs) and 35% (7-10am Weekdays, 2 minutes), depending on the time set, time of week and direction (see Table 18 and Table 19). Slight increases of up to 26 seconds were observed in September/ October 2020. This is consistent with the observed 87% to 107% traffic levels compared to September/ October 2019 (Table 6). It is also notable that vehicular speeds (85th percentile) are over the current general urban speed limits of 50km/hr in the less congested time periods, particular February and March 2021 leading to potential safety concerns.

Table 18 Travel times and traffic speeds, September & October 2019 and 2020, February and March 2021. Direction towards city.

Stepaside to Clonskeagh (via Overend Way)

			2019		2020		2021		Time Change	
Route	Date Range	Time Set	Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	2019 to 2020	2019 to 2021
Stepaside to Clonskeagh via Overend Way	W/days	7:00-10:00	00:19:16	45.97	00:14:34	48.75	00:12:28	52.60	-00:04:42	-00:02:06
Stepaside to Clonskeagh via Overend Way	W/days	10:00-16:00	00:14:58	48.99	00:14:29	48.77	00:13:10	50.87	-00:00:29	-00:01:19
Stepaside to Clonskeagh via Overend Way	W/days	16:00-19:00	00:16:39	47.37	00:14:37	48.55	00:13:18	50.52	-00:02:02	-00:01:19
Stepaside to Clonskeagh via Overend Way	W/ends	7:00-10:00	00:11:19	57.14	00:11:32	55.34	00:11:11	56.15	+00:00:13	-00:00:21
Stepaside to Clonskeagh via Overend Way	W/ends	10:00-16:00	00:14:56	49.46	00:14:36	48.76	00:13:24	50.24	-00:00:20	-00:01:12
Stepaside to Clonskeagh via Overend Way	W/ends	16:00-19:00	00:14:08	50.19	00:13:32	50.10	00:12:50	51.39	-00:00:36	-00:00:42

Table 19 Travel times and traffic speeds, September & October 2019 and 2020, February and March 2021. Direction towards Stepside.

Clonskeagh to Stepside (via Overend Way)

Route	Date Range	Time Set	2019		2020		2021		Time Change	
			Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	2019 to 2020	2019 to 2021
Clonskeagh to Stepside via Overend Way	W/days	7:00-10:00	00:13:42	49.36	00:13:38	48.76	00:12:17	51.70	-00:00:04	-00:01:21
Clonskeagh to Stepside via Overend Way	W/days	10:00-16:00	00:13:37	49.10	00:13:53	48.10	00:12:54	49.87	+00:00:16	-00:00:59
Clonskeagh to Stepside via Overend Way	W/days	16:00-19:00	00:19:38	43.49	00:14:37	46.61	00:13:06	48.87	-00:05:01	-00:01:31
Clonskeagh to Stepside via Overend Way	W/ends	7:00-10:00	00:11:11	56.16	00:11:30	54.40	00:11:04	55.81	+00:00:19	-00:00:26
Clonskeagh to Stepside via Overend Way	W/ends	10:00-16:00	00:13:07	49.86	00:13:33	48.41	00:12:55	49.66	+00:00:26	-00:00:38
Clonskeagh to Stepside via Overend Way	W/ends	16:00-19:00	00:12:52	50.09	00:12:59	49.34	00:12:36	50.62	+00:00:07	-00:00:23

N31 and R119 Route

A similar analysis was carried out on three possible alternative routes to the coastal road since the inception of the Coastal Mobility Route. The first two routes illustrated in Figure 65 and Figure 66 are close to the CMR. An additional route between Glenageary Road Upper and UCD using the N11 (Figure 67) was also selected to assess travel times further inland, to identify whether any differences were observable. Variants of this route such as via Oliver Plunkett Road and Stillorgan Park Road were also assessed, though they have not been included in the report due to the relatively similar results.

Figure 65 N31/R119 alternative CMR-adjacent route. The southbound route diverts via Crofton Road and Marine Road (source map adapted by author from Openstreetmap.org)

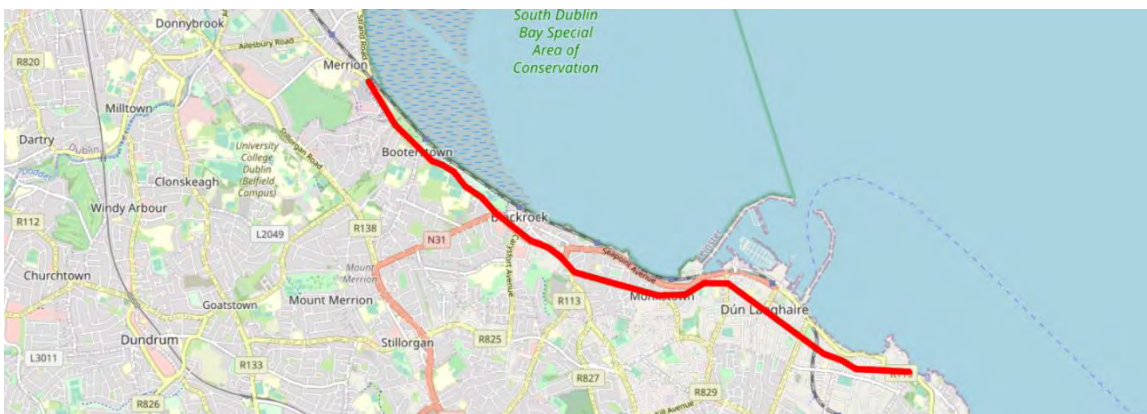


Figure 66 N31/Tivoli Road CMR-adjacent route (source map adapted by author from Openstreetmap.org)

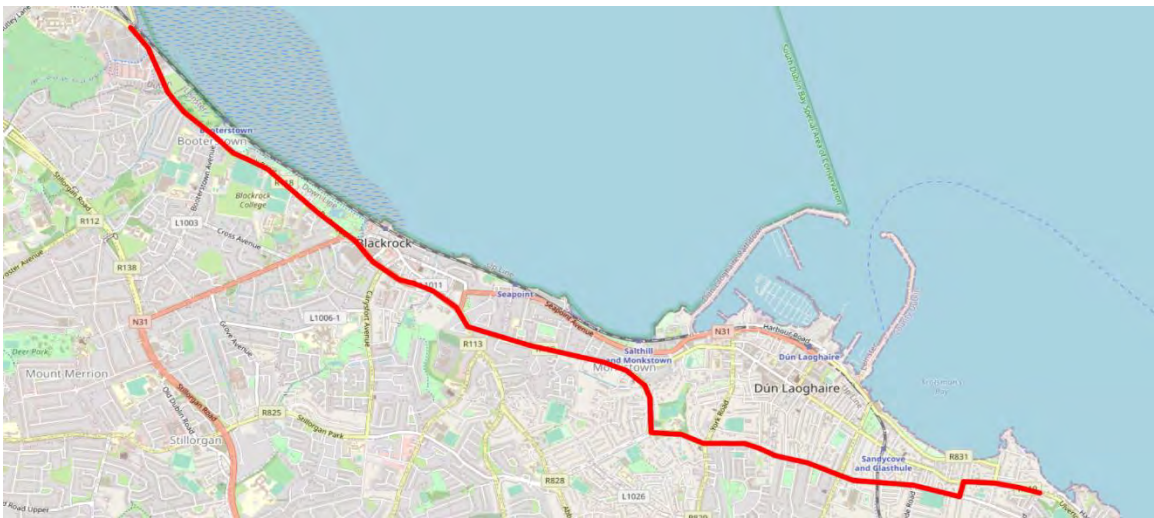


Figure 67 Glenageary Road to UCD route, via Kill Avenue and N11 (source map adapted by author from Openstreetmap.org)



The N31 and R119 routes are outlined in Figure 65 and Figure 66. Results for both routes show similar results (Table 20-Table 23) generally showing less travel time gains for motor vehicles when compared to the baseline. Morning city-bound travel times for the N31/R119 are reduced by 3% (20 seconds) and 16% (2 mins 14 seconds) in 2020 and 2021 respectively, compared to reductions of 24% (4mins 42 seconds) and 35% (2 minutes 6 seconds) on the baseline.

Evening outbound travel times increased by 3% (26 seconds) and reduced by 11% (22 seconds) in 2020 and 2021 respectively, compared to reductions of 26% (5 minutes) and 33% (1.5 minutes) on the baseline. Caution is advised when considering the percentage values as the distance travelled is not the same. Actual time saved or increased is a better measure of actual impact to the users. The differences reported in this

paragraph are the greatest seen in the examined scenarios, with the majority being less than 2 minutes. For comparison, this would be a similar delay to arriving at one additional mid-phase red traffic light along the 2-kilometre journey. The Tivoli Road route shows slightly larger travel time increases (or lower reductions in times) than the R119 route during 'off-peak' periods between 10am to 4pm, though median traffic speeds are also consistently 1 to 3 kph higher on this route.

The differences in the level of change between the baseline and the N31/R119 route indicate that N31/R119 route has gained less travel time benefit for motorists during periods of reduced traffic that the pandemic has brought. The same applies to the N31/Tivoli Road route. However, it is worth noting the differences in the usage profile that have been identified in the analysis of the Clonskeagh Road walking and cycling baseline (Section 5.3.1). Usage patterns of Clonskeagh Road suggest it is more dependent on commuter users than the Rock Road. Pre-pandemic, it saw lower numbers of pedestrians and cyclists at weekends and higher numbers on weekdays than the Rock Road, while post-pandemic it has seen consistently lower levels of pedestrian and cyclist usage across all time periods, so it is not surprising that it has a greater reduction in vehicular traffic also. It could be surmised that the streets closer to the coast provide a greater recreational function and attract a broader range of users as a result.

Table 20 Travel times and traffic speeds, September & October 2019 and 2020, February and March 2021. N31 and Tivoli Road, Castle Park to Merrion Gates

Route	Date Range	Time Set	2019		2020		2021		Time Change	
			Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	2019 to 2020	2019 to 2021
Castle Park to Merrion Gates (via Tivoli Road)	W/days	7:00-10:00	00:15:18	44.55	00:14:58	45.05	00:12:44	48.24	-00:00:20	-00:02:14
Castle Park to Merrion Gates (via Tivoli Road)	W/days	10:00-16:00	00:14:32	44.65	00:16:01	43.03	00:14:24	45.07	+00:01:29	-00:01:37
Castle Park to Merrion Gates (via Tivoli Road)	W/days	16:00-19:00	00:14:30	44.36	00:15:10	44.13	00:14:17	45.09	+00:00:40	-00:00:53
Castle Park to Merrion Gates (via Tivoli Road)	W/ends	7:00-10:00	00:11:43	52.70	00:12:01	50.99	00:11:32	51.86	+00:00:18	-00:00:29
Castle Park to Merrion Gates (via Tivoli Road)	W/ends	10:00-16:00	00:14:06	45.40	00:16:14	42.78	00:14:43	44.49	+00:02:08	+00:01:31
Castle Park to Merrion Gates (via Tivoli Road)	W/ends	16:00-19:00	00:14:07	45.20	00:15:40	43.86	00:14:05	45.58	+00:01:33	-00:01:35

Table 21 Travel times and traffic speeds, September & October 2019 and 2020, February and March 2021. N31 and Tivoli Road, Merrion Gates to Castle Park.

Route	Date Range	Time Set	2019		2020		2021		Time Change	
			Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	2019 to 2020	2019 to 2021
Merrion Gates to Castle Park (via Tivoli Rd)	W/days	7:00-10:00	00:14:22	44.97	00:14:30	44.74	00:12:47	47.85	+00:00:08	-00:01:43
Merrion Gates to Castle Park (via Tivoli Rd)	W/days	10:00-16:00	00:14:13	44.48	00:15:42	42.62	00:14:03	44.65	+00:01:29	-00:01:39
Merrion Gates to Castle Park (via Tivoli Rd)	W/days	16:00-19:00	00:15:31	42.46	00:15:57	42.66	00:13:57	44.45	+00:00:26	-00:02:00
Merrion Gates to Castle Park (via Tivoli Rd)	W/ends	7:00-10:00	00:12:02	50.77	00:12:10	49.71	00:11:48	50.76	+00:00:08	-00:00:22
Merrion Gates to Castle Park (via Tivoli Rd)	W/ends	10:00-16:00	00:13:54	45.20	00:16:04	42.17	00:14:18	44.23	+00:02:10	-00:01:46
Merrion Gates to Castle Park (via Tivoli Rd)	W/ends	16:00-19:00	00:13:42	45.47	00:14:34	44.11	00:13:44	45.57	+00:00:52	-00:00:50

Table 22 Travel times and traffic speeds, September & October 2019 and 2020, February and March 2021. R119 and N31, Castle Park to Merrion Gates, via George's Street Upper.

Route	Date Range	Time Set	2019		2020		2021		Time Change	
			Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	2019 to 2020	2019 to 2021
Castle Park to Merrion Gates (via George's St Upper)	W/days	7:00-10:00	00:15:06	42.85	00:14:40	43.65	00:12:37	46.84	-00:00:26	-00:02:03
Castle Park to Merrion Gates (via George's St Upper)	W/days	10:00-16:00	00:15:07	41.54	00:16:18	40.15	00:14:41	42.64	+00:01:11	-00:01:37
Castle Park to Merrion Gates (via George's St Upper)	W/days	16:00-19:00	00:14:31	42.64	00:14:54	42.11	00:14:12	43.40	+00:00:23	-00:00:42
Castle Park to Merrion Gates (via George's St Upper)	W/ends	7:00-10:00	00:11:23	50.98	00:11:57	49.08	00:11:32	50.29	+00:00:34	+00:00:25
Castle Park to Merrion Gates (via George's St Upper)	W/ends	10:00-16:00	00:15:00	42.17	00:16:51	39.60	00:15:03	42.10	+00:01:51	+00:01:48
Castle Park to Merrion Gates (via George's St Upper)	W/ends	16:00-19:00	00:14:42	42.01	00:16:09	40.56	00:14:25	43.03	+00:01:27	-00:01:44

Table 23 Travel times and traffic speeds, September & October 2019 and 2020, February and March 2021. R119 and N31, Merrion Gates to Castle Park, via Monkstown Road and Crofton Road.

Route	Date Range	Time Set	2019		2020		2021		Time Reduction	
			Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	2019 to 2020	2019 to 2021
Merrion Gates to Castle Park (via Crofton Rd)	W/days	7:00-10:00	00:16:17	43.80	00:16:25	42.61	00:14:36	45.43	+00:00:08	-00:01:49
Merrion Gates to Castle Park (via Crofton Rd)	W/days	10:00-16:00	00:17:27	41.33	00:18:34	39.02	00:16:44	41.43	+00:01:07	-00:01:50
Merrion Gates to Castle Park (via Crofton Rd)	W/days	16:00-19:00	00:18:23	40.12	00:18:14	39.78	00:16:21	41.77	+00:00:09	-00:01:53
Merrion Gates to Castle Park (via Crofton Rd)	W/ends	7:00-10:00	00:13:22	49.13	00:13:46	47.55	00:13:17	48.48	+00:00:24	-00:00:29
Merrion Gates to Castle Park (via Crofton Rd)	W/ends	10:00-16:00	00:17:33	41.44	00:19:36	38.03	00:17:17	40.79	+00:02:03	-00:02:19
Merrion Gates to Castle Park (via Crofton Rd)	W/ends	16:00-19:00	00:17:03	42.04	00:18:26	39.54	00:16:34	42.09	+00:01:23	-00:01:52

Glenageary Rd

Changes in travel times on this route are broadly similar to those observed on the N31/R119 and N31/Tivoli Road routes. Reductions in travel times during traditional rush-hour periods are more accentuated on this route, while travel times at weekends have changed slightly more favourably than the two N31-associated routes. There is also a small but noticeably greater improvement in travel speeds in 2021, relative to 2020, observed on the two N31-associated routes.

Table 24 Travel times and traffic speeds, September & October 2019 and 2020, February and March 2021. Glenageary Road to UCD, via Kill Lane.

Route	Date Range	Time Set	2019		2020		2021		Time Reduction	
			Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	2019 to 2020	2019 to 2021
To UCD, via Kill lane	W/days	7:00-10:00	00:15:34	50.90	00:14:08	53.12	00:11:42	57.39	-00:01:26	-00:02:26
To UCD, via Kill lane	W/days	10:00-16:00	00:13:11	53.73	00:13:40	52.79	00:12:42	55.12	+00:00:29	-00:00:58
To UCD, via Kill lane	W/days	16:00-19:00	00:13:53	52.56	00:13:53	52.66	00:13:01	54.67	-00:00:00	-00:00:52
To UCD, via Kill lane	W/ends	7:00-10:00	00:10:51	62.82	00:11:14	61.12	00:11:08	61.55	+00:00:23	-00:00:06
To UCD, via Kill lane	W/ends	10:00-16:00	00:12:30	55.38	00:13:07	53.88	00:12:44	55.60	+00:00:37	-00:00:23
To UCD, via Kill lane	W/ends	16:00-19:00	00:12:25	55.33	00:12:57	54.08	00:12:37	55.83	+00:00:32	-00:00:20

Table 25 Travel times and traffic speeds, September & October 2019 and 2020, February and March 2021. UCD to Glenageary Road, via Kill Lane.

