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DfI

Guidance on Accessibility Analyses and
the Preparation of Planning Policies for
Transport

June 2021

Guidance on Accessibility Analyses and the Preparation of Planning Policies for Transport.

Introduction

1. This Guidance replaces the *'DfI Guidance on the Preparation of LDP Policies for Transport'*, issued in January 2019.
2. Under the reformed two-tier planning system introduced in April 2015, councils have considerably enhanced planning powers, including responsibility for the preparation of new Local Development Plans (LDPs). These reforms significantly enhance local democratic accountability and provide a new planning system that is more responsive to the priorities and needs of local people.
3. Whilst councils have flexibility to bring forward operational policies tailored to local circumstances, in preparing their LDPs they must take account of the [Regional Development Strategy](#) (RDS) 2035, the [Strategic Planning Policy Statement](#) (SPPS), and any other policy or advice in guidance issued by the Department. In relation to transport policy matters, this must also include a consideration of [Planning Policy Statement \(PPS\) 3 and PPS 13](#) which will cease to apply once a council adopts its Plan Strategy.
4. It is recognised that LDPs prepared by councils are a fundamental tool in the implementation of central government policies and strategic objectives on transport. It is therefore of critical importance that LDPs provide land-use allocations and robust local operational policies and guidance that align with the policies, strategies, plans and advice of the Department in relation to transport.
5. The Department is currently developing a suite of Transport Plans which will set out the Department's intentions for investment in transport networks over the next 15 years. With this in mind, councils are encouraged to engage with the Department when bringing forward future development and transport policies that are robust and integral elements of the new LDPs. Councils' policies and strategies must also take account of the relevant Transport Studies and Plans.

Our Transport Responsibilities

6. Following the reform to the Northern Ireland planning system in 2015, the Department continues to be the competent authority for transport.
7. The Department's transport vision, as set out in '[Ensuring a Sustainable Transport Future: A New Approach to Regional Transportation](#)' is:

“to have a modern, sustainable, safe transportation system which benefits society, the economy, the environment and which actively contributes to social inclusion and everyone's quality of life”

8. The Department's continuing commitment to secure genuine integration between the planning of land use and of transport infrastructure as set out in the Department's document '[Planning for the Future of Transport – Time for Change](#)'. This Document outlines how the Department's priorities for the future of transport here can be supported by the improved planning, management and development of the transport networks. The document focuses on the changes the Department needs to make, working across government, with transport contributing to societal and environmental objectives as well as economic ones.
9. LDPs and Transport Plans together have a key role to play in facilitating the integration of transportation and land use planning. Their preparation provides the joint opportunity to assess the transport needs, problems and opportunities within the Plan area and to ensure that full consideration is given to sustainable transportation matters in the allocation of land for future development. In addition the process represents a unique opportunity to combine the shared regional and local ambitions which are set out in the Programme for Government and also in each councils' Community Plan and LDPs.
10. The integration of land use and transport planning has the potential to:
 - reduce the need for motorised travel;
 - provide infrastructure that will enable an increase in the use of sustainable travel modes – walking, cycling and public transport; and
 - make better use of existing transport infrastructure and minimise the need for new transport infrastructure.

11. The Transport Plans will set out the Department's intentions in terms of new transport infrastructure and services. In preparing the LDP councils must take account of the relevant Transport Plans.

Purpose of this Guidance

12. The purpose of this Guidance is to assist councils with the drafting of robust LDPs by highlighting the key considerations that are particularly relevant to the preparation of local operational transport policies and guidance. The application of this Guidance will be monitored and content will be kept under review.
13. This Guidance has a statutory basis under Part 2 of the [Planning Act \(Northern Ireland\) 2011](#) - Section 8 (5) (b); Section 9 (6) (b) and Section 20 (a) refer. As such, councils must take account of it when preparing their LDPs.
14. The Guidance will not, however, inform the consideration of planning applications and has no operational weight for development management purposes.
15. Any conflict between this Guidance and the SPPS will be resolved in favour of the provisions of the SPPS.

Key Considerations

16. PPS 3 'Access, Movement and Parking' and PPS 13 'Transportation and Land Use' contain a number of Key Considerations, supported by robust transport management policies, that have been proven to work well since their introduction in 2005 and 2010 respectively. The policy approach of PPS 3 and PPS 13 are closely replicated, in a strategic way, in the SPPS. As such, the policy provisions of PPS 3 and PPS 13 are judged by the Department to reflect good practice. It is strongly encouraged, therefore, that these proven operational policies are replicated closely by councils when formulating their local transportation planning policies. However, the guidance contained in this document is not prescriptive and ultimately councils retain the flexibility to tailor their local transport policies to their local circumstances, provided this can be supported by evidence.

17. In preparing LDPs, councils should take account of PPS 3 and PPS 13 and the following Key Considerations:

- Integration of Land-Use and Transportation
- Active Travel Networks
- Park & Share and Park & Ride
- Creating an Accessible Environment
- Access to Public Roads
- Protected Routes
- Safeguarding New Transport Schemes
- Disused Transport Routes
- Transport Assessments & Travel Plans
- Walking & Cycle Provision
- Provision of Public and Private Car Parks
- Parking & Servicing
- Design of Car Parking
- Temporary Car Parks

18. In addition to the Key Considerations outlined above there are also important transport provisions within the subject policies of the SPPS and within retained planning policy. Councils in developing LDPs must also take account of these policies.

19. The following table sets out the recommended approach in relation to:

- the integration of land-use and transportation; and
- the formulation of local operational planning policies for transport.

SPPS Regional Strategic Objective	Key Policy Consideration	Integration of land-Use and Transportation Best Practice Approach	Explanation and Justification	Link to SPPS
Promotion of sustainable patterns of development and accessibility for all	Integration of land use and transportation	<p>Accessibility Analyses should be employed to assist in the identification of appropriate development sites where integration with public transport, cycling, walking and the responsible use of the private car can best be achieved</p> <p>Guidance in the use of accessibility analysis has been provided to the councils and is included in Annex 1 of this document.</p>	<p>The SPPS acknowledges that “the successful integration of transport and land use is fundamental to the objective of furthering sustainable development” (6.293) – this approach highlights the role of planning for improving connectivity and promoting more sustainable patterns of transport and travel.</p> <p>Furthermore the SPPS states “the aim of the SPPS with regard to transportation is to secure improved integration with land-use planning” which is consistent with the RDS and the New Approach “and to facilitate safe and efficient access, movement and parking” (6.296). To achieve the SPPS regional strategic objective to “promote sustainable patterns of development which reduce the need for motorised transport, encourages active travel, and facilitate travel by public transport in preference to the private car” (6.297).</p> <p>The location and design of development has a fundamental influence on travel patterns. In the allocation of land in a development plan and making decisions on development proposals, a key aim will be to integrate transportation and land use in ways which enable people to carry out their everyday activities with less need to travel and with the maximum modal choice.</p> <p>This will require the consideration of ways to reduce the physical separation between housing and services (such as shopping, jobs, health and education facilities) “through allocating sites for housing development in proximity to existing or planned provision of services” (SPPS 6.301) in line with bullet point one of SPPS paragraph 6.297.</p>	6.297 and 6.301

SPPS Regional Strategic Objective	Key Policy Consideration	Integration of land-Use and Transportation Best Practice Approach	Explanation and Justification	Link to SPPS
Promotion of sustainable patterns of development and accessibility for all	Active Travel Networks	In accordance with the SPPS “LDPs should identify active travel networks and provide a range of infrastructure improvements to increase use of more sustainable modes. In particular, within urban areas, providing enhanced priority to pedestrians, cyclists and public transport and an appropriate level of parking provision which is properly managed.”	Walking and cycling constitute core components of an integrated transport approach and have the potential to reduce reliance on other forms of transport, particularly within urban areas. The draft Programme for Government commitment to increase the percentage of journeys made by walking, cycling and public transport depends on reducing the percentage of journeys made by other means. In order to achieve this, it is important that good quality infrastructure – convenient, continuous, coherent and comfortable – in the form of comprehensive walking and cycling networks are an integral part of LDPs.	6.300
Promote parking policies that will assist in reducing reliance on the private car and help tackle growing congestion	Park & Share and Park & Ride	Park & Share and Park & Ride sites should be developed in appropriate locations to reduce the need to travel by private car and encourage the use of public transport.	<p>The Regional Strategic Objectives within the SPPS acknowledge the importance of encouraging active travel and facilitating travel by public transport in preference to the private car and explicitly includes an objective “to promote parking policies that will assist in reducing reliance on the private car and help tackle growing congestion” (6.297). This is one way in which planning can support the creation of an environment where there are more opportunities for active and sustainable travel through Park & Share and Park & Ride – thereby reducing traffic congestion on the transport network.</p> <p>In addition to Park & Share and Park & Ride the development of car parking strategies by the council, in collaboration with the Department, will have a fundamental role in promoting a modal shift away from the private car.</p>	6.297 & 6.301

SPPS Regional Strategic Objective	Key Policy Consideration	Local Operational Planning Policies for Transport Best Practice Policy Wording	Explanation and Justification	Link to SPPS
Ensuring accessibility for all, with the needs of people with disabilities and others whose mobility is impaired given particular consideration	Creating an Accessible Environment	<p>Developers will be required (where appropriate) to take account of the following (building on SPPS 6.302):</p> <ul style="list-style-type: none"> a) facilities to aid accessibility e.g. provision of dropped kerbs, tactile paving etc., together with the removal of any unnecessary obstructions; b) convenient movement along pathways and an unhindered approach to buildings; c) pedestrian priority to facilitate pedestrian movement within and between land uses; and d) ease of access to reserved car parking, public transport facilities and taxi ranks. <p>The development of a new building open to the public, or to be used for employment or education purposes, will only be permitted where it is designed to provide suitable access for all, whether as customers, visitors or employees. In such cases the Planning Authority will operate a presumption in favour of a level approach from the boundary of the site to the building entrance and the use of steps, ramps or mechanical aids will only be permitted where it is demonstrated that these are unavoidable and can be facilitated from the public footway without overly impairing available width. Development should be designed to facilitate ease of access for all pedestrians including wheelchair users, not only to the building entrance but also to and from the pedestrian environment around the building. Access to existing buildings and their surroundings is improved as opportunities arise through alterations, extensions and change of use.</p> <p>Where appropriate, a Design and Access Statement should be required to accompany development proposals.</p>	<p>The SPPS identifies the need to “ensure accessibility for all, with the needs of people with disabilities and others whose mobility is impaired given particular consideration” (6.297).</p> <p>The current guidance documents adopted by the Department is “Creating Places – Achieving Quality in Residential Developments.” This guidance demonstrates how quality places, whether created in rural surroundings or an urban setting, will respect their context and make the most of the existing site characteristics. A well designed layout protects and respects natural habitat and heritage, encourages walking and cycling and provides convenient access to public transport.</p> <p>Additional information is available in Development Management Practice Note 12 – Design and Access Statements.</p>	6.297

