

Wicklow County Council

**N11/M11 Junction 4 to Junction 14
Improvement Scheme**

Appendix D15 – Physical Activity

265455-ARP-HGN-SWI-RP-CH-0004

C01 | 6 December 2021

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1 Introduction

This report documents the Stage 2 Project Appraisal Matrix assessment of options under the criterion of Physical Activity. The purpose of the assessment is to assess, where possible, the nature of physical activity impacts of the scheme on active travel modes, physical recreational activities and on vulnerable groups of road users such as pedestrians and cyclists.

The physical activity appraisal has been conducted in accordance with Transport Infrastructure Ireland Project Appraisal Guidelines (TII PAG) Unit 7.0: Multi-Criteria Analysis with additional guidance being drawn from TII PAG Unit 13.0: Pedestrian and Cyclist Facilities.

1.1 Assessment Methodology

PAG Unit 13.0 outlines the sub-criteria to be considered in the appraisal of options as part of the Physical Activity assessment, which include the following:

- Health Benefits;
- Absenteeism Benefits;
- Journey Ambiance Benefits;
- Changes in the number incidents or journey time for pedestrians and cyclists; and
- Other possible impacts of pedestrian and cyclist facilities.

At this stage in the option selection process, it is not possible to fully quantify the impacts of the scheme options across each of the Physical Activity sub-criteria listed above. For example, the precise design detail of any required infrastructure for pedestrians and cyclists has not been determined at option selection stage. Accordingly, it is not possible to quantify a prediction of usage of any active travel facilities and consequently the health, absenteeism and journey time benefits that may arise. In light of this, the Physical Activity appraisal aims to qualitatively assess the impacts of the scheme corridors and transport scenarios in respect of physical activity. The methodology also assesses the potential impacts to existing recreational facilities and active travel infrastructure within the study area.

Each corridor was scored on a seven-point scale depending on the severity of impacts to physical activity. A score of 1 indicates majorly negative impacts on physical activity. A corridor would be assigned this score should it have a majorly negative impact upon existing amenities or provide little to no benefit to physical activity. A score of 7 indicates majorly positive impacts on physical activity. A corridor would be assigned a score of 7 should it have a majorly positive impact on existing amenities and/or provide opportunities to improve physical activity within the study area.

The complete seven-point scale is outlined below:

- 7 – Major or highly positive;
- 6 – Moderately positive;
- 5 – Minor or slightly positive;
- 4 – Not significant or neutral;
- 3 – Minor or slightly negative;
- 2 – Moderately negative; or,
- 1 – Major or highly negative.

2 Existing Facilities

The study area contains a range of physical activity amenities and desirable or useful features or facilities, that act as constraints to the development of the N11/M11 Scheme. These are discussed in more detail below.

2.1 Amenities, Walking & Cycling Facilities

There exist numerous and popular walking routes within the study area. This region of County Wicklow is recognised as particularly scenic and attracts people from around the country seeking to avail of the recreational opportunities it holds. Popular trails include:

- Bray Head Cliff Walk – this trail extends along a coastal path between Bray and Greystones offering views of the Irish Sea.
- Great Sugarloaf – One of the primary attractions to the study area, located 4km West of Kilmacanoge, see **Figure 1** below.