Route	Date Range	Time Set	2019		2020		2021		Time Reduction	
			Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]	2019 to 2020	2019 to 2021
To Glenageary Road, via Kill lane	W/days	7:00-10:00	00:13:27	53.50	00:13:22	53.32	00:12:05	56.44	-00:00:05	-00:01:17
To Glenageary Road, via Kill lane	W/days	10:00-16:00	00:13:01	53.51	00:13:21	52.46	00:12:34	54.28	+00:00:20	-00:00:47
To Glenageary Road, via Kill lane	W/days	16:00-19:00	00:16:06	48.66	00:13:50	51.43	00:12:41	53.53	-00:02:16	-00:01:09
To Glenageary Road, via Kill lane	W/ends	7:00-10:00	00:10:53	61.72	00:11:06	60.45	00:10:59	61.03	+00:00:13	-00:00:07
To Glenageary Road, via Kill lane	W/ends	10:00-16:00	00:12:26	54.98	00:13:03	53.70	00:12:27	54.84	+00:00:37	-00:00:36
To Glenageary Road, via Kill lane	W/ends	16:00-19:00	00:12:19	55.19	00:12:32	54.96	00:12:15	55.87	+00:00:13	-00:00:17

Pre-Covid the travel times along the N31 and R119 route between Castle Park and Merrion Gates varied by only approximately 30 seconds in either direction in the period between July and December 2019 (Figure 68). Travel time towards the city were lower as the trip distance is 600 metres less. Travel times fall considerably after the arrival of Covid-19 in Ireland and during the first lockdown in March and April 2020 but climb in May and go above previous travel times in June (Figure 69). Similar patterns in traffic volumes during this period are generally also observable in unrelated traffic data, such as the canal cordon counts (Figure 70) published by Dublin City Council, indicating the wider traffic conditions affecting the road network.

A 30 second increase to travel times on the outbound route is observed in July while the CMR was being installed. The removal of the southbound traffic lane on Seapoint Avenue would have required changes to motorists' habits and behaviours and it would be expected for these changes to take some time to bed in. This increase disappeared the following month. There was no increase in travel times on the city-bound direction. A subsequent increase in travel times in both directions in September, which corresponds to vehicular traffic volumes returning and exceeding previous years volumes which is likely to be influenced by a combination of the start of the school term, and also favourable weather for leisure trips; increases in cycling numbers are also visible during this period on the Rock Road (see Section 5.3.1– Rock Road Usage Patterns).

Figure 68 N31 & R119 median travel times, all days, 8am to 8pm, July – December 2019.

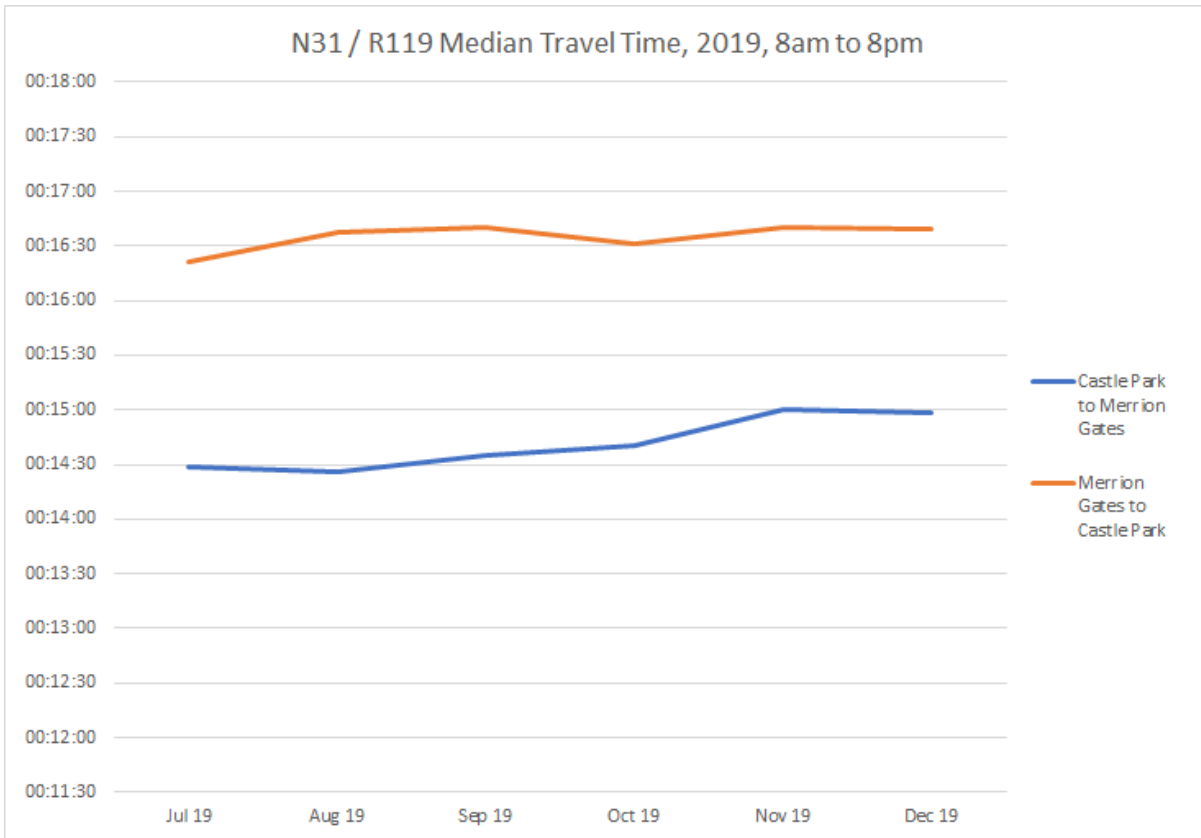


Figure 69 N31 & R119 median travel time, all days, 8am to 8pm, 2020 to March 2021.

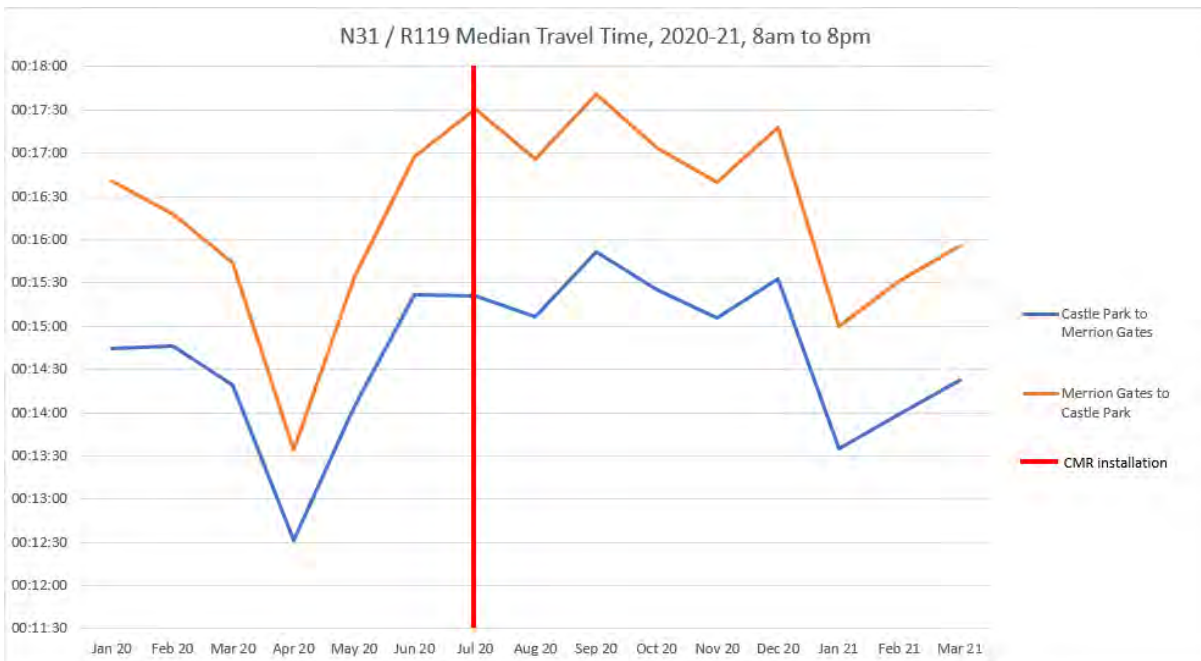


Figure 70 Canal Cordon Count: weekly total number of vehicles (green inbound, purple outbound) crossing canal boundary, 26 Jan 2020 to 21 Feb 2021. Courtesy of Dublin City Council.

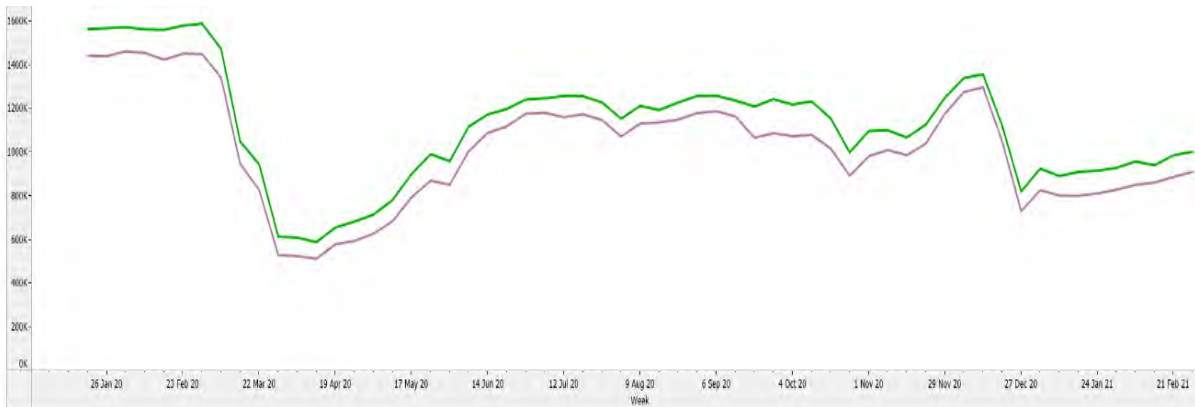


Table 26 N31 and R119 route median travel times and 85th percentile travel speeds

Date Range	Castle Park to Merrion Gates (7.6km)		Merrion Gates to Castle Park (8.2km)	
	Median Travel Time	85th perc [kph]	Median Travel Time	85th perc [kph]
Jul 19	00:14:29	42.93	00:16:41	41.67
Aug 19	00:14:26	43.02	00:16:18	42.18
Sep 19	00:14:35	42.79	00:15:44	43.22
Oct 19	00:14:41	42.51	00:13:34	47.15
Nov 19	00:15:00	42.02	00:15:35	43.28
Dec 19	00:14:59	42.20	00:16:58	41.04
Jan 20	00:14:45	42.29	00:17:31	40.38
Feb 20	00:14:46	42.39	00:16:56	40.98
Mar 20	00:14:19	43.21	00:17:41	40.18
Apr 20	00:12:32	47.27	00:17:04	40.83
May 20	00:14:05	43.98	00:16:40	41.28
Jun 20	00:15:22	41.82	00:17:18	40.76
Jul 20	00:15:21	41.95	00:15:00	43.85
Aug 20	00:15:07	42.34	00:15:31	43.10
Sep 20	00:15:52	41.30	00:15:56	42.36
Oct 20	00:15:25	41.58	00:16:21	42.53
Nov 20	00:15:06	42.08	00:16:38	42.40
Dec 20	00:15:33	41.56	00:16:40	42.39
Jan 21	00:13:35	44.69	00:16:31	42.24
Feb 21	00:13:59	44.13	00:16:40	41.82
Mar 21	00:14:23	43.25	00:16:39	41.94

Localised Vehicular Speeds: Coastal Mobility Route

Separately, on a more localised level, speed radar data was also observed and compared with previous count data (radar data was from 12 Oct-18th Oct 2020, and snapshot count data was from 8th-12th December 2016). The radar was located to the south of Belgrave Road along Seapoint Avenue (since relocated), with the count data taken from the same location). The speed limit on Seapoint Avenue is 50km/hr. A reduction in average speed in a westward direction in December 2016 was recorded from an average speed of 45km/hr and a 85th percentile ranging from 49-61km/hr depending on the vehicle type and time of the day, to an average speed of 43km/hr and a 85th percentile speed of 53km/hr. While a speed reduction is noted and welcome in the one lane of traffic now operating at Seapoint Avenue, average percentile speeds are still over the speed limit and are not recommended for this urban context with high levels of walkers and cyclists. It is recommended additional traffic calming measures are introduced at strategic points and junctions that also facilitate safer pedestrian and cyclist crossing movements.

5.4 Conclusions

While still under Public Health restrictions at the time of writing of this report it is difficult to predict the role of the infrastructure on the longer-term mobility patterns in the area. The significant reduction in public transport capacity during the pandemic is likely to have resulted in some modal shift to the private car for essential trips that may have been previously taken on public transport. There is also a possibility that the works in Blackrock and the CMR are trip generators to the area for recreational purposes given the limitations on wider travel due to Covid-19. While challenging to predict the long term implications of modal shift on vehicular traffic patterns in the area, the evidence of increased cycling trips in the area is a very positive indication that modal shift has also occurred to active travel modes following the installation of the CMR route and the Blackrock Main Street works.

There is evidence of a cycling network effect – where the addition of new infrastructure adds to the usage of existing facilities – extending to the Rock Road showing that the route is not just a recreational destination in itself. The prolonged duration of the pandemic and mobility restrictions have given individuals that have taken up cycling the opportunity to gain in confidence locally and to create sustainable habits. With the retention of the CMR protected route and a greater network of routes in the area, this could be maintained unless a negative influence (such as increased vulnerability due to traffic speeds) impacts on individual decisions.

There is also evidence of a diverse range of users on the Coastal Mobility Route and Blackrock Main Street . A more positive gender ratio was found compared with previous data, however specific action may be needed to further improve these and other vulnerable user ratios to better represent population demographics.

The role of school traffic cannot be explicitly stated, however, there was an observed increase in traffic in September 2020, and decrease in February 2021 when schools were closed due to level 5 Covid-19 restrictions. Observations of families using the route, and older children travelling independently on the CMR, demonstrate the approval of parents and guardians for children to travel safely on the route. There is

a lot of potential to counteract the school-related increase in vehicular traffic with more similar active travel routes.

Given the major impact that Covid-19 is having on mobility patterns in Dublin (as well as internationally), comparison of vehicular traffic levels in Blackrock and the CMR region were undertaken with Stillorgan and Clonskeagh. No major differences between the areas were found in terms of overall traffic volumes. One of the most significant patterns emerging for all areas (including the comparison areas of Stillorgan and Clonskeagh) is the general increase in day-time traffic as many drivers have changed their car usage away from commuting to work and towards day-time local trip making. This has been an internationally observed trend during the Covid-19 pandemic. However, the high and growing numbers of cyclists in the area also means that the bicycle is an increasingly important local trip making transport mode.

One of the main change with regards to vehicular travel patterns in the local area relates to the distribution of traffic. In general, less people are driving on more traditional commuter roads such as the Rock Road, Seapoint Avenue and the Stillorgan Dual-Carriageway (N11), and more on local and regional roads such as Monkstown Road and Tivoli Road. However, other local routes have also seen no additional vehicular traffic. Overall, background traffic levels – notwithstanding fluctuations in response to changing restriction levels – have remained relatively constant.

Traffic reduction has been observed within Blackrock village (-40%) and along the CMR. Observed increases in cycling levels suggest at least some mode transfer has taken place. Inferences into walking levels cannot be made due to the lack of pre-Covid data, but healthy walking levels were recorded in both areas during surveys. Traffic and transport patterns are likely to change again once public transport capacity returns to normal levels and work-from-home achieves a greater sense of equilibrium. In this regards, it is recommended that further mobility analysis (including cycling, vehicular traffic and public transport usage) is undertaken, particularly along the CMR region, during additional time periods in 2021 and 2022 to monitor evolving transport patterns.