SPPS Regional Strategic Objective	Key Policy Consideration	Local Operational Planning Policies for Transport Best Practice Policy Wording	Explanation and Justification	Link to SPPS
Promote road safety in particular for pedestrians, cyclists and other vulnerable road users.	Access to Public Roads	<p>Planning permission will only be granted for a development proposal involving direct access, or intensification of the use of an existing access, onto a public road where:</p> <ul style="list-style-type: none"> a) Such access will not prejudice road safety or significantly inconvenience the flow of people or goods; and b) The proposal does not conflict with Policy Area Protected Routes. <p>The acceptability of access arrangements, including the number of access points onto the public road, will be assessed against the Department for Infrastructure’s current published guidance set out in Annex 2 in addition to:</p> <ul style="list-style-type: none"> • The nature and scale of the development; • The character of existing development; • The contribution of the proposal to the creation of a quality environment – including the potential for urban/ village regeneration and environmental improvement; • The location and number of existing accesses; and • The standard of the existing road network together with the speed and volume of traffic using the adjacent public road and any expected increase. <p>The standards used to determine the suitability of a new a new access or the intensification of use of an existing access are set out in the Department’s guidance ‘Development Control Advice Note 15 (2nd Edition)’ together with ‘Creating Places’.</p>	<p>The land-use planning system has an important role to play in promoting road safety, as identified in the SPPS. It is important to fully consider the effect proposed new development will potentially have on the public road network and Planning Authorities should ensure appropriate policy is included in the LDP.</p> <p>A well designed access is important for the safety and convenience of all road users. The standards used to determine the suitability of a new or intensification of use of an existing access are set out in the Department’s guidelines “Development Control Advice Note 15 (2nd Edition).”</p>	6.297

SPPS Regional Strategic Objective	Key Policy Consideration	Local Operational Planning Policies for Transport Best Practice Policy Wording	Explanation and Justification	Link to SPPS
Restrict the number of new accesses and control the level of use of existing accesses onto Protected Routes	Protected Routes	<p>LDP policy relating to protected routes must provide clear policy coverage on the various classes of protected route:</p> <ul style="list-style-type: none"> a) Motorways and high standard dual carriageways – All locations: Planning permission will not be granted for development proposals involving direct access – with the potential exception for motorway service areas where there is demonstrable need. b) Other dual carriageways, Ring Roads, Through-Passes and By-Passes – All locations: Planning permission will only be granted for a development proposal involving direct access or the intensification of the use of an existing access in exceptional circumstances or where the proposal is of regional significance. c) Other protected routes – outside settlements and within settlements: the provisions as set down by the SPPS should be applied. d) Petrol filling stations – in addition to the above mentioned criteria, local operational planning policy should require that proposals for new petrol filling stations in the countryside, within 12 miles of existing services, will not be acceptable. It is considered reasonable to expect car users to travel at least 12 miles along the protected route network before reaching a petrol filling station or service area (on either side of single carriageway roads). Where 	<p>The SPPS provides a clear direction as to the importance of regionally designated protected routes located within the Plan area.</p> <p>This policy is intended to protect roads which contribute significantly to economic prosperity by providing efficient links between all the main towns, airports and seaports, and with the Republic of Ireland.</p>	6.297 & 6.301

SPPS Regional Strategic Objective	Key Policy Consideration	Local Operational Planning Policies for Transport Best Practice Policy Wording	Explanation and Justification	Link to SPPS
		<p><i>.continued</i></p> <p>a protected route is already adequately served by existing services the creation of new petrol filling stations will not be acceptable. All such development proposals for petrol filling stations should meet normal planning, environmental and road safety considerations.</p>		
Protect routes required for new transport schemes including disused transport routes with potential for reuse	Safeguarding new transport schemes	<p>Planning Permission must not be granted for development that would prejudice the implementation of a transport scheme identified in a LDP or Transport Plan.</p> <p>In addition, the following matters must be taken into account in assessing whether the implementation of a particular scheme would be prejudiced by a development proposal:</p> <ul style="list-style-type: none"> • The nature of the proposal; • The programming of the transport scheme; and • The extent to which implementation of the scheme would be compromised by the carrying out of the proposed development. 	<p>SPPS sets out the requirement for new transport schemes or planned improvements to the transport network to be identified in the LDP and “to be afforded adequate protection from development likely to jeopardise its implementation” (6.301).</p> <p>The Department continues to be committed to making every effort to minimise the effects of blight – and where this is unavoidable, provision exists to compensate landowners whose land is required for such schemes.</p>	6.297
Protect routes required for new transport schemes including disused transport routes with potential for future reuse	Disused Transport Routes	<p>Planning Permission will not be granted for development that would prejudice the re-use of a disused transport route identified in a LDP or Transport Plan for transport or recreational purposes.</p>	<p>The SPPS sets out the requirement for LDPs to “identify and safeguard disused transport routes such as former railway lines and canals where there is a reasonable prospect of re-use for future transport purposes” (6.301). It is anticipated that the Local Transport Studies will assess the need for continued protection of such routes and will make a recommendation to the planning authority as to the need for continued protection for transport route protection.</p>	6.301

SPPS Regional Strategic Objective	Key Policy Consideration	Local Operational Planning Policies for Transport Best Practice Policy Wording	Explanation and Justification	Link to SPPS
Promote sustainable patterns of development and road safety	Transport Assessments & Travel Plans	<p>LDP policy should make reference to the Department’s current published Transport Assessment (TA) guidance, and include reference to the requirement for developer contributions - where a development necessitates the provision of additional transport infrastructure improvements these costs shall be borne by the developer.</p> <p>The coverage and detail of a TA should reflect the scale of development and the extent of the transport implications of the proposal. In applications for significant travel generating uses, a TA may need to be accompanied by a Travel Plan. A Travel Plan may also be required for small developments as a mitigation measure to reduce car dependency.</p>	<p>Transport Assessment (TA) represents a significant tool that assists with the integration of transport policy and land-use planning. The SPPS identifies the requirement for planning authorities to “apply the Department’s published guidance”¹.</p> <p>It is suggested that Travel Plans, through the setting out of complementary measures can help to mitigate adverse impacts highlighted by TAs. It is vital that planning authorities make appropriate provision for the monitoring and enforcement of Travel Plans, particularly where agreed objectives are not met – this may be done through attaching a condition to the planning consent or any legal agreement.</p>	6.303
Encourage active travel and promote the provision of adequate facilities for cyclists	Walking & Cycle provision	<p>Planning permission should only be granted for development where the needs of pedestrians and cyclists are taken into account. Where appropriate the following may be required:</p> <ul style="list-style-type: none"> a) safe and convenient pedestrian and cycle access; b) safe, convenient and secure cycle parking having regard to the Department for Infrastructure’s published standards²; c) Safe and convenient pedestrian and cycle links to existing or programmed cycle networks; <p>Major employment generating development, such as those requiring a Transport Assessment, may be required to make provision for shower and changing facilities. That provision will be considered in the Transport Assessment and any Travel Plan.</p>	<p>In addition to the requirements of the SPPS, Programme for Government Outcomes 2 and 11 commit the Department to securing increased levels of journeys made by walking, cycling and public transport. In order to achieve this, walking and cycling as everyday modes of transport, within urban areas, must be made easier. A major concern which discourages people from walking and cycling is the lack of good quality infrastructure. To address this, new development should incorporate safe walking and cycling routes within the site and provide links to existing or programmed cycle networks. Planning authorities have a key role to play in this through the LDP and development management process.</p>	6.301

¹ Transport Assessment Guidelines for Development Proposals in Northern Ireland – October 2006

² Parking Standards (published by DOE, 2005)

SPPS Regional Strategic Objective	Key Policy Consideration	Local Operational Planning Policies for Transport Best Practice Policy Wording	Explanation and Justification	Link to SPPS
Promote parking policies that will assist in reducing reliance on the private car and help tackle growing congestion	Provision of public and private car parks	<p>Applicants should be required to demonstrate that the proposal:</p> <ul style="list-style-type: none"> a) does not significantly contribute to an increase in congestion³; b) does not have a detrimental impact on local environmental quality; c) meets a need identified in the LDP or Transport Plans, or is accepted following the submission of a robust analysis provided by a developer; d) is within defined areas of parking restraint will only be used for short-stay parking and is appropriately managed to deter long stay commuter parking; and e) is compatible with adjoining land uses. 	Car parking is considered to be a key transport policy lever and can, when appropriately managed, act as a stimulant to economic development whilst having environmental and safety benefits in locations such as town and city centres. In line with the SPPS the planning authority “should be satisfied that there is a need for the development by reference to the councils overall parking strategy following a robust analysis by the applicant” (6.305).	6.301
Promote parking policies that will assist in reducing reliance on the private car and help tackle growing congestion	Parking & Servicing	Development proposals will be required to provide adequate provision for parking and appropriate servicing arrangements taking account of the specific characteristics of the development and its location, having regard to the Department for Infrastructure’s published standards and any reduction in standards provided in a Local Policies Plan or agreed Transport Assessment/Plan. All parking and servicing proposals should not prejudice road safety or significantly inconvenience the flow of people or goods.	The SPPS states “in assessing the appropriate amount of car parking, account should be taken of the specific characteristics of the development and its location, having regard to the Department’s published standards ⁴ and any reduction in standards provided for through the LDP or Transport Assessment” (6.304).	6.301

³ This should be assessed using the Departments published guidance ‘Transport Assessment Guidelines for Development Proposals in Northern Ireland’ – October 2006

⁴ Parking Standards (published by DOE, 2005)

