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TECHNICAL NOTE 170024/003

Subject: DMURS and NCM Design Statement

Produced by: NCG

Project: Residential Development at Newcastle South

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1.0 INTRODUCTION

- 1.1.1 It is DBFL's opinion that the proposed residential development is consistent with both the principles and guidance outlined within the *Design Manual for Urban Roads and Streets* (DMURS) 2013 and the *National Cycle Manual* (NCM) 2011. The scheme proposals are the outcome of an integrated design approach that seeks to implement a sustainable community connected by well-designed streets which deliver safe, convenient, and attractive networks in addition to promoting a real and viable alternative to car-based journeys.
- 1.1.2 The following section outlines the specific design features that have been incorporated within the proposed residential scheme with the objective of delivering a design that is in full compliance with DMURS and the NCM.

2.0 DESIGN ATTRIBUTES

2.1 Development Strategy

- 2.1.1 The development strategy maximises connectivity between key local destinations through the provision of a high degree of permeability and legibility for all network users particularly for sustainable forms of travel such as cycling. Accordingly, the proposed residential scheme delivers greater mode and route choices along direct, attractive and safe linkages to a range of amenities and local service destinations.
- 2.1.2 The development strategy also incorporates a hierarchy of streets with **Arterial** links including the R120 to the north and east and the R405, Hazelhatch Road to the west

of the subject site. **Link** streets adjacent to the site, include Newcastle Boulevard and Burgage Crescent, which provide connections between the proposed development and both the above **Arterial** links and with local centres and community infrastructure such as schools and sports clubs. In accordance with Newcastle LAP 2012, Newcastle Boulevard will incorporate dedicated cycle facilities and traverse the proposed development and link with the L6001 to the west as part of future development.

- 2.1.3 The internal road network within the site has been designed to deliver a hierarchy of **Link** and **Local** streets that provide appropriate access within / across the proposed new residential communities and the road network external to the site. The movement function of each internal street network has sought to respect the different levels of motorised traffic whilst optimising access to/from public transport and catering for a higher number of pedestrians and cyclists. In parallel the adopted design philosophy has sought to consider the context / place status of each residential **Local** street in terms of level of connectivity provided, quality of the proposed design, level of pedestrian / cyclist activity and vulnerable users requirements whilst identifying appropriate 'transition' solutions between different street types. The proposed road hierarchy is illustrated on drawing number 170024-2000.
- 2.1.4 The cycle network within the proposed development has been designed in accordance with the five principle requirements of the National Cycle Manual; road safety, coherence, directness, attractiveness and comfort. The raised adjacent cycle tracks along the main east/west link street provide a suitable and safe transition from the existing on-road cycle facilities to the east of the subject site to provide a coherent cycle network along Newcastle Boulevard. The proposed north/south green-link provides an attractive and comfortable direct route for pedestrians and cyclists migrating between the subject development and various amenities including St. Finian's School, employment opportunities and Newcastle Village. This green-link is designed as an amenity route for less confident cyclists and children. Given the low vehicular traffic volumes within the internal local streets (<2,000 AADT), cyclists will generally share the road surface with vehicular traffic as per Section 1.7 of the National Cycle Manual.



2.2 Linkages

2.2.1 The street layout was derived from several factors which include, Newcastle LAP 2012, boundary conditions, future and existing development, watercourses and hedgerows. This has led to the creation of a street network that is predominantly a grid pattern with some curvilinear sections in specific areas. As part of the design and development of the street network, cycle and pedestrian linkages were prioritised around the development to link existing and future developments including schools. Figure 2.1 below presents the proposed and potential external linkages which could be facilitated by the development.

