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DELIVERING SUSTAINABLE TRANSPORT FOR THE GRANGEGORMAN URBAN QUARTER

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ABSTRACT

This paper looks at the challenges and opportunities posed in delivering sustainable transport for an education, health and mixed use campus development at Grangegorman, Dublin. It looks the transport strategy for the largely pedestrian development, which places emphasis on sustainable modes. The paper looks at how existing positive modal split of the Dublin Institute of Technology can be maintained and improved in the relocation of the Institute to a consolidated campus and how other users can be encouraged to adopt sustainable modes of transport. Work conducted to date on active mobility management for users of the Grangegorman campus is described.

INTRODUCTION

The Grangegorman development is an urban regeneration project of national importance located in Dublin's north-west inner city. It will deliver c.380,000 sq. m. of educational and health facilities on the Grangegorman site, in addition to student accommodation, community, sports and recreational uses, and science and technology, commercial research and incubator space on a centrally located, but underutilised site of 29 ha. (73 acres).

The development involves the relocation, on a phased basis, of the Dublin Institute of Technology (DIT) from its dispersed locations within Dublin City to a single campus. It also provides community, mental health and continuing care facilities for the Health Service Executive (HSE).

The relocation of the DIT facilities poses challenges in ensuring that the existing positive modal split of the Institute is maintained in the move to a single integrated campus. Developing a positive modal split for other users on the campus also poses challenges.

THE DUBLIN INSTITUTE OF TECHNOLOGY

The DIT is one of Ireland's largest providers of higher education courses and caters for c.10% of third level students nationally. The Institute was formed in 1993 by the amalgamation of 6 constituent colleges of the City of Dublin Vocational Education Committee which had been established from the late 19th century to provide vocational and technical training (Duff, Hegarty, Hussey, 2000). The colleges were, for the most part, centrally located in Dublin with easy access to public transport networks.

The Institute currently has approximately 21,000 students (c.15,000 full time and c.6000 part time) and 1700 staff. By 2013, DIT occupied no less than 39 buildings in Dublin City, mainly focussed on the 6 main campuses of Bolton Street, Aungier Street, Cathal Brugha Street, Rathmines, Mountjoy Square and Kevin Street. The ease of access to public transport, combined with the very small provision of on-site parking, has resulted in a positive modal split for both staff and students.

In September 2014, the first tranche of c.1100 students and 200 staff were relocated to the Grangegorman campus. By 2019, it is anticipated that c.50% of DIT students and staff will be relocated to Grangegorman.

HISTORY OF GRANGEGORMAN

Institutional use at Grangegorman commenced in 1814 with the development of the Richmond Lunatic Asylum. A second institutional building, accommodating a penitentiary, opened two years later in 1816. In 1897, due to rising demand for space by the asylum, the penitentiary was taken over for hospital use and became part of the psychiatric complex (GDA, 2011a). By 1836, lands on the west of Grangegorman Upper were purchased for use as recreational gardens for the benefit of the patients. The Grangegorman site gradually expanded to the North Circular Road, covering a total of c.30 hectares, with a range of buildings including chapels, infirmaries, a mortuary and residential accommodation for patients.

The population of the asylum rose from c.300 patients in 1850's to c.2000 patients in the 1940's at its height. By the early 1980's, the site was still in active use as a psychiatric institution with around 800 patients residing there. Despite its active use, with people living and working on the site, daily visitors, sports activities and other events, Grangegorman was not well connected to the rest of the city. This can be attributed to its use as a psychiatric facility. The road, cycling and pedestrian network avoided, bypassed and generally forgot Grangegorman.

The use of the site as a psychiatric institution declined after the implementation of the new Irish mental health policy, Planning for the Future (Dept. of Health, 1984) and many residents living on site were relocated into community based housing.

From the mid 1980's, activity on the site diminished rapidly, accompanied by the demolition of many healthcare buildings, paving the way for the reinvention of the Grangegorman site as an education, health and community campus (Prendergast T, 2014). By 2006, the number of Grangegorman residents had reduced to just over 100.

An initial decision by Government in 1999 to relocate part of DIT to Grangegorman was followed in 2001 by a decision to relocate all of the Institute's activities onto the site. This allowed the site to be developed at an urban 'city building' scale, with the creation of a new urban quarter.

The Grangegorman Development Agency was established in 2006 to procure the Grangegorman development. The site was subsequently designated as a Strategic Development Zone, reflecting its economic and social importance to the state. The adoption of the Grangegorman Planning Scheme by the elected representatives of Dublin City Council and its approval by An Bord Pleanála in 2012 allowed development to proceed.

A new replacement health facility, the Phoenix Care Centre, which opened in February 2013, accommodates, amongst other services, c.35 long term residents, reflecting the change in mental health policy. A Primary Care Centre will open on the site in Spring 2017, with a Community Nursing Unit to follow in 2021.

GRANGEGORMAN MASTERPLAN AND PLANNING SCHEME

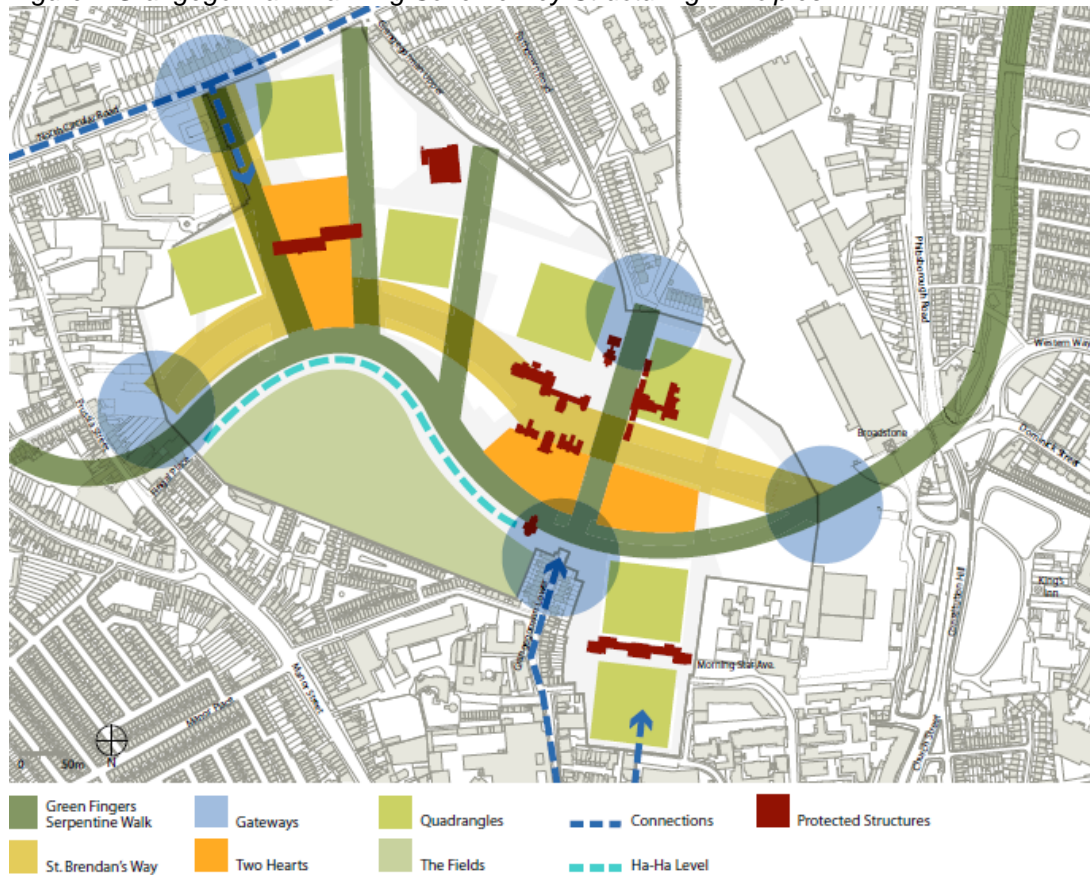
The Grangegorman project vision is central to the delivery of the Grangegorman development. The vision found expression in the Grangegorman Masterplan 2008 and the Grangegorman Planning Scheme 2012. The latter is the key statutory policy instrument to deliver the Grangegorman development and has been incorporated into the Dublin City Development Plan 2011- 2017 and draft Development Plan 2016-2021.