Overall, while in some cases evidence is limited and qualified by the impacts of Covid-19, there appears to be positive evidence of “traffic evaporation”, particularly with the Blackrock Village measures. This effect is used to describe where traffic demand management measures reduce traffic on targeted routes, without increasing traffic on adjacent routes. This counter-intuitive process happens as a result of a redistribution of trips onto other modes, at different times of the day and sometimes on to other links where capacity may be available. The net result is an increase in overall mobility, as well as business, health and environmental quality improvements. In this context the measures can be seen as a set of positive steps in the right direction. Consideration should be given to following these up with additional measures on surrounding streets in order to further reduce traffic levels, improve conditions for alternative modes, including walking, cycling and public transport, as well as improving overall health through improved air-quality, etc.

Protection of public transport priority will be very important as restriction levels are lifted and potential new traffic patterns emerge. This will also be critical, as well as the continual improvement of the pedestrian and cycle network, to ensure a continual modal shift from cars towards sustainable transport and associated traffic evaporation.



6. IMPLEMENTATION & ENGAGEMENT

6.1 Introduction

This chapter outlines Council’s approach to communicating and engaging with the public throughout the implementation of the Covid Mobility works in Blackrock Main Street and along the Coastal Mobility Route. Section 6.2 presents findings from a series of interviews with a sample of key stakeholders and Section 6.3 focuses on a review of publicly accessible information, primarily via DLR’s website.

6.2 Stakeholders Interviews

As part of the evaluation study, TU Dublin interviewed a sample of strategic stakeholders to explore the engagement approach/process for delivery of works by DLR. This is considered a particularly important aspect of the study as the *Covid Mobility* works were implemented in a rapid build format to respond to the pandemic emergency and the Council did not utilise formal public engagement processes that would typically follow in similar mobility and public realm projects in Ireland. However, it should be noted that the Council was not under any legislative duty to undertake formal consultation and the *Covid Mobility* works and associated fast-track implementation processes were encouraged by the Department of Transport and the National Transport Authority (see Chapter 1 for further details).

A sample of seven interviewees were chosen from a range of key stakeholders, as listed in Table 27. All interviews were semi-structured in nature and were undertaken online due to the Level 5 Covid-19 restrictions in place at the time of interview (February and March 2021). Although resource intensive, interviews can glean rich insights, thus additional interviews may be beneficial in Phase 2 of the study. In one case, the Public Participation Network (PPN) met collectively and produced a report based on questions asked and this was followed up with an interview with the PPN Network Manager. The inclusion of the PPN helped to widen this stakeholder engagement beyond individuals and facilitates a degree of community engagement in the process.

In addition to exploring the engagement approach, the interviews also shed important light as to the views of the interviewees on whether the *Covid Mobility* works have been successful or not, or elements thereof, and on the key challenges and lessons associated with the works. The interviews also helped inform recommendations for the longer-term future of the subject projects, and possible future similar projects. This is outlined further in Chapter 7.

Table 27 List of Phase 1 Interviewees and key reasons for inclusion in study

	Interviewee	Key Reason(s) for Inclusion in Phase 1 of Study
1.	DLR Executive Representative: Bob Hannan, Senior Architect, DLR	Bob Hannan had an active role from within the Council in the redesign of Blackrock Main Street, and the Coastal Mobility Route (along with several colleagues from DLR), as well as having contributed to the Blackrock Local Area Plan and Draft Dún Laoghaire Local Area Plan whereby a vision for the future of both areas was previously developed.
2.	Business Representative Group: Tom Feeney, Chair of the Blackrock Business Network (BBN)	The BBN were very active in seeking a redesign and reallocation of road space in Blackrock Main Street to cater for the safer reopening of business after the first

		Covid-19 Lockdown (May 2020). They maintain an active ongoing interest in the Covid Mobility works and regularly seek the views of both the Blackrock business and the local community. The interview focused on the works to Blackrock Main Street (not the Coastal Mobility Route).
3.	<p>Community Representative for Blackrock Ward:⁴³ Elected Member – Cllr. Marie Baker, Fine Gael</p>	Councillor Baker has been an elected representative for the Blackrock Ward since 2004 and is a member of the Transportation and Marine Strategic Policy Committee. She is also Chair of the Community, Culture & Wellbeing Strategic Policy Committee. Blackrock Village and its environment have been a key issue for the Councillor and many of her constituents over this time.
4.	<p>Community Representative for Dún Laoghaire Ward: Elected Member – Cllr. Tom Kivlehan, Green Party</p>	Councillor Kivlehan has been elected to the Council, representing the Dún Laoghaire Ward, on two occasions. Most recently he was appointed, to replace Ossian Smith TD, in February 2020 and his council tenure coincides therefore with the Covid-19 pandemic. Councillor Kivlehan is a member of the Housing Strategic Policy Committee and the Planning and Citizen Engagement Strategic Policy Committee.
5.	<p>Community Representative: The Public Participation Network (PPN); Dr. Simone Sav, Public Participation Network Manager</p>	<p>Dr. Sav has worked for the PPN since May 2019 and became the PPN Network Manager in January 2020. The PPN has been established by government as a network that allows local authorities and community organisations connect with each other. The PPN assist local citizens through the local groups to have a greater say in local government and they have statutory rights to elect representatives on to decision making bodies in the local authority such as Strategic Policy Committees and Policing Committees.</p> <p>Dr. Sav engaged with PPN members from across the county (but particularly those from the affected areas) seeking feedback on the Covid Mobility projects following a request from TU Dublin (which was consolidated into a report and fed into the interview with Dr. Sav). Dr Sav is also a member of one of the organisations that is a member of the PPN, St. Michaels Rowing Club.</p>
6.	<p>Disability Representative: John Nolan, Chair of the Dún Laoghaire Rathdown Disability Consultation Group (DCG)</p>	The DLR DCG are a consultative forum involving both persons with a disability and organisations that work with and support them. The DCG advises Dún Laoghaire-Rathdown County Council on the

⁴³ The scope of Phase 1 of the study allowed for interview with one Elected Member from the Blackrock ward and one from the Dún Laoghaire ward. The interviewees were chosen from both the Transportation and Marine Strategic Policy Committee and the Planning and Citizen Engagement Strategic Policy Committee within DLR. Interviewees were also chosen so that they were not from the same political party.

enhancement of the delivery of its services with particular regard to accessibility issues, enhancement in the access, circulation, and egress of the built environment and the enhancement of access to information and communication technology.

<p>7. National Government Representative: Finola O’Driscoll, National Transport Authority (NTA)</p>	<p>Finola O’Driscoll is a Senior Programme Manager in the NTA, the national funding agency responsible for administrating the grant for the works. She oversees a programme of projects among several local authorities including Dún Laoghaire Rathdown, Fingal, South Dublin, Cork City Council and Cork County Council.</p>
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6.3.1 Interview Findings

The key interview findings are discussed below under the following headings:

- a) Role in Covid Mobility
- b) Views on Level and Nature of Engagement
- c) Views on Success, or otherwise, of Covid Mobility – Blackrock Main Street
- d) Views on Success, or otherwise, of Covid Mobility – Coastal Mobility Route
- e) Challenges with the Covid Mobility Works – Blackrock Main Street
- f) Challenges with the Covid Mobility Works – Coastal Mobility Route
- g) Lessons for the Future – Engagement
- h) Lessons for the Future – Policy and Implementation
- i) Lessons for the Future – Design Elements
- j) Other Findings of Note

a). Role in Covid Mobility

Interviewee	Role in Covid Mobility
<p>Blackrock Business Network Representative – Tom Feeney</p>	<ul style="list-style-type: none"> • Active in seeking a reallocation of road space including a one-way road system, expanded footpath space and a contra-flow bicycle lane along Blackrock Main Street from Council (along with BVRAG⁴⁴ and others) to support businesses reopening after the first Covid-19 lockdown, including increased space for social distancing and queuing. • Took a centralised role as a key contact point for the Covid Mobility project for local businesses on their mailing list. • On-going active interest in the future of Blackrock Main Street and Blackrock Village.

⁴⁴ Blackrock Village Regeneration Action Group

DLR Executive Representative – Bob Hannan	<ul style="list-style-type: none"> Active design and stakeholder engagement role in the Covid Mobility & Public Realm Works in Blackrock, Glashule, Dundrum, Dalkey and the CMR.
Elected Member – Cllr. Marie Baker, Fine Gael	<ul style="list-style-type: none"> Active representative and stakeholder engagement role in the Covid Mobility & Public Realm Works in Blackrock Main Street.
Elected Member – Cllr. Tom Kivlehan, Green Party	<ul style="list-style-type: none"> Active representative and stakeholder engagement role in the Covid Mobility & Public Realm Works on the CMR.
Disability Representative - John Nolan, Chair of the DLR DCG	<ul style="list-style-type: none"> Active representative and stakeholder engagement role in the Covid Mobility & Public Realm Works in Blackrock Main Street.
National Government Representative: Finola O’Driscoll, NTA	<ul style="list-style-type: none"> Key contact point within the national agency funding the works.
Community Representative: Dr. Simone Sav, Public Participation Network (PPN) Manager	<ul style="list-style-type: none"> The PPN did not have a role in the Covid Mobility & Public Realm Works in Blackrock village or the CMR. The works were already under-way before the Network had the opportunity to discuss it as a group.

b). Views on Level and Nature of Engagement

From the Local Authority perspective, the Senior Architect noted that the nature of stakeholder engagement on the Covid Mobility works was *‘radically different’* to what was typical in Ireland previously as it was very much about **meeting stakeholders regularly on the ground and addressing issues and concerns in a live and dynamic way as a response to the rapid nature of the works.**

The **unique opportunity for change** which Covid-19 presented was noted by Councillor Baker. She commented that while Blackrock has no real public space or functioning town square, the idea of change had been *“batted back and forth for all the years I’ve been a councillor to be perfectly honest”*. With covid-19, the council made the decision that they have the power to initiate change, whether for health or other reasons. Now that change has been presented, *“people are seeing the street in a particular way, and maybe making a leap from what’s currently being out there would maybe be more possible now than it’s ever been in the past.”*

The Senior Architect described the engagement style as being *‘formal-informal’*, particularly by the time the Dalkey Village works were underway (which happened after Blackrock Main Street). By that point, the engagement had evolved into an **‘open circle’** style meeting in the local church car-park in Dalkey where anyone could come along, and was chaired or guided by Dalkey Tidy Towns or Dalkey Community Council. Although less formal or structured in nature for Blackrock and the CMR (which were the first to get off the ground), most engagement was undertaken directly on the ground, **including making live adjustments to the works as needed to cater for the needs of the stakeholder.** Examples of this included the adjustment of the CMR wooden road segregators so that residents could access their properties sufficiently by car, and an adjustment to the space required for the bus turning circle at the junction of Bath Avenue / Blackrock Main Street following feedback from Go Ahead (the bus operator for bus route no. 114 and no.17).

The Senior Architect noted that he feels that the level of stakeholder engagement was *'appropriate for the circumstances we found ourselves in'*. A momentum established and a lot of activity happened in a short period of time, particularly during Summer and Autumn 2020 and he argued that the Councillors were generally *'very supportive'* of the works. As time has gone on, the pace of the works has slowed and the level of engagement, particularly with the Councillors is *'navigating those lines between formal processes and informal processes'*.

The Blackrock Business Network (BBN) expressed satisfaction with the level and nature of the engagement by the Council during the Covid Mobility works noting that they think that it is *'appropriate'* and that they felt that they *'couldn't ask for anymore'*. The BBN feel a degree of ownership over the scheme which appears to contribute to their sense of agency in it. Engagement consisted of meetings on-site as well as online meetings with Council, with opportunities to *'tweak'* and *'change'* aspects of the plan, as was needed.

This was a sentiment that was also expressed by the Disability Representative Group. It was appreciated that every time something new was done, *'we always took a walkabout to look and see'*. They appreciated that their views were taken into account. One outstanding concern was mentioned (see further below) but the overall satisfaction with engagement was high.

The Chair of the BBN also noted that some traders are going to *'complain'* and *'if you listen to everything and you act on everything, you'll never get anything done'*. This was a particularly important balancing act for the Council in their attempt to provide a rapid response to a difficult wider context associated with the pandemic.

In terms of on-going engagement, the BBN noted that there has been *'a little, from time to time'* with little real need expressed for continued high level of engagement needed, and that Council have been in touch recently regarding the future of the works, as well as the future of George's Avenue (and plans to introduce a new cycle lane and some public realm works there).

In terms of public engagement, Cllr Kivlehan noted that the Council *'had to act quickly'* as there was an urgent requirement to provide safe and equitable alternatives to public transport. In his view: *"they have performed quite well. In fact, I think they have performed very well considering the pressures that they're under and considering the times that we're in. They have done an amazing job at getting things done."* In addition to this, Cllr Baker reminds the interviewer early on in the pandemic when the decisions on Blackrock and the CMR were being made that people *'were scared to death'* of Covid-19, and this would inevitably impact on the wider engagement process. Cllr Kivlehan felt that Council were doing their best within the situation. He views the CMR as an *'essential'* service. Cllr Kivlehan discussed the flexible nature of the Council with regards to making changes, as required, to the Covid Mobility routes following engagement with various stakeholders, particularly noting the positive role of the Director of Services for Infrastructure and Climate Change and this department. He noted that there was a feeling that the *'Council wanted to get it right'* and that the Director was *'prepared to listen'*.

The NTA Representative gave recognition to the innovative approach taken by DLR using their Adaptive Build Model (see Figure 71) where there were on-site changes from engagement on the ground. This model evolved from the Covid Mobility works and formed part of Council's separate 'Active Schools Travel

Initiative⁴⁵. The value in the approach is that when you *'build it first and let the people experience it, that's a much more genuine decision-making process, you have experiential judgment of both sides of what was there before and what is there now'*. And this approach is very different because *'no matter how good the photomontage is on the fly though its completely different. You could never tell how people [in the locality] might feel after such an intervention'*. By **letting the trial be the consultation** and listening on the ground it allows you to be adaptable but also you are still doing the scheme that you planned to do. Ms O'Driscoll said that she thinks that *'Dún Laoghaire have been doing all the right things during this engagement'* and also commended their commissioning of this detailed assessment.

All of these actions mean that when there is a further process to make things more permanent *'it really is a more genuine decision, genuine input from people because they are just more aware of what they are being asked to comment on. So, I'm delighted that Dún Laoghaire took the brave steps that they did...'* Reference was made to schemes in other jurisdictions that started their COVID Mobility interventions a little later or engaged in more pre-construction consultation. A number of these schemes got further delayed because of legal action or opposition groups that mobilised during the consultation phase. Some others successfully carried out trials like the DLR schemes. There were varied experiences, however it was noted that *'combining trials with further [consultation] processes seems to be a good way forward. That is what they do in the UK with experimental traffic orders'*.

The NTA representative complemented the design team's public profiles for the project. *'That was brilliant because it wasn't a faceless council doing this. Sure, it was Robert, Conor and Bob explaining in real and genuine terms in videos what the point of it was.'* This engagement where *'they were open to saying what they were doing and who was doing it and putting a name and face behind it... was a really interesting element to it, and ... probably really helped'*. The combination of on the ground engagement, media appearances, social media posts etc has led to *'a much more democratic engagement'* for example with *'parents of young kids, ... [who] can't be get out for half seven or half nine so if [the information] its accessible any day then its accessible to pretty much anyone'*. It was recognised that they most likely *'didn't just get thank you letters'* but when the director and their team are out there, they *'are in the position to control a lot of fire but people knew, and the councillors knew, they had someone who could take this and was strong enough to bring it through themselves, so it didn't all fall to the councillors to defend'*. The latter observation that the public engagement of the design team took pressure off the councillors to defend the project is an interesting one that warrants further exploration with public representatives going forward.

The PPN members had differing opinions on the level of engagement. All were, however, in agreement that they were not consulted prior to the commencement of the works, *"We didn't even know that they were happening"*. It was noted that there was *"no engagement at the planning stage, but once the project commenced, they did feel that they were listened to"*. In later initiatives such as the Active School's Travel, some groups reported that experienced a higher level of engagement with Council engineers and *'feel that the engineers do try to take on board and have integrated their suggestions in the plans when possible.'* The *'weekly meetings with the design team for Dalkey'* were also noted.

⁴⁵ For more information, see <https://www.dlrco.ie/en/environment/active-school-travel>

A review of the engagement with businesses along the Coastal Mobility Route does not form part of Phase 1 of this study, and is recommended as part of future phases of the study.