SPPS Regional Strategic Objective	Key Policy Consideration	Local Operational Planning Policies for Transport Best Practice Policy Wording	Explanation and Justification	Link to SPPS
Promote parking policies that will assist in reducing reliance on the private car and help tackle growing congestion	Design of Car Parking	<p>Development must include a high standard of design, layout and landscaping for parking and permission will only be granted where all the following criteria is met:</p> <ul style="list-style-type: none"> a) It respects the character of the local townscape/ landscape; b) It will not adversely affect visual amenity; and c) Provision has been made for security, and the direct and safe access and movement of pedestrians and cyclists within the site. 	The quantum and arrangement of car parking can have a significant impact on the quality of the built and natural environment. Therefore all proposals for parking and associated facilities should be well designed, respect local character and their wider setting.	6.301
Promote parking policies that will assist in reducing reliance on the private car and help tackle growing congestion	Temporary Car Parks	<p>Planning permission should not be granted for the development of a temporary car park unless it is demonstrated that:</p> <ul style="list-style-type: none"> a) It complies with the relevant LDP policy(ies) relating to public and private car parks and the developer can show that a need exists which cannot be met in the short term by the Council or the private sector; and b) It is submitted in conjunction with programmed proposals to develop/redevelop the site in question. <p>Planning permission if granted, will be subject to a time-limited condition for a period of 1 year.</p>	As identified above in the provision of public and private car parks, car parking is inextricably linked to both transportation and broader environmental objectives.	6.301

ANNEX 1 - Accessibility Analyses Guidance

Concept

1. Accessibility analysis is the process of measuring ease of travel from or to specific origins or destinations to provide an evaluation of a particular location.
2. The concept of accessibility focuses on the relationship between four key parameters:
 - A location and its land-use
 - An essential service relevant to the land-use
 - A specified mode of transport, and
 - The time of travel
3. The consideration of the assessment of level of accessibility must therefore be considered separately by:
 - Land-Use at the location, for example;
 - Housing, or
 - Employment
 - The services important to the land-use, for example;
 - Employment
 - Shopping
 - Health
 - The mode of travel, for example;
 - Public Transport
 - Walk
 - Cycle
 - Car
 - Time of day or day of week, for example;
 - Weekday 7am – 9am – employment
 - Weekday evening 8pm – 10pm – shopping
 - Saturday 10am – 2pm – shopping

Isochrone Maps

4. The use of isochrone maps is a central component of accessibility analyses. Isochrones are lines which join locations of equal travel time from a chosen origin or to a chosen destination or vice versa. Using geographic information systems (GIS) techniques, isochrones can be produced on map bases and can be colour banded in, say, 10 minute intervals. The isochrone map therefore allows the reader to distinguish readily between areas with short travel times and hence good accessibility and areas with long travel times and poor accessibility. Depending on the analysis required, GIS techniques can combine the isochrone catchment areas with census (or similar) geo-coded population data, to allow estimates to be made of the number of people who fall into different accessibility classifications (e.g. less than 20 minutes, 20 to 30 minutes, or greater than 30 minutes).

Context

5. Three principal types of accessibility will be considered in this guidance:
- **Regional Accessibility** – providing an overview often relevant to a town or Council area
 - **Strategic Accessibility** – a coarse assessment of accessibility appropriate for strategic or preliminary decision making
 - **Local Accessibility** – a geographically detailed assessment of accessibility appropriate for consideration of a site for zoning purposes.

Regional Accessibility

6. Regional accessibility is concerned with the accessibility of a location in terms of access to regionally important destinations. It is most useful for categorising a broad area such as a Council Area or a principal city, main or local hub. It is proposed that the provision of separate travel times by public transport and car only are sufficient as accessing destination considered to be of importance to the region using walking and cycling modes is unlikely to become the norm.
7. Isochrones maps should be generated from a single key location. It is recommended that this is from the most relevant town centre or local public transport hub in order to present the best possible public transport times. The maps could indicate destinations considered to be important to the region such as the main ports, airports, cities, and border crossings to enable the reader to undertake their own visual assessment of accessibility to these destinations.
8. Figure 1 and Figure 2 show how regional accessibility maps can look using Enniskillen as an example and how the results can vary between public transport and car modes. The maps show clearly:
 - The generally concentric nature of the car isochrones colour bands arising from the density of road network;
 - The elongation of the car isochrones coinciding with the M1 motorway on which speeds are high;
 - The very irregular pattern of public transport isochrones arising from the comparatively limited coverage of connecting services from Enniskillen;
 - The radial pattern of public transport isochrones in the vicinity of Enniskillen provided by local bus services;
 - The 'spotted' and discontinuous isochrones arising from Goldline limited-stop services to Belfast; and,
 - The long journey times by public transport to locations beyond the Enniskillen and Omagh area due to limited connecting services or interchange in Belfast.
9. The Regional Accessibility maps are proposed as a useful tool in highlighting variations in the standard of the transport network arising from travel speed and directness of route. In general for car these will relate to road standards – i.e. Motorway, dual carriageway or single carriageway. In general for public transport they will relate to mode (i.e. train, limited-stop bus or local bus) and the availability and interconnectivity of services.

10. Annex 1A provides additional detail relating to the creation of the regional accessibility maps using TRACC Accessibility Analysis software.

Travel Time by Public Transport from Enniskillen from 7:00am

Transport Planning & Modelling Unit
Clarence Court
10-18 Adelaide Street
Belfast, BT2 8GB