The project vision sees the site developed at an urban scale and density, with a main pedestrian boulevard, plazas, quadrangles and quality public realm (GDA, 2008). The objective is to create a new Dublin city quarter with a high level of accessibility and permeability, opening it up to the local area and city. The site will be largely pedestrian, and will be connected to the city centre by Luas Cross City (GDA, 2011a).

The Grangegorman Masterplan 2008 has as a key aim the 'transformation of a closed compound into an integral part of the life of the city' with 'many ways in and many ways through' (GDA, 2008). The aim is to create a seamless link to existing and future transport infrastructure and networks, including to the Luas Cross City.

The Grangegorman Planning Scheme translates the Grangegorman Masterplan into a clear and achievable planning strategy. The campus is a primarily pedestrian district with a high level of permeability with strong connections through new openings to the surrounding street network. To date, significant progress has been achieved under the Planning Scheme in opening up the site with the creation of additional access points from Prussia Street, North Circular Road and Grangegorman Upper and Lower. In addition, on the opening of the Luas Cross City, a new public plaza, Broadstone Gate, will provide the eastern gateway to Grangegorman as illustrated in Figure 1. The securing of the plaza, through an initiative of the Grangegorman Development Agency, Dublin City Council, the National Transport Agency, Transport Infrastructure Ireland, CIE, Dublin Bus and Bus Eireann illustrates a joined up approach for the achievement of a greater good.

Figure 1 Grangegorman Planning Scheme Key Structuring Principles



GRANGEGORMAN SUSTAINABILITY STRATEGY

The Grangegorman Sustainability Strategy 2014 has a key aim to achieve 'best practice in transport'. Rolling targets have been identified, to coincide with the delivery of development on the site. Whereas the Planning Scheme is seeking to maintain the existing positive DIT modal split, a 30% reduction in private car usage over existing levels is envisaged in the strategy.

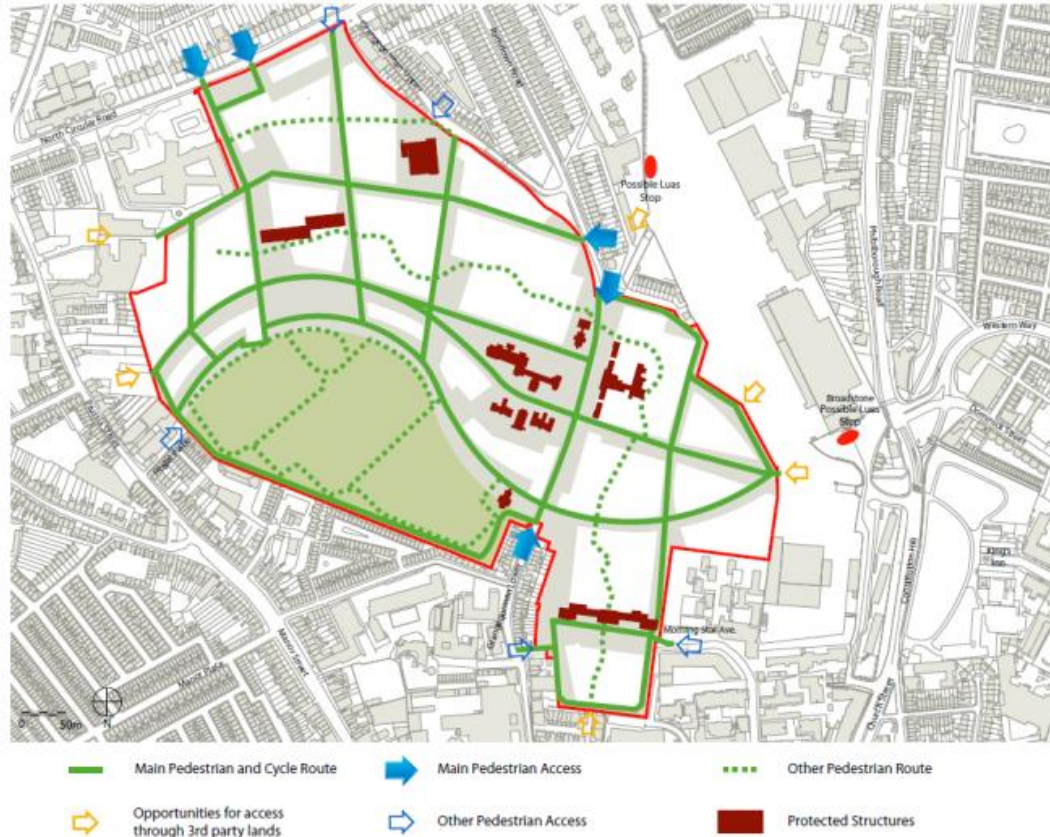
The access strategy for Grangegorman has been developed with a multi modal approach in mind. Pedestrian and cyclist access points have been sited to maximise connectivity with public transport services and also the surrounding pedestrian and cyclist network. Vehicular access will be provided from North Circular Road, Broadstone Gate, Morning Star Avenue and multiple access points from Grangegorman Lower/Upper.

The existing diversification of DIT building locations generates significant travel demand across the city. Grangegorman offers a consolidated campus environment which can play an important role in generating sustainable travel patterns for the city.

The proposed development has been designed along the principals set out in the NTA Transport Strategy for the Greater Dublin Area and the subsequent Design Manual for Urban Roads & Streets (DMURS) published by the Department of Transport, Tourism & Sport, giving priority to soft modes (walking & cycling) followed by public transport and vehicular traffic in that specific order.

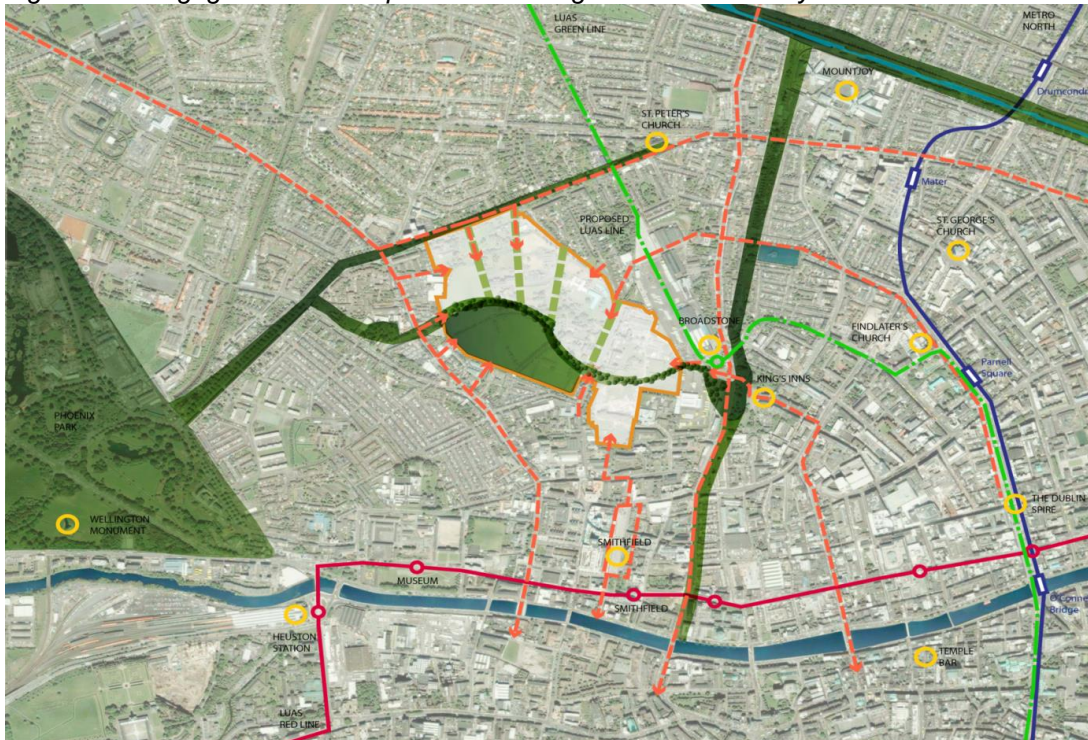
Figure 2 below, taken from the Planning Scheme, illustrates the pedestrian and cycling movement strategy for the site. The development is largely retained for pedestrian and cyclist priority, with vehicles confined to restricted secondary routes.