Figure 71 DLR Adaptive Build Model that formed part of the ‘Active Schools Travel’ Initiative



c). Views on success, or otherwise, of Covid Mobility – Blackrock Main Street

Interviewee	Views on Success	Reasoning and relevant quotes
Blackrock Business Network Representative – Tom Feeney	Yes ‘very much so’ (quote)	<p>‘.....the activity and the vibrancy’ in the village. ‘I think what the businesses like is the vibrancy’.</p> <p>‘And people I speak to, particularly the community.... They all love it. I think the community has really fallen in love with it’.</p> <p>It is recognised that the feelings of success are not universal among the business owners, but rather that the majority are happy with the Main Street redesign overall.</p>
Community Representative for Blackrock Ward – Cllr Marie Baker	Yes	<p>“Yes they have [been a success] because paths are wider, there are places for people to congregate outdoors, businesses – in terms of the ones who can open – are doing well, we’ve actually had several new coffee shops open in Blackrock during the pandemic, which must be saying something!”</p>

DLR Executive Representative - Bob Hannan	Yes	<i>“One of the pillars was supporting and underpinning business. I don’t have any data on anything beyond footfall, and obviously food and coffee has done very well...’ . ‘...They have become centres for people to hang out and socialise, that’s for sure. And if that was the aim, then it’s a success’.</i>
Community Representative for Dún Laoghaire Ward – Cllr Tom Kivlehan	Yes	<i>“...when you look at Blackrock it’s a different village now. People come in, meet friends, it has a nicer atmosphere, it isn’t dominated by traffic.”</i>
Disability Representative - John Nolan, Chair of the DLR Disability Consultation Group	Yes	<i>“It works best because there are no obstacles in the way. Blackrock, it’s a wide footpath and there is plenty of room for tables and chairs, either near to the shops or on the edge of the footpath, and you have a good three or four meters of a footpath to negotiate. So, there are no obstacles really”... “It was messy” [before the works]. “Things could be left here, there and everywhere outside premises. It wasn’t as tidy as it is now.” “they’ve done it the most successful way they could.”</i>
National Government Representative: Finola O’Driscoll, NTA	Yes	<i>“It looks good to me when you see the people are around using the benches all the time even in cold February days ... It seems to be a rare gem of a scheme where everybody seems to be happy. I’m sure there is some dissent but not a lot. And given everything I know about schemes and how hard they are to get in its incredible ... there’s increased vitality there and increased spend, that’s great.’ ‘It’s very much achieved the original objectives but it’s achieved a lot more in terms of really showcasing what improved public realm can do for active travel projects when they are merged together and how the whole feel of a place can change to be more people orientated and you still have that movement function but these two projects are definitely very high on place function. That’s where they capture the public imagination.” “And it’s not just because of Covid. I think people are sitting outside in Blackrock because people have always wanted to sit somewhere and be where other people are. That’s been a big lesson.”</i>
Public Participation Network Report and their view explained by Dr. Simone Sav, Public Participation Network Manager	Mixed views, but generally very positive	<i>“Response from residents has been overwhelmingly positive.” “Residents initially against the project have voiced a change of position after seeing the project work in real life.” “members are overwhelming supportive of the changes made to the Main Street in Blackrock” “There are a couple of conflict points around Blackrock, a road audit could fix this.”</i>

d). Views on success, or otherwise, of Covid Mobility – Coastal Mobility Route

Interviewee	Views on Success	Reasoning and relevant quotes
Community Representative for Dún Laoghaire Ward – Cllr Tom Kivlehan	Yes, 'tremendously successful' (quote)	<p>"I think it is genuinely popular. I think people now see the advantage of that there. If you went to take that away now, I think so many people would be up in arms about it."</p> <p>"When you see the volume of children and grandparents, older people, who are back on their bicycle where many of them haven't cycled for a number of years because some of them felt 'well, I'm getting a bit older the road is a little more dangerous', but given the chance to get in a safe environment there. I've seen 70 and 80 years olds getting out cycling again. And they love it, it gives them a sense of freedom. So I think it has been tremendously successful. I think that people think it is temporary now, I think if you went to take it away, there would be a riot within south Dublin."</p>
Public Participation Network Report and their view explained by Dr. Simone Sav, Public Participation Network Manager	Mixed views, but generally positive	<p>"very positive and has encouraged a greater degree of cycling exercise"</p> <p>"more people using the outdoors for recreation"</p> <p>"negative in the inconvenience to car users"</p> <p>"general consensus is that too much consideration has been given to cyclists and not enough to pedestrians"</p> <p>"The cycle track is widely enjoyed by the public, it is nice to see families with young children using it".</p> <p>"The Lycra clad cyclists often frighten young children with their speed."</p> <p>"Clear signage needed."</p> <p>"Coastal Cycle track blocks access and Monkstown Life Saving Club have had to move their activities to Killiney Beach."</p>
DLR Executive Representative - Bob Hannan	Yes	<p>'..You can see that numbers along the Coastal Mobility Route are good and are generally stable over time and you can see them returning and they do provide a mobility function'.</p>
Community Representative for Blackrock Ward – Cllr Marie Baker	"It's hard to know" (quote)	<p>"I like the notion of it. It does something to give people a release from being able to cycle without – and really I'm talking about cyclists here because nothing has changed for walkers along the Coastal Mobility Route – it really is only cycling who have benefitted here. ... I would have been a walker on that route before...and nothing has really changed, the paths are the same. They talked about putting the odd pedestrian crossing – and it hasn't quite materialised. ... I suppose one of the benefits maybe is that there is less car noise, which is a plus."</p>
National Government Representative: Finola O'Driscoll, NTA	Yes	<p>"It is bringing a lot of people ... it's really caught the imagination of active travel interventions in Ireland. It has just shown it is possible to go big and do something on a temporary basis that is quite dramatic ... [It has] galvanised a lot of other councils and given a bit of impetus to ... go for things so it definitely has had a ripple effect."</p>

“Once people see a community, they feel it, it just changes the atmosphere. A cycle route – as much as I love them – they are not the place to go – and if you can make a place along the way that has a bit of seating and planting and you’re dickying the whole place up and everyone just naturally gathers in those places and it looks good and that changes the vibe of the place. I think a lot of councils have copped onto that. It’s so cheap in the whole overall scheme of things but it really makes a big difference ... allowing people to come together ... providing spaces so it not just about the movement function, it’s about the place function.”

e). Challenges with the Covid Mobility Works - Blackrock Main Street

Deliveries: According to the BBN, the design of the delivery system for businesses is one of particular importance within the context of Blackrock Main Street. Deliveries largely happened in an ad-hoc fashion previous to the implementation of the one-way road system and contraflow bicycle lane, with delivery vans pulling up on the side of the road or along double yellow lines, in addition to the dedicated loading bays. The original two-way road allowed for this as passing vehicles were able to go around delivery vans/trucks, something that is no longer possible within the reallocated road space. The problem appears to be compounded by the lack of use of internal deliveries to businesses within Blackrock Shopping Centre. However, the redesigned Main Street did include two new/additional delivery bays at either end of the Main Street. The BBN noted on-going issues with the improper use of these bays by private cars, and a sometimes insufficient response time to address the issues with the parking wardens.

Another side effect of the delivery system is that many more deliveries are now taking place along George’s Avenue (lower) than had taken place previously. These has changed the character of this stretch of road, and some businesses located along George’s Avenue experience this as a disbenefit of the Covid Mobility works⁴⁶. The continued use of George’s Avenue for deliveries also represents a threat to Council’s planned ‘Active School Travel’⁴⁷ *Sea-to-Mountains* and *Park-to-Park* routes, with the BNN raising concern as to what may happen if this delivery ‘safety valve’ is removed.

The BBN believe that if Blackrock Shopping Centre ensured deliveries within their own property for their businesses, *‘that would solve a lot of the problems’*. In addition, the BBN have also suggested an expansion of the delivery bay along the northern end of Main Street to alleviate delivery problems by subsuming one additional car-parking space into a lengthened delivery bay.

⁴⁶ Although specific research was not undertaken into the impact of deliveries on the residents of Blackrock Village, additional consideration of potential impact may also be warranted.

⁴⁷ https://www.dlrcoco.ie/sites/default/files/atoms/files/07.09.2020_activeschooltravel_info_pamphlet.pdf
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Street Furniture & Maintenance: A reservation was raised, not just about the quality of planting and street furniture in Blackrock village, but also the organisational approach to how this was done. In Councillor Baker's view *"they missed a trick there particularly when there seemed to be money to be spent ...at the time. I think they did a poor job on that element of the planting"*. Similarly, the street furniture was described as *"a bit of a hotchpotch of different things"*. In the councillor's view, this was a result of the Architects Department within Council taking control of what she sees as the Parks Department's domain, stating: *"we have a fully-fledge parks department who actually know about trees and planters and all this stuff. Why weren't they involved?"*

The PPN indicated that the changes in Blackrock main street posed no issues for their member groups, but the comments they have relate to individuals. There is a belief that the street feels safer with cars flowing in one direction but that *"there was a lack of top-class secure bicycle parking which would be easy to use and does not impact upon pedestrians."* With increased usage of Blackrock Main Street, there was a comment that there was *"poor street cleaning"* but that the changes had ensured that there was *'an improvement for the people who live, work and socialise in that area.'* Comment was also made on the type of street furniture used in the village, which some felt was a *"cheap and cheerless version"* pointing out that other areas developed later received better quality street furniture. Comment was also made on the planting in the village and it was suggested that *'trees that were not twigs'* might be better.

Cycle-lane Separators & Safety: The disability group mentioned an outstanding concern. They recommended that any divisions between the cycling lanes and the road at controlled crossings should be painted illuminous yellow (for increased visibility), which hasn't happened to-date.

f). Challenges with the Covid Mobility Works – Coastal Mobility Route

Traffic Displacement: According to Councillor Kivlehan, the problem of deflected traffic on Monkstown Road is *"still there"*, with some residents feeling that *"they have been dumped on with more traffic"*. In his view the council is prepared to look at ways of slowing down and reducing traffic levels, in addition to improving conditions for pedestrians, etc. But overall, he indicated that the need for experimentation is both important and beneficial. And ultimately to be able to communicate that there are consequences of change and that these need to be balanced across the community.

Non-Segregated Section of CMR: It is noted that there is a particularly difficult section of the CMR between York Road and Coal Quay Bridge. A member of the Public Participation Network noted that *'The junction of Harbour Road and Crofton Road, travelling from Dún Laoghaire going North, is problematic for cyclists. Most cyclists now simply alight, walk onto the seaside footpath, and back onto the Crofton Road cycleway.'*

Other: Some in the PPN commented on *'the Lycra clad cyclists'* or *'Tour de France trainees'* being a problem and dangerous to other cyclists who are returning to cycling and to pedestrians who may be crossing the road. Comment was also made that at times too little focus was given to pedestrians. Attention was brought to the *"dangerous cycle lane black rubber dividers"* which some felt were dangerous. There was a feeling that the changes in traffic flows had diverted traffic onto other roads such as Tivoli Road. The PPN also argued that access to slipways for sailing has been restricted and people from the sailing club have had

to move to Killiney beach instead. Confusion as to access routes for cars and bikes was reported and there is a belief that better signage and alterations to Google maps were required.

g). Lessons for the Future – Engagement

A common theme within the interviews related to the **‘openness’ of the DLR Executive**. This openness along with a positive attitude towards communications, was endorsed by Councillor Kivlehan. In his view, the DLR Director of Infrastructure and Climate Change *“has performed really well in the media in getting that message out there. Now, he has his detractors from people within the community. But I think he is selling a message and he is selling it well. And he is prepared to listen”*.

The public **‘open circle’** style of stakeholder engagement that was evident in Dalkey, in particular, is an innovative method of engagement that provides a forum for the public to engage in a live way with the key decisions makers in a proposal. Hannon feels that the method can yield a *‘real goldmine of ideas’*. It also allowed for the public to become *‘more connected’* with the proposals, and to *‘build greater trust’* between the Council and stakeholders. Hannon felt this method worked very well and the numbers turning up tended to be manageable in that a *‘core’* group of individuals were involved on a regular basis but then *“as issues come around people turn up, and as they have their say, they drop off again”*. However, as Hannon described, care needs to be undertaken to ensure that the *‘quieter’* voices and those who take extra time to consider and reflect on the proposals are given their fair opportunity to voice their views, and to ensure that the louder or sectoral voices do not dominate.

This direct engagement with stakeholders including community members was seen by Councillor Kivlehan as something that worked and played a positive role: *“Myself, himself and ... the five of us would be socially distant and we would give them an hour to talk the problems out and we say ‘there are things where we agree with you, there are things where we disagree with you, we go away, have a look and get back to you’”*.

Hannon recommended that **‘processes’ should be created so that those quieter voices can be heard**. A useful way to achieve this is through skilled facilitation, which could become an active part of dynamic or *‘town-hall’* style of engagement in the future. In this style of engagement, the Executive are very much putting themselves out there in the public and are not necessarily trained to be in such a public facing role. Facilitation would also help ensure that ground rules around respect and dignity for all are integral to the process.

The rapid and dynamic nature of the design, engagement and implementation processes can bring many benefits in that it is outcome driven and overcomes the challenge of inertia in the system. But this rapid nature can also bring certain risks. For example, those who were either not aware of the proposal at the relevant time or not quick enough to react may feel that they did not have an opportunity to express their views, which can lead to feelings of resentment, as expressed by some members of the PPN. As the Covid Mobility works were largely a reaction to an unprecedented situation with Covid-19, and encouraged and funded as such by the Department of Transport and the National Transport Authority, the public may gain more comfort in the future with greater awareness of how the *‘adaptive build and design’* model works,

the policy goals that any works are aiming to address, and how the public can meaningfully engage with model.

The disability group expressed that they would have liked to have been consulted earlier in the process. It was recognised that this project was implemented quickly, but they expressed a wish to be consulted before implementation for future projects. However overall, they were satisfied with the engagement with the group.

The PPN are generally critical of the fact that they were not consulted with from the outset and wish to be consulted with in the future. However, they believe that the outcome of the works are positive, but had they not been and no consultation had taken place, there would be a different feeling. They recognised that this happened quickly and that it was completed under emergency conditions. They indicated that engagement while the works were under way did happen and that efforts were made to take points of view on board. There is a view that they do not believe that the works were temporary and that this was done under the cover of an emergency to get the changes in without consultation.

The NTA had a different viewpoint on the engagement around the project. While other interviewees were giving feedback from a local perspective, the NTA were looking at the engagement process with interest as active travel infrastructure schemes in Ireland, and worldwide, have been difficult to implement because of high levels of objection at local level. Praise was given to the team on their engagement and in particular the leadership shown by the DLR Director of Infrastructure and Climate Change, Robert Burns. *“I remember seeing the first video that Robert did from a desk and it was the first time I’d seen a Director of Service talking about a scheme in a video. And now I have seen about six of them do it. It is so simple and great and it takes nothing to turn around and tell people ... it has been revolutionary in terms of how to pitch projects.”* The on the ground engagement and media being produced about the project helped to communicate the reasons why the project mattered and *“it wasn’t a faceless council doing it.”*

A learning going forward may be that communication and engagement is amplified for all potential projects. Not just describing what the scheme will be but *‘the reason why it really matters, and what space does for people ... from the personal stories and videos of the street’*. Regarding a sense of space, perhaps more effort needs to be made *“to draw out those elements so that people are more aware of them ... [and] they start to question why it is they like a space so that they can do a quick analysis of what is right and what’s wrong with it”*. A potential parallel was drawn with public health. It was noted that we *“are good at cause and effect. We’ve got that smoking harms us and we should try to exercise ...but this is a little bit more of an amalgamation of factors, so I don’t know if there is a good correlation of something else, where it has sunk into the public consciousness, this quite complex idea. But I don’t know as a profession if we even try to explain it. It’s all project-based, it’s all street based.”* The media engagement and social media posts by the team raised many of the reasons behind the decisions that were made, perhaps the success and acceptance of the scheme is in part a consequence of these communications.

h). Lessons for the Future – Policy & Implementation

The Covid Mobility works represent a significant set of changes to the built environment to support pedestrians and cyclists, as well as village centres, in Blackrock and along the coast from Seapoint to Sandycove. **Change can be difficult and as Cllr Kivlehan argued “Change is something that we have to do”, particularly to address Climate Change.** In describing the approach to Blackrock Main Street in particular, the Senior Architect noted that *“we’ve kind of sketched out the changes”*, referring to the temporary and trialing nature of the works and that *“some of these dynamic ways of doing things, at least in terms of creating the sketches is a good idea”*. He also noted the importance of *“being open to change”* and *“getting community feedback”* but also *“being strong enough to guide”*.

The benefit of trials is that it allows people to experience what a redesign of the public realm will mean for them. Elements of the design can be adapted on-site as needed, and it was clear there were several on-site adaptations on the Covid Mobility works to address a range of stakeholder concerns which arose during the implementation process.