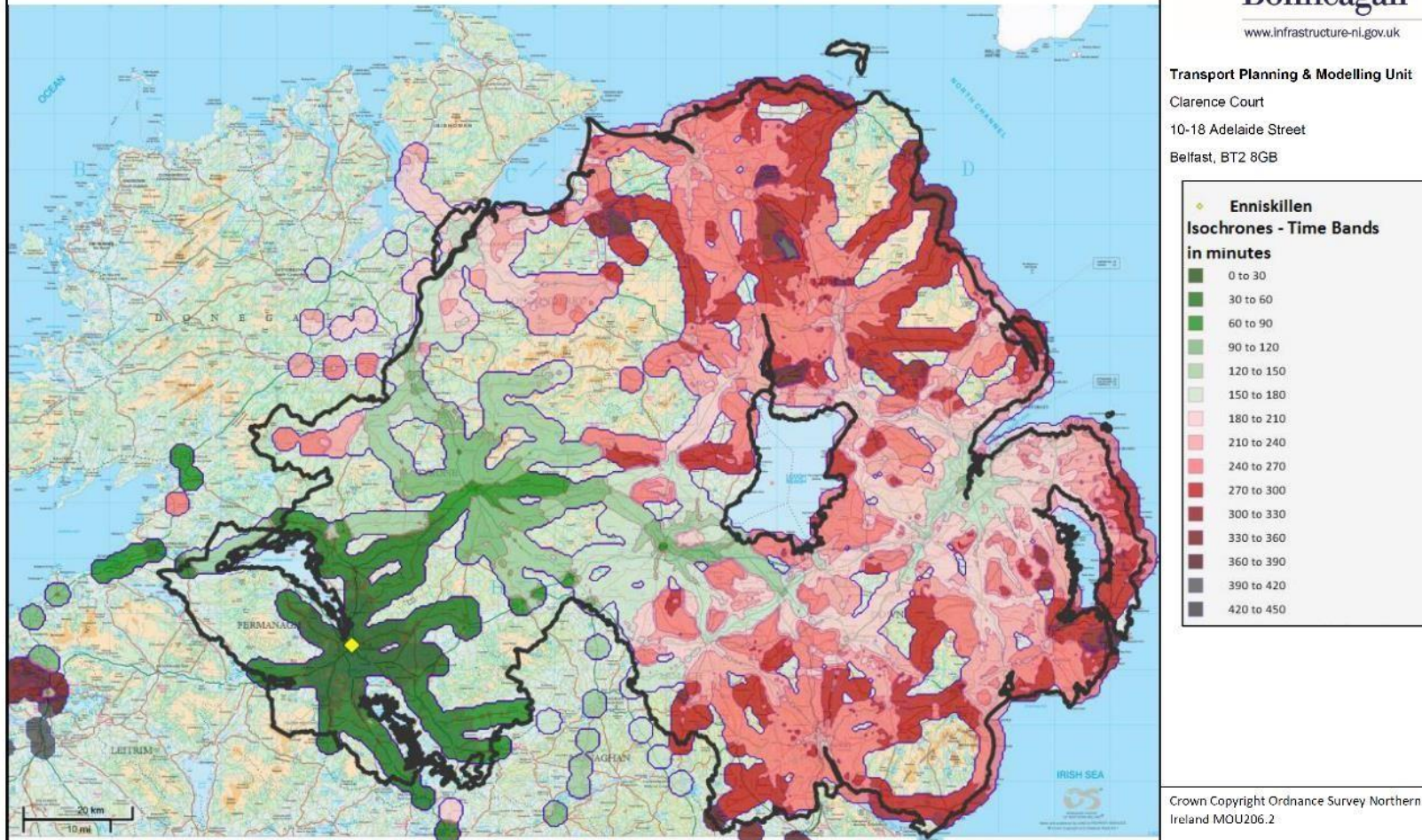


Figure 1 - Travel Time by Public Transport from Enniskillen from 7:00am

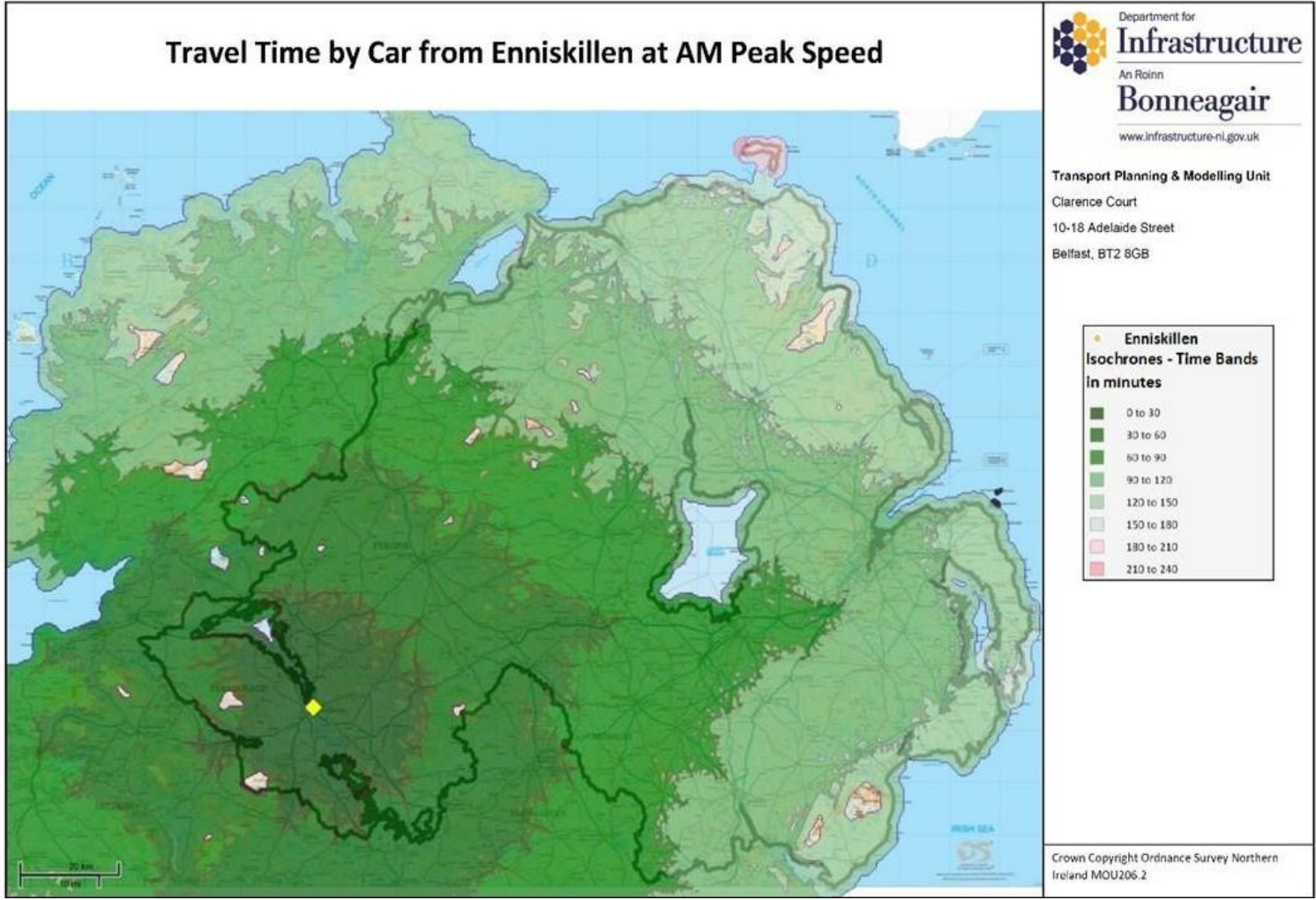


Figure 2 - Travel Time by Car from Enniskillen at AM Peak Speed

Strategic Accessibility

11. Strategic accessibility is concerned with a broad assessment of accessibility in order to guide strategic decisions such as those being made at Plan Strategy stage. It is proposed that, in general, isochrones drawn from the town centre will be adequate for this assessment as the town centre can be used as a proxy location for key services. However, separate isochrones maps will be needed for walking, cycling, public transport, and car modes.
12. Public transport (PT) isochrones will also be needed for a range of time periods to enable accessibility to different key services to be compared. Table 1 summarises the time periods and key services that should be used when assessing strategic accessibility.

Table 1 – Strategic Accessibility Maps by Mode and PT Time Period

Strategic Use	Modes				PT Time periods
Residential	Walk	Cycle	PT	Car	AM Peak Inter-peak Saturday
Employment	Walk	Cycle	PT	Car	AM Peak

13. Figures 3 – 7 show how strategic accessibility maps can look using Enniskillen as an example, and how the results can vary between modes:
- **Figure 3 walking** - the limited area included in the isochrones reflects the low speed, whilst the irregular shapes reflect the limited number of bridge crossings and a number of cul-de-sac layouts
 - **Figure 4 cycling** – the increased area over walking reflects the increased speed, whilst the ‘finger-like’ shapes reaching outward reflect the road network coverage
 - **Figure 5 PT Weekday AM peak** – is similar to Figure 1 but provides additional detail and stops at 60 minutes
 - **Figure 6 PT Saturday** compares closely to Figure 6 but there are fewer local routes to west and east
 - **Figure 7 car** – is similar to Figure 2 but provides additional detail and stops at 60 minutes