Figure 2: Pedestrian and Cyclist access to Grangegorman



To achieve good integration with the external transport network and the best possible access to public transport, the development has been designed with excellent permeability for all transport modes such as the existing Blanchardstown and Ballymun QBCs as well as the proposed Luas Cross City stops at Broadstone and also the proposed Grangegorman stop. Access to existing Luas Red line services is also provided at Smithfield with proposals to improve the pedestrian and cyclist link between the campus and this key node. It is envisaged that further access from the west will be delivered in tandem with the delivery of the proposed Blanchardstown – UCD Bus Rapid Transit scheme (Swiftway). Key access route to and around Grangegorman are shown in Figure 3.

Figure 3: Grangegorman Masterplan: Connecting the Site to the City

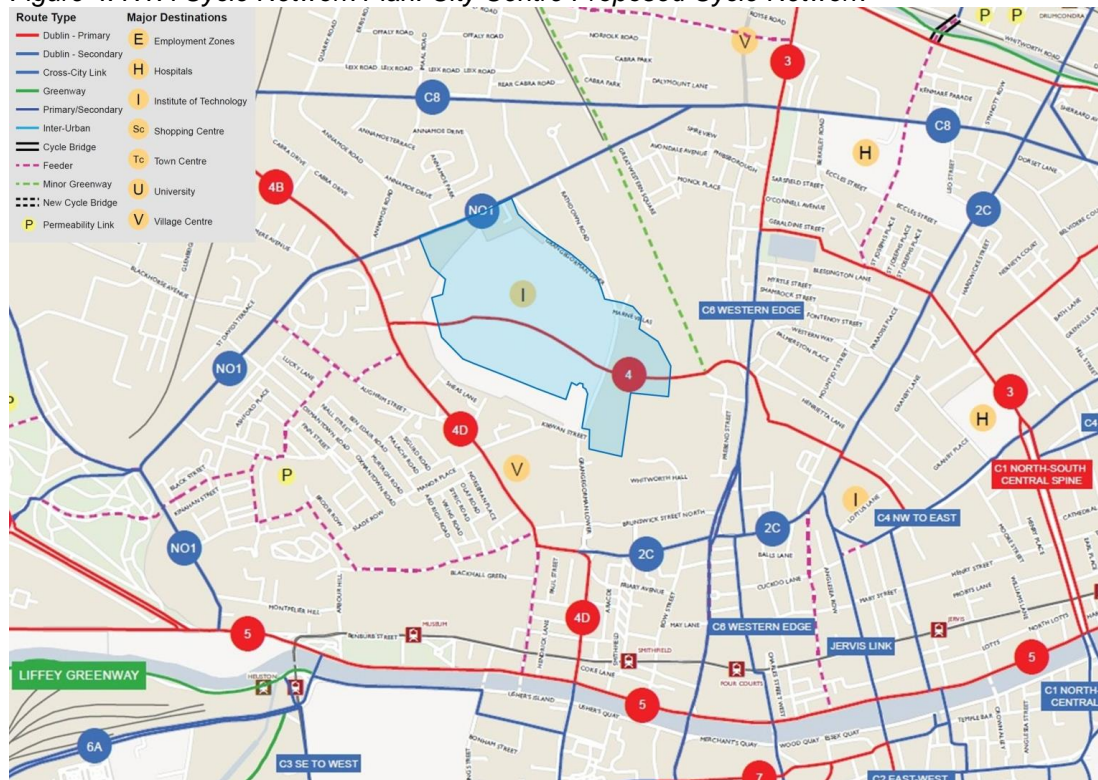


The pedestrian/cycle network will provide a comprehensive network of internal streets, designed to modern standards which will encourage the sustainable movement of people. A portion of the primary cycle network for the Greater Dublin Area, as proposed in NTA's Cycle Network Plan (see Figure 4), will be provided within Grangegorman. The realisation of Primary Route No 4 will not only significantly enhance cyclist accessibility to Grangegorman but will also deliver a key east - west route on the north side of the River Liffey for the benefit of all cyclists delivering a previously unattainable level of permeability for the City which is expected to increase the attractiveness of cycling further.

Proposed Broadstone Luas Stop at Broadstone Gate



Figure 4: NTA Cycle Network Plan: City Centre Proposed Cycle Network



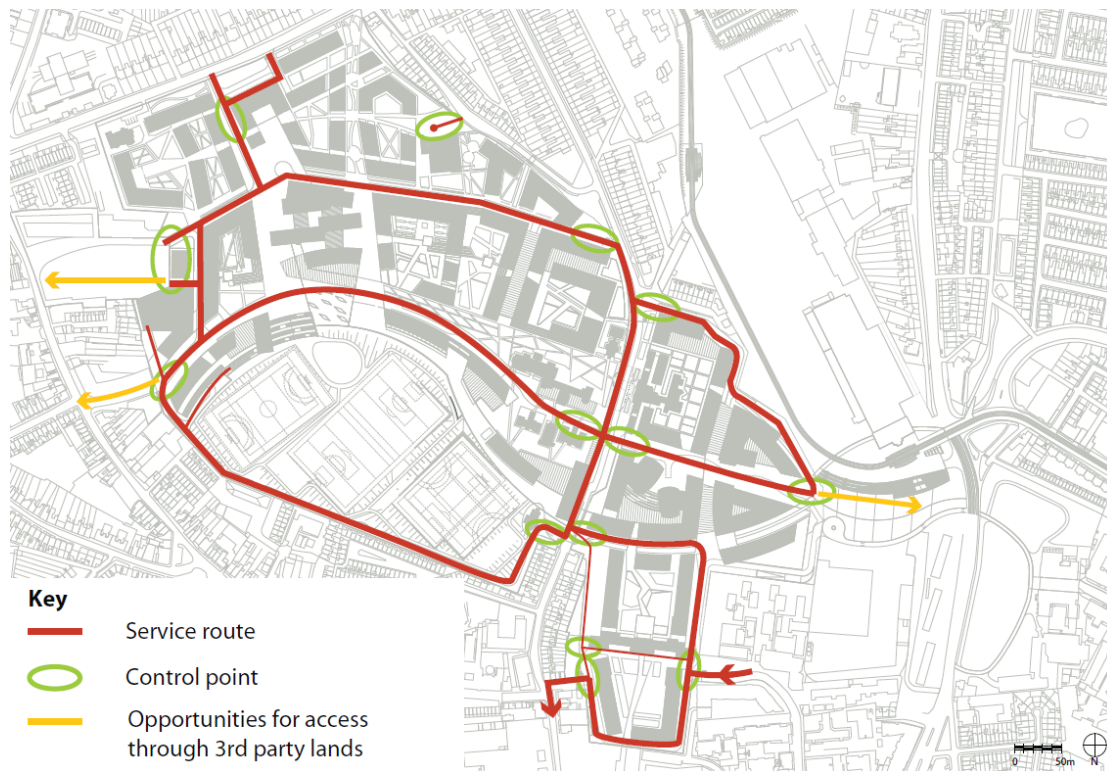
The provision of car parking facilities is a key element to the management of travel demand to the development site. The proposed parking provision is also the principle driver for the vehicular modal split for each aspect of the development. An over - provision of car parking may lead to the inducement of vehicular trips while an under - provision may lead to an overspill to the surrounding on street car parking facilities. The provision of car parking on the site has been optimised to ensure that it satisfies the operational requirements of the various land uses while protecting the adjacent amenity.