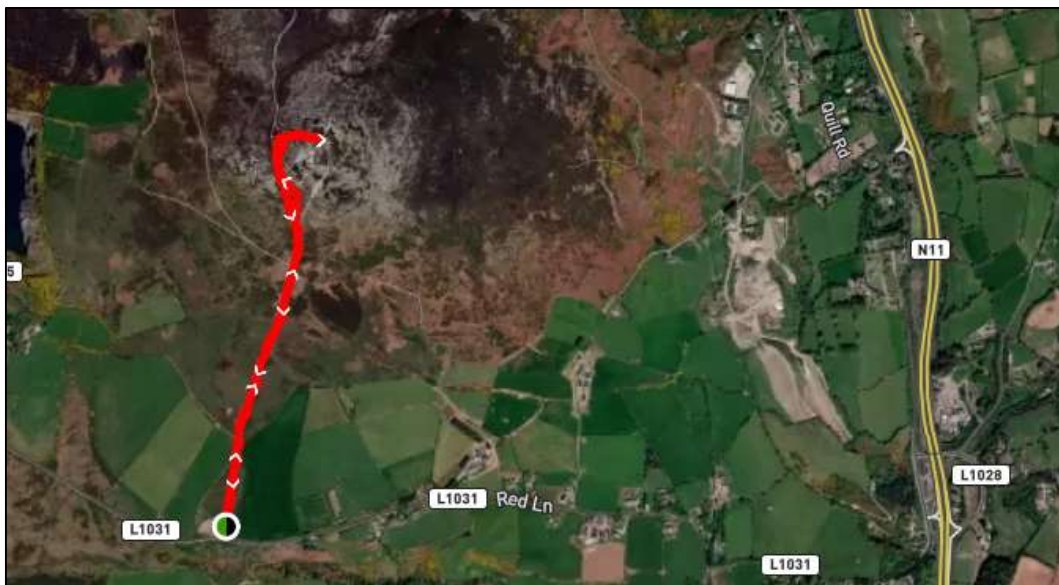


Figure 1 Great Sugarloaf hiking trail (© Google Imagery ©2021 DigitalGlobe)

- Delgany Heritage Trails – trail in and around the village of Delgany which includes historical sites and places of interest.

- Bray Promenade/Bray Town – coastal town route with a mile-long walk along the seafront, attracts people from all over Wicklow and South County Dublin.
- Bray to Greystones Walk – 17km moderately trafficked trail between the two towns.
- Little Sugar Loaf – located between Kilmacanoge and Bray.
- Old Downs Hill – Found to the West of the Glen of the Downs and N11 Junction 10 (Delgany). The trail is denoted by the black line in **Figure 2**.



Figure 2 Old Downs Hill Trail

- Glen of the Downs Nature Trail – lies between Junction 9 (Glenview) and Junction 10 (Delgany) along the N11/M11, highlighted in red in **Figure 3** below.



Figure 3 Glen of the Downs Nature Trail (© Google Imagery ©2021 DigitalGlobe)

- Kindlestown Trail. – trail found at Kindlestown wood to the east of Junction 9 (Glenview) and the Glen of the Downs.

Within County Dublin, several other popular trails and walks exist which include:

- Dublin Mountains Way;
- Carrickgollogan – Lead Mines Way
- Carrickgollogan – Mountain Access Route;
- Barnaslingan – Pine Loop trail;
- Barnaslingan – Scalp Lookout Trail; and
- Glenview Woodlands Trail.

2.1.1 Existing conditions for vulnerable road users on N11/M11

As a designated motorway, pedestrians and cyclists are prohibited from accessing the section of existing M11 from its commencement at Loughlinstown Roundabout in the north, to its termination at Junction 6 (Bray/Fassaroe). To the south of this however, the existing N11 dual carriageway is an all-purpose route and, as such, must consider the need to accommodate vulnerable road users in a safe manner. In accordance with current road design standards, the provision of cycle/pedestrian facilities along national roads may vary in form, comprising of either adjacent cycleways running directly along the verge of the road, to off-line facilities remote from the carriageway, potentially utilising disused railway lines, forest trails or greenways. Alternatively, pedestrians and cyclists may need to be

accommodated on an alternative route, where an appropriate alternative facility exists.

In the case of high-speed dual carriageways such as the existing N11, it is usually preferable for cyclists and pedestrians to be accommodated away from the road carriageway, using alternative facilities to limit interaction with high volumes of motorised traffic and to ensure a more comfortable and spacious environment for vulnerable users. However, the development of the present N11 along much of the original trunk road has similarly resulted in a marked absence of alternative routes to satisfactorily cater for pedestrians and cyclists. Along certain sections of the route, cyclists and pedestrians are effectively forced to use the existing N11, compounding an already hazardous environment in view of the geometric and operational deficiencies presented above. In the absence of any dedicated lanes, cyclists currently use the hard shoulder, mixing closely with high speed traffic and are especially vulnerable at junction exits and entries, where there are no appropriate crossing points to navigate safely amongst weaving vehicles. However, on many sections of the route the hard shoulder temporarily reduces in width or disappears altogether where the hard shoulder doubles up as a merge or diverge auxiliary lane, leaving no defined position on the road for cyclists and pedestrians. Examples of this problem are illustrated in **Figures 4 and 5** below, but the problem is widespread along the corridor.