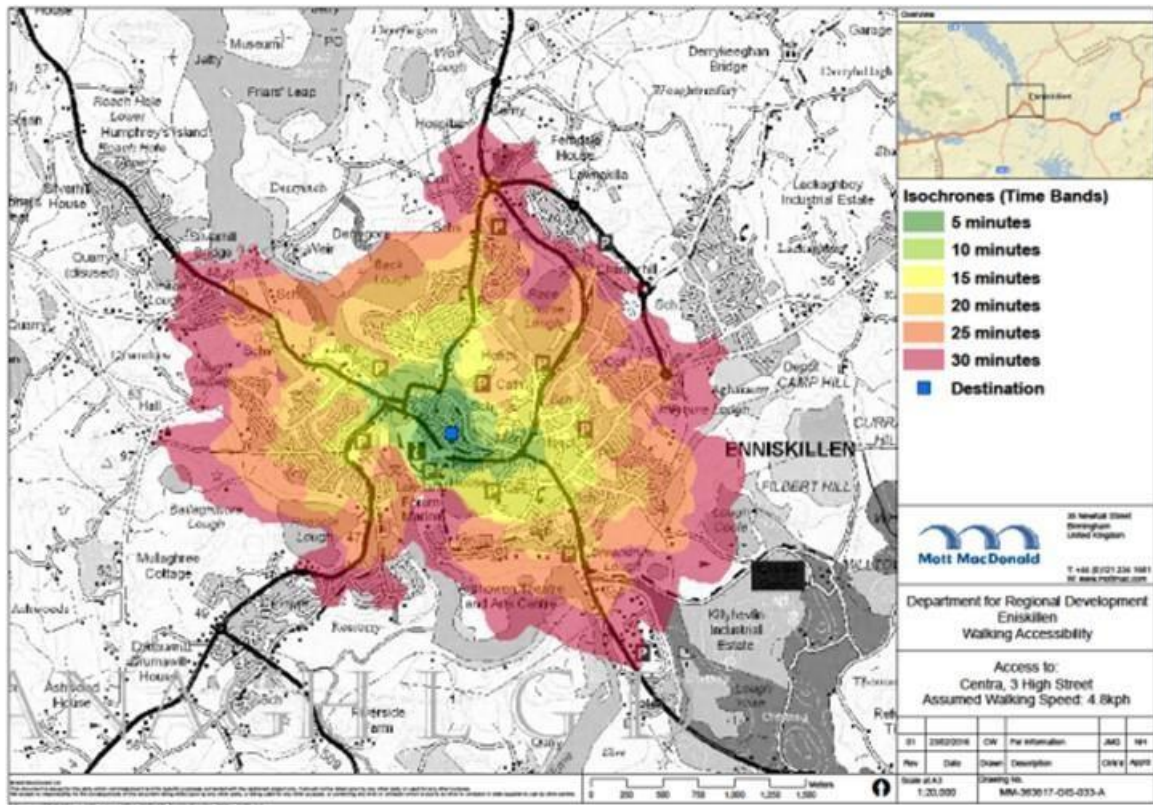


Figure 3 - Walk Access to Enniskillen Town Centre

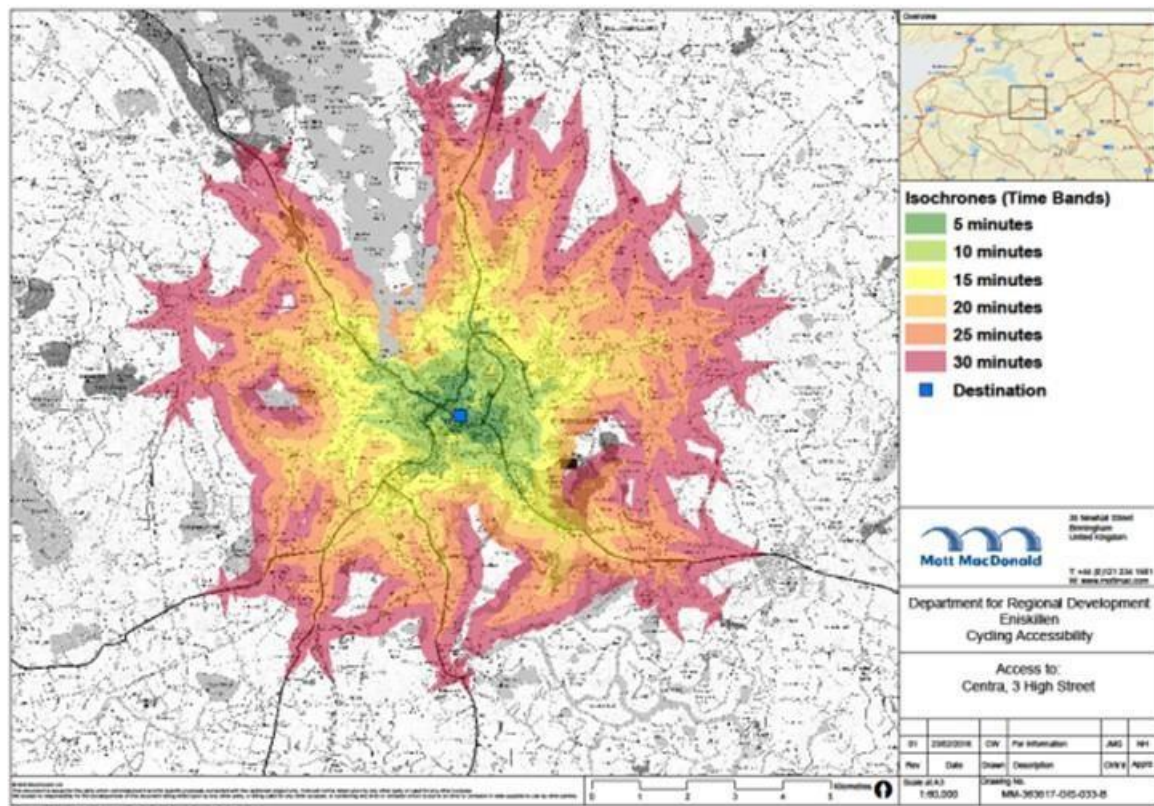


Figure 4 - Cycle Access to Enniskillen Town Centre

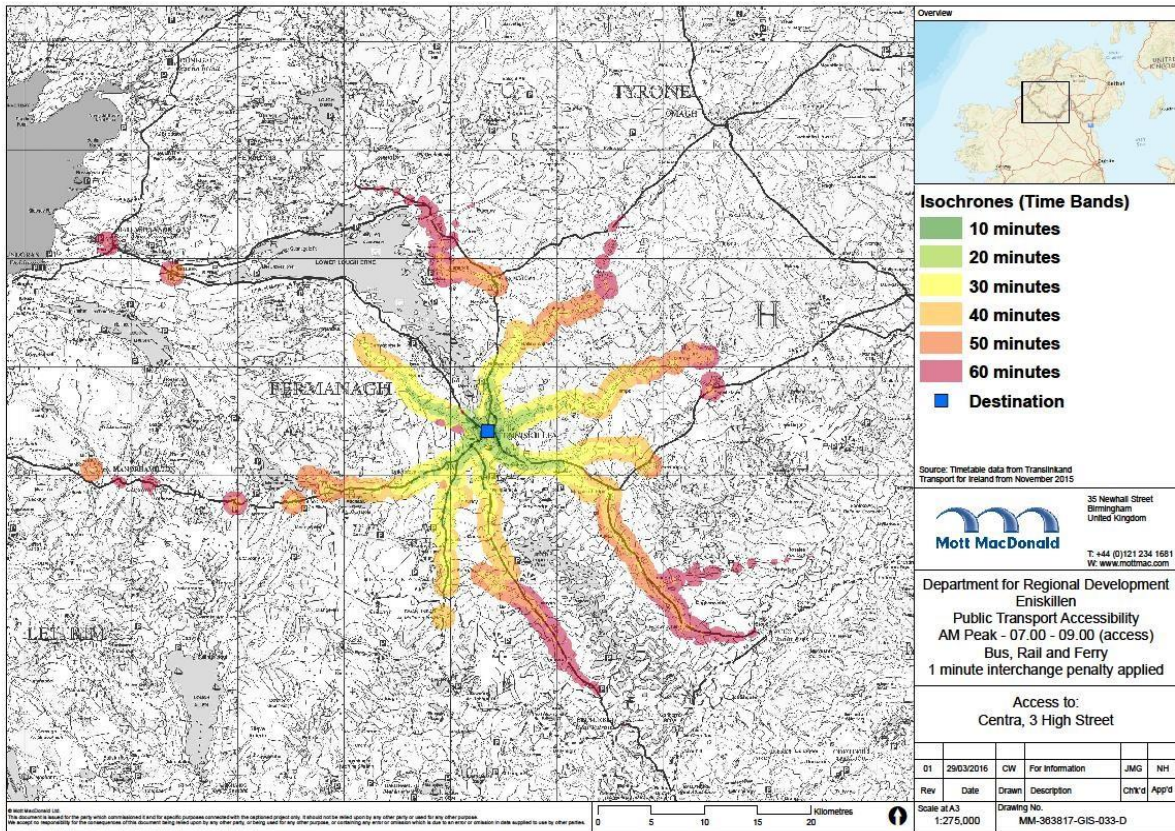


Figure 5 - Public Transport Access to Enniskillen Town Centre – Weekday AM Peak

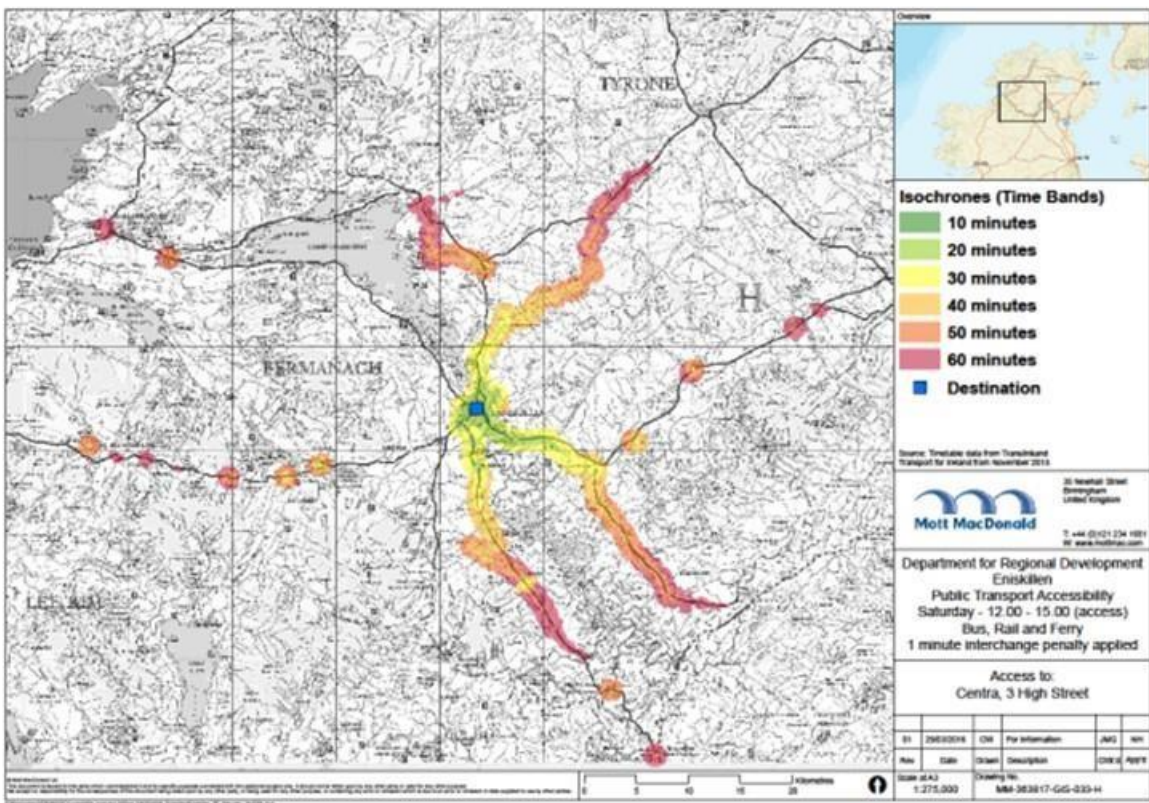


Figure 6 - Public Transport Access to Enniskillen Town Centre – Saturday Lunchtime

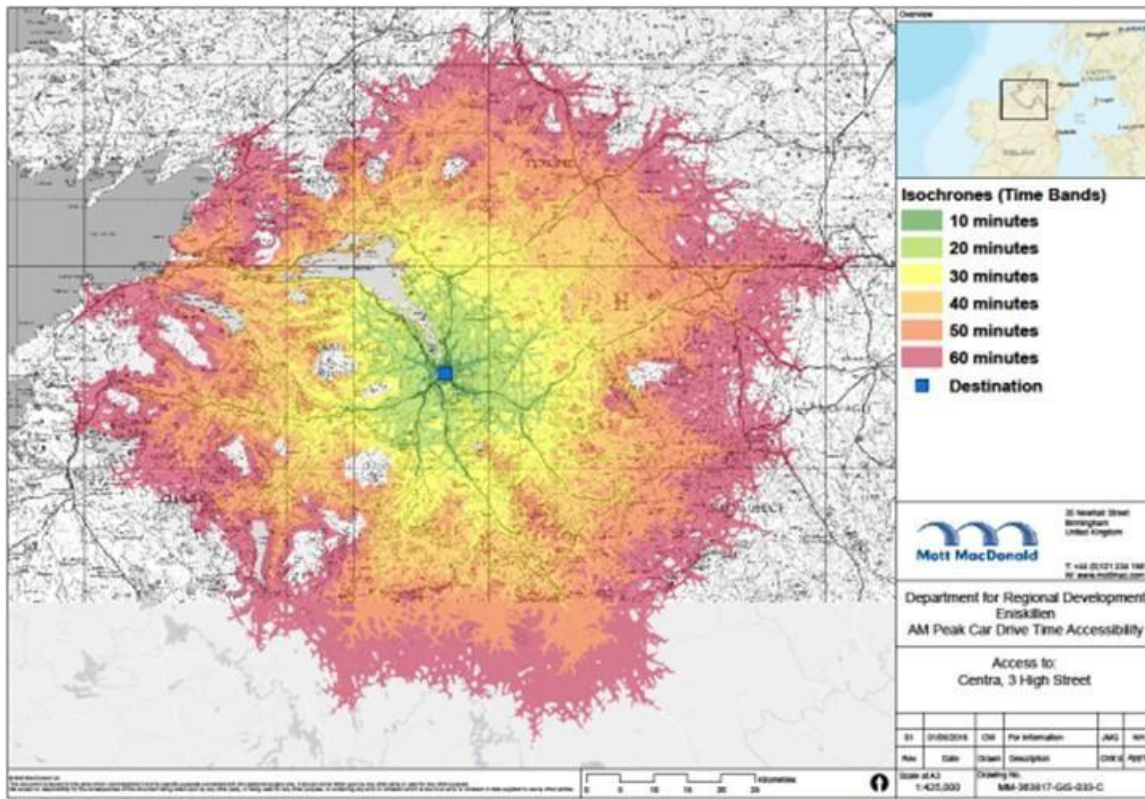


Figure 7 - Car Access to Enniskillen Town Centre – Weekday AM Peak

14. The Strategic Accessibility maps are proposed as a useful tool in identifying strategic differences in accessibility between locations. Whilst many of these differences may be known to experienced local planners, some may not. The maps may therefore be useful in identifying particularly strong or weak alternative locations for new development at the Plan Strategy stage.
15. For example Figure 3 shows that the Rossorry area to the south west of Enniskillen is more than 30 minutes by walk from the town centre – this would be especially important in considering a residential use. In addition Figures 6 and 7 illustrate which road corridors are served by bus and in particular that there only 3 adequately served corridors on Saturday. Figure 6 – Public Transport Access to Enniskillen Town Centre – Weekday AM Peak, in particular would be especially important for an employment use as it shows the corridors served by public transport during the weekday commute.
16. Annex 1B provides additional detail as to how the 2016 strategic accessibility maps were created using TRACC accessibility analysis while Annex 1C outlines the parameters required to produce similar strategic accessibility maps using TRACC Accessibility Analysis software.

Local Accessibility

17. Local accessibility is concerned with the accessibility of individual locations or sites in order to guide zoning decisions at Local Policies Plan stage or potentially individual planning applications.
18. Whilst isochrones drawn from the town centre were used for strategic decisions, it is clear that greater geographic detail is needed for local decisions. Therefore it is proposed that specific isochrones maps are produced for each individual location or site. As with strategic accessibility, separate isochrones maps will be needed for public transport, walking, cycling, and car modes.
19. Public transport isochrones will also be needed for a range of time periods to enable accessibility to different key services to be compared. Table 2 summarises the time period and key services that should be used when assessing local accessibility and the direction of travel to be considered.

Table 2 – Local Accessibility Maps by Mode and PT Time Period

Land-Use	Direction of Travel	Modes				PT Time periods	PT Purpose
		Walk	Cycle	PT	Car		
Residential	From	Walk	Cycle	PT	Car	AM Peak Inter-peak Saturday	Employment Shopping and Health Shopping
Employment	To	Walk	Cycle	PT	Car	AM Peak	Not Applicable

Residential Land-uses

20. For residential land-use locations, the isochrones should be created with the location in the centre of the map and the location of key services may be mapped as reference points. It is proposed that the town centre is used as a proxy for employment. The following types of local services should be considered:
- Retail food stores for Shopping purpose
 - General Practice doctors' surgeries for Health purpose
21. The precise location of employment, retail or services will depend on the character of the settlement.