The total car parking provision of 1,150 spaces has been quantified and assigned with reference to the Dublin City Council Development Plan maximum standards.

Car parking locations have been sited to minimise interaction with the soft modes of walking and cycling. Access to car parking will be severely restricted to encourage the use of alternative modes as a means of accessing the site further.

Servicing will be undertaken predominately from the North Circular Road access junction and Grangegorman Lower/Upper, as shown in Figure 5. Within the site, the road network has been designed to accommodate servicing vehicular movements. However, vehicular access to these links will be restricted to off peak hours. Their character is predominantly pedestrian shared space with limited vehicular traffic and flush shared surfaces with minimal delineation of carriageway space.

Figure 5: Proposed Service Access at Grangegorman



EXISTING TRAVEL PATTERNS AND ATTITUDES

In order to ensure that appropriate and effective travel measures are implemented to support the Grangegorman development, it is essential that the current travel demand and patterns to DIT and HSE sites are understood. A number of sources of information were considered including:

- **POWSCAR 2011:** The 2011 Census using Places of Work, School or College Census of Anonymised Records (POWSCAR) database provides valuable information in relation to travel patterns to DIT. Permission for use of the database was granted by the CSO;
- **DIT Campus Survey 2014:** Results of the 2014 survey of DIT staff and students undertaken by the NTA Smarter Travel Workplace Team; and
- **HSE Grangegorman Staff Survey 2014:** AECOM undertook a survey of staff at the HSE Phoenix Care Centre and Connolly Norman Centre in May 2014.

Outputs from each of these data sources are presented below to provide some context for the mobility management challenge at Grangegorman.

POWSCAR 2011

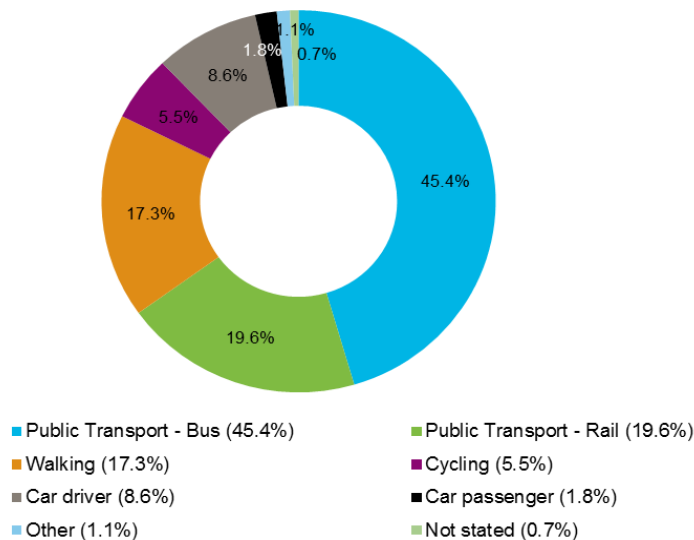
POWSCAR has been used to understand the 'origin' of commuting trips by students to DIT in 2011. It was not possible to estimate the origin of staff commuting trips as these were difficult to determine, especially in the city centre where the trips of DIT commuters would be difficult to differentiate from other commuters.

As shown in Figure 6 below, the majority of student trips originate in the Dublin City area (30%) with almost 70% of all student trips originating within County Dublin. As shown, there is a strong concentration of trips originating from the city centre area but beyond this the number of trips is quite evenly dispersed across the Greater Dublin Area.

Figure 7 demonstrates the proximity of students in 2011 to the Grangegorman campus. 8% of students are currently living 2km from Grangegorman and a further 17% are living 2-5km from the campus. It is very likely that the spatial nature of where students live will change as Grangegorman develops. However, feedback from a student survey in 2014 DIT Campus Survey suggests that at present just 30% of students are living in rented accommodation. The remaining 70% live at home, on campus accommodation or within their own homes and therefore, the pattern of travel demand generated is only likely to change for the 30% of students who are renting accommodation.

As shown in Figure 6, the mode share of public transport trips to current DIT sites is very high at 65%. Just 9% of students drive to the site with 23% choosing active modes for the commute.

Figure 6: Mode split of student trips to DIT, 2011 Census



The high mode share for public transport use to DIT reflects the central location of each of the campuses. For example, students at the Mountjoy Square Campus have access to a wide range of bus services and are also located a short walking distance from DART and Luas services. Based on this high level of public transport access, the mode share of public transport trips to DIT Mountjoy Square is 70%. However, it is noteworthy that even at this location, car use remains at 9%.

The origin of public transport trips among 2011 students is shown in Figure 7. As expected, there is a high take-up of DART and Luas services among students living within approximately 1km from these rail lines. Elsewhere, students are heavily dependent on bus services to access the city centre DIT campuses. It is estimated that in 2011, 68% of students were living 400m from a direct service (bus/rail) to the city centre and 94% were living 800m from such a service.