Figure 4 Narrowed hard shoulder – N11 southbound at Junction 11 (Kilpedder) (© 2021 Google)



Figure 5 Abrupt removal of hard shoulder – N11 northbound at Junction 9 (Glenview) (© 2021 Google)

Many of the developments made to the N11 corridor over time have not taken due consideration of the needs of non-motorised road users. Few of the existing structures crossing the N11 have dedicated cycle facilities, or even sufficient width in the verge to allow separation of vulnerable users and vehicles, refer to **Figure 6** below.



Figure 6 Absence of pedestrian/cyclist facilities – existing R768 overbridge at Junction 7 (Bray South) (© 2021 Google)

The specific provision for pedestrians on the existing N11 is similarly inadequate, placing vulnerable users in proximity to high speed traffic without safe refuge or segregation. While the demand for pedestrian usage along the dual carriageway may be low, the absence of alternative routes and the presence of frontage accesses serving businesses and residential properties generates a low-level pedestrian usage on certain sections of the route, most notably between Bray and Kilmacanoge.

2.2 Sports/Athletic Facilities

There are a large number of existing sports and activities clubs and sports facilities within the Study Area, these include:

- Bray Emmets GAA club is located alongside the existing M11 just south of Junction 5 (Bray North) and is accessed via Old Connaught Avenue.
- Shankill GAA club is located in proximity to Junction 4 (M11/M50).
- Cuala GAA club lies to the East of the M11 between Junction 4 (M11/M50) and Junction 5 (Bray North).
- Kilmacanoge GAA is located West of the N11 on the outskirts of Kilmacanoge village.
- Glencormack United FC is also found to the West of the N11 on the outskirts of Kilmacanoge.
- Newcastle GAA is located towards the southern end of the scheme East of Junction 13 (Newtownmountkennedy/Newcastle).
- Newtown GAA is located towards the southern end of the scheme to the West of Junction 13 (Newtownmountkennedy/Newcastle).
- St. Anthony's Football Club is located to the East of Junction 11 (Kilpedder) off the R761.
- Kilcoole GAA club is located along the R761 adjacent to Druids Glen Golf Club.

- Carrickmines Croquet and Lawn Tennis Club is located to the North of the Study Area, just off Junction 15 of the M50.
- Landsdowne Old Wesley Rugby Club is found West of the M11 Junction 4 along the R116. Shankill Tennis Club is located to the East of Junction 4 along Quinn's road in the town of Shankill.
- Carrick Glen Clay Pigeon Club is found to the West of the N11 Junction 14 (Coyne's Cross) at Ballyduff cross.
- Shoreline Sports Park is an athletics facility located at the southern end of Greystones off the R774.
- Seapoint Rugby Club is found to the East of the N11 in Cabinteely.

There are also numerous park and recreational green areas within the study area. Cabinteely park is located in the north of the study area, to the west of the N11 in Cabinteely. Kilbogget park is also located here to the east of the N11. Shanganagh Park and DLRC Cricket Club are located to the east of the N11 between Junction 4 (M11/M50) and Junction 5 (Bray North). The People's Park is found within the town of Bray along Upper Dargle Road.

In addition to the specific facilities listed above, there are of course numerous other amenities and facilities promoting physical activity within large towns such as Bray and Greystones. Where proposed corridor options impact directly on recreational facilities mentioned above, this is judged to represent a negative impact in relation to the Physical Activity assessment.