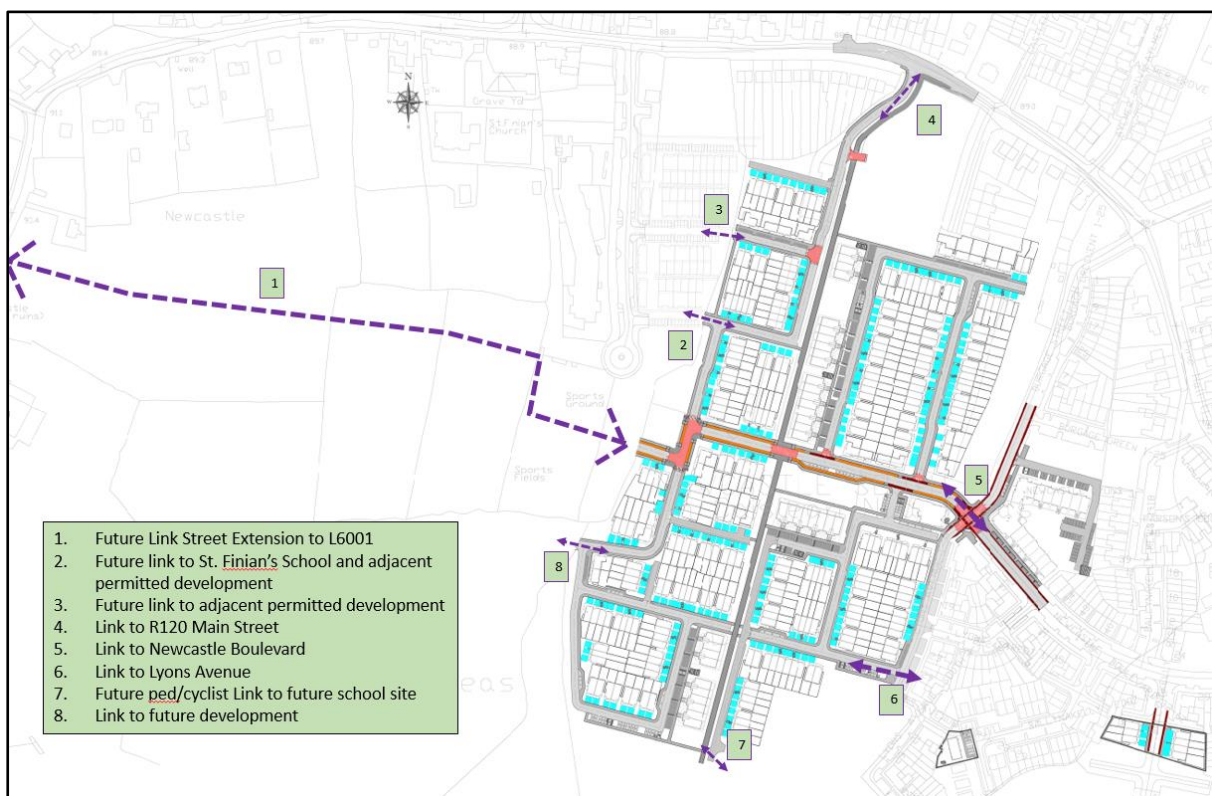


Figure 2.1 - Linkages

2.2.2 A number of these future linkages will be delivered subject to agreement with adjoining landowners. For example, Link 1, 2 & 3 will be provided up to the applicant's boundary but the connection between the two developments is subject to agreement with South

Dublin County Council and adjoining landowners. The key principal is that the proposed development layout can facilitate enhanced linkages over and above the considerable improvement in permeability through the site arising from the scheme.

- 2.2.3 Link 4 will provide access from the development to the town centre via a new priority junction with the R120 and Link 5 will facilitate the extension of Newcastle Boulevard.
- 2.2.4 Links 1 and 2 will provide an important link between the existing St. Finian’s National School and the future school site to the south of the development although these links are subject to agreements with adjoining landowners.
- 2.2.5 The linkages detailed above demonstrate that permeability has been considered from a very early stage in the design and all links that can be provided by the applicant, have been accommodated. Where identified links cannot be accommodated, provision has been designed to allow connections to be provided by the Local Authority.

2.3 Design Parameters

- 2.3.1 The adopted design approach successfully achieves the appropriate balance between the functional requirements of different network users whilst enhancing the sense of place. The implementation of self-regulating streets actively manages movement by offering real modal and route choices in a low speed high quality residential environment. Specific attributes of the schemes design which contribute to achieving the objectives of DMURS and principles of the National Cycle Manual include;
 - a) A strong sense of street enclosure is achieved utilising the adopted building height to street width ratios internally; in parallel with the provision of large street trees.
 - b) The potential dominance of on-street car parking for the duplexes is actively managed through the provision of landscaped buffers and the provision of large street trees.
 - c) On-street activity is promoted internally along the residential streets through the adoption of ‘own-door’ dwellings.
 - d) The proposed design has sought to specify minimal signage and line markings along the internal **Local** streets with such treatments used sensitively throughout.