Figure 7: Origin of student commuting trips to Grangegorman, POWSCAR 2011

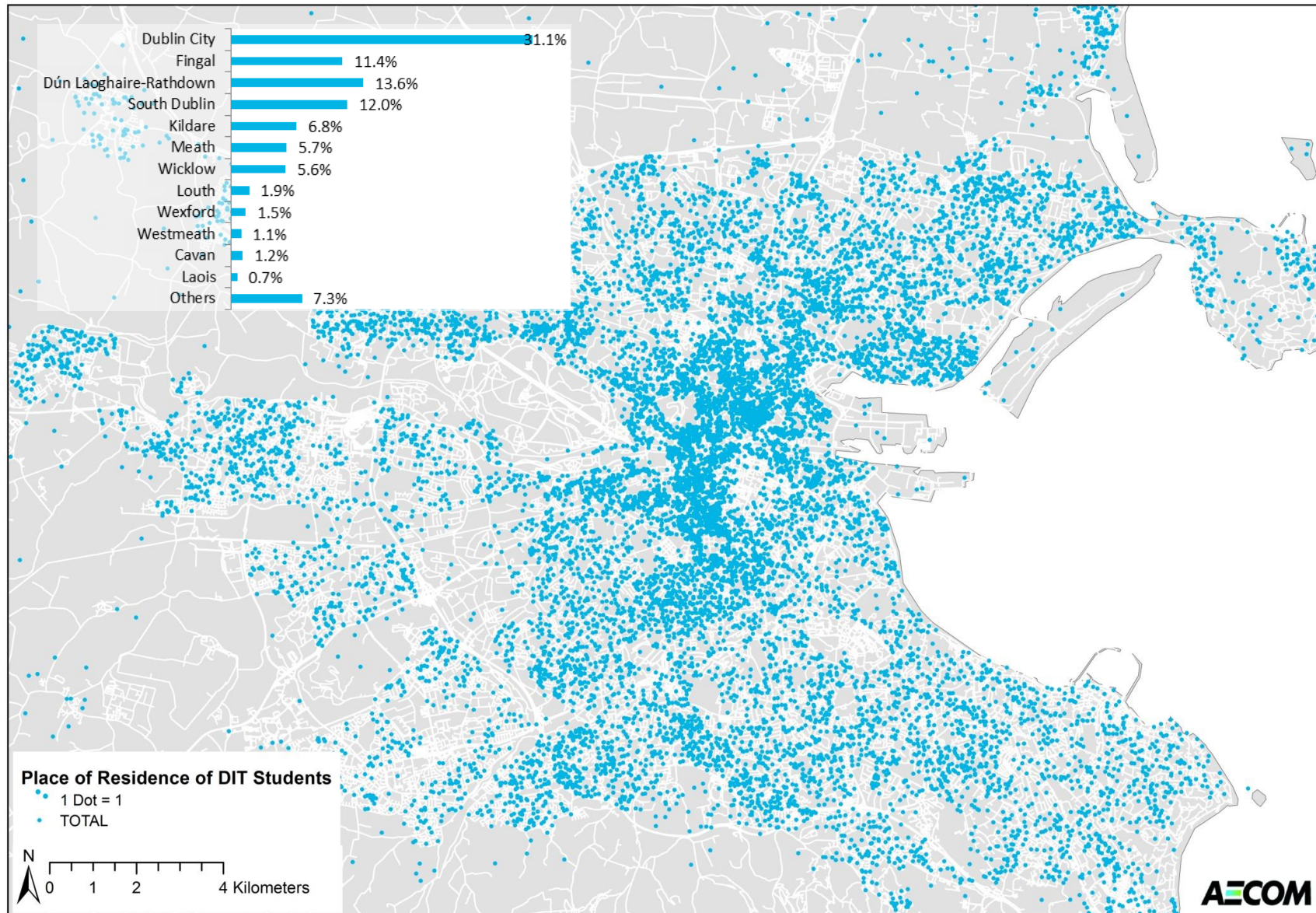


Figure 8: 2km and 5km catchment areas from Grangegorman

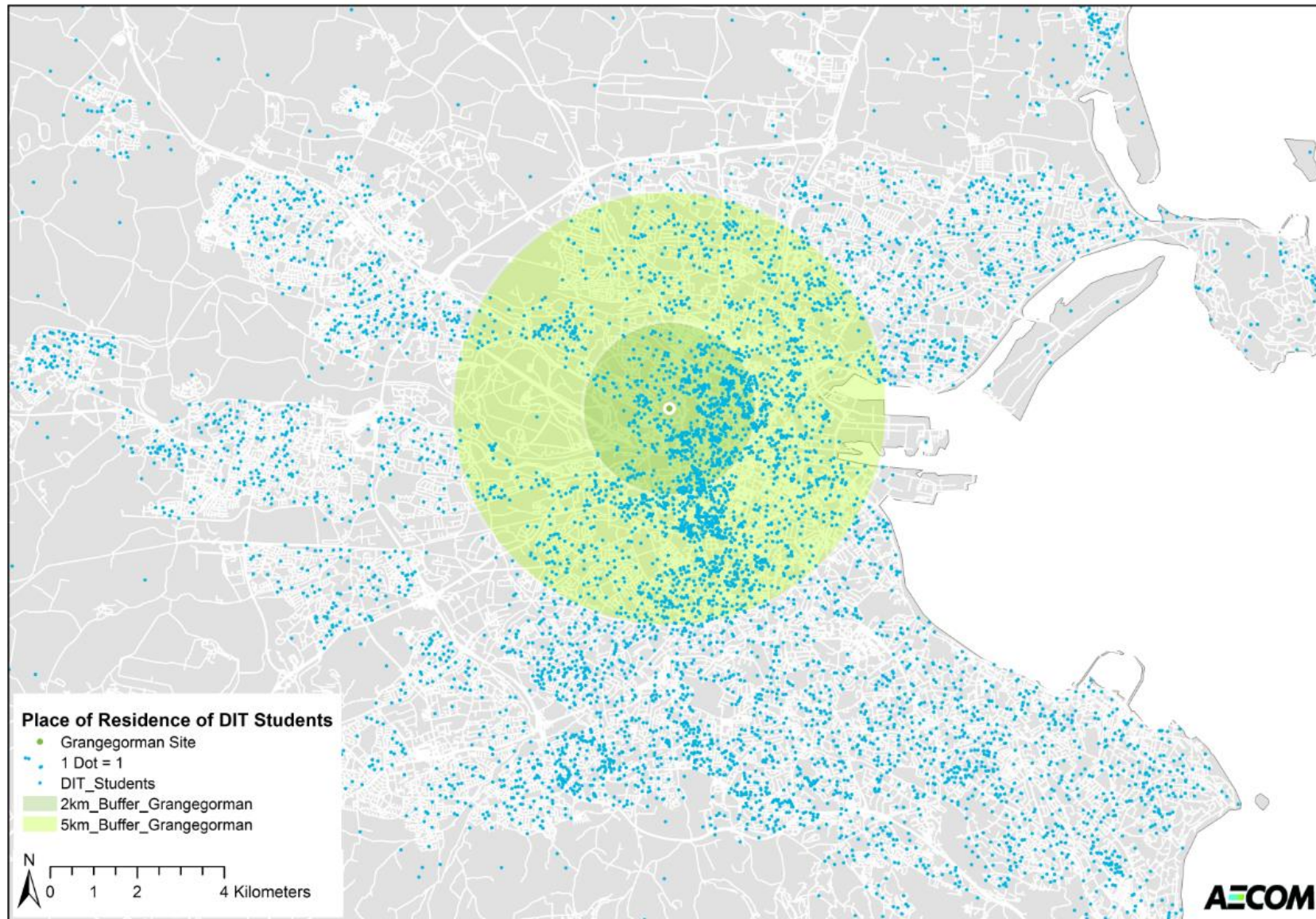
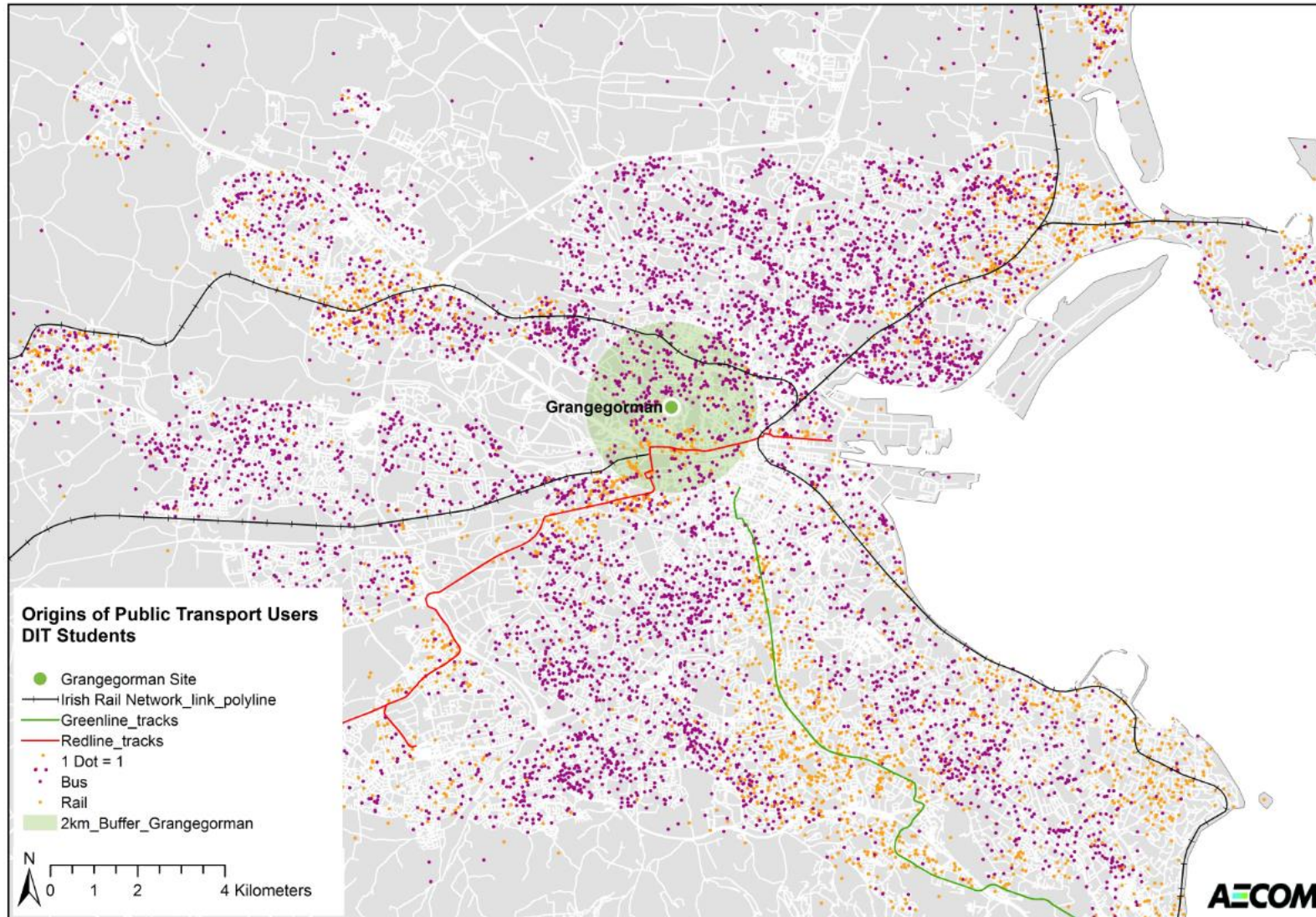


Figure 9: Origin of public transport trips to Grangegorman, POWSCAR 2011



DIT Campus Survey 2014

Findings from the 2011 Census are corroborated by a survey of DIT staff and students undertaken by the NTA in 2014. The surveys were conducted as part of the Smarter Travel programme. Overall, 1,803 staff and students responded to the survey, representing approximately 8% of the 21,624 people based at DIT. The survey suggests that approximately 71% of respondents were using public transport to get to college. This survey also captured the commuting mode of staff to DIT and demonstrated that there is a higher dependency on car use among staff with 23% of staff driving to work and less uptake of public transport as a result. Interestingly, the mode share for active modes among staff is higher than for students at 25%.

More detailed findings from the surveys are as follows:

Car Dependency

The results of the NTA survey demonstrate the difference in car mode share between staff (23%) and students (9%). Among those driving to work, 38% of staff and 15% of students said they 'always' have a parking space available to them. Just 8% of staff said they 'never' have a parking space available to them compared to 66% of students.

The majority of staff (60%) and students (73%) do not require a car during the course of their work. Therefore, there is some evidence of car dependency for the commute to work, especially given the central location of current DIT sites. When staff car drivers were asked what would encourage them to choose an alternative travel mode, the most common was 'discounted public tickets' (43%), followed by 'improved cycle parking' (29%). The response from student drivers was similar although 35% of student respondents also highlighted parking charges as a disincentive to driving.

Walking

Almost 10% of staff respondents (n=36) and 13% of student respondents (n=182) regularly walk to campus and 30% of staff respondents (n=118) and 31% student respondents (n=432) occasionally walk.

The extent of feedback provided by the survey in relation to walking was limited although respondents did highlight an interest in the following to encourage more walking:

- 10% of respondents (n=361) suggested 'Green commuters' coffee mornings;
- 19% of respondents (n=672) suggested an incentive scheme for 'green commuters';
- 7% of respondents (n=239) are interested in lunchtime walking groups; and
- 8% of respondents (n=281) are interested in a Sli na Slainte walking routes marked out in the local area/ on site.

Cycling

The survey results suggest the following measures to encourage more cycling to DIT:

- Shower areas were improved/increased (52%);
- Lockers provided (60%);
- Drying room for gear provided (48%);
- Cycle parking increased (52%);
- Cycle parking moved closer to entrance (42%);
- Cycle parking covered and secure (e.g. only accessible by cyclists) (58%); and
- Increased security on campus (56%).

The results also indicate that 25% of respondents (n=46) who regularly drive to work said they would be interested in cycling to work more often.

Public Transport

44% of staff respondents (n=175) and 71% (n=995) student responses are already using public transport for the commute. However, it appears that there is further scope to increase regular use of public transport as 61% of staff (n=237) and 73% of students (n=1008) occasionally use public transport, meaning that they have access to services but don't always use them.

The survey found that there was a high awareness of the Tax Saver public transport tickets although the annual ticket does not suit all staff due to the nature of terms. It was suggested that monthly tickets, as well as Leap Cards, should be promoted more within DIT.

Car Sharing

There is evidence from the survey results that informal car-sharing is happening, with 1% of staff respondents (n=4) and less than 1% of student respondents (n=7) regularly travelling to campus as a passenger in a car with driver going to same destination. 2% of staff respondents (n=8) and less than 1% of student respondents (n=6) reported travelling to campus regularly as a passenger in a car with driver going to different destination.

Car-sharing could be increased by more formal promotion, with 37% of staff who are regular car drivers (n=31) and 69% of students who are regular car commuters (n=59) stating that they are interested in car-sharing.

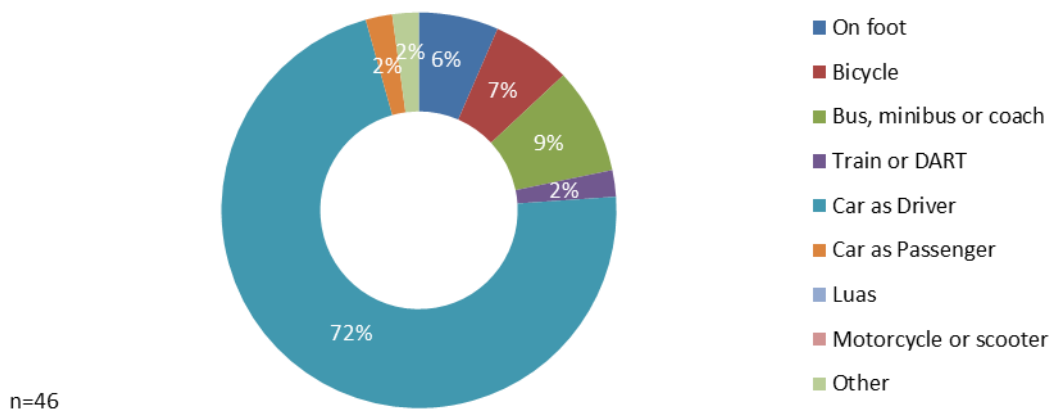
All of the above information was collated and proved invaluable in developing the transport strategy and mobility management plan for the Grangegorman campus.