2.3 Other Facilities

There are numerous different golf clubs in County Dublin and Wicklow that are located within the study area, including:

- Old Conna Golf Club is located by Old Conna village just west of the M11.
- Woodbrook Golf Club is located along the eastern coast and is divided by the DART Railway Line.
- Dún Laoghaire Golf Club is located north of Enniskerry along the Dublin and Wicklow county border.
- Bray Golf Club is located along the R761 south of Bray.
- Greystones Golf Club is located in the south of Greystones Town in the Killincarrig townland.
- Charlesland Golf Club is situated along the eastern coast just south of Greystones Golf Club in Ballynerrin townland.
- Moving west, Delgany Golf Club, is located in close proximity to the Glen of the Downs SAC within the Bellevue Demesne.
- The Druids Glen Golf Resort is mainly located within the Leabeg Upper townland south of Kilcoole town.

- The Glen Mill Golf Club is located to the east of the existing N11 in the townland of Timore.

Brennanstown Riding School is both a training and facilities centre for the British Horse Society qualifications and is one of Ireland's premier equestrian establishments. The school is located adjacent to the existing N11 Junction 7 (Bray South).

Again, any direct impact from a corridor to these types of facilities would have a negative effect on the scoring of a corridor option in relation to the Physical Activity assessment.

3 Physical Activity Impacts

3.1 Corridor Options

In the northern section of the scheme, Corridor Options 1A and 1B differ only in the location and layout of Junction 7 (Bray South). Corridor 1A facilitates a new junction – located to the south of the existing Junction 7. This alternative junction impacts on lands associated with Brennanstown riding school. The proposed link road from this new Junction 7 towards Southern Cross Retail Park, the southbound diverge and the southbound merge, as well as the eastern junction roundabout, all impact upon and effectively sever these lands which may adversely affect the operation of the riding school and thus impact negatively on its amenity and recreational value. Conversely, Corridor 1B (North) facilitates an upgrade of Junction 7 at the existing junction location, avoiding impact on the equestrian facility at Brennanstown and impacting lands to the west of the N11 corridor instead. Accordingly, Corridor Option 1A (North) scores negatively relative to Corridor Option 1B (North) in the physical activity assessment.

In the absence of any other differences in impacts on facilities or amenities between the two corridors, the preferences, and scores of the corridor options in the northern section of the scheme are summarised in **Table 1** below:

Table 1: Summary of Physical Activity Assessment for northern section

	Corridor Option 1A (North)	Corridor Option 1B (North)
Score / Impact Level	3 - Minor or Slightly Negative.	4 - Not significant or neutral.
Preference	Least Preferred	Preferred

In the southern section of the scheme, Corridor Option 1 (South) passes on-line through the Glen of the Downs SAC. The presence of the existing roadway currently detracts from the amenity and recreational value of the Glen of the Downs Nature Reserve. Retention of an on-line corridor through the Glen is unlikely to address this issue satisfactorily, and in this regard, Corridor Option 1

(South) scores negatively. Furthermore, owing to the designation of the site as a Special Area of Conservation (SAC), the existing N11 is narrow and constrained in nature through the Glen. There is no safe, segregated pedestrian access and cyclists are presented with hazardous conditions traversing along the narrow hard shoulders alongside fast-moving traffic. It is unlikely that an on-line option within Corridor 1 (South) could adequately provide a solution to this as the final cross-section may be constrained by what can be made fit along the existing roadway whilst minimising impacting the boundaries of the SAC. This further contributes to the negative assessment for Corridor 1 (South).

Corridor Option 2 (South) has an adverse impact on an Area of Outstanding Natural Beauty and to an Area of High Amenity along the off-line cyan corridor segment. The corridor also requires deep cuts into the hillside of the ‘Old Downs Hill’, a popular trail for hikers. This option does however remove the existing impact of the N11 from the Glen of the Downs SAC. This would allow for the declassification of the existing N11 through the nature reserve, with the downgraded section of the N11 then providing a viable alternative route for cyclists and pedestrians. The Glen of the Downs would likely also become a more attractive and valuable amenity to the region once the high flow of traffic through it is removed. For these reasons, Corridor Option 2 (South) scores neutrally as the impacts to ‘Old Down’s Hill’ are largely balanced by the removal of impacts to the SAC. Corridor Option 2 (South) ties back into the N11 at Junction 12 (Newtownmountkennedy) where it follows the existing road to the scheme end at Junction 14 (Coyne’s Cross). Like Option 1 (South), this section does not impact any other amenities or facilities which accommodate physical activity, and its score is therefore not further affected.