- e) Footpaths of generally 2.0m width are provided throughout the scheme and with connections / tie-in to existing external pedestrian networks and proposed green-links.
- f) Appropriate clear unobstructed visibility splays, as per DMURS requirements; are provided / safeguarded at all internal nodes and at the site access junctions to the external road network.
- g) Well designed and frequently provided pedestrian crossing facilities are provided along key travel desire lines throughout the scheme in addition to those located at street nodes. All courtesy crossings are provided with either dropped kerbs or a raised flat top treatment thereby allowing pedestrians to informally assert a degree of priority.
- h) At the more heavily trafficked **Link Street** (extension of Newcastle Boulevard), a formal signalised toucan crossing is provided for the benefit of both pedestrians and cyclists. Such crossings are provided with a single straight direct movement to minimise crossing distance and enhance pedestrian / cyclist convenience and comfort levels.
- i) All informal pedestrian crossing facilities are at least 2.0m wide, whilst all controlled pedestrian crossings are at least 2.4m wide.
- j) The main **link** street through the site, extension of Newcastle Boulevard has been designed with a number of junctions and a meandering alignment through the development to promote traffic calming and discourage “rat running” through the development. The **Link Street** has been designed with a 6.5m wide carriageway to facilitate future buses. Cycle infrastructure on the link street has been provided as raised adjacent cycle tracks to align with the Newcastle LAP, 2012 and to provide a suitable and safe transition from the existing cycle infrastructure to the east to provide a coherent cycle network along Newcastle Boulevard.
- k) Cyclists are established on road in advance of junctions to alert all road users to the presence of cyclists at conflict points in accordance with the NCM.
- l) Suitable cyclist ramps with gentle gradients have been proposed at transitions between on-road and off-road cycle facilities.



- m) Zebra crossings are proposed on the main east/west link street at the junction with the north/south local street adjacent to the open space zoned lands. This will provide continuity and priority for pedestrians and cyclists.
- n) With the objective of encouraging low vehicle speeds and maximising pedestrian safety and convenience, corner radii at **Local / Local** nodes have been generally specified as 4.5m and corner radii at **Local / Link** nodes have been specified as 6m as per DMURS guidance.
- o) Contrasting materials are specified in the 'Homezone', (shared area), to indicate that the carriageway is an extension of the pedestrian domain.
- p) Internally within the development carriageway kerb heights have been specified as 75-80mm in accordance with the objectives of DMURS.
- q) The proposed north/south green-link provides an attractive and comfortable direct route for pedestrians and cyclists migrating between the various schools, amenities and Newcastle Village. The 4m wide shared green-link is designed as an amenity route for less confident cyclists and children.
- r) The green-link has been designed to minimise the number of vehicular crossings along its route to give priority to the vulnerable road users.
- s) Along the remaining lightly trafficked internal **local** streets, cyclists will share the carriageway with other street users as per the NCM guidance for such situations.
- t) The proposed residential developments internal hierarchy of **Local** streets incorporates 5m to 5.5m wide carriageways with 2m wide footpaths. Proposed **'Homezone' Local** streets are minimum 4.8m wide and 6m adjacent to perpendicular parking bays.
- u) The main access routes (e.g. leading to/from the site access nodes with **Link** streets) of internal street network will be formed using standard macadam / asphalt finishes, however for **'Homezone' Local** streets, a colour contrast is to be achieved by way of a textured / colour surface to reinforce the lower design speed in these areas.



- v) Similarly, at each of the at-grade flat top pedestrian crossing / traffic calming table treatments, different surface material treatments are proposed to alert and subsequently influence driver behaviour and vehicle speeds.
- w) Vertical and horizontal deflections in the form of raised tables and build-outs have been strategically placed across the internal **Local** street network to promote lower design speeds and enable pedestrians to cross the street at-grade. These features have been located at (i) equal priority junctions, (ii) on straights where there is more than 100m between nodes, (iii) at entrance treatments to reinforce a change between design speeds, (iv) at pedestrian & green-link crossings; The maximum height of raised flat top treatments is designed to be 75mm with a minimum flat top width of 2.0m.
- x) The provision of on-street car parking includes a mixture of perpendicular and parallel parking bays along either one or both sides of the internal **local** streets. In accordance with DMURS perpendicular parking spaces are a minimum of 5m long x 2.4 m wide and parallel parking spaces are a minimum of 6m long x 2.4 m wide.