22. Figure 8 presents a Residential Land-use Local Accessibility Map for walk using an example in Dungannon. The map is centred on the location of interest and walk isochrones up to 30 minutes have been generated.
23. For ease of reference, the similar maps for other modes are presented in Annex 1E. Figures A1 and A2 present the maps for cycling and car isochrones respectively. Figures A3 and A4 present the public transport isochrones for AM peak and Inter-peak respectively.

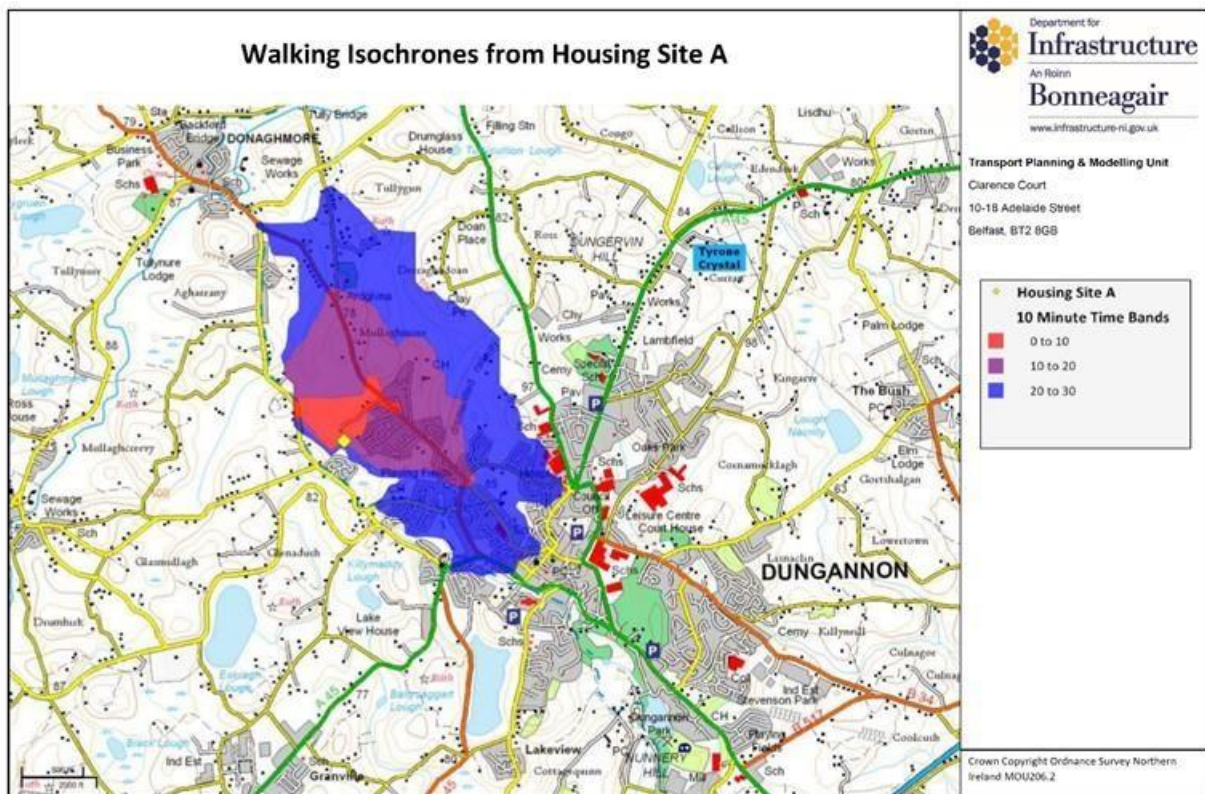


Figure 8 - Walking Isochrones from Potential Housing Site in Dungannon

24. An assessment of the isochrones maps the minimum access time to each of local services such as supermarkets, large centres of employment and doctors' surgeries can be identified and recorded by mode. Table 3 presents, as an example, a theoretical set of results produced from Figure 8 and Figures A1 – A4.

Table 3 Local Accessibility Results – Residential

Service	Walk	Cycle	PT	Car	PT Time Period
Employment	>30 Minutes	10 – 20 Minutes	<10 Minutes	<10 Minutes	AM Peak
Shopping	20-30 Minutes	<10 Minutes	10 – 20 Minutes	<10 Minutes	Inter-peak
Health	20-30 Minutes	<10 Minutes	<10 Minutes	<10 Minutes	Inter-peak

25. Presenting accessibility evidence in this form allows for a comparison of alternative locations or sites. Whilst the tabular format facilitates comparison, it may also be convenient to consider 'generic' levels of accessibility – i.e. excellent, good, fair or poor. Table 4 presents a potential scoring matrix for residential locations by mode. Car travel times are omitted at this stage as they vary little and are of limited relevance to sustainable practices. The table has been devised on the basis of time bands, ranging from greater than 30 minutes denoting 'poor' or effectively inaccessible, to less than 20 minutes denoting 'good'. A walking travel time of less than 10 minutes is denoted as 'excellent'. Only those sites with a walking time of under 10 minutes, regardless of other modes, can be considered to have excellent accessibility.

Table 4 – Local Accessibility Scoring Matrix - Residential

Walking Time	Cycling Time	Public Transport Time	Assessment
> 30 Minutes	> 30 Minutes	>30 Minutes	Poor
20 - 30 Minutes	20 - 30 Minutes	20 - 30 Minutes	Fair
10 -20 Minutes	< 20 Minutes	< 20 Minutes	Good
< 10 Minutes			Excellent

26. These generic levels of accessibility can be applied upon the results from Table 3 to provide a more striking graphical representation as presented in Table 5. It is proposed that the best generic score across all modes should be used for each service. Therefore for the residential location in Table 5, access to each of the services would be considered as:

- Employment – Good
- Shopping – Good
- Health – Good

Table 5 Access to Services

Service	Walk	Cycle	PT	PT Time Period
Employment	>30 Minutes	< 20 Minutes	< 20 Minutes	AM Peak
Shopping	20-30 Minutes	< 20 Minutes	< 20 Minutes	Inter-peak
Health	20-30 Minutes	< 20 Minutes	< 20 Minutes	Inter-peak

Employment Locations

27. For employment locations, the isochrones should be created with the location in the centre of the map. In this case, the number of residents who can access the location within a particular travel time, by particular mode, is the best measure of accessibility. It may be useful to denote generic levels of accessibility, using the same travel time values as for residential accessibility.
28. Figure 9 presents an Employment Location Local Accessibility Map for walk using a location close to Dungannon as an example. As before the map is centred on the location of interest and walk isochrones up to 30 minutes have been generated.

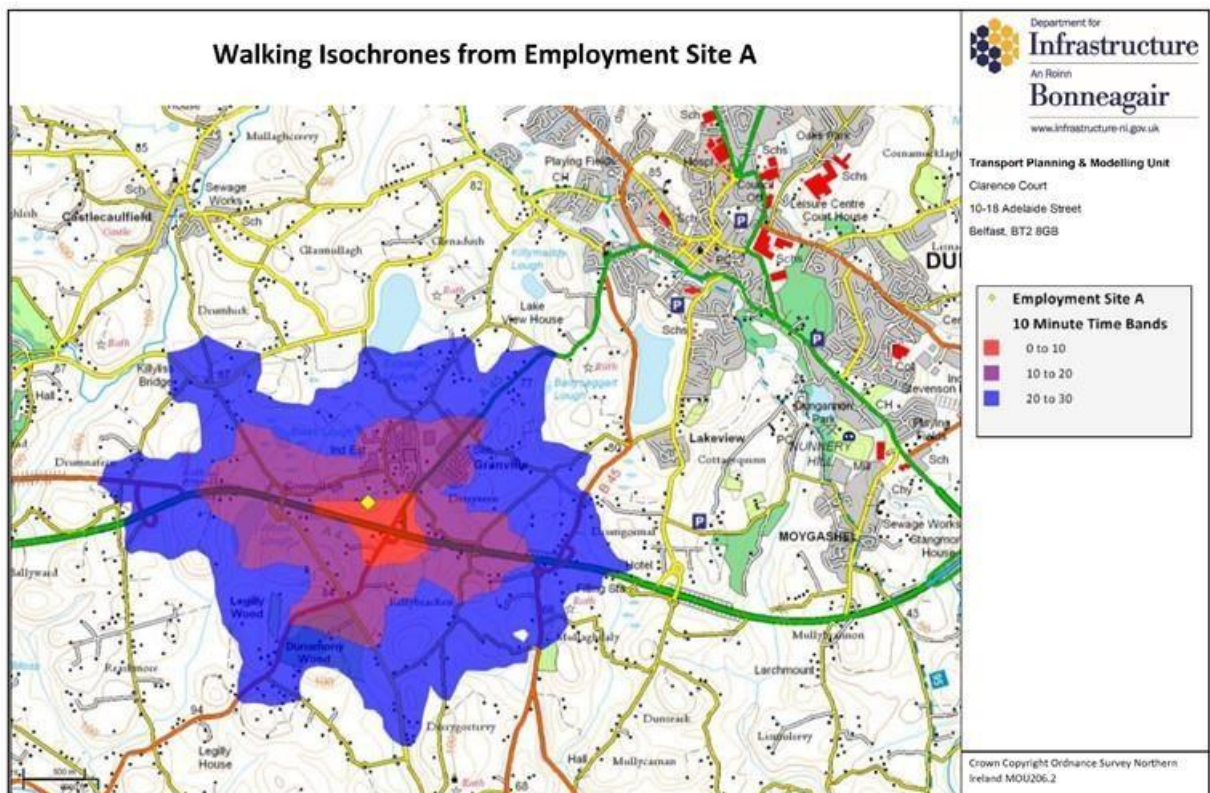


Figure 9 - Walking Isochrones from Potential Employment Site A near Dungannon

29. In order to produce a quantified measure of accessibility it is necessary to combine the isochrones with the 2011 census population at Small Area level using TRACC or a similar GIS function. Table 6 presents an example set of results based on the numbers of residents in the vicinity of Employment Site A near Dungannon allocated to the generic levels by mode. Note that no calculation is made for the assessment of 'poor' as this would be infinite.