HSE Travel Survey 2014

Due to the nature and pattern of work shifts at the Grangegorman HSE facility, travel demand is quite different to that generated by the DIT. Nevertheless, these travel demands must also be accommodated and reflected in the transport strategy for the site. A travel survey of staff at the Grangegorman HSE facility was undertaken in 2014 to understand more about current travel demand among HSE staff. The survey had a response rate of 47% from a total of approximately 150 staff.

The modal split identified through the HSE travel survey is shown in Figure 10. Almost three quarters of employees are using a private vehicle to access the site. The use of active modes is limited with only 6% of staff walking and 7% cycling. Another 9% of staff travel by bus and 2% by train or DART, whereas Luas take-up is very low.

Figure 10: HSE Survey Respondents Modal Split



While a mobility management action plan has been prepared for the HSE facility and measures are being put in place to reduce car dependency, future mobility and transport planning for the site needs to reflect the varying travel requirements of both the DIT and HSE.

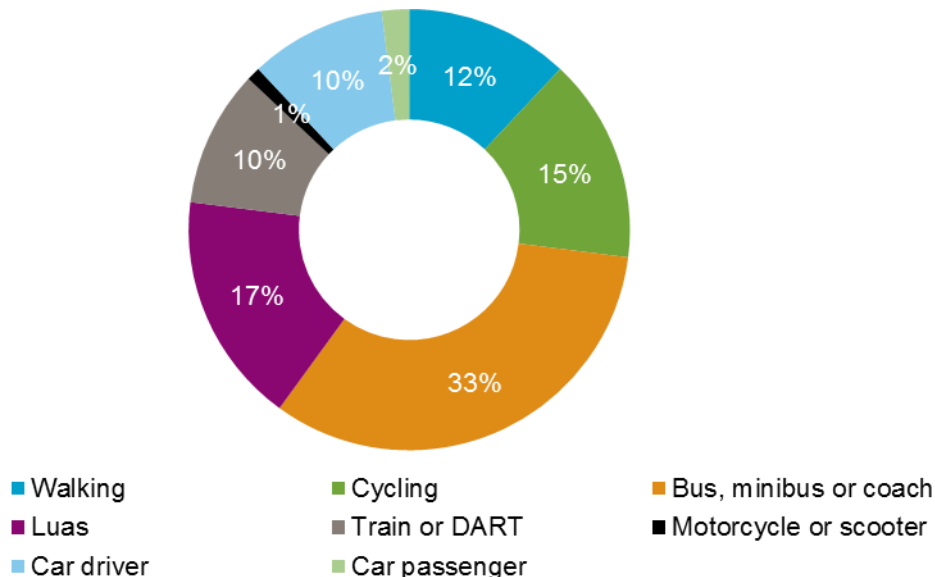
GRANGEGORMAN MOBILITY MANAGEMENT PLAN

A Mobility Management Plan for the Grangegorman site has been developed with the objective of ensuring that commuting travel patterns to the site will be sustainable and will not generate adverse impacts on the local community or transport network. As such, specific targets for modal share have been agreed which will steer the development and implementation of the MMP. The targets are set out in Figure 11 and have been proposed

- for all commuters – staff and students – to Grangegorman;
- based on the current commuting average for DIT/HSE staff and students;
- taking the Luas Cross City and Swiftway schemes into account;
- taking significantly improved cycle routes and pedestrian environment into account; and
- on the assumption that not all parking demand can be accommodated on site and that some demand will be catered for in nearby multi-storey carparks.

The targets are assuming that bus/BRT will continue to be the main mode of access to Grangegorman with Luas Cross City and Red Line accommodating 17% of travel demand. Including the rail modal share of 10%, public transport will be the main mode of travel for 60% of commuting trips to Grangegorman. A mode share of 16% of all commuting trips to the site is proposed for cycling, in the context of significantly improved facilities through implementation of the Greater Dublin Area Cycle Network Plan. It is targeted that the car driver mode share would not exceed 10% across the overall site. This number covers the need for a car for business purposes, a constraint that will vary across the site with access to car parks managed to reflect this demand.

Figure 11: Grangegorman mode share targets



In terms of the measures that are proposed as part of the MMP an Action Plan has been developed with responsibilities assigned to different parties for each action. In general, the Action Plan (Appendix 1) addresses the following:

- **Control:** What control measures are being taken to manage travel demand? In travel demand management terms, these are the 'sticks' which control demand and include: parking and traffic management;
- **Provision:** While 'sticks' have an important role to play in managing demand, it is important to acknowledge that there is a need to ensure there is a satisfactory level of provision of alternative modes and facilities;

- **Awareness:** To influence travel behaviour there is a fundamental need for a clear and integrated awareness campaign; and
- **Support:** To encourage ongoing travel behaviour change, it is recommended that an employee takes on the role of Mobility Manager. This individual would work collaboratively to ensure recommendations of the MMP are delivered.

A summary of the main issues and opportunities identified in the development of the Grangegorman Transport and MMP Strategy include:

- **Car Dependency:** There is evidence from both DIT and HSE staff and student surveys that there is a dependency on car use that could in some instances be replaced with other modes.
- **Public Transport Connectivity:** It is envisaged that there will be a significant increase in the number of commuters using bus services and facilities in the Grangegorman area. As such, there is a need to review access routes serving the site as well as facilities such as bus stops. This process is currently underway and the GDA has engaged with Dublin Bus and the NTA with the aim of ensuring that adequate bus services and facilities are available to serve the future demand for this mode.
- **Pedestrian Environment:** The quality of the pedestrian environment in the vicinity of Grangegorman has not been well rated and requires some attention given the volume of pedestrians expected through the area in the coming years. Improving actual and perceived safety on walking routes to public transport nodes will be particularly important in giving commuters confidence in their choice of mode.
- **Cycling:** The GDA Cycle Network Plan sets out a network of cycling routes in the Grangegorman vicinity. It is important that development of high quality facilities accessing the site is fast tracked and delivered in the short term to ensure a high cycling mode share to the site evolves from the outset.
- **Parking Strategy:** An allocation of 1,150 parking spaces within the campus has been proposed. These are currently allocated to each individual building/entity within the site and an estimate of actual demand for all trips to the site has not been generated. As such, there is a need to estimate actual demand across the overall site as opposed to each individual building to understand how parking can be allocated in a more effective way.
- **Supporting Facilities:** To support a shift to alternative travel modes to the campus, it is important to recognise the needs of these commuters by providing facilities such as sheltered secure bike parking located close to building entrances, lockers and showers.
- **Information and awareness:** A campaign to raise awareness of the move to Grangegorman needs to incorporate travel and transport options as a key theme. This needs to commence in advance of each phase of development.

On the basis of these challenges, a robust action plan of mobility management measures has been proposed and is being implemented by the Grangegorman Development Authority and supporting stakeholders. A summary of the action plan with targeted actions, owner and delivery phase is presented in Appendix 1.

At this stage of project delivery, the Mobility Management Action Plan is presented as a 'live' document and is subject to review of a Steering Committee which has been established to monitor the effectiveness of the measures and any travel patterns which emerge in the coming years.

CONCLUSION

The location of Grangegorman in Dublin's inner city offers the opportunity to generate sustainable travel patterns for all users of the site. Already the connectivity of what was a closed off site has been transformed with the creation of new access points to the surrounding street network. The opening of the LUAS Cross City will provide an important connection with the city centre and will allow additional transport interchange opportunities.

The key challenge will be in maintaining and improving the existing modal split in the relocation of DIT staff and students from their city centre locations and in facilitating other users to use sustainable modes of transport. Limited on site car-parking combined with proactive mobility management will assist in this.

Bus will continue to be the primary mode of transport to Grangegorman with walking and cycling also becoming more important. The DIT student catchment is likely to change with the move to Grangegorman and it will be necessary to respond to such changes.

The input and support of statutory transport agencies and Dublin City Council has and will continue to be critical in the achievement of sustainable transport for Grangegorman. Already, with the cooperation of these bodies, considerable progress has been made in opening up the Grangegorman site to allow the creation of a new permeable urban quarter.

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Provision	Active Modes	APPENDIX 1
		<p>Ensure that the design process reinforces the relevant hierarchy of road users where appropriate and that motorists are made aware, through design or otherwise, of the priority assigned to pedestrians and cyclists</p>
	<p>Work in partnership with Dublin City Council to make improvements to the pedestrian environment in the vicinity of Grangegorman. This includes:</p>	
	<ul style="list-style-type: none"> o Safety at crossings 	
	<ul style="list-style-type: none"> o Timing for pedestrians at crossings 	
	<ul style="list-style-type: none"> o Advance stop lines for cyclists 	
	<ul style="list-style-type: none"> o Improved lighting 	
	<ul style="list-style-type: none"> o Upgrade and maintenance of pavements 	
	<ul style="list-style-type: none"> o Formalising desire lines through residential areas 	
	<p>Work in partnership with Dublin City Council to ensure the introduction of planned cycling facilities as outlined in the GDA Cycle Network Plan</p>	
	<p>Liaise with Dublin Bikes regarding potential for development of at least one bike station within Grangegorman</p>	
	<p>Ensure sufficient bike parking is available throughout development of the site. It should be conveniently located and preferably secure and sheltered</p>	
	<p>Investigate potential to demarcate specific area within the underground car parks for cycle parking (including lockers)</p>	
	<p>Establish permanent cycle maintenance stations which include air pumps and basic tools for maintenance</p>	
	<p>Ensure the permitted speed of vehicular traffic onsite is enforced</p>	
	<p>Designate and maintain shower and locker facilities in all new blocks and ensure sufficient facilities are available throughout site development</p>	
	<p>Introduce innovative facilities on cycle routes throughout the campus to support cycling such as foot rests and railings at junctions and tilted bins</p>	
	<p>Improve wayfinding to and within the site for pedestrians and cyclists</p>	
	<p>Introduce a Sli na Slainte or similar walking route around the campus</p>	
	<p>Observe desire lines of cyclists and pedestrians as the site evolves and ensure routes are formalised where possible to optimise safety</p>	
	<p>Develop a clear access plan for cyclists through the site to mitigate excessive conflicts with other road users</p>	
	<p>Ensure live counters of cyclists are installed on all main entrances to the site, ideally these should have a visual display similar to other used in Dublin</p>	
	Public Transport	
	<p>Work with the NTA and service providers to identify opportunities for phased expansion of services to the site in line with demand</p>	
	<p>Ensure the identification of potential routes is based on a clear understanding of travel demand to the site using established databases or staff/student surveys</p>	
	<p>Ensure a service area for buses is established at a central and convenient location within the campus</p>	
	<p>Work with the NTA to upgrade all bus stops serving the area as identified. Where possible stops serving the campus should have shelters, seating and lighting as well as real time information and route information</p>	

	Liaise with operators to improve connectivity to commuter and intercity rail services at Connolly and Heuston Stations
	Ensure real time information on bus and Luas services in the area is displayed within campus
	Consider the possibility of introducing an interim shuttle service from the campus to key public transport nodes such as the Luas Green line at St Stephens Green
	Parking
	Develop a site wide parking strategy which outlines a plan for delivery, allocation and funding of parking within the site
	Car Pooling
	Promote use of the national car sharing website carshare.ie. Alternatively, a facility on the campus intranet could easily be established
	Introduce priority spaces for those who car share which are close and convenient to campus entrances
Work with car pool companies to make cars available to staff and students in the vicinity of Grangegorman	
Control	Flexible Working
	Encourage and promote flexible working among staff including staggered working hours and telecommuting
	Educate and train managers to encourage flexible working
	Ensure video conferencing facilities are made available to all staff
	Investigate the potential to offset some teaching hours until before/after the morning peak
Encourage the proposed primary school to adopt off-peak start/finish times (07:30 – 12:30 for example)	
Awareness	Grangegorman should be promoted as a 'green campus' where arrival by car is the last mode that should be considered. Public transport, walking and cycling routes to the site need to be actively promoted on an ongoing basis and form an integrated component of both DIT and HSE communications
	Establish a clear brand concept for green/smarter travel to Grangegorman site. This should be widely promoted and incorporated in all communication with staff regarding commuting to the site
	Provide a central travel information centre within the campus and on the internet/intranet, with information on bus and rail routes and timetables, cycling routes etc
	Provide a personalised travel planning service for staff and students, particularly in advance of the move to Grangegorman. This approach has proven to have an impact of travel behaviour and mode choice
	Establish walking and cycling clubs among staff (in addition to existing student clubs) to promote active travel to work and during breaks
	Inform all new recruit about travel options to the site
	Ensure Grangegorman is incorporated as a key destination on journey planning apps and Google maps
	Ensure sustainable access to Grangegorman is promoted for all events and meetings etc
Promote conveniently located Park and Ride facilities which provide direct public transport access to Grangegorman (for example, on the Luas Red and Green lines)	

	Promote and encourage take up of the Bike to Work scheme
	Make both annual and monthly tax saver tickets available to staff
	Hold regular events to promote active travel, especially national events such as Bike Week
	Establish a Travel Smart reward system which encourages the use of sustainable modes to the site. For example, this might quantify the extent of walking/cycling trips and provide retailer discounts for every 200km travelled using these modes
	Introduce health/active travel challenges among staff focusing particularly on car drivers
	Offer complimentary taxi fares for car poolers in emergency circumstances
Support	Recruit a Co-Ordinator for delivery of the Grangegorman MMP
Change Management	Plan to purchase various promotional merchandise such as hi-vis vests, umbrellas, bag covers which promote Grangegorman and smarter travel to the site
	Bus/LUAS stop advertising to incorporate Grangegorman
	Advertising on Dublin Buses of the move to Grangegorman
	Update journey planning apps to include "DIT Grangegorman Campus", instead of St. Brendan's Hospital
	Location of St Brendan's Hospital on Google Maps to be changed to DIT Grangegorman
	Disseminate information through 'Champions' and lecturers. Specific 'Champions' among existing staff in each department can be chosen to disseminate information locally. This should be centrally planned and lead with up to date progress information
	Raise awareness of the move among new students through 2nd level student counselors, third level exhibitions and CAO e-zine
	Undertake information roadshows to existing Art/Design/Social Science students in March/April
	Set up Notice Board for GG in existing Mountjoy Square, Portland Row and Temple Bar locations with regular updates (including photos)
	Use existing screens on Campus to include updated GG information
	Ensure Weekly GG story on DIT news page (www.dit.ie)
	Create an email signature tagline on with a link to GG website
	Create a link to GG website from all relevant programs on "Study at DIT"
	Explore "DIT moving to GG" app, plotting journey from O'Connell Street
	Develop a "map my run/cycle" to GG from a specific central location
	Develop an attractive map visual highlighting key locations close to GG. Eg.: Phoenix Park; Croke Park; Stoneybatter; Smithfield
	Explore promotional opportunities connected to Career Guidance Counselor's conference (21 March) include program advertisement
	EZINE aimed at CAO applicants in March /April
Need to increase awareness among existing staff at Grangegorman that car parking arrangements will have to be different in Grangegorman	