Corridor Option 5 (South) is identical to Corridor Option 1 (South) apart from a widened boundary through the Glen of the Downs SAC. Widening of the corridor would potentially allow for the provision of pedestrian access and cycle lanes through the Glen however the additional unavoidable impact to the SAC would be detrimental to the nature reserve itself as an amenity. For these reasons, Corridor Option 5 South scores negatively.

Corridor Option 6 (South) includes the off-line purple segment passing underneath the Glen of the Downs to the west in a tunnelled alignment. Similar to Corridor Option 2 (South), the provision of an off-line corridor from mainline traffic will ensure that a safer alternative route (i.e. the declassified N11) is available for active travel purposes. While cyclist and pedestrian access would be prohibited through the tunnel itself, a declassified N11 through the Glen of the Downs may provide a safe and attractive pedestrian and cycling facility where a viable alternative was previously unavailable. The tunnel ties back into the mainline just south of Junction 10 (Delgany). The corridor option then continues along the existing road to the end of the scheme at Junction 14 (Coyne’s Cross), avoiding impacts to any other facilities or amenities. The tunnel option likely represents the best opportunity to improve and benefit physical activity in the southern section of the scheme. For these reasons, this corridor option scores positively.

The overall corridor option scores and preferences for the southern section of the scheme are thereby summarised in **Table 2** below:

Table 2: Summary of Physical Activity Assessment for southern section

	Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 5 (South)	Corridor Option 6 (South)
Score / Impact Level	2 – Moderately Negative	4 – Not significant or neutral	2 – Moderately Negative	5 – Minor or slightly positive
Preference	Least Preferred	Intermediate	Least Preferred	Preferred

3.2 Transport Scenarios

The choice of transport scenario, as distinct from the transport corridor, provides a more tangible basis for comparing and evaluating option performance under the Physical Activity criterion. As a high-speed motorway/dual carriageway, it may be preferable that provision for active travel modes (i.e. walking and cycling), is accommodated away from the road carriageway, using alternative facilities to limit interaction with high volumes of motorised traffic and to ensure a more comfortable and spacious environment for vulnerable users. The inclusion of parallel service roads within Scenarios 5A and 5B between Junction 6 (Bray/Fassaroe) and Junction 8 (Kilmacanoge) are expected to contribute to a safer environment for active travel in these areas. On balance, Scenario 5A is considered marginally preferable given the additional inclusion of a new parallel road between Junction 5 (Bray North) and Junction 6 (Bray/Fassaroe), which could provide a safer alternative route for active travel, linking major future residential developments at Fassaroe and Old Conna to Bray.

Scenario 4 would deliver an enhancement to bus services within the study area in addition to those already included in the GDA Strategy and the Bus Connects project. While a bus service cannot be seen itself as an accommodator of physical activity, a bus journey typically requires users to adopt a form of active travel such as walking or cycling to move between their origin and the bus stop and again from the bus stop to the destination. The provision of an improved bus service network may ultimately encourage more people to leave the car at home, which results in a positive assessment. It is acknowledged however that the attractiveness of improved bus service may be contingent on the concurrent delivery of road improvement measures to alleviate existing congestion.

The overall Transport Scenario scores and preferences are summarised in **Table 3** below:

Table 3: Summary of Physical Activity Assessment for Transport Scenarios

	Scenario 5A	Scenario 5B	Scenario 4
Score / Impact Level	5 – Minor or slightly positive	3 – Minor or slightly negative	5 – Minor or slightly positive
Preference	Preferred	Least Preferred	Preferred

4 References

Transport Infrastructure Ireland (2016) Project Appraisal Guidelines for National Roads Unit 7.0 – Multi Criteria Analysis PE-PAG-02031. Available from: <https://www.tiipublications.ie/library/PE-PAG-02031-01.pdf>

Transport Infrastructure Ireland (2016) Project Appraisal Guidelines for National Roads Unit 13.0 – Pedestrian and Cyclist Facilities PE-PAG-02036. Available from: <https://www.tiipublications.ie/library/PE-PAG-02036-01.pdf>