This was articulated by Councillor Kivlehan who stated that: *“I think [the Coastal Mobility Route] was an essential thing to do. I would have been behind trialing it even if Covid hadn’t been there ... because we are facing a crisis of climate change, but we are also facing a crisis within healthcare quality and how the city works”*. The counterpoint of this is the problems of working within the normal processes. For example, in normal times, Councillor Kivlehan felt they wouldn’t have got it done as quickly because of tendering processes, which were bypassed as part of the Covid emergency stipulations.

The BBN representative raised the point *“I think one thing you’ll learn from these things is that sometimes you just make a change and leave that at rest for a number of months, and often a problem you had at the beginning isn’t a problem once people get used to it”*. The representative also took a pragmatic view noting that *“there is an acceptance that everyone could not possibly be satisfied with a design solution – there are always going to be those that it is less convenient, or perhaps not work well for”*.

An insightful reflection was made by Councillor Baker, about the context and what may have made it possible to achieve change in such a dramatic fashion. In preparation for the interview, Councillor Baker went back over the Council meeting minutes and it proved salient. *“Looking at it now and thinking, yeah sure that was the original Covid-19, we were all scared to death. There were only 13 of us councilors out of 40 allowed to come to the meeting and 6 staff members. It was pared down to the bare minimum. It’s funny to even look back, not that long ago, and see how things have evolved since, in terms of the virus and movement and in-and-outs of lockdown”*.

The temporary nature of the works was also presented as a potential negative, with other village centres, which were reconfigured at a later date, apparently receiving a higher level and quality of investment. According to Councillor Baker, *“because we [i.e. Blackrock village] had a plan that was drawn up, they kind of went at it and it all went down relatively quickly”*. This has led to relative disappointment: *“We are one of the county towns but we look a little like we are wearing our shabby clothes. ... Maybe, if we actually held back, we would have got a better job?”*

Councillor Kivlehan defended the need to act quickly, stating: *“on this one we had an emergency situation with Covid so we had to act quickly because we knew that people weren’t going to mix on buses, we knew that there was going to be a massive reduction in the people using public transport but still some of those people – everybody including healthcare workers, lots of nurses – they didn’t drive, they used public transport to get into the seven or eight or ten miles where they were working.”* In his view **it was critical at the time to create options for these essential workers and walking and cycling were top of the agenda.** While there is a general acceptance from the PPN that much of the adaptive works were positive and there were considerable benefits to individuals who could now use the village and coastal area differently, there was concern around issues relating to safety, standards and levels of discommoding of people and traffic. The lack of consultation has left a level of skepticism from some to the temporary nature of the works and the rationale of the local authority’s actions. There is a belief that improvements are necessary, and some would want some of the measures to stay. There is a clear view that consultation with the PPN is not only warranted but is a requirement.

While the specific funding for these schemes were through a Covid emergency grant scheme that fast-tracked projects, there is existing legislation under which local authorities can take action for public safety, even within the Roads Act, in emergencies. Plus, Section 38 that can be used to do works between building lines that prioritise cyclists and public transport without having to go through the Part 8 process. The NTA representative noted that *“In the UK they have Experimental Traffic Orders, where you can put things in for a period of time and then they have to be voted on. **We’ve got more power in Irish legislation to make changes to the road for cyclists and public transport but there has been varying will to do that depending on the political makeup of the councils and the trust, maybe, they have with the Executive.**”*

The NTA representative recognised that making changes in middle of a pandemic was going to be difficult and that this had to be carried by the Executive. While this would normally have been addressed by the elected members and have had a much wider consultation, the speed at which change had to take place required decisive and efficient actions. Projects like this, in normal times, might be ideal to go before something like a citizen's assembly within each local authority, where citizens could listen to experts and examine the pros and cons of each case, make recommendations and give the changes a level of greater public credibility.

Existing Government policy (principally the Design Manual for Urban Roads and Streets, 2018) calls for a **multi-disciplinary approach when designing or redesigning urban roads and streets to recognise the many different needs of urban areas and their users.** This approach has been lacking in Ireland, and has often resulted in car-based transport dominating over the needs of pedestrians and cyclists, and over healthy and vibrant urban/village centres (which has in turn led in many cases to their decay and abandonment in favour of out-of-town and other car-based shopping centres). The Senior Architect noted what he termed a real **‘shift’ within the culture of DLR** during the Covid Mobility works. This shift revealed a greater understanding of the importance of multidisciplinary approaches to design and implementation of projects where the principles of urban regeneration, liveability, and active mobility come together in a more holistic manner. To this end, the Senior Architect believes the Architecture, Transportation and Parks Departments within Council worked well together, and he would like to see this approach extended to be *‘embedded’* into the entire planning system.

i). Lessons for the Future – Design Elements

Vehicle Delivery & Set-Down: Informal use of the road system for deliveries, pick-up and set-down can become more difficult where road space is reallocated away from vehicles, and associated carriageway space is tightened. This is likely to have increased substantially during Covid-19 due to the volume of online shopping and associated home deliveries. Short-term set-down and delivery areas should be considered as part of any major road space reallocation system, as well as hybrid car-parking bays that double as additional loading bays before 10/11am, for example.

It is also recognised that the movement of goods is likely to change in the near future, and include the greater use of low-carbon delivery systems (for example, cargo-bikes and smaller electric vans; drones; and the use of more centralised mobility hubs⁴⁸ that cater for package delivery lockers).

Car-parking: Where general car-parking is removed or considered for removal in road-space reallocation schemes in urban/service centres, the location of disabled or mobility impaired access parking spaces should be prioritised. This may also be more relevant for certain types of businesses or sectors, such as pharmacies, healthcare etc, than others.

j). Other Findings of Note

The NTA representative argues that many people involved in active travel have been given a ‘boost of morale’ seeing these projects go ahead. O’Driscoll noted that the *“Covid mobility works ... galvanised and reenergised councils and personnel within councils so much. We’ve all spent years and years trying to get things in and fighting at the coalface and just to get something in, it was a wonderful feeling for so many people: ‘It’s in! It’s in now!’, especially ... [since] some of these have going on for 10/12 years. It just gave a boost to the whole profession.”*

It was acknowledged that could easily not have happened. *“I remember at the start of Covid seeing what was happening in the UK cities and across Europe and I didn’t dare think that we were going to follow suit and try these things. And it could have easily not happened were it not but for certain people taking certain decisions and Dún Laoghaire being one of them. And this resulted in a definite cascade of action ... It has been a game-changer”.*

A final reflection from Councillor Kivlehan of the Green Party on the nature of positive feedback may be worth recounting. His parting comment was that: *“In relation to emails I am getting back from constituents and so on, I have been getting very positive emails and I get people who are negative about it. Particularly people up on Carysfort, where there are bicycle lanes going in too. As I would say to people there, they’re negative before it even goes in. And I say to them, ‘look, we have to try these things’. But in general, I would say I have got a lot less negative emails than I would have thought this would have generated and a lot more positive emails than I thought as well.”* This was important, in the Councillor’s view, because of

⁴⁸ For example, see <https://como.org.uk/shared-mobility/mobility-hubs/what/>

the danger of discounting the views of the “silent majority”, which may be positively disposed towards a project but whose views may go unheard.

Blackrock Specific:

Future of Blackrock Village: The BBN have a strong desire to retain and build upon the current Covid Mobility Works including extending the public realm treatment to the adjacent streets to contribute to a healthier overall village, including George’s Avenue and Main Street Extension (adjacent to Blackrock Library). In both of these streets, there is a strong desire to ensure that any plans for expansion of cycle-lanes are balanced with public spaces/realm, deliveries and car-parking. The BBN are particularly concerned about the potential impact of removing car-parking along the northern edge of Main Street Extension should the Council wish to extend and complete the contra-flow cycle lane along Maretimo Villas, and consider that there may be alternatives worth examining.

The desire to extend and link the cycle lanes along Maretimo Villas and Blackrock Park to the village was expressed by a PPN member who argued that *“the contraflow cycle lane on Maretimo Villas should be extended to Main St. in Blackrock Village. In addition, the cycle track through Blackrock Park should be connected to the cycle track in Blackrock Village - either by expanding the laneway behind Deepwell or providing a protected lane on the Rock Rd as you come out of Blackrock Park.”*

Car-Parking: The Chair of the BBN noted that although many businesses will bring up the issue of not enough car-parking, this is likely to be a point that can never be satisfied as there is often an unrealistic expectation that there should be an available parking space directly outside the shop a customer wishes to go to⁴⁹. It was noted that *‘there are plenty of parking spaces’* around Blackrock *‘if you’re prepared to walk 5 minutes’*. For example, on ‘upper’ George’s Avenue (the other side of Frascati Road), one *‘can count up to 10 spaces there at anytime of the day’*. However, it is recognised that car-parking can be considered more important to some types of businesses and their customers than others, thus it is important that there is a prioritisation of car-parking for the mobility impaired/disabled users proximate to main streets, and that there is a comfortable and legible pedestrian environment linking more peripheral parking spaces to main street environments (with car-parking demand management tools also employed).

The Role and Preparedness of Stakeholders: An interesting point raised by the BBN was the importance of being ready to engage with the Council with a pre-prepared vision for the future of the village. As the BBN were aware that Local Authorities across Ireland were seeking to implement Covid Mobility works in order to facilitate social distancing and the reopening of businesses after the first Covid-19 lockdown, they moved quickly to galvanise a team (including BVRAG, and others) to prepare a vision of what they wanted for Blackrock Village so that this could be presented to Council at the opportune time to take full advantage of the opportunity. This shows the importance of having leadership and active representation at a business as well as community level within urban centres.

⁴⁹ *The perception of not enough car-parking is one that is a commonly held view in urban areas and high street environments. In addition, retailers often overestimate the number of customers (and their average spend) arriving by car. For example, see O’Connor et al. (2011) and <https://www.livingstreets.org.uk/media/3890/pedestrian-pound-2018.pdf>*

6.2.1. Conclusions

This section reported on seven semi-structured interviews undertaken online from individuals who were chosen from a range of key stakeholders. In one case, the Public Participation Network (PPN), drafted a written report based on a collective discussion between their members on the questions that had been set and this was followed up with a clarification interview. What was evident from all of the interviews was that there was a general acceptance that the mobility and public realm changes in both Blackrock village and the Coastal area were received favourably. There was a feeling that they added positively to the urban form in both areas, but also, that there were some issues that continued to need attention.

The concept of change had been one that was debated and considered over a prolonged period, but with the COVID-19 emergency, adaptation became a priority as a means of ensuring that those business which were able to remain open or adapt their trading patterns could survive. Equally, the measures aimed to facilitate the movement of people and allowed them to enjoy local amenities while living with the government's emergency restrictions.

Issues in relation to how these adaptations were introduced was a matter of discussion and debate. The engagement and consultation process was described as being “formal-informal”, appropriate for the circumstances, lacking until the works commenced, one that was “done actively on the ground, making adjustments to meet the requirements of stakeholders”. While the PPN pointed out that they were not engaged with and did not know what was happening until works commenced, all interviewees were of the view that everyone was listened to once work was underway and that adjustments were made following representations. A common comment was on the openness of the DLR Executive to what was happening and an openness to ideas and alterations.

The general view of the measures taken by the council are one of success. They have been viewed as very good for pedestrians, cyclists, business and the community. The comments show how much livelier both the village and the coastal area are and that a lot of vehicular traffic has been removed. This, however, has received some negative comment as well. While some traffic is likely dissipated by active travel measures, other traffic has been diverted elsewhere and motorists have been discommoded, a point that is implicitly seen by some as being positive. The interviews have shown a number of issues where improvements or mitigating actions might take place such as improved conditions for pedestrians, higher quality planting and materials, additional seating, better signage and traffic displacement alleviation measures.

The Covid Mobility works introduced to address an emergency situation caused by the pandemic has resulted in the DLR executive acting quickly and decisively in a multi-disciplinary fashion. It represents a shift in the culture of the Council and its responsiveness to the emergency and to ongoing engagement with elected members, the public, business and other stakeholders during and after the modifications. The temporary alterations represented a significant set of changes to the built environment that supported pedestrians, cyclists, the village centre in Blackrock and along the coast from Seapoint to Sandycove. The Covid Mobility process has provided considerable learning and as the measures were rolled out, the interviewees suggest that acceptance and satisfaction for the alterations seem to have grown over time.

6.3 Desktop Study: Public Engagement & Communication

This Section reviews the Council’s approach to relaying information and its approach to consultation for the Blackrock Main Street and Coastal Mobility Route (CMR) works, as viewed through publicly accessible information. Dún Laoghaire-Rathdown County Council (DLR) engaged in a variety of means of communicating what it was aiming to do and these can be obtained from the Council’s website (www.dlrcoco.ie), minutes of Council and Strategic Policy Committee⁵⁰ meetings, and social media posts.

Table 28 below is a summary of the main points of note in relation to the Covid Mobility works as gathered from Council’s websites. Further details are provided below on the nature of the consultation and information provision, with some suggestions for future works.

Table 28

Theme	Council Covid Mobility Communication
The Context of Covid	The need to facilitate social distancing during the reopening of the economy and schools, road safety (particularly for pedestrians and cyclists), providing alternatives to public transport, and supporting the local economy is emphasised throughout.
Temporary & Phased Implementation Approach	<p>The temporary nature of the schemes is emphasised, as well as the staged or phased approach to the implementation of the schemes – including an engineering phase whereby the road space is reallocated, and a placemaking phase whereby public realm improvements are emphasised.</p> <p>In the later projects such as Dalkey, more details are provided on the nature of materials used in the different phases of the schemes.</p>
Maps/Diagrams	Maps, diagrams and schematic drawings of the proposed changes in all projects are provided, although only Blackrock provides a detailed cross-section of existing and proposed street layout.
Social Media	Information is shared on Council’s Facebook and Twitter accounts although there does not appear to be much interaction made by the council to comments apart from suggesting contact via email or reminding users of community standards. A clear exception to this is DLR’s Director of Services in charge of the works. Here a considerable and noteworthy effort is made to communicate and actively engage with the public via Twitter.
Video	Two high quality public information videos ⁵¹ illustrating the completed works in Blackrock Main Street and along the CMR were disseminated via DLR’s website and social media channels.
Council Meetings	The ‘e-Council’ section of the website is less user friendly. Details of many council meetings are unavailable and not all minutes or recordings relevant to this study have been uploaded.
‘Report-It’ Tool	The website encouraged residents and stakeholders to use the ‘Report It’ section of the website to make submissions on the Covid Mobility schemes. This was set up in

⁵⁰ Although these minutes tend to be inconsistently uploaded onto Council’s website for public viewing.

⁵¹ see <https://youtu.be/-Fvxl4c6fGM> and <https://www.youtube.com/watch?v=JnW5JqL6NoM>

June 2020 to allow stakeholders to directly report issues of social distancing and pedestrian/cyclist safety etc. Later initiatives in September–November 2020 (Active School Travel) adopted a more formalised approach to non-statutory public consultation.

6.3.1 Blackrock Main Street

Prior to the commencement of the works, DLR announced the proposed interventions for Blackrock Main Street in late May 2020 on its website⁵² and associated social media channels. Prior to this, DLR and the Blackrock Business and Community Network had been in discussions regarding the proposals.

DLR announced two phases to the project - the engineering or road space reallocation phase, and the placemaking phase. Once the road space reallocation phase had been rapidly implemented in June 2020, the Council sought public feedback using its 'Report-It' webpage over a 2-week period before the commencement of Phase 2. This was communicated through its website and social media channels (for example, see Figure 72).

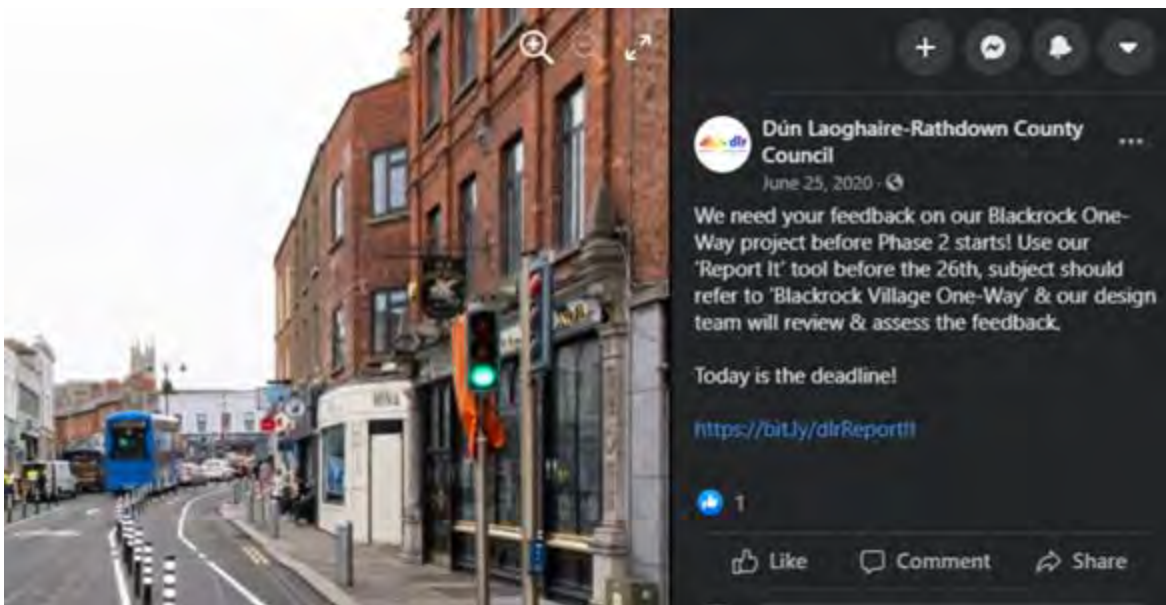
During this time, the Executive also engaged in a series of one-on-one/small group meetings with a range of business, public transport and other stakeholders with the objective of resolving localised issues such as delivery bay sizes, turning circle for buses and cycle lane design.

Following the 2-week consultation period, on 6th July 2020, Council announced a high level summary of the public submissions received⁵³, and their plans to proceed with Phase 2 of the works, with some design modifications based on feedback. 160 submissions were recorded, 74% of which were positive, 18% negative and 8% neutral.

⁵² [dlr to create a safe and dynamic public space for pedestrians and cyclists in Blackrock Village | Dún Laoghaire-Rathdown County Council \(dlrcoco.ie\)](#)

⁵³ <https://www.dlrcoco.ie/en/news/general-news-public-notice/council-proceeding-phase-2-mobility-public-realm-works-blackrock>

Figure 72 Example of social media (Facebook) communication by Dún Laoghaire Rathdown County Council



One of the main take away points from survey feedback was making the contraflow lane for cyclists only and not a shared space with pedestrians. These changes were implemented in the placemaking phase. The development of and integration with other cycle paths, particularly within the Blackrock Village area was a popular issue raised in supportive feedback forms and Council noted that it intended to address this further⁵⁴.

Negative feedback was raised in relation to loss of car-parking of which Council noted the minor loss of car-parking proposed, and the retention of disability parking. Potential traffic delays were also raised as a concern, of which the Council noted that this would be kept under '*continuous review and signal settings may be altered to reflect to give more time at certain junctions for vehicles. However, pedestrians and cyclists also need a fair and safe allocation of time at junctions to allow them proceed safely as they cross or continue their journeys and so there is a balance to be reached*'.

6.3.2 Coastal Mobility Route

Prior to the commencement of the Coastal Mobility Route works, DLR announced the proposed interventions on its website⁵⁵ and associated social media channels in mid-June 2020⁵⁶.

⁵⁴ Over the Summer 2020 in the Blackrock area, Council subsequently implemented segregated cycle-lanes on Carysfort Avenue, and Newtownpark Avenue, and are currently designing proposals for a cycle lane to be implemented along George's Avenue during 2021.

⁵⁵ www.dlrcoco.ie/en/news/general-news-public-notice-press-releases/dlr-create-safe-and-dynamic-public-space-pedestrians

⁵⁶ <https://www.dlrcoco.ie/en/transportation-infrastructure/coastal-mobility-interventions>

The role of Covid-19 is highlighted by the desire to make walking and cycling safe for all ages and abilities and the public health advice to avoid using public transport and to cycle or walk where possible. The preparation for a safe reopening of the county post-lockdown is mentioned, as is the significant increase in cyclists from May 2019 to May 2020. The webpage also highlights the high number of cyclist and pedestrian deaths on the country's roads in the first five months of 2020 and the corresponding need to create safe cycling and walking infrastructure. The existing road structure is considered insufficient for the expected increase in cyclists and walkers. The boost to local businesses and the need to "reimagine our use of and relationship with" public space is also highlighted.

The route is outlined including areas such as Harbour Road where a shared space will be located. The linking to The Metals cycle route is also cited. The webpage mentions an accelerated plan to install the CMR as quickly as possible and the possibility of "tweaking" design as the project proceeded. Its temporary nature is outlined. Clear indications are given in the text and on drawings of which streets will become one-way once the CMR has been implemented. Schematic drawings (without detailed cross-sections) are also provided.

New traffic restrictions are outlined, including at Harbour car park and Seapoint Avenue. An increase in through-traffic volume in Monkstown village is cited as a potential problem but the council noted that it will keep monitoring this.

The commencement of the works was scheduled for early July and the works were expected to take 3-4 weeks to complete, representing an exceptionally short timeframe from the time of announcement of the plans to their implementation. There was no formal process for public consultation associated with the works. The 'Report-It' tool was also available for stakeholders to comment on the CMR, although this may not have been widely known. Directly affected stakeholders were engaged with on-site and tweaks were made to the design to accommodate access to properties etc, and public representatives were regularly engaged at the time. The council stated it would continue to engage with residents and businesses.

Updates on construction progress were presented on Council's website⁵⁷. Apart from a small delay due to poor weather, the works proceeded quickly and on schedule. It is noted that 3.6km of segregated cycle lane was delivered in a matter of weeks, which is exceptionally fast.

6.3.3 Discussion

The Blackrock and Coastal Mobility Route works were undertaken and communicated to the public at an early stage of the pandemic when large public gatherings or traditional large scale face-to-face means of communication were generally not permitted (due to public health restrictions). In addition during these

⁵⁷ www.dlrcoco.ie/en/news/general-news-public-notice/coastal-cycle-route-mobility-updates

earlier months, online public meetings were not yet commonplace. The Council largely communicated with the public through written information on their website and social media channels.

However, online communication does not suit everyone, and few people would be regularly monitoring the Council's website. This may have meant that some people may not have been aware that the works were proposed or underway, or how to engage with the process. In addition, the Council's website can be difficult to find up-to-date information as there is no dedicated landing page for each project or for the *Covid Mobility* works in general. The information can be spread across a number of webpages and press releases making it difficult to follow.

A dedicated landing page for significant projects such as these presenting all the relevant material, including a clear indication of that status and timelines of the project and drawings would increase accessibility and transparency of the projects. In addition, it should be clearly outlined how the public can engage with the project, including providing feedback. Aggregated data on the feedback should also be presented, as well as Council's response to the feedback (such as is already done with other Council projects in the '*We asked, You said, We Did*' part of DLR's website⁵⁸). It is also important that the original information webpages are retained after any relevant public submission period passes to retain access to and record of the information. There is evidence of such improvements in later projects, such as the Active School Travel.

The Blackrock Business Network (BBN) put up posters in shops along Blackrock Main Street to draw attention to the works and DLR might at look such measures and/or assist organisations to do the same. The higher level Covid restrictions meant that venues which could have hosted posters and leaflets such as churches, libraries and community centres were closed and as such there was no access from the general public. However, public information posters could be put up in public places in the affected areas regardless of restriction level.

⁵⁸ https://dlrcoco.citizenspace.com/we_asked_you_said/



7. CONCLUSIONS & RECOMMENDATIONS FOR GOING FORWARD

7.1 Discussion & Conclusions

7.1.1 Introduction

The subject of this study is set within the context of a pandemic with ever shifting conditions, and because of that a traditional evaluation is difficult to undertake. In addition, the limited ‘before’ intervention data available and public health restrictions meant that some proxies had to be used. Given the lack of precedence, this research is largely explorative in nature involving a mixed methods approach encompassing surveys, interviews, observation, desktop studies, and technical data collection and analysis. The scope of this Phase 1 study is limited to a socio-economic and mobility analysis of Blackrock Village and mobility aspects of the Coastal Mobility Route, and further research is recommended. However a considerable level of research has been undertaken, and conclusions and recommendations can be made at this stage.

The research set out to achieve four main objectives: (1) to evaluate the short-medium term social and economic impacts of *Covid Mobility* on Blackrock Main Street (largely explored in Chapters 3, 4 and 6); (2) to assess the mobility impacts of the *Covid Mobility public realm measures* on Blackrock Village and the Coastal Mobility Route, (largely explored in Chapter 5); (3) to explore the engagement approach/process for delivery of works by Dún Laoghaire-Rathdown County Council, (largely explored in Chapter 6); (4) and to provide recommendations for the longer-term future of the subject projects, and possible future similar projects. This is outlined further in this chapter.

Aligned with the above, this study reviews the outcomes of Covid Mobility against DLR’s objectives for the works. These are outlined in the following section.

7.1.2 Covid Mobility Outcomes against Objectives

Table 29 below outlines a summary of DLR’s Covid Mobility Objectives mapped against key outcomes. Particularly considering the short timeframes, the list of outcomes are positive, considerable and significant.

Table 29 Summary of DLR Covid Mobility Objectives and Outcomes

DLR Covid Mobility Objectives	Outcomes
DLR1: <i>Increase outdoor social distancing space for pedestrians in villages</i>	Quantity of Public Space: 25% increase in social distancing space provided in Blackrock Main Street with expanded and reallocated public realm.
DLR2: <i>Increase cycling and pedestrian comfort and safety</i>	Segregated Cycle-Lanes: Provision of c.3.8km of safe segregated cycling infrastructure along Blackrock Main Street and the majority of the coast from Seapoint to Sandycove that did not exist previously (there is a missing segregated section at Harbour Rd/Crofton Rd).

Cycle-Lane User Groups: A diverse range of users of cycling facilities are evident including 53% casual; 11% teenager/youth; 10% children and 7% older users on the CMR, with a gender split of 35%:65% female to male.

Adjacent Vehicular Traffic Speeds:

- 1. Blackrock Main Street:** average speeds of 20km/hr and 85th percentile speed of 27km/hr in Blackrock Main Street (below the target max. vehicle speed of 30km/hr in an urban/village setting).
- 2. Coastal Mobility Route:** A small reduction in average speed in a westward direction in December 2016 from an average speed 45km/hr and a high 85th percentile ranging from 49-61km/hr (depending on the vehicle type and time of the day to an average speed) of 43km/hr and an 85th percentile speed of 53km/hr in October 2020. However, localised 85th percentile speeds are still excessive for this context.

Change in Vehicular Traffic: Change in traffic patterns including a 40% reduction in detected vehicular traffic in Blackrock Main Street from September/October 2019 to September/October 2020 (when traffic was similar to pre-Covid levels) and reduction in vehicular traffic along Coastal Mobility Route. Some CMR related redistribution noted on inland routes, but also onto other modes and times of day.

Pedestrian footpaths: Footpath width increased along the length of Blackrock Main Street (albeit at the carriageway level and not at the footpath level, which may cause accessibility issues for some), bringing the majority of footpath widths in excess of the recommended minimum of 3m (DMURS), except at Rock Hill where existing footpath widths are generally under 3m. On the Blackrock Shopping Centre side of Rock Hill (where there are no retail units), footpaths have remained unchanged at c.1.75m. No change to pedestrian footpath widths on CMR, however comfort and safety improved due to reduced vehicular traffic and speed.

Healthy Streets Check: 21% increase in health and quality of pedestrian and cycle environment of Blackrock Main St from 53% to 74% using the TfL Healthy Streets Toolkit.

Community Support for Blackrock Main Street: High level of support expressed by community representatives in interviews; 84% of residents surveyed think the Blackrock Main Street redesign is good for the village.

DLR3:

Reduce pressure on public transport capacity by providing a sustainable mobility alternative

Change in safe cycling options: Provision of c.3.8km of safe segregated cycling infrastructure along Blackrock Main Street and the majority of the coast from Seapoint to Sandycove that did not exist previously (there is a missing segregated section at Harbour Rd/Crofton Rd).

Cycle-Lane User Groups: A diverse range of users of cycling facilities are evident including 53% casual; 11% teenager/youth; 10%

children and 7% older users on the CMR, with a gender split of 35%:65% female to male.

Change in Pedestrian & Cycle Counts:

1. Blackrock Main St: 32% increase in cycling numbers in Blackrock Main Street from June 2020 to March 2021, even with Level 5 restrictions in place.
2. *Coastal Mobility Route*: At least 2.7 times more cyclists along the CMR since its introduction; average of 13,243 cyclists per week from September-December 2020, with signs of significant growth over 4 week period March-April 2021, with 20,133 cyclists a week.

DLR4:

Decrease reliance on private vehicles for short journeys, while increasing the use of walking and cycling as transport modes for a wide range of users

Change in safe cycling options: Provision of c.3.8km of safe segregated cycling infrastructure along Blackrock Main Street and the majority of the coast from Seapoint to Sandycove that did not exist previously (there is a missing segregated section at Harbour Rd/Crofton Rd).

Cycle-Lane User Groups: A diverse range of users of cycling facilities are evident including 53% casual; 11% teenager/youth; 10% children and 7% older users on the CMR, with a gender split of 35%:65% female to male.

Change in Pedestrian & Cycle Counts:

1. *Blackrock Main St*:
Cycling - 16% more bicycles than cars on Blackrock Main Street & 32% increase in cycling numbers in Blackrock Main Street from June 2020 to March 2021, even with Level 5 restrictions in place.
Pedestrians - Using Dundrum as a proxy for pre-works pedestrian counts in their absence, footfall was higher in both June and September/October 2020 (Level 3 Covid restrictions) in Blackrock than in Dundrum Main Street in June 2020. However, Level 5 restrictions are having a significant negative impact on pedestrian numbers.
2. *Coastal Mobility Route*: At least 2.7 times more cyclists along the CMR since its introduction; average of 13,243 cyclists per week from September-December 2020, with signs of significant growth over 4 week period March-April 2021, with 20,133 a week.

DLR Objective 5:

Support economic development in villages/urban centres.

Business Satisfaction: 72% of businesses surveyed view the new layout as a positive addition to Blackrock Village and the same number again would like the works made permanent (including those who would like elements of the design modified); 37.5% of businesses on Main Street felt that the works were helpful to their business during Covid, while 25% felt they were unhelpful.

Community Satisfaction: High level of support expressed by community representatives in interviews; 84% of residents surveyed think the Blackrock Main Street redesign is good for the village.

Pedestrian and Cyclists Counts:

1. *Pedestrians* - Using Dundrum as a proxy for pre-works pedestrian counts in their absence, footfall was higher in both June and September/October 2020 (Level 3 Covid restrictions) in Blackrock than in Dundrum Main Street in June 2020. However, Level 5 restrictions are having a significant negative impact on pedestrian numbers.
2. *Cycling* - 16% more bicycles than cars on Blackrock Main Street & 32% increase in cycling numbers in Blackrock Main Street from June 2020 to March 2021, even with Level 5 restrictions in place.

7.1.3 Conclusions

The Covid Mobility works represent some of the most significant set of changes to the built environment to support pedestrians and cyclists, as well as village centres, that the modern local authority system in Ireland has delivered, particularly when viewed from the temporal perspective. In terms of investment in the public realm, and facilities for active travel, this system could be more typically described as one experiencing inertia, and one that ultimately lags behind in its global Sustainable Development⁵⁹ and Climate Change obligations.

The findings in this study illustrate considerable achievements by Dún Laoghaire-Rathdown County Council not only in terms of its Covid Mobility and Public Realm objectives and meeting the guidelines put forward by the State for such works, but also in making substantial progress towards wider national policy goals of sustainable mobility and sustainable communities.

The study clearly demonstrates high levels of support from business, elected members and the community for the temporary redesign and reallocation of road space in Blackrock Main Street, and a desire to make the changes permanent. Considerable improvements in the provision and quality of cycling infrastructure within the study area are evident with significant increases in the number and range of people cycling. How and when people travel has changed dramatically over the pandemic, and vehicular traffic patterns are likely to continue in a state of flux and will take further time to settle as the medium-term effects of Covid-19 play out.

Overall, while in some cases evidence is limited and qualified by the impacts of Covid-19, there appears to be positive evidence of “traffic evaporation”, particularly with the Blackrock Village measures. This effect is used to describe where traffic demand management measures reduce traffic on targeted routes, without increasing overall traffic levels on adjacent routes. This counter-intuitive process happens as a result of a

⁵⁹ Particularly relating to UN Sustainable Development Goal no. 11 ‘Sustainable Cities & Communities, see <https://sdgs.un.org/goals/goal11>

redistribution of trips onto other modes, at different times of the day and sometimes onto other links where capacity may be available. The net result is an increase in overall mobility, as well as business, health and environmental quality improvements. In this context the measures can be seen as a set of positive steps in the right direction. Consideration should be given to further mobility analysis when Covid-19 restrictions lift further, as well as following up with additional measures on surrounding streets in order to further reduce traffic levels and calm traffic speeds where needed. Also, there should be continual improvement to the conditions for alternative modes, including walking, cycling and public transport, as well as improving overall health through better air-quality, etc.

The Council's approach to stakeholder engagement is one that has drawn both criticism and praise. However the achievement of on-the-ground outcomes has received endorsement from a wide range of backgrounds, including those who may have had reservations about aspects of the schemes. DLR have shown a level of leadership and innovation, including showing signs of a necessary cultural shift towards more interdisciplinary approaches to transport and mobility interventions.

This study has examined the socio-economic and mobility impacts of the Blackrock Village Covid Mobility public realm interventions, as well as the interim mobility impacts of the Coastal Mobility Route. Both schemes are temporary in their design, but at an early stage, have yielded positive returns in terms of their objectives, which include the promotion of sustainable mobility, active travel and more healthy community outcomes. The socio-economic study of Blackrock Village has shown that the Covid Mobility works have been good for the overall health of the community. They have also proven – in the perception of the business community at least – to be beneficial to the economic vibrancy of the village neighbourhood. This has been during a highly challenging period when socio-economic outcomes have been largely negative within the wider national and international context. Both Blackrock Village and the Covid Mobility Route schemes appear to have been received overwhelmingly positively by the community, based on feedback from key stakeholders.

Comments by one public representative in relation to the Blackrock measures are worth noting in this regard. According to the Councillor, *“there have always been ... pressures that stopped it being pushed in that direction, and [now] people are seeing the street in a particular way, and maybe making a leap from what's currently been out there may be more possible now than it's ever been in the past.”*

This merits pause for reflection on the benefits of experimentation and the use of temporary measures in the redesign of public spaces and mobility networks. On the evidence of this research, these approaches may help to achieve aims and outcomes which, while necessary and essential in terms of climate change and meeting internationally agreed goals, can prove intractable within the confines of traditional approaches to public project implementation. The multi-disciplinary approach of the local authority project team and their open attitude to engagement were also material towards the delivery of successful project outcomes.

There are many lessons to be learned from the DLR's Covid Mobility works, both in terms of positive lessons for future similar mobility and public realm works, as well as ways in which practice and approaches could be improved. The next section outlines specific recommendations for Blackrock and the Coastal Mobility Route as well as general recommendations for future projects.

7.2 Recommendations for Going Forward

7.2.1 General Recommendations

There are many learnings that other public agencies, as well as DLR, can take from the Covid Mobility experience. Many of the following recommendations are informed by DLR's current practice (as evidenced throughout the Covid Mobility works) and are relevant for other Local Authorities, as well as DLR moving forward with future projects.

1. Public & Stakeholder Engagement:

- a. For future proposed works that do not require statutory consultation procedures (such as those that were the subject of this study), a **dedicated online engagement webpage for public and business feedback on specific projects**/proposed interventions is recommended to be established, combined with offline information and **feedback opportunities in public libraries and Council offices** (if public health restrictions allow access to these buildings). It is also recommended that **information posters** are displayed within the area of the proposed intervention which also explain how the public can provide feedback. Feedback should be permissible in both an online and in written format to ensure access to engagement opportunities for those without internet access. A dedicated 'Report-It' or similar page per project is recommended on Council's website, as well as a dedicated 'We asked, you said, we did' page, or similar, per project for greater transparency around the consultation process.
- b. Embracing the **public facing** Local Authority model:
 - i. The project benefitted from an attitude of upfront and on the ground engagement with key stakeholders, including organisations and groups with leadership roles within the community. This appears to have helped in communicating positive aspects of the proposed changes and allaying concerns that may have been held. Building support and community capital for a project, and establishing lines of communication at an early stage with elected representatives and representatives from community and business can be helpful throughout the project implementation and beyond.
 - ii. The Covid Mobility process was consolidated by an open attitude to engagement throughout the project stages. The live 'Open Circle' style of stakeholder consultation employed by DLR throughout the Covid Mobility works is an innovative, engaged and outcome driven approach, and it is recommended that this model is considered for similar significant project proposals. To ensure a range of voices are heard, and that there is mutual respect and dignity shown to all involved, this process may be best managed either by having a project lead with facilitation skills or by having a trained facilitator as part of the team. It is also recommended that the 'Open Circle' approach forms part of any local authority's

engagement landscape and is communicated as a methodology to the public, so there is an awareness of the model.

- iii. A component of this online and open attitude to engagement should be a proactive presence on social media, where project news can be disseminated and fed into the public discourse.

2. Monitoring and Evaluation:

- a. It is recommended that monitoring and evaluation forms a key component of similar projects in the future, particularly projects where a degree of experimentation is included as part of the aims and objectives. Collection of **comprehensive pre-intervention data** is important to the evaluation process, so that suitable **baseline data** is available from which to assess the changes against. The nature of the baseline data will vary depending on the project and its aims, but may include:
 - i. Pedestrian and footfall counts, particularly live counts where change can be charted over a longer period of time
 - ii. Cyclists counts, particularly live counts where change can be charted over a longer period of time
 - iii. Public transport usage and performance data
 - iv. Vehicular counts, particularly live counts where change can be charted over a longer period of time
 - v. Traffic speeds
 - vi. Modal split surveys
 - vii. Air and noise quality data, particularly live sensor data where change can be charted over a long period of time and different seasons
 - viii. Observational study into use of space.
- b. Establishing **clear project aims and objectives at the outset** will assist in ongoing monitoring and evaluation.
- c. Undertake **post intervention evaluation and associated data collection** (a number may be required), allowing time for the project to settle, for stakeholders to experience it over a few seasons and for behaviours to adjust (for example, after 6 months and after 1 year). Allowance should be made for this within the overall project budget.

3. Design & Implementation:

- a. **Willingness to Experiment** – Experimentation is a well-established model for project delivery in other countries including the UK, many European countries, Australia and the

USA⁶⁰. As noted above, experimental or pilot projects should be encouraged and facilitated for certain projects in Ireland, particularly those that are important in addressing international climate change obligations and UN Sustainable Development Goals⁶¹ and where the shift from the status quo raises major concerns or uncertainties for key stakeholders. This openness and willingness to experiment should ideally be introduced as part of the organisational culture and not just within specific divisions or one-off projects. Oftentimes, perceptions around the un-even distribution of project costs and benefits can undermine implementation. Particularly for public-facing development, or where sensitivities exist to change or the perception of change, the use of temporary or experimental project approaches may be beneficial.

- b. A set of **guidelines for the delivery of rapid works, especially experimental trials**, is recommended to be developed at a national level building on the existing Government *Design Manual for Urban Roads and Streets (DMURS) Interim Advice Note*⁶² (2020). These guidelines should explain how trials will generally work; encourage a clear establishment of project aims and objectives; ideas for stakeholder engagement; how projects should be evaluated against the aims and objectives; and the process for adaptation or reversal of the work at the end of the trial period, should this be required. It is important though that innovation and dynamism should be encouraged in trials as this will be needed to address the major societal challenges associated with Sustainable Development and Climate Change. Coupled with this might be a guidance note on Tactical Urbanism. Tactical Urbanism is itself a form of experimentation, which can help to build community capital around a new project or innovative proposal. The Transport for London “*Small Change Big Impact*” report (2017) is a useful example of how tactical urbanism can be utilised to promote and nurture community support for sustainable interventions in the public realm, through inclusiveness, participation and imagination.
- c. **Multidisciplinary Approach** - the *Design Manual for Urban Roads and Streets* (2013, 2018) requires a multi-disciplinary approach to the design and management of the public realm in urban areas. Such a process has been effectively adopted by DLR through the two-phase approach to implementation: (i) the engineering/movement phase where the public space was reallocated, followed by (ii) the placemaking phase, where the temporary design was finalised through the use of planting, public realm treatments, introduction of street furniture etc. The integration of the transportation, architecture, planning and parks’ departments in particular, within Local Authorities, are key to the success of this approach.

⁶⁰ For more information see Bishop and Williams (2012), *The Temporary City*.

⁶¹ <https://sdgs.un.org/goals>

⁶² <https://www.dmurs.ie/what-s-new>

7.2.2 Blackrock Main Street/Village Recommendations

Overall, a **strong level of community and business support** is evident for the temporary Covid Mobility and Public Realm Works undertaken in Blackrock Main Street. In addition, the Street Audit undertaken as part of this study illustrates a significant improvement in the health of the street before and after the temporary works (see Chapter 3 and 4). Both have identified a number of suggested improvements to be explored for the future of Blackrock Village, the key points of which are included below.

1. Immediate Considerations (Summer 2021):

- a. Blackrock Village appears to be growing as a destination, particularly from Friday-Sundays. As Covid-19 restrictions are likely to continue in some form over Summer 2021 albeit at a lower level and allowing for more travel and outdoor dining etc., **it is likely that weekends will become busy and a degree of public space management may need to be considered**, including increased street cleaning and street furniture maintenance.
- b. There may also be an opportunity to explore the potential to close part of Blackrock Village (e.g. Main Street, Main Street Extension, George's Avenue) to vehicular traffic for a number of hours on weekend afternoons during the summer/early autumn months. This **could increase available outdoor public space on a temporary basis** supporting local businesses, and facilitate the further linking up of the cycle network during busy periods. A public transport and emergency access plan should form part of any such proposal.

2. Medium Term Considerations (late 2021-2022):

- a. Develop a **permanent public realm regeneration plan for Blackrock Main Street (and adjacent streets as considered relevant)** on the basis of the success of the Covid-19 temporary public realm interventions. The public should have an opportunity to provide feedback and input on design proposals. Any plan should consider the findings of this study (as outlined in Chapter 3 and 4) including loading/deliveries; quality of public realm and street furniture finishes and materials; quality of planting and street trees; introduction of some shade and shelter opportunities; additional step-free pedestrian crossing facilities; additional cycle priority treatments for shared cycle/vehicle roadways and car-parking demand management. A permanent maximum traffic speed limit of 30km/hr should also be considered in Blackrock Main Street and adjacent streets, as well as a gateway/village entry treatment on the approach from the north/west at Rock Hill, and pedestrian and cycle connectivity from the east, south and west.
- b. Any **works should be expanded to take into account the immediate adjacent streets to Blackrock Main Street** including Main Street South/Extension (adjacent to Blackrock Library and Blackrock College of Further Education); George's Avenue (northern end); Bath Place; Carysfort Avenue and Temple Road (northern end near the junction with Main Street). Undertaking a street audit on these adjacent streets (similar to that contained within this study) would help inform the process.

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- c. Consideration should be given to **linking the cycle network from Blackrock Main Street south-eastwards along Main Street South/Extension and connecting with the Coastal Mobility Route**. It is likely that there would be increased benefit to both the community and business from the creation of a connected network of safe and all age- and ability-friendly cycle infrastructure that will continue to grow the attractiveness of this route as a recreational, tourism and transport corridor. Any extension of this link should include an enhancement of the public realm in recognition of the primary function of this space as a village centre. A slow-speed, shared-street environment, with associated carriageway treatment, is a potential treatment connecting the CMR north-westwards to Main Street. A contraflow cycle lane should be considered here heading south-eastwards and connecting to the existing contraflow cycle lane at Maretimo Terrace. There is a recognition that some businesses will be concerned at losing car-parking in this location, thus a whole of southern village centre⁶³ approach to levels of car-parking should be considered.

7.2.3 Interim Coastal Mobility Route Recommendations

Phase 1 of TU Dublin's study scope focused on the mobility aspects of the Coastal Mobility Route, thus the following recommendations are exclusively mobility related. Future phases of the study may include a fuller social, economic and environmental (including noise and air quality) assessment.

1. There is opportunity to **further improve the pedestrian environment along the CMR and its environs**. It is recommended that an audit of pedestrian accessibility following universal design principles is undertaken. As part of this, the early prioritisation of additional pedestrian crossing facilities (such as a step-free/raised courtesy crossings) at strategic points along the CMR is recommended.
2. Introduction of **traffic calming measures** at strategic points along the CMR to reduce vehicular speeds, and support pedestrian crossing movements (in conjunction with recommendation no. 1).
3. Consideration of a **30-40km/hr traffic limit along the Coastal Mobility Route** (it is important that the inland mobility management measures associated with recommendation no. 4 would be undertaken in conjunction with this to discourage vehicular traffic moving inland).
4. Introduction of **mobility management strategies** particularly along Monkstown Avenue, Glashule Road, and Tivoli Road including active encouragement of use of sustainable modes, traffic calming and the wider introduction of 30km/hr (in village/urban centres and adjacent to schools) and 40km/hr zones (linking sections).
5. Explore options to better **link-up the non-segregated components of the CMR** adjacent/along Crofton Road, Coal Quay Bridge and Harbour Road, including consideration of infrastructural solutions (with an over-arching aim of creating a continuous segregated cycle facility along the full length of the CMR if possible). Extending the segregated portions of the CMR and linking up with a

⁶³ For example, use of Park 'n' Stride to legible car-parking within a few minutes' walk.

wider segregated cycle network is likely to further improve the range, as well as number of users, including **increasing the proportion of females** using the route.

6. Develop targeted **strategies to further improve the range and diversity of users** of the Coastal Mobility Route (including females, children and disabled users) to better reflect population demographics, and undertake regular monitoring to track progress.
7. Explore future travel patterns associated with the **coastal area as an increasing amenity/destination**, including traffic management strategies to accommodate potential additional trips generated. This might incorporate improved signage as well as promotion of public transport, park 'n' stride and extending the range of active modes.
8. The **impact of the Coastal Mobility Route on travel patterns, modes and habits will evolve over time**, as Covid-19 restriction levels change and the medium-long term consequences of the pandemic translate into peoples' working and schooling arrangements in particular. We recommend that a **further mobility analysis is undertaken after c.1 year of post CMR implementation mobility data is available and again in c. 12-18 months' time** (or at a time when Covid-19 restrictions are largely lifted) to further understand the impact of the CMR in conjunction with the impact of post-Covid longer-term shifts in travel behaviour, and how this translates into transport patterns and modes. Recommendations no. 1-7 are not intended to be dependent of any outcome of recommendation no.8, but rather to complement it.

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Appendices

Appendix 1: Road Space Reallocation, Blackrock Main Street



Appendix 2: Healthy Street Check Street Audit

Healthy Streets Check

Scoring System

Enter score here

Notes

	3	2	1	0	More info on each question	Enter score here		Notes Please supplement your answers with detailed notes where possible
						Existing layout	Proposed layout	
1 Total volume of two way motorised traffic	There are fewer than 500 vehicles per hour at peak.	There are 500 to 1000 vehicles per hour at peak.	There are more than 1000 vehicles per hour at peak, where people cycling are separated from motorised traffic.	There are more than 1000 vehicles per hour at peak, where people cycling are mixed with motorised traffic.	ⓘ	3	3	Based on IDASO traffic counts (30.09.20-06.10.20). Despite no change to score represented in HSC tool, vehicle traffic now limited to one way and volumes are reduced accordingly.
2 Interaction between large vehicles and people cycling	No large vehicles are using the street, or cycle traffic is separated from motorised traffic.	The proportion of large vehicles is less than 2% of motorised traffic, 7am to 7pm.	The proportion of large vehicles is greater than 5% of motorised traffic, 7am to 7pm. or The proportion of large vehicles is less than 2% of motorised traffic, 7am to 7pm, and people are cycling either: - in a nearside general traffic lane or bus lane at least 4.5m wide, or - in a cycle lane where the combined width of the cycle lane and the next general traffic lane is at least 4.5m.	The proportion of large vehicles is greater than 5% of motorised traffic, 7am to 7pm, and people are cycling either: - in a nearside general traffic lane or bus lane less than 4.5m wide, or - in a cycle lane where the combined width of the cycle lane and the next general traffic lane is less than 4.5m.	ⓘ	0	1	Based on IDASO ATC count, Blackrock (30.09.20-06.10.20) 7-7pm. 9.4% Large Vehicles. The one way vehicle lane is 3.5m and shared with cyclists southbound. Northbound the cycle lane is protected as a contraflow.
3 Speed of motorised traffic	85th percentile speed is less than 20mph. or Existing 85th percentile speed is 20 to 25 mph, but there are some proposals to reduce speed further. or Existing 85th percentile speed is over 25 mph but a complete redesign of the street environment should reduce this to below 20mph.	85th percentile speed is 20 to 25mph. or Existing 85th percentile speed is 25 to 30 mph, but there are some proposals to reduce speed further.	85th percentile speed is 25 to 30mph. or Existing 85th percentile speed is greater than 30 mph, but there are some proposals to reduce speed further.	85th percentile speed is greater than 30mph. or Existing 85th percentile speed is greater than 30 mph, and there are no proposals to reduce this speed.	ⓘ	2	3	Post works 85th percentile speed of 27km/hr (IDASO traffic counts 30.09.20-06.10.20). Pre works estimated to be over 30km/hr due to wider carriageway and less traffic calming elements.
4 Traffic noise based on peak hour motorised traffic volumes	There are fewer than 55 vehicles per hour (c. <58 DB).	There are 55 to 450 vehicles per hour (c. 58-70 DB).	There are more than 450 vehicles per hour (c. >70 DB).	-	ⓘ	2	2	Based on IDASO traffic counts (30/09.20-06.10.20) and Tetraam traffic counts (Feb & Mar 2021).
5 Noise from large vehicles	The proportion of large vehicles is less than 5% (c. +0 to +3DB).	The proportion of large vehicles is 5 to 10% (c. +3 to +5 DB).	The proportion of large vehicles is greater than 10% (c. +5 DB and over).	-	ⓘ	2	2	Based on IDASO traffic counts (30/09.20-06.10.20).
6 NO2 concentration (from London Atmospheric Emission Inventory)	If assessing existing: The NO2 concentration is less than 32µg/m3. If assessing proposal: The existing NO2 concentration is less than 32µg/m3 or the existing concentration is 32 to 40µg/m3 with local traffic volume reduction measures proposed.	If assessing existing: The NO2 concentration is 32 to 40µg/m3. If assessing proposal: The existing NO2 concentration is 32 to 40µg/m3 with no proposal to reduce local traffic volume or the existing NO2 concentration is greater than 40µg/m3 with local traffic volume reduction measures proposed.	If assessing existing: The NO2 concentration is greater than 40µg/m3 (legal limit value). If assessing proposal: The existing NO2 concentration is greater than 40µg/m3 with no proposal to reduce local traffic volume.	-	ⓘ	3	3	Estimated figure only. Recommend installation of air quality monitor in future similar works where possible. No local air quality monitor in place. Proxies used: EPA NO2 Modelled Air Quality (2017) for area; and (EPA monitor in Dun Loghaire) for 1-30 Sept 2020 (average 18.3µg/m3), however figures within HSC refer to an annual mean.
7 Reducing private car use	There is no through-movement for motorised traffic, with access limited to local residents, deliveries and public service vehicles.	There are some time or movement restrictions for motorised traffic.	There are no access restrictions for motorised traffic.	-	ⓘ	1	2	Main Street is one-way for cars. There is a dedicated contraflow lane for cyclists.
8 Ease of crossing side roads for people walking	Side roads are closed to motor traffic. or Side roads are one-way out for motor vehicles and have features to encourage drivers to turn cautiously.	Side roads are two-way or one-way in for motor vehicles, and have features to encourage drivers to turn cautiously.	Side roads have dropped kerbs only.	Side roads have no dropped kerbs.	ⓘ	1	1	Individual breakdowns are: Blackrock Shopping Centre car entrance 1; Underground Car Park, Trident House 1; Brusna Cottages 1; Georges Avenue 0; Bath Avenue 2; Caysfort Avenue 3.
9 Mid-link crossings, to meet pedestrian desire lines	All main pedestrian desire lines are provided for with crossings.	Only some of the main pedestrian desire lines are provided for with crossings.	No main pedestrian desire lines are provided for with pedestrian crossings.	-	ⓘ	2	2	Recommend considering additional desire line crossing mid-block between Bath Ave and Caysfort Ave junction on Main Street.
10 Type and suitability of pedestrian crossings away from junctions	Crossing is uncontrolled, with conflicting traffic volume less than 200 vehicles per hour. or A Zebra or parallel crossing is provided. or Crossing is signalled so that people crossing the main carriageway have priority, while traffic on the main carriageway has on-demand green.	Crossing is uncontrolled, with conflicting traffic volume between 200 and 1000 vehicles per hour. or Crossing is signalled and straight-across where the distance to cross is less than 15m or greater than 15m in a 20mph speed limit. or Crossing is signalled and staggered where the distance to cross is greater than 15m in a 20mph+ speed limit.	Crossing is uncontrolled, with conflicting traffic volume greater than 1000 vehicles per hour. or Crossing is signalled and straight-across where the distance to cross is greater than 15m in a 30mph+ speed limit.	-	ⓘ	2	3	Based on IDASO traffic counts (30/09.20-06.10.20) averages per hour 7-7pm (115). Before counts assumed to be greater due to two traffic.

11	Technology to optimise efficiency of movement (pedestrians, cyclists, buses and general motor traffic)	All appropriate detection and optimisation technology has been applied to traffic signals.	Some detection and optimisation technology has been applied to traffic signals.	No detection and optimisation technology applied to traffic signals.	-	①	2	3	Cycle lights now in place at both Bath Ave and Caryfort Ave junctions. Auditory alerts were in place under previous layout.
12	Additional features to support people using controlled crossings	Controlled crossings have many additional features to enhance their quality (please see scoring guidance).	Controlled crossings have some additional features to enhance their quality (please see scoring guidance).	Controlled crossings have no additional features to enhance their quality (please see scoring guidance). or There is no step-free access at the crossing point and/or there is no physical delineation between the footway and carriageway away from crossing points.	-	①	2	3	Dropped kerbs, tactile paving, auditory alert for visually impaired, cyclist lights (at pedestrian crossing) were all present.
13	Width of clear continuous walking space	There is 2m or more clear width for walking in quiet locations (flows of <500 pedestrians an hour). or There is 2.5m or more clear width for walking in moderately busy locations (flows of 600-1200 pedestrians an hour). or There is 3m or more in busy locations (flows of >1200 pedestrians an hour).	There is 2m to 2.5m clear width for walking in moderately busy locations (flows of 600-1200 pedestrians an hour). or There is 2.5m to 3m in busy locations (flows of >1200 pedestrians an hour).	There is 1.5m to 2m clear width for walking in quiet and moderate locations (flows of <1200 pedestrians an hour). or There is 2m to 2.5m clear width for walking in busy locations (flows of >1200 pedestrians an hour).	There is less than 1.5m clear width for walking.	①	2	3	East side score = 3, west side score = 1 due to space constraints. 2 = overall average. Additional temporary footpath space provided at carriageway level (1.5m) in redesign, although this may present accessibility issues for some. Bollards taken away removing obstructions to footpath, and additional cycle parking facilities added resulting in more than 2m of clear continuous footpath space.
14	Sharing of footway with people cycling	No part of the footway is designated as shared use for walking and cycling.	Part or all of a footway wider than 3m with fewer than 200 pedestrians per hour is designated as shared use. or Part or all of a footway less than 3m wide is designated as shared use.	Part or all of a footway used by more than 200 pedestrians per hour is designated as shared use. or Part or all of a footway less than 3m wide is designated as shared use.	-	①	3	3	Footpaths are segregated from cycle path. However, no cycle path in previous arrangement.
15	Collision risk between people cycling and turning motor vehicles	Side roads are closed to motorised traffic or turning movements by motor vehicles are minimised. and At signal-controlled junctions, all conflicting movements between cycle traffic and turning motor traffic are separated.	Some measures are in place to reduce turning movements by motor vehicles at priority junctions. and At signal-controlled junctions, cycle movements are not separated and fewer than 5% of turning vehicle movements are made by larger vehicles but mitigation measures are in place.	There are no restrictions on turning movements by motor vehicles at side roads and other uncontrolled accesses. and At signal-controlled junctions, cycle movements are not separated and more than 5% of turning vehicle movements are made by larger vehicles but mitigation measures are in place.	At signal-controlled junctions, cycle movements are not separated, more than 5% of turning vehicle movements are made by larger vehicles and there are no mitigation measures in place.	①	0	1	Previous arrangement had no facilities to protect cyclists. Some improvement in redesign however, Caryfort Ave has no segregation and no dedicated light for right-turning cyclists. Bath Place has cyclist light plus entry point on cyclist path on Main St for cyclists coming from Bath Place. There are no segregated facilities for cyclists turning right from Main Street onto Francis Rd.
16	Effective width for cycling	Where cycles are separated from other traffic, the width of the lane or track is 2.2m or more (one-way) or 3.5m or more (two-way). Otherwise: Width of the nearside general traffic lane (where there is no cycle lane) or width of the cycle lane plus adjacent general traffic lane is 4.5m or more.	Where cycles are separated from other traffic, the width of the lane or track is 1.5m to 2.2m (one-way) or 2.5m to 3.5m (two-way). Otherwise: Width of the nearside general traffic lane (where there is no cycle lane) or width of the cycle lane plus adjacent general traffic lane is between 4m and 4.5m.	Where cycles are separated from other traffic, the width of the lane or track is less than 1.5m (one-way) or less than 2.5m (two-way). Otherwise: Width of the nearside general traffic lane (where there is no cycle lane) or width of the cycle lane plus adjacent general traffic lane is less than 3.2m.	Width of the nearside general traffic lane (where there is no cycle lane) or width of the cycle lane plus adjacent general traffic lane is between 3.2m and 3.9m.	①	0	2	The new one-way cycle lane is 1.75m in width. A good balance between needed additional pedestrian space and dedicated cycle lane provided.
17	Impact of kerbside activity on cycling	There is no kerbside activity. or People cycling are physically separated from parking or loading facilities.	There is occasional kerbside activity and people cycling can keep at least 1.0m clearance to vehicles parked or loading.	There is frequent or continuous kerbside activity, and people cycling can keep at least 1.0m clearance to vehicles parked or loading.	People cycling cannot maintain at least 1.0m clearance from vehicles parked or loading.	①	0	3	West side score is 3 due to segregated lane. East side = 2 due to presence of bus stop, loading bays and parking spaces.
18	Quality of carriageway surface	The carriageway surface is even and smooth, with sufficient skid resistance. or There are defects but resurfacing of the whole carriageway is proposed.	There are a few minor defects in the carriageway surface (please see scoring guidance).	There are many minor defects in the carriageway surface (please see scoring guidance).	There are major defects in the carriageway surface (please see scoring guidance).	①	3	3	Alan Mee Architects audit report (2017) noted that the previous layout as being 'in good condition'. New layout also appears in good condition; smooth and even without any holes or other defects.
19	Quality of footway surface	There is an even and level surface for walking on footways. or There are defects but resurfacing of the whole footway is proposed.	There are a few minor defects in the footway surface (please see scoring guidance).	There are many minor defects in the footway surface (please see scoring guidance).	There are major defects in the footway surface (please see scoring guidance).	①	1	1	The westside footpath of Main St in particular has multiple defects such as cracks, raised or loose paving slabs, cellar doors at pub. The temporary tarmac ramps from the kerb to the extended public realm space are also of poor quality.
20	Surveillance of public spaces	There is constant surveillance – because mixed use buildings overlook the street or spaces, or because there are many people using the space or walking through.	There is intermittent surveillance – because surrounding buildings are single-use or do not completely overlook the street, or because there are few people using the space or walking through.	There is poor surveillance – because few buildings overlook the street or space, there is little activity.	-	①	2	2	Most of street scores 2 but surveillance is poorer at Rodd rail section due to lack of passive surveillance at Blackrock Shopping Centre and office space at Trident House. Small level of mixed-use residential on Main St.
21	Lighting	Street lighting meets the British Standard S489:2003 and the European Standard CEN/TR 13201. and Lighting of off-carriageway facilities for walking or cycling exceeds the same standards.	Street lighting meets the British Standard S489:2003 and the European Standard CEN/TR 13201 but lighting of off-carriageway spaces for walking or cycling does not.	Street lighting does not meet the British standard S489:2003 and the European Standard CEN/TR 13201.	-	①	3	3	Street is well lit and meets the 2003 standards as outlined, however there may be a need to replace/upgrade some lighting in the near future to meet newer standards.

22	Provision of cycle parking	Cycle parking exceeds existing demand and is accessible by all.	Cycle parking meets existing demand and is accessible by all.	Cycle parking does not meet existing demand. 0 Cycle parking meets existing demand but is not accessible by all.	-	①	2	3	Cycle parking provided exceeded demand at time of audit, however, as increasing numbers of cyclists use Blackrock Main Street, additional cycle parking may be needed.
23	Street trees	If assessing existing: There are multiple trees, with canopies spaced less than 15m apart on average. If assessing proposals: All existing trees are to be retained and the street is already tree-lined with less than 15m between tree canopies. or All existing trees are to be retained, with planting of new trees designed to reduce the average canopy spacing to less than 15m.	If assessing existing: There are multiple trees, with canopies spaced more than 15m apart on average. If assessing proposals: Not all existing trees are to be retained, however new planting will ensure the overall number of trees is maintained or increased. or All existing trees are to be retained, however the canopy spacing will remain more than 15m on average.	If assessing existing: There are no trees, or only one tree. If assessing proposals: There are no existing or proposed trees. or The number of trees has been reduced.	-	①	1	2	New layout added a substantial additional number of street trees, albeit all young trees, in temporary storage containers with small canopies.
24	Planting at footway level (excluding trees)	If assessing existing: There is substantial planting in good condition designed to create or improve social space and/or act as a connection between other green spaces (eg pocket park, rain garden, community garden area). If assessing proposals: Existing greenery is to be enhanced with integrated SUDS features if new planting or new areas of greenery are proposed.	If assessing existing: There is some planting, eg shrubs, verges, hedges, ornamental flower beds, or adaptation for some animal species. If assessing proposals: Existing standalone greenery is to be retained.	If assessing existing: There is no planting, or existing planting is in a poor condition. If assessing proposals: No green infrastructure is proposed, or the size of existing greenery is to be reduced.	-	①	1	2	Very little planting in previous layout. Considerable additional temporary planting provides in planter boxes.
25	Walking distance between resting points (benches and other informal seating)	There is less than 50m between resting points.	There is between 50m and 150m between resting points.	There is more than 150m between resting points.	-	①	1	2	Resting spaces are less than 50m apart between Georges Ave and Carystart; There are resting spaces between Rock Road and Georges Avenue at KA Furniture/Blackrock cellars, it is more than 50m from here to the next bench located at the Hair Salon
26	Walking distance between sheltered areas protecting from rain, including fixed awning or other shelter provided by buildings/infrastructure	There is less than 50m between sheltered areas.	There is between 50m and 150m between sheltered areas.	There is more than 150m between sheltered areas.	-	①	1	1	The bus shelter at the old post office is the only public shelter on Main Street.
Are there any bus services running on this street? (Y/N) If not, do not complete metrics 27-28							Y	Y	An answer is required here in order to generate results
27	Factors influencing bus passenger journey time	There are positive influences on bus journey time, e.g. bus lanes, and/or exemptions for buses from movement bans for general traffic.	Buses are mixed with traffic but not significantly delayed.	There are negative influences on bus journey time, e.g. unclear markings, narrow lane width, parking/loading issues, short rags length, mixing with congested traffic.	-	①	1	2	There is a small improvement on Main Street as buses have priority in the traffic flow at the bus stop. However the new layout also creates some additional length for route 114 travelling to Blackrock Station. Interview with Go Ahead noted no significant issues here.
28	Bus stop accessibility	Bus stop is wheelchair accessible, there is clear space for boarding and alighting and there is a clearway in place at the bus stop.	Bus stop is wheelchair accessible but either there is limited clear space around the bus stop for boarding and alighting or, for borough roads, there is no clearway in place.	Bus stop is not wheelchair accessible, ie the kerb height is less than 100mm.	-	①	3	3	Score is for bus stop at DART station. Other bus stops around Main Street, or Blackrock (Rock Road southbound, Frascati SC, Zurich) receive a score of 3. Bus stops on Carysfort Ave receive a score of two due to the smaller footpath width.
Are there any rail/underground/bus stations accessible from this street? (Y/N) If not, do not complete metrics 29-31							Y	Y	An answer is required here in order to generate results
29	Bus stop connectivity with other public transport services	The bus stop is within sight of another service – less than 50m away.	The bus stop is between 50m and 150m away from another service.	The bus stop is more than 150m away from another service.	-	①	1	1	Score is for bus stop at old post office on Main Street. Other bus stops around Blackrock (Rock Road southbound, Frascati SC, Zurich and Carysfort) receive a score of 3. Most stops are not within sight of each other but are within 50m and accessible to each other. Station receives a 3 for its entrance. Footpath to the station is narrow and not fully accessible.
30	Street-to-station step-free access	All entry points to the station are step-free.	The main entry point to the station is not step-free but step-free alternatives are provided.	There is no step-free access to the station.	-	①	2	2	
31	Support for interchange between cycling and underground/rail	Secure cycle parking is provided close to station access points, and exceeding existing demand.	Cycle parking is available close to station access points that meets existing demand.	There is insufficient cycle parking to meet demand, or cycle parking is poorly located for station access points.	-	①	2	2	
If 'zero' scores (known road danger issues) remain, please explain why opposite:							4	0	

Woolley Street