30. It can be seen that as expected the number of residents who are within walking distance is relatively low compared to the number who can access the site either on bike or by public transport. However, these numbers are much more meaningful once accessibility analysis has been completed on multiple sites and data is available for comparison. Therefore it is envisaged that for each alternative employment location, a table similar to Table 6 would be prepared.

Table 6 Local Accessibility Assessment – Employment Site A near Dungannon

Residents Walking	Residents Cycling	Residents Public Transport AM Peak	Assessment
577	12,568	9,187	Fair
241	6,932	6,883	Good
27			Excellent

31. Annex 1D outlines the parameters required to produce local accessibility maps using TRACC Accessibility Analysis software.

Annex 1A - Key TRACC Parameters for Regional Accessibility Maps

Walking Speed	4.8km/hr
Walking variation multiplicative factor (while off Network)	1.2
Maximum Walking Distance to the Network (all modes)	800m
Maximum Public Transport Interchange distance	400m
Public Transport Interchange Penalty	5 Minutes
Maximum Walking Distance to the Network	800m
Maximum Public Transport Journey Time	7.5 hours
Public Transport Timeframe	Tues 07:00-17:30
Maximum Car Journey Time	4 hours
Car Timeframe	07:00-12:00
Regional Origin Grid Spacing	200m
Recommended Time Bands	30 minutes

ANNEX 1B – Information on the Creation of the 2016 Strategic Accessibility Maps using TRACC

Accessibility Analyses Mapping

32. Accessibility Analyses maps were previously produced for central locations for urban areas across Northern Ireland that had a population of over 5,000 at the time of the 2011 census.

33. It is proposed that any future Strategic Accessibility Maps should use similar parameters. For each destination, the following maps were produced:

- Walk Access
- Cycling Access
- Car Drive Time
- PT AM Peak
- PT PM Peak
- PT Saturday
- PT Sunday

34. The model parameters and specifications for the above maps are outlined below.

- **Walk Access** – Walk mapping represented access for pedestrians to the destination along the road network. Walking was represented at the standard walk speed of 4.8 kmph.
- **Cycling Access** – Cycle mapping represented access for cyclists to the destination along the road network. Cycling was represented at the standard cycle speed of 16 kmph.
- **Car Drive Time** – Car journey time was modelled for the AM peak period. The road network was derived from a commercially-sourced digital HereMap product that includes road speeds estimated from anonymised mobile phone data. Similar data is required if Car Drive Time accessibility maps are required.
- **PT AM Peak** – Modelled public transport accessibility to the destination location during the morning peak period (07:00 – 09:00hrs). Bus, Rail, and

Ferry services were included in the public transport model, with data sourced from Translink timetables. The model allowed for a maximum 800m walk to a public transport stop at the start and end of a journey, and a 400 metre walk between service changes within the journey. Such service changes included a one-minute interchange penalty to prevent over optimistic changes

- **PT PM Peak** – Modelled public transport egress from the destination location during the evening peak period (16:00 – 18:00hrs). All modelling parameters were the same as the AM peak run.
- **PT Saturday** – Modelled public transport accessibility to the destination location for a Saturday afternoon (12:00 – 15:00hrs). All modelling parameters were the same as the AM peak run. **PT Sunday** – Modelled public transport accessibility to the destination location for a Sunday afternoon (12:00 – 15:00hrs). All modelling parameters were the same as the AM peak run.

ANNEX 1A – Information on the Creation of the 2016 Strategic Accessibility Maps using TRACC

Walking Speed	4.8km/hr
Walking variation multiplicative factor (while off Network)	1.2
Maximum Walking Distance to the Network (all modes)	800m
Cycle Speed	16 km/hr
Maximum Public Transport Interchange distance	400m
Public Transport Interchange Penalty	5 Minutes
Maximum Walking Distance to the Network	800m
Maximum Walking Journey Time	30 minutes
Maximum Cycling Journey Time	30 minutes
Maximum Public Transport Journey Time	30 minutes
Maximum Car Journey Time	30 minutes
Car Speeds	AM Peak Speeds
Public Transport Timeframe	Tues 07:00-09:00
Strategic Origin Grid Spacing	100m
Recommended Time Bands	10 minutes

ANNEX 1D - Key TRACC Parameters for Local Accessibility Maps

Walking Speed	4.8km/hr
Walking variation (while off Network)	1.2
Maximum Walking Distance to the Network (all modes)	800m
Cycle Speed	16 km/hr
Maximum Public Transport Interchange distance	400m
Public Transport Interchange Penalty	5 Minutes
Maximum Walking Distance to the Network	800m
Maximum Walking Journey Time	30 minutes
Maximum Cycling Journey Time	30 minutes
Maximum Public Transport Journey Time	30 minutes
Maximum Car Journey Time	30 minutes
Car Speeds	AM Peak Speeds
Public Transport Timeframe	Tues 07:00- 09:00
Local Origin Grid Spacing	100m
Recommended Time Bands	10 minutes
Census Geography for Population Reporting	Small Areas

ANNEX 1E – Residential Land-use Local Accessibility Maps

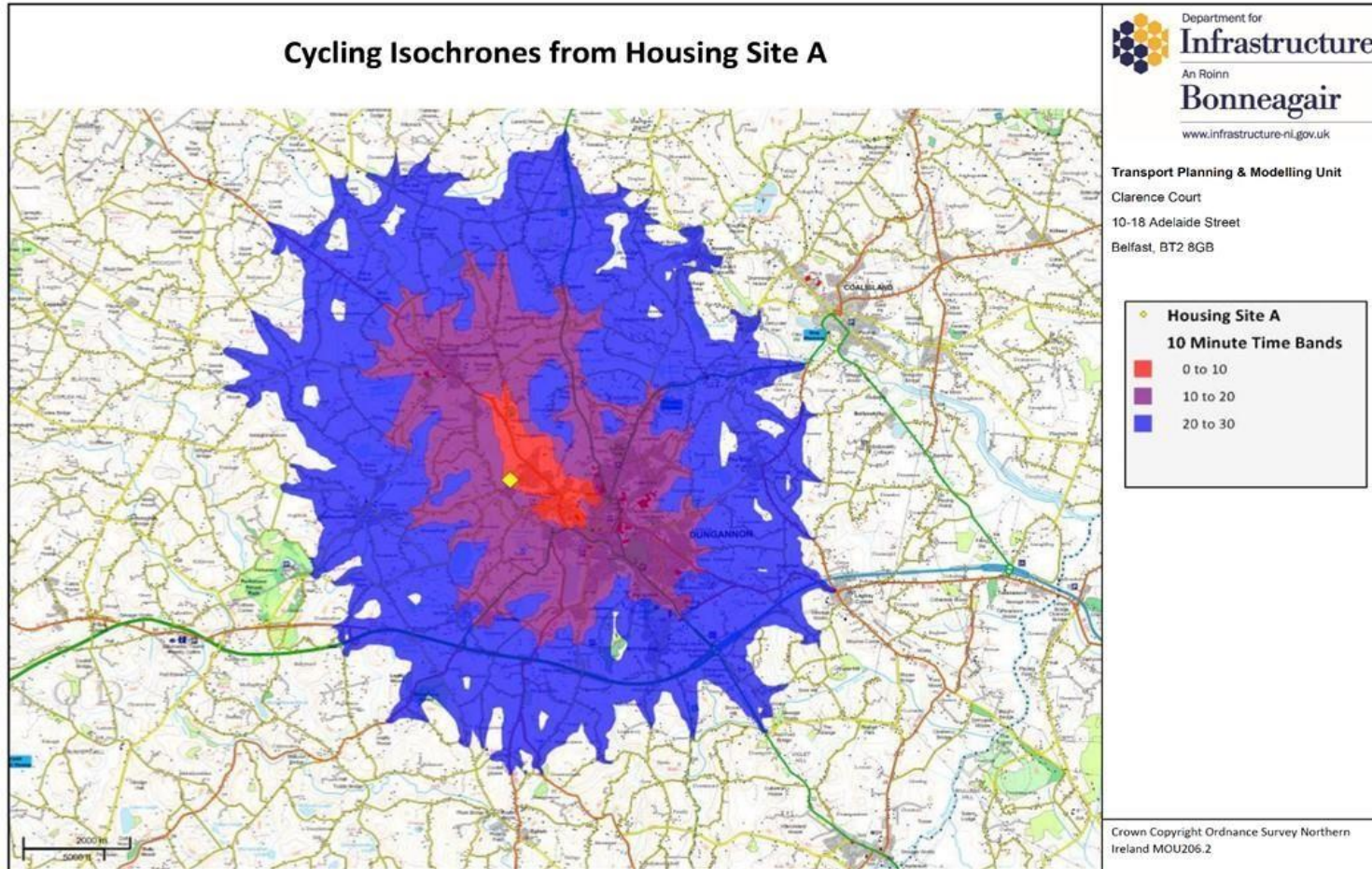


Figure A 1 - Cycling Isochrones from Potential Housing Site in Dungannon

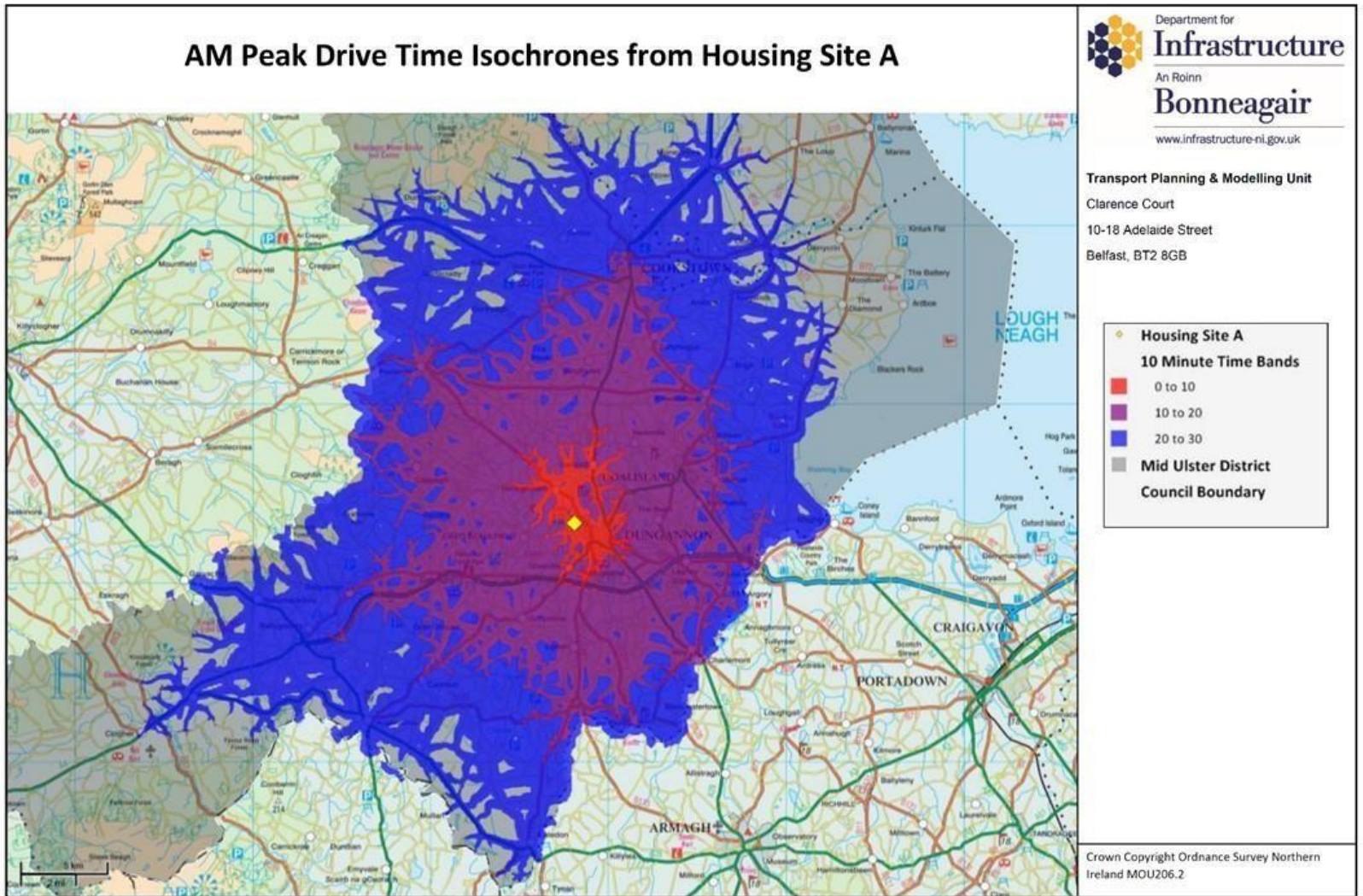


Figure A 2 - Car AM Peak Drive Time Isochrones from Potential Housing Site in Dungannon

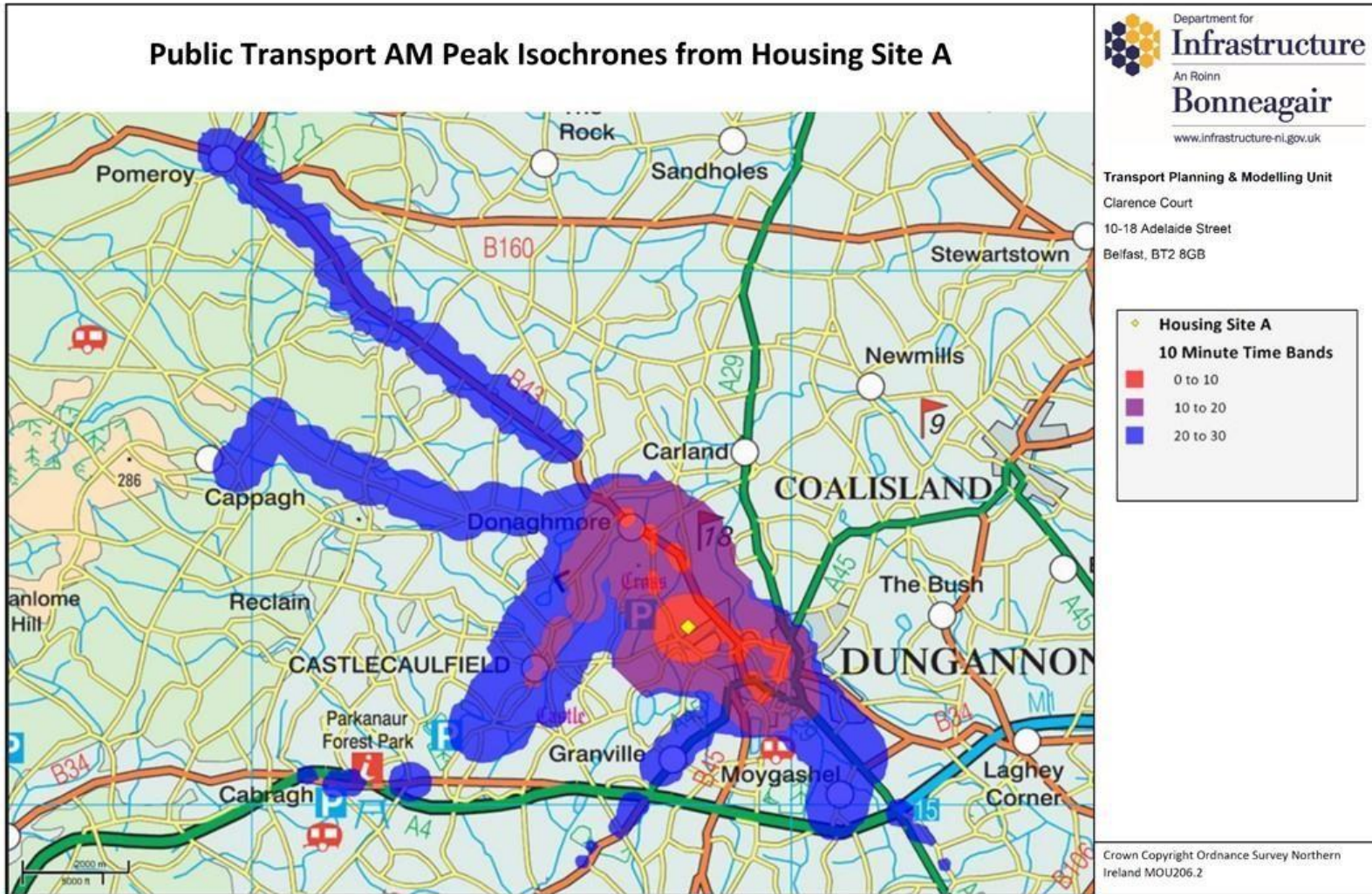


Figure A 3 - Public Transport – AM Peak Isochrones from Potential Housing Site in Dungannon

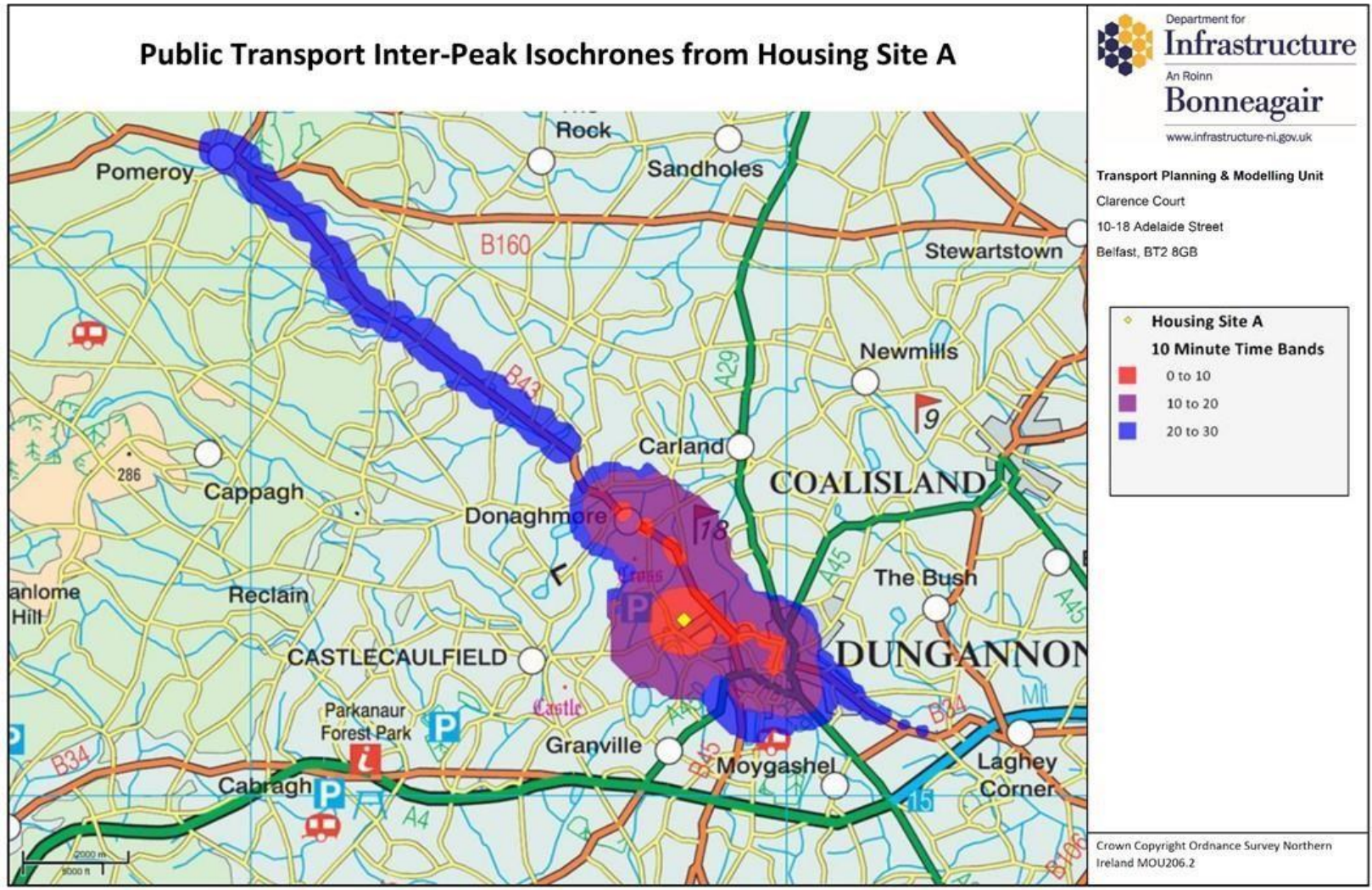


Figure A 4 - Inter Peak Isochrones from Potential Housing Site in Dungannon

ANNEX 2 - Current DfI Published Guidance

- Creating Places - Achieving Quality in Residential Development
- Development Control Advice Note 15 (2nd Edition)
- Transport Assessment Guidelines for Development Proposals in Northern Ireland – October 2006
- Parking Standards (Published by D.O.E.)
- Development Management Practice Note 12 – Design and Access Statements.