

Arup Consulting Engineers

Dundalk Institute of
Technology

**Mobility Management
Plan**

Sustainable Traffic
Management Strategy &
Implementation
Programme

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STAFF AND STUDENT TRAVEL SURVEY RESULTS

EXECUTIVE SUMMARY

Dundalk Institute of Technology (DKIT) currently experiences significant problems associated with excess demand for car parking on Campus during the peak operation periods, i.e. in-term week days. A recent survey carried out by the DKIT Estates Office revealed that up to 350 cars park in non-designated areas during the peak operational periods on Campus. The excess number of cars parked on Campus presents significant safety and operational problems as follows which need to be addressed:

- One of the problems that need to be addressed most urgently is the issue of blockage of emergency access routes. This has been raised by the County Fire Officer and identified in the Fire Risk Assessment carried out by Gardiner and Partners in October 2005. Indiscriminate car parking on service/emergency routes currently blocks access for emergency vehicles. In the case of a fire breaking out in many of the Campus buildings, emergency and fire tender vehicle would not have complete access at present. Furthermore, cars parked adjacent to buildings have been noted to block fire exit doors of buildings, which is considered to be a serious risk.
- The excess number of cars parking on Campus also has a significant impact on the daily operation of the Campus. Cars are parked in designated delivery and waste removal areas, making delivery not possible or forcing service vehicles to park elsewhere and operate less efficiently. This also creates further obstruction to other vehicles on Campus. Bus Eireann have ceased to drop students off at the bus lay-by located on Campus due to cars parked in this area.
- Movement on Campus is restricted by cars parked on double yellow lines along roads. Sight distances on bends are also restricted by cars parked illegally which are considered to be a health and safety issue. Due to restricted road space, there is evidence that cars are being bumped and scraped.
- Cars parked in non designated areas seriously impact on the quality of the Campus. Pedestrians are forced to walk on roads as a result of footpaths being blocked. Blocked footpaths have serious implications for mobility impaired persons. Overall the excess number of cars parked on Campus is visually obtrusive and has a negative impact on the image of DKIT.

DKIT is one of the stakeholders of the Dundalk 2020 Sustainable Energy Ireland Project. It is the objective of the above project to increase the use of renewable energy and to increase energy efficiency of buildings. However, the excess number of cars on Campus however creates an image of DKIT which is not in line with the objectives of the project. SEI is considering relocating its head offices onto DKIT Campus, provided that the excess car parking problem is adequately addressed.

DKIT expects further Campus population growth within the next five years which would increase car parking demand even more. Local and national trends also suggest that car ownership in Ireland is increasing as the country becomes more affluent.

DKIT is conscious of the growing problem outlined above and in reaction proposes to implement a Sustainable Traffic Management Strategy which has the objective of reducing car based transport to Campus and to promote more sustainable modes of transport including walking, cycling and public transport.

As part of the above study a DKIT staff and student travel survey was carried out during February 2006. The travel survey was designed to capture information on the existing travel patterns and behaviour of the DKIT population.

The survey produced a representative sample of staff (60% of total staff responded) on Campus. A lower student sample (12% of total students responded) was achieved and therefore needs to be carefully interpreted in the subsequent analysis undertaken.

The travel survey has revealed that more than 80% of staff and 30%-40% of students (based on interpretation of available student demographic and car park survey information) currently drive to Campus while the remainder make use of other modes of transport including walking, cycling and public transport. An analysis was also carried out on staff and student living locations and travel distance to Campus. This analysis has shown that there are currently significant potential for staff and students to make use of other modes of transport other than the car.

It is estimated that 17.5% of staff and 27.6% of students could potentially walk to Campus, while only 3% staff and 11% students currently do. Also, 39% of staff and 36% of students live close enough to cycle to Campus, but only 1.7% staff and 2.2% students currently cycle. There is also significant potential for staff and students to make use of public transport. Currently only 1.7% of staff and 10.7% of students have indicated that they make use of bus transport to Campus, while virtually no staff and students travel by train to Campus. DKIT demographic information and the travel survey findings show that more than half of staff and students live within the catchment of the existing bus and rail transport corridors in County Louth and can potentially travel to Campus by public transport.

Following the review of the existing transportation environment and an analysis of the potential shift of staff and students away from car based transport, a transportation strategy has been developed for DKIT with proposals to make the use of sustainable modes of transport more attractive while disincentives are proposed for parking on Campus for those who do not need to do so on a regular basis.

It is proposed that the transportation strategy is rolled out over a time period of 5 years. The following measures are proposed to promote sustainable modes of transport:

- Appointment of a Mobility Manager and Steering Committee which will be the vehicle to implement the Strategy. Much of the work to be carried out will be promoting walking, cycling and the use of public transport by various means;
- Developing a Marketing Strategy to sell the proposed commuting alternatives to staff and students;
- Improvement of the existing footpath and cycle network to Campus (in consultation with Dundalk Town Council) and raising awareness of the health benefits of walking and cycling;
- Providing additional cycle facilities on Campus including showers, lockers and secure cycle parking;
- Establishing new more direct bus routes to Campus and improving the operation of existing bus routes to make services more reliable. This study has found that a number of existing bus routes in County Louth to Dundalk terminates in the town centre leaving users no direct means of transport to travel to the Campus located further to the south;
- Linking Dundalk railway station by shuttle bus to the Campus. More than 200 staff and 900 students currently live in the catchment of the Dublin to Belfast railway line of which virtually none is using it. Users are however currently left stranded at the railway station which is located too far away from Campus to walk. By providing a shuttle link, rail as an alternative mode of transport becomes more attractive. It is proposed that the option is investigated to deliver this service in conjunction with other stakeholders in the Dundalk 2020 SEI Project;
- Establishing a car share scheme amongst staff and students and encouraging it by providing dedicated preferential car share spaces at prime locations on Campus and to guarantee a ride home if the sharing arrangement breaks down or emergencies occur.

The above measures on their own will however not be effective on its own to significantly reduce the number of cars on Campus. To be successful in achieving the goals of the strategy, it is necessary to introduce disincentives for driving and parking on Campus.

It is proposed that a paid car parking strategy should be introduced on Campus and that staff, students and visitors pay for parking on Campus. This is the most effective way of curbing parking demand and is employed by many organisations as a successful measure to deal with this problem. The most appropriate payment system for DKIT would be a 'pay and display' system where a ticket is purchased from a pay station and then displayed in the car window. It is proposed that the pay and display should not be implemented at once, but should be rolled out over the five year lifetime of the Strategy.

As mentioned earlier one of the most serious issues on Campus is cars parked in non designated areas imposing health and safety risks and impacting on the daily operation of the Campus. To address this issue, it is proposed that all cars parked in non designated areas should be clamped. Clamping should be brought into Campus within the short term to address this serious issue immediately.

Only a limited amount of land at DKIT is currently available for additional car parking provision. The only land still available to provide additional car parking is within the vicinity of the Carrol's Building and it is estimated that an additional circa 200 car parking spaces can be provided. It is proposed that these parking spaces (150No.) and a bus parking area are developed to accommodate short term car parking when clamping is introduced on Campus. These spaces would serve as a temporary solution to accommodate cars currently parked in non designated areas. As the measures proposed for improving the attraction of non car based transport is introduced and car park charging is gradually introduced, this parking can be decommissioned.

The implementation of the proposed strategy is proposed to be divided in three Phases. Phase 1 covers the time period up to 2007. It is estimated that the capital cost of introducing the strategy in 2006/7 will be approximately €461,000. For Phase 2 (2008/9) the cost for implementing the measures recommended is expected to be in the order of €667,000 and for Phase 3 (2010/11) the cost is expected to be €750,000.

It is however believed that the implementation cost of the strategy would be substantially financed by the income generated from car park charging, leaving little or no additional financial burden on DKIT.

It is important that the proposed strategy is agreed and adopted by the DKIT Governing Board to ensure that the strategy can be effectively implemented by DKIT Management.

1. INTRODUCTION

1.1 Background and Context

Like many other third level educational facilities, the Dundalk Institute of Technology (DKIT) have observed an increase in the number of staff and students travelling to Campus by car. This causes many traffic related problems including congestion and illegal parking on Campus, which hampers the daily operation of the Campus and has a negative impact on the quality of the environment.

Indicators predict that the car situation can potentially get worse in the future. According to a publication of the Central Statistics Office (CSO), 2006, the number of vehicles licensed in February 2006 increased by 14%, compared to the same month in 2005. Furthermore the national population has increased by 8% between 1996 and 2002, according to the CSO website and this trend is likely to have continued up to 2006, as would be shown in the 2006 census underway, and beyond. Car ownership rates, which were traditionally lower, are steadily increasing towards the European average of 450 cars per 1000 population.

DKIT has been undergoing a phase of major physical expansion over the past decade. Staff and student populations are likely to continue to grow in the future together with further expansion of the current building stock which potentially will bring more cars to Campus.

DKIT however would like to be proactive in light of the above by implementing a strategy to reduce car based travel to Campus and to encourage and promote more sustainable ways for staff and students to travel including walking, cycling and public transport.

Arup Consulting Engineers have been appointed by the DKIT Estates Office to prepare a sustainable traffic management strategy which would review the existing Campus from a transportation point of view, assess the future transportation environment of the Campus within the next 5 years and propose tangible traffic and mobility management measures for the Campus.

2. METHODOLOGY

The Sustainable Transport Plan was carried out following the methodology outlined below.

Section 3 reviews the policies in place set by the planning and transportation documentation of the Local and Regional Authorities. Section 4 reviews the existing transportation context of the Campus including the Campus layout and existing transport facilities available and the existing and future external transportation context including available road infrastructure, public transport provision, cycle facilities and footpaths;

As part of the study, a staff and student travel survey have been carried out to review the existing travel patterns and behaviour of the Campus population. Section 5 is a discussion of the results of this survey.

Section 6 reviews the expected future development of the Campus in terms of new building stock on Campus and future staff and student numbers up to 2012, which is the life time of this Plan.

Based on the analysis of the information provided in the previous sections, a sustainable transport strategy is proposed. Section 7 outlines the Strategy by outlining mobility measures for each mode of transport.

Mode split targets are set in Section 8 for future years which would be used to measure the success achieved during the implementation of the Strategy.

Section 9 proposes a structure to be set up on Campus for the management of the Strategy. Section 10 outlines a Implementation Programme and Cost Schedule on an annual basis for the Strategy and Section 11 proposes a Monitoring programme to track the progress made with the implementation of the Plan.

3. PLANNING AND TRANSPORTATION CONTEXT

The planning framework for the Dundalk Institute of Technology Campus is based on the strategic objectives outlined in the Dundalk and Environs Development Plan 2003 – 2008. The document describes the policies and objectives identified for Dundalk during this five-year period.

The main aim in the Dundalk and Environs Development Plan is to:

“Provide a forward planning framework which promotes growth and development for the Dundalk plan area and promotes the establishment of its gateway status as a regional shopping destination and employment growth centre whilst protecting and, where appropriate, enhancing the natural and built environment and ensuring that development is both sustainable and of high quality.”

Chapter 10, which relates to Transportation and Infrastructure, recognises that a *“comprehensive and efficient transportation infrastructure is an essential component in the future development of any urban area. This is particularly so in high growth areas like Dundalk, where increased car travel demand has placed unprecedented pressure on transport infrastructure.”*

The objectives in support of the above are aimed at promoting sustainable modes of transport. The 15 Transport orientated policy objectives are as follows:

- TR1 Promote sustainability by reducing mobility demands and promoting transport-conscious planning strategies.
- TR2 Actively co-operate with relevant bodies in the development of sustainable and integrated transportations system for Dundalk.
- TR3 Encourage alternative means of transport.
- TR4 Safeguarding the public nature of Streets and roads
- TR5 Increase Sense of Safety
- TR6 Encourage Safer Routes
- TR7 Promote and Encourage Cycling as an alternative means of transport
- TR8 Enhancing Public Transport
- TR9 Liaison with relevant transport bodies
- TR10 Protecting the Railway Lines
- TR11 Short-term Parking
- TR12 Providing for accessible developments in accordance with the Standards
- TR13 Rational use of existing network and traffic calming
- TR14 Proposed undertaking of Integrated Land use and Transportation Strategy
- TR15 Proposed undertaking of a Transport Strategy for Dundalk and its Environs

Contained outside the immediate boundary of Dundalk and its environs, the Louth County Council development plan 2003 – 2009 stipulates the development framework for the other areas within Louth County Council’s jurisdiction. The county has enjoyed economic growth

due to its strategic location relative to the Dublin/Belfast economic corridor and the objectives and policies within this development plan are therefore aimed at the continuous improvement of the road and rail infrastructure and accessibility to local ports and international airports.

An overview of the strategic objectives and policies are detailed below:

Louth County Council has developed a number of policies addressing a number of transport and telecommunications needs in the area. As listed in Section Eight, the general strategic objectives are to:

- Promote sustainable development within the county through the integration of transportation and land use policies in order to reduce the need to travel.
- Maintain road reservations and road improvement line free from development for those schemes that it is an objective of the planning authority to implement.
- Explore, in consultation with Iarnrod Eireann, Bus Eireann and any other interested parties, an expansion of the public transport system and improvement of facilities in the county.
- Ensure that all modes of transport are suitable for people with impaired mobility.
- Encourage pedestrian and cycling links in the county in order to increase the use of these modes of transport.

The development plan discusses a number of transportation related policies including the following:

Policy 8.1

- Prohibit any development if associated traffic movements would result in the creation of a traffic hazard or traffic congestion.
- Seek to develop a more integrated policy on rural transport in order to address the needs gap identified in the rural transport audit.
- Apply the standards as set out in the National Road's Authority – Design Manual for Roads and Bridges and Louth County Councils' – Guidelines for the Design and Construction of Housing Estates and the Department of the Environment & Local Government's Recommendations for site development works for housing areas.
- Provide and maintain a road hierarchy based on motorway, national routes, regional routes and all county roads with the aim of maintaining the carrying capacity and lifespan of the road network, ensuring traffic safety and the avoidance of traffic hazards for motorists, pedestrians or other road users.
- Require that a traffic assessment and safety audit be submitted with all permitted developments along national primary or secondary routes or where in the opinion of the planning authority is likely to have a significant affect on such a route.

Policy 8.3

- Seek to achieve a balance between the use of private transport with the need to promote alternative modes of transport such as public transport, cycling and walking.
- Explore in consultation with Iarnrod Eireann, Bus Eireann and any other interested parties, an expansion of the public transport system and improvement of facilities in the area.
- Ensure that all modes of transport are suitable for people with impaired mobility including the provision of parking facilities that disabled access facilities are incorporated into existing/new development.

- Seek to develop an integrated policy on rural transport in order to address the need gaps identified in the rural transport audit.
- Seek to provide pedestrian and cyclist paths especially where they would provide shorter, safer or more pleasant routes, so as to encourage and facilitate walking and cycling.

Policy 8.4

- Support Iarnrod Eireann's efforts to improve the quality of the rail infrastructure and service available within County Louth.
- Seek the re-opening of the Dunleer railway station.
- Seek the opening of a new rail station/halt north of the River Boyne in Drogheda.

The proposed policies of the Dundalk and Environs Development Plan 2003 – 2008, are in line with the intention of DKIT to implement a Sustainable Transportation Plan. These policies and objectives would make it easier for staff and students to travel by more sustainable modes of transport.

4. EXISTING TRANSPORTATION ENVIRONMENT

4.1 Site Context

Dundalk Institute of Technology (DKIT) is located in Dundalk town situated in County Louth. Dundalk is strategically located on the East Coast of Ireland, halfway between Dublin and Belfast. Although the Institute mostly serves the population of Co. Louth and surrounding counties including Meath, Cavan and Monaghan, staff and students travel as far as from Dublin to Dundalk.

Dundalk is served by the newly constructed M1 Motorway and the Dublin to Belfast railway line, which both run north to south along the East Coast linking Dundalk to other towns along this corridor including Newry, Dunleer, Drogheda, Balbriggan, Skerries amongst others. Other radial routes also link directly into Dundalk including the N52 from Ardee, the R178 from Cootehill and Carrickmacross and the N53 from Monaghan and Castleblaney.

DKIT is located to the south of Dundalk town centre along the old Dublin route at the north eastern quadrant of the junction with the N52, which forms an eastern ring road around the town. The majority of land within the vicinity of the Campus comprises residential land use, with the exception of the Xerox premises located further to the south and the adjoining Vocational School to the north.

4.2 Campus Layout

4.2.1 General

The Campus boundary and layout of the grounds are shown in Figure 4.1. The total area of the Campus site is approximately 33 Hectare.

The Campus is roughly T-shaped, which can be divided into three distinct areas. The majority of the traditional Campus academic buildings are located within the northern arm of the T-shape. This area includes the following faculty buildings: T.K. Whitaker Building (Library and Administration); the Engineering Building, Science Building, School of Informatics, Music and Creative Media, School of Business Studies, Padraig Faulkner Building (Student Union), Hospitality Training Building and the Nursing, Midwifery, Health Studies & Applied Sciences Building.

Within the eastern arm the majority of the sports grounds including GAA, rugby and football pitches are located. The southern arm of the T-shape includes the Carroll's building which is an old industrial building which is being restored for academic use to house Computer Sciences.

The Campus is bound by the Old Dublin Road and residential properties to the west. Hoey's Lane bounds the Campus to the north as well as the Vocational School and Naughton's Close residential area. The majority of the remaining lands to the north, east and south of the Campus sport grounds are currently undeveloped. The site located to the south of the Campus adjacent to Carroll's building, referred to as Green Park is currently being developed to accommodate a hotel, offices, medical centre, sports facilities and apartments.

4.2.2 Campus Entrances and Internal Road Network

There are four entrances to the Campus as shown on Figure 4.2. The Dublin Road Entrance to the Campus is the main entrance, followed by the Hoey's Lane Entrance. The PJ Carroll's Building Entrance is a relatively new entrance to the Campus off the N52 (Inner Relief Road) which is proposed to be upgraded in the future.

The fourth entrance is the P.G. Carroll's Building Entrance off Dublin Road, which is currently closed and only provides access to a limited number of car parking spaces.

Table 4.1 provides additional information on the four Campus entrances. All types of traffic are accommodated by the entrances. Currently the distribution of staff over the main entrance and Hoey's Lane Entrance is almost equal while the majority of students make use of the Main Entrance.

The internal road network of the Campus comprises basically of a north-south spine (linking Hoey's Lane Entrance to the north to the southern N52 Inner Relief Road Entrance), running the length of the Campus, providing access to car parks. A link road from the Main Entrance off Dublin Road links to the north-south spine and is continued further to the east via a staggered junction. This road runs to the east to serve the sport grounds.

An emergency access route runs at the back of the academic buildings, following the eastern boundary of the Campus.

Table 4.1: Campus Entrances

Entrance	Types of Traffic					Notes
	Vehicle	Cyclists	Pedestrians	% Staff	% Students	
1. Dublin Road – western access	Yes	Yes	Yes	43.2	48	Primary Access
2. Hoey's Lane (Main DKIT Campus Entrance)	Yes	Yes	Yes	46.1	40.4	Secondary Access
3. P.J. Carroll Entrance (N52 Inner Relief Road – southern access)	Yes	Yes	Yes	10.7	11.6	
4. P.J. Carrolls Building Entrance (Dublin Road – western access)	-	-	-	0	0	Currently Closed
Total				100	100	

4.2.3 Existing Car Parking and Internal Road Network

There are currently a total of 714 car parking spaces available on Campus. The majority of these spaces are located on the northern part of the Campus, close to the academic buildings as shown in Figure 4.3, except for the newer car parks 5 and 6 which are located to the south. Car park 1 is a staff only car park while the remainder are student car parks. 16 disabled spaces are provided at various locations on Campus.

The existing provision for car parking is summarised as follows:

Car Park No.	No. of Parking Spaces	Comment
1	140	
2	92	Designated as a Staff Car Park without barriers
3	130	
4	48	Includes 4 Disabled Parking Spaces
5	28	
6	182	
7	68	
Front of Whitaker Building	10	6 Disabled Spaces and 4 Reserved and Visitor Spaces
Front of Nursing Building	6	6 Disabled Spaces and 4 Reserved and Visitor Spaces
Total Car Parking Spaces	714	

DKIT currently experience major difficulty with the number of illegal parking taking place on Campus. The parking problem is currently presenting traffic and health & safety issues and interferes with the daily operation of the Campus. Figure 4.4 graphically illustrates the major problems experienced as a result of illegal parking which includes amongst others obstruction to fire access roads, the waste compound, delivery set down areas and bus parking bays, disabled parking bays are obstructed, driver visibility is obstructed and fire exit doors is blocked. These are serious issues in the case of an emergency and need to be addressed.

DKIT currently has 3,750 students and 415 full time academic and non academic staff which equates a total Campus population of 4,165 people. The current rate of available parking spaces to Campus population is 1 space per 6 persons. Table 4.2 below shows comparable parking provision rates at other tertiary institutes. Compared to other tertiary institutes, DKIT currently has a relative high parking provision rate.

Table 4.2: Current Parking Provision at Other Tertiary Educational Facilities

Institute	Parking Provision
University College Cork	Total of 1,200 spaces of which 800 is on campus and 400 off site (Park and Ride). Parking Provision Rate: 2,250 staff, 15,000 students / 1,200 spaces equals 1 space per 14 persons
University of Limerick	Total of 1,900 spaces on Campus Parking Provision Rate: 1,600 staff, 10,000 students / 1,900 spaces equals 1 space per 6 persons
Dublin City University	Total of 1,075 spaces on Campus Parking Provision Rate: 1,200 staff, 10,500 students / 1,075 spaces equals 1 space per 11 persons
National University Ireland, Galway	Total of 1,400 spaces on Campus Parking Permit available for staff and students Parking Provision Rate: 1,800 staff, 15,088 students / 1,400 spaces equals 1 space per 12 persons
Cork Institute of Technology	Total of 1,500 spaces Parking Provision Rate: 1,700 staff, 9,000 students equals 1 space per 7 persons

4.2.4 Pedestrian and Cycle Facilities

The internal pedestrian network of the Campus is shown in Figure 4.5. Footpaths are available at the Main and Hoey's Lane Entrances and along all internal roads within the Campus. The northern part of the Campus, where all the older academic buildings are located has an extensive footpath network. However, the area within the southern part, within the vicinity of the P.J. Carroll Building will be redeveloped in the future to integrate with the remainder of the Campus.

There is currently no cycle lane network available on Campus and it is unlikely that a cycle network will be developed in the future. Vehicle speeds on the internal road network of the Campus is considered to be low and the straight sections of the roads are rather short making it not possible for vehicles to build up speed. Cycle facilities should rather be provided on the external roads providing access to the Campus where traffic flow and speeds are potentially high. The external cycle road network is discussed in a following section of this report.

4.3 Campus Growth and Development in Recent Years

In the recent years, DKIT has experienced a significant rate of growth in both the student and staff population. Since 1993/94 the number of full time students has grown from approximately 2,000 to more than 3,500 in 2005/06. This is a growth of more than 75% over this time period. The full time student growth was particularly high during the last few years since 2001/02. During this period, student numbers increased, by more than 1,000 (50% growth).

DKIT Campus was founded in the early 1970's and has since then developed continuously. The first building stock development on Campus was the North Block which now accommodates Administration, Apprentices, Computing, Engineering, Nursing, Restaurant and Sciences. Since then the South Block was developed in 1978 which accommodates Business, Computing and Humanities. Further development includes the Multi –Purpose Centre and Student Services Centre constructed in 1989. Within the last 10 years the Hospitality Training Centre (CERT Building) and Regional Development Centre was constructed in 1998 and the LIRC Building in 2001.

The P.J. Carroll Building was an old factory building which have been incorporated into the Campus grounds recently. It is currently being reconstructed to accommodate Computer Science.

4.4 Road Layout and Access

4.4.1 External Road Network

Existing Surrounding Road Network

The Dundalk regional road network comprises of radial and orbital primary routes, which provide a high level of regional access to and from the city centre.

The N1 (Dublin Road) runs adjacent to the west of the Campus. The N52 skirts the southern boundary of DKIT and Hoey's Lane is the Campuses northern boundary. The majority of the remaining lands to the east of the Campus sport grounds are currently undeveloped. The site located to the south of the Campus adjacent to Carroll's building is currently being developed to accommodate a hotel, offices, medical centre, sports facilities and apartments.

The principle routes surrounding DKIT Campus are as follows:

- Dublin Road (N1) – National primary road providing a north-south vehicular access to central Dundalk from the south. This is a wide single carriageway with numerous direct access roads from adjacent properties and local road junctions, the majority of which are priority controlled.
- Dundalk Inner Relief Road (N52) – National secondary road providing a north-south corridor for regional traffic to bypass the town centre. This is a wide single carriageway with limited direct access and a number of signalised and roundabout junctions with local roads radiating from the town centre.
- Hoey's Lane - Local distributor road running east-west linking the Dublin Road and Dundalk Inner Relief Road. This is a standard single carriageway local distributor running east-west linking the Dublin Road and the Dundalk Inner Relief Road.

Future Proposed Surrounding Road Network

Within Dundalk Town hinterland a number of key road infrastructure projects are proposed as shown on Figure 4.6.

- Future Inner Western Relief (IWR) Road is proposed to link the national secondary roads on the western side of Dundalk. It is to follow along the eastern side of the M1, west of Dundalk town. It will connect from the N1 (Dublin Road) south of the town to arc west and connect on the north of the town to the N52. This link will relieve the Dublin Road of regional traffic. It is in the advanced planning stages and the construction is expected to be private development driven. It is anticipated to be constructed in stages with the southern segment (Southern Link – Priorland – Hill Street Junction) opening in 2010.
- This future IWR Road will include a radial link to allow access to Dundalk town centre from both the west and east; and

- The southern section of the IWR road will run parallel between the M1 and R132 from Casteltbelligham, with an interchange at the N1 (Dublin Road) radial link to the N52.

These road network additions will assist ease of accessibility to the DKIT Campus and make it a more attractive educational centre to students in neighbouring counties and further.

4.5 Public Transport Provision

4.5.1 Bus

There is a daily bus service between the Institute and a range of locations around Dundalk town, including a regular shuttle service to the town Campus on the Ramparts. These routes are indicated on Figure 4.7.

There are 5 privately operated daily bus services to the Institute during the academic year, these serve the following towns:

- | | |
|---------|---|
| Route 1 | Moynalty, Kells, Navan, Wilkinstow, Castletown, and DKIT
(Operated by Russel Coaches) |
| Route 2 | Bailieborough, Kingscourt, Kilmainamwood, Nobber, Drumconrath, DKIT
(Operated by Russel Coaches) |
| Route 3 | Navan, Slane, Collon, and DKIT
(Operated by Russel Coaches) |
| Route 4 | Dun-a-Ri Gates, Kingscourt Road, Ballalley, Magheracloone Chapel, Raferagh, Boylands Cross, and DKIT
(Operated by Finegan Coaches) |
| Route 5 | Carrickmacross, Essexford, Knockbridge, and DKIT
(Operated by Finegan Coaches) |
| Route 6 | Philipstown, Ardee, and DKIT
(Operated by Finlay Coaches) |

Weekend Services

- DKIT, Collon, Slane, Navan, Trim, Longwood, Enfield, (Friday and Sunday – operated by Finnegan Coaches)
- Monaghan, Castleblayney, Culloville, Dundalk, (Sunday evening – operated by Finnegan Coaches)
- Oldcastle, Cavan, Shercock, Cootehill, Ballybay, Castleblayney, DKIT (Sunday and Friday – operated by Bus Éireann)
- Longford, Mullingar, Dundalk (Sunday and Friday – operated by Bus Éireann)

Bus Éireann operates a satisfactorily service to DKIT Campus. The Longwalk to Bay State route and a number of private coach operators have a designated coach stop at Hoey's Lane Campus entrance. The private bus services and the Dundalk – Dublin Bus (No. 100) Éireann route have a set-down area at the Campus Dublin Road entrance. Presently there are no bus routes operating in the vicinity of the Campus along the N52 Dundalk Inner Relief Road. Buses currently congregate along Hoey's Lane for set-down of passengers.

A designated bus set down area is located in the Campus (adjacent to Car Park 2). This bus facility is however not used by bus and is frequently occupied by illegally parked cars.

Table 4.3 shows the bus services and frequency provided by Bus Éireann.

Table 4.3: Bus Éireann Services during Peak Hour Periods

Route No./Name	Morning Peak (08:00 – 10:00)	Evening Peak (17:00 – 19:00)
	No. of Buses inbound to Dundalk	No. of Buses outbound from Dundalk
Dublin – Drogheda – Dundalk (No. 100)	2	3
Dublin – Dundalk – Belfast (No.1)	2	2
Belfast – Dundalk – Dublin (No.1)	0	0
Dundalk – Newry (No.160)	1	2
Dundalk – Greenore – Carlingford – Omeath – Newry (No. 161)	0	0
Dundalk – Monaghan – Cavan (No. 162)	1	2

4.5.2 Rail

The Dublin to Belfast InterCity train has a designated stop in Dundalk. This route serves Dundalk Clarke Station 7 times daily during the weekdays (including Saturday) and 4 times daily during Sunday. During the weekday AM peak hours (08:00-10:00) 1 InterCity train arrives in from Dublin, this also stops at Drogheda.

The Belfast to Dublin InterCity train runs 7 times daily (Monday to Saturday) with station calls to Dundalk and 4 times daily on Sunday. During the AM weekday peak hours only 1 Inter City train serves Dundalk.

Dundalk Clarke rail station is also serviced by Dublin suburban Arrow trains.

The Dublin to Belfast InterCity route services the following towns:

- Dublin Connolly – Drogheda – Dundalk – Newry – Portadown – Lurgan – Lisburn – Botanic – Belfast Central

The Dublin to Dundalk Arrow route services the following towns:

- Dublin Pearse – Tara Street – Dublin Connolly – Howth Jct. & Donaghmede – Portmarnock – Malahide – Donabate – Rush & Lusk – Skerries – Balbriggan – Gormanston – Laytown – Drogheda – Dundalk

Table 4.4 details the train routes which service Dundalk during the AM and PM weekday peak hours:

Table 4.4 Rail Services to Dundalk Station during Weekday Peak Hours

Route	Train Service	Morning AM Peak Hour (08:00-10:00) – Arrive Dundalk	Evening PM Peak Hour (17:00-19:00) – Depart Dundalk
Dublin to Belfast – Dundalk station call	InterCity	1	0*
Belfast to Dublin – Dundalk station call	InterCity	1	2
Dublin to Dundalk – final destination Dundalk	Arrow	1	-
Dundalk to Dublin – final destination Dublin	Arrow	-	0**

* Dublin to Belfast InterCity service: no PM peak hours service, though trains depart from Dundalk to Belfast at 16:15 and 19:55

** Dundalk to Dublin Arrow service: no PM peak hour service, though a service is provided at 16:10 and 19:18 departing from Dundalk

Results from the staff and student travel surveys highlight the under use of the rail service with 0% of staff and 0.4% of students availing of the train service. This is unsurprising considering that DKIT Campus is located more than 2.5km from Dundalk rail station, which is further than a comfortable walking distance. DKIT staff and students are therefore stranded when they use this service. Currently there is no bus link available between Dundalk Station and the Campus.

4.6 Cycle Infrastructure and Parking Provision

Cycle lanes are currently available along a section of the Dublin Road to the north of the Campus and south of the junction with the N52 Inner Relief Road. No cycle facilities are however available within the vicinity of the Campus. Although no cycle lanes are currently provided, cycle lanes are under consideration as part of a QBC (Quality Bus Corridor) being investigated by Dundalk County Council along Dublin Road and Dundalk Inner Relief Road.

Dundalk Town Council however are proposing the development of an extensive cycle route network throughout Dundalk providing cycle routes along major routes into the town centre.

At present, there are no segregated cycle routes within the internal road network of the Campus. Cyclists share the road with vehicle and also have access through the pedestrian areas of the western core area.

According to the staff and student travel surveys, 1.7% and 2.2% cycle to DKIT Campus.

4.7 External Pedestrian Access

A pedestrian footpath is located along the N1 Dublin Road, Hoey's Lane and the N52 connecting to the Campuses footpath network.

A pedestrian traffic signal phase is part of the signalisation phasing at the junction on the Dublin Road. Footpaths are provided on both sides of Dublin Road and the section of Dundalk Inner Relief Road adjacent to the site.

According to the staff and student travel surveys, 3% and 11% travel on foot to DKIT Campus.

4.8 Disabled / Mobility Impaired Provision

At present there are a total of 16 parking spaces provided for disable drivers on Campus. These spaces are spread out in the vicinity of the western core area with no disable parking facilities in the southern region of the Campus. According to the Louth County Council Development Plan 2003 Parking Standards, 'parking bays for wheelchair and special need users shall be provided at a rate of 1 space per 10, and each space shall be a minimum of 3.5 metre wide. A total of 71 spaces is therefore required according to this standard. Arup considered these parking provision standard to be high and have consulted with the Dundalk Town Council Roads Department in relation to this. We were advised to refer to the document 'You can Park Here', published by the National Rehabilitation Board. According to the parking standards specified in this publication 7 mobility impaired spaces should be provided for every 200 standard car parking spaces. Therefore the required number of mobility impaired spaces on Campus should be 25, leaving a current shortfall of 9 spaces.

DKIT takes a proactive approach to catering for the disabled and mobility impaired. Any future buildings will be designed to be access friendly. DKIT currently experiences major problems with illegally parked vehicles on footpaths, making it difficult for wheelchairs to use these facilities. Illegally parked cars also causes obstruction for the visually impaired who relies on an environment which remains every day the same in order to find routes to destinations.

5. STAFF AND STUDENT SURVEY RESULTS

5.1 Introduction

A staff and student travel survey was carried out at DKIT during February 2002. The primary purpose of this survey was to review the existing travel patterns and behaviour of staff and students at DKIT including arrival and departure times at Campus, current modal split, typical journey lengths, times and the origins of trips. This information is used as base line information which to build a sustainable transportation study on. Following is a discussion of the travel survey results.

5.2 Methodology

Staff and student survey questionnaires were designed in consultation with the DKIT Estates Management Office.

Two questionnaires were produced; one for staff and one for students. These were identical except for Question 1, “Which group best describes your employment at DKIT?”, which substituted “studies” for “employment”. Copies of the questionnaires are included in **Appendix A**. The questionnaires were distributed electronically, via e-mail and manually.

Electronic survey

The survey was posted electronically on a website developed by InterNETalia. The website survey was available for four weeks. Staff and students were requested by email to respond to the survey and were sent weekly reminders. Responses from both staff and students were automatically entered from the website into a database of survey results. The majority of staff and students responded to the survey electronically

Manual survey

The questionnaires were also made available to the staff and students via the Estates Management Office during February 2006. Only a minority of staff and students responded to the survey manually.

Representative samples

The total of 248 staff survey responses were received which represents approximately 60% of the total staff population. A total of 456 student survey responses were received which represents approximately 12% of the total student population. The staff sample size is considered to be representative of the staff population. However, there is some reservation over the sample size of the student sample. It is expected that students that mostly replied to the electronic survey was car drivers who are struggling to find car parking spaces and therefore are more concerned with the existing travel situation at DKIT.

Analysis of survey responses

The survey responses are presented in full in **Appendix B**. The staff responses are discussed in **Section 5.3** and the student responses in **Section 5.4** below.

5.3 Staff Responses

5.3.1 General Information

The staff are predominantly (62%) within academic schools (Business and Humanities; Informatics, Music and Creative Media; Engineering; Nursing, Midwifery, Health Studies and Applied Studies). Other staff are employed in either “Administration and Library” (22%) or “Technical Support and Caretaking” (5%).

The majority (82%) of staff are on Campus 5 days per week. 10% of staff attends 4 days per week. Less than 6% would be on Campus for 3 days or less and less than 1% of staff would be present 6 days per week.

5.3.2 Staff Living Locations

A staff and student living location analysis was carried out for the Campus population based on a full database of staff and student addresses which was made available by the DKIT Estates Managers Office. The results of the analysis for staff are shown in Figure 5.1.

The majority of staff (63%) at DKIT live in County Louth while small percentages live in adjacent counties including Counties Down and Armagh located in Northern Ireland and Counties Monaghan, Cavan, Meath and Dublin in Ireland.

The analysis also shows that 270 (35%) of staff live within Dundalk and 56 (7.4%) live in Blackrock. 53 (7.0%) live in Dublin City. The remainder of the staff live in smaller concentrations in towns and villages within the vicinity of the Dundalk.

Figure 5.1 also shows the number of staff living within the catchment of the Dublin to Belfast railway line, which is assumed to be a corridor of 5km to either side of the line. With the exclusion of Dundalk itself, it is estimated that a total of 232 staff live within this corridor and can potentially make use of railway transport.

5.3.3 Campus Traffic Information

Staff arrival at Campus mainly takes place in a two hour period. More than half (54%) of staff arrive between 08:00 and 09:00, while 40% arrive the following hour (between 09:00 and 10:00). Less than 3% arrive on Campus at other times of day.

The majority (59%) of staff leave the Campus between 17:00 and 18:00. 16% depart the previous hour (between 16:00 and 17:00) and fewer than 3 % leave at other times of the day.

The majority of staff enters the Campus via Hoey's Lane (46%) while 43% enter the Campus through the Main Entrance on Dublin Road and 11% through the N52 Inner Relief Road to the south.

The majority of staff however exits the Campus via the Main Entrance off Dublin Road while 43% exit the Campus through the Hoey's Lane access and 9% leaving through the N52 Inner Relief Road.

5.3.4 Modal split, journey distance and time

The majority of staff (92.7%) travel to DKIT by car. 87.1% of these trips are single occupant trips with no car passengers. Only 5.6% of staff has indicated that they are car passengers and therefore are already car sharing.

Very little staff currently makes use of public transport. No staff have indicated that they make use of the train while only 1.6% of staff have indicated that they make use of bus services.

Despite the fact that 17.5% of staff have indicated that they travel less than 2miles to Campus which is considered to be a reasonable walking distance, only 3.6% of staff are currently walking to Campus. 39% of staff has indicated that they are living within 4miles of Campus, which is considered to be a reasonable cycling distance. However, only 1.6% of staff currently cycle to Campus.

15.9% of staff live between 4-10 miles of Campus, which is considered to be a distance range that could be served by local public transport. The remainder of staff who live further than 10 miles from the Campus could be served by regional public transport, which typically would include Bus Eireann and railway services. The staff living location analysis that was carried out has shown that there are a number of towns outside Co. Louth (more than 10 miles travel distance) with high numbers of staff. These locations are ideal for car sharing to take place.

The majority of staff (65%) have journey times of less than 30 minutes. 25% travel for 30 minutes to 1 hour. 10% take more than 1 hour to reach DKIT.

The most important factor for staff travelling the way they currently do was that they had no alternative (34%). The quickest way (22%) and flexibility (16%) were also decisive factors. Lack of public transport was cited by 9% of staff and 6% needed a car during the day. Cost was not identified by any of the staff as being crucial to their modal choice (but was for 8% of the students).

As stated above 93% of staff travel to DKIT by car. 84% are single occupancy, 11% have two people, and less than 4% have three or more people per car.

5.3.5 Parking on Campus

Of the number of staff that indicated that they drive and park on Campus, 75% have indicated that they park within a designated car parking space while the remainder park elsewhere. Of the 75% of staff who do park in the designated car parks, most park in Car Park 1 (33%), Car Park 4 (21%), Car Park 2 (19%) and Car Park 3 (12%). 8% or less of staff use Car Parks 5 to 8, though car park capacity and location are obviously also factors in this comparison.

5.4 Student Responses

5.4.1 General Information

The majority of students that have responded to the survey have indicated that they are enrolled within the School of Business and Humanities (48%). 20% are in the School of Nursing, Midwifery, Health Studies and Applied Studies while 16% are in the School of Engineering and 15% are in the School of Informatics, Music and Creative Media.

The majority (80%) of students are on Campus 5 days per week. 14% of students attend 4 days per week while less than 2% indicated that they are on Campus for 3 days or less.

The peak arrival period for students is similar to that of staff. However, students arrive slightly later than staff. The period between 08:00 to 09:00 is busy (43%) but more students (49%) arrive between 09:00 and 10:00. 6% or fewer arrive on Campus at later during the day.

The majority (82%) of students leave the Campus between 16:00 and 18:00; 45% between 17:00 and 18:00, and 37% between 16:00 and 17:00. 8% leave between 15:00 and 16:00.

48% of students enter the Campus off the Dublin Road, while 40% enters at Hoey's Lane Entrance and the remaining 12% at the N52 Inner Relief Road Entrance.

51% of students leave through Main Entrance off Dublin Road, while 42% exits at the Hoey's Lane Entrance and 8% from the N52 Inner Relief Road Entrance.

5.4.2 Student Living Locations

The results of the student living location analysis is shown in Figure 5.2. 49% of students at DKIT live in County Louth. Smaller percentages of students live in surrounding counties including Counties Down and Armagh in Northern Ireland and Counties Cavan, Meath, and Dublin in the Republic of Ireland.

More than a quarter of students (1,186 No.) live in Dundalk town. There are also many other student population concentrations within towns and villages close to Dundalk including Drogheda (428 students), Navan (241 students), Castleblaney (144 students), Carrickmacross (124 students), Ardee (145 students) and Monaghan (63 students).

Figure 5.2 also shows the number of students living within the catchment of the Dublin to Belfast railway line, which is assumed to be a corridor of 5km to either side of the line. With the exclusion of Dundalk itself, it is estimated that a total of 942 students live within this corridor and can potentially make use of railway transport.

5.4.3 Modal split, journey distance and time

The travel survey has indicated that 75.7% travel to DKIT by car. 59.9% of these trips are single occupant trips with no car passengers. It is however considered on review that the student survey does not represent the reality of Campus. 59.9% of students represent 2,213 car drivers, which does not correlate to the number of car parking spaces available or travel patterns on site. It is expected that car drivers were more inclined to respond to the survey undertaken due to the problems experienced with finding a car parking space. A more representative percentage of students driving to Campus would probably be in the order of 30% to 40%, based on available car park numbers and cars parked on Campus. It is proposed that a follow up survey should be undertaken, where a broader sample is captured. This should take place during the monitoring programme of the strategy. Only 15.8% of staff has indicated that they are car passengers and therefore are already car sharing.

Very few students (0.4%) currently make use of train services while 10.7% have indicated that they are taking the bus to Campus.

The living location analysis that has been carried out have shown that despite the fact that 26.6% of students have indicated that they travel less than 2 miles to Campus which is considered to be a reasonable walking distance, only 11% have indicated that they are currently walking to Campus. While 36% of students have indicated that they are living within 4 miles of Campus, which is considered to be a reasonable cycling distance, only 2.2% currently cycles to Campus.

12.1% of students live between 4-10 miles of Campus, which is considered to be a distance range that could be served by local public transport. The remainder of students who live further than 10 miles from the Campus could be served by regional public transport, which typically would include Bus Eireann and railway services. The student living location analysis that was carried out has shown that there are a number of towns outside Co. Louth (more than 10 miles travel distance) with high numbers of students. These locations are ideal for car sharing to take place.

The majority of students (62.5%) have journey times of less than 30 minutes. 32% travel for 30 minutes to 1 hour and the remaining 10% take more than 1 hour to reach DKIT.

The most important factors for students were flexibility (22%), speed (21%) and lack of any alternative (20%). Reliability (9%), cost (8%), lack of public transport (8%) and the need to drive during the day (7%) were also crucial factors among students.

76% of students travel to DKIT by car. Of these 44% are single occupancy, 35% have two people, 14% have 3 people and 7% have four people per car. Students are currently more successful than staff at reducing single occupancy.

As stated above, 76% of students travel to DKIT by car. Of these 44% are single occupancy, 35% have two people, 14% have 3 people and 7% have four people per car.

5.4.4 Travelling by bus

11% of students travel to DKIT by bus. 46% of these students use Bus Eireann, 17% use Finlay's Coaches and a further 17% use Val Russell Coaches. Other bus services listed by students (<5% each service) were: Blackrock Buses, Carlingford Coaches, Finnegan Coaches, Halpenny Coaches, Matthew's Coaches, Michael Burn, "Town Service" and "Private".

5.4.5 Parking

Of the students that drive and park on Campus, 39% of these students do not normally park in a designated car park. The most significant reason given (by 87% of these students) for this was that no parking spaces are available in car parks by the time they are on Campus. Other reasons prioritised by students were location (6%), needing the car often during the day (4%) and that they didn't think it bothers anyone (3%). None suggested other reasons for not parking in the designated car parks.

Of the 61% of students who do park in the designated car parks, most park in Car Parks 2 and 3 (22% each), Car Park 8 (18%), Car Park 6 (13%) and Car Park 4 (10%). 9% or less of students use Car Parks 1, 5 and 7 though car park capacity and location are obviously also factors in this comparison.

5.5 Conclusions

The surveys have shown that the AM peak period for the Campus is between 08:00 and 10:00 while the PM peak period is between 16:00 and 18:00. Generally, staff arrive on Campus earlier and leave later than students.

The busiest entrances to the Campus are the Hoey's Lane and the Main Entrance which more or less equal use. The N52 Inner Relief Road Entrance has a much lower use than the other two.

Travel to DKIT Campus is currently dominated by car based transport and the existing public transport facilities available is under utilised. Although large percentages of staff and students currently live within walking and cycling distance of the Campus, very small percentages currently travel in this way to Campus.

The high car based transport profile of staff and student results in a large number of cars parked on Campus for which there are not a sufficient number of car parking spaces. However, as will be discussed later in this report, the provision of additional car parking spaces on Campus will only address this issue in the short term, but in the longer term will attract more cars to Campus and is therefore not considered to be a sustainable approach to solve this problem.

Most staff and students currently travel to Campus for reasons of convenience as opposed to necessity. Therefore the only way to make more sustainable modes of transport more attractive is to make staff and students aware or even to increase the perceived cost associated with car based transport.

6. CAMPUS DEVELOPMENT 2006 – 2010

6.1 Student Population Growth

Over the past 10 years the Institute has grown its full-time student numbers from 2,000 to a figure in excess of 3,500 i.e. a growth of 75%. The growth was particularly strong from 2000/2001 to 2005. During this five year period, student numbers increased, by more than 1,000 (50% growth).

This high growth rate however is not envisaged to continue for future years due to an increasingly competitive environment in which higher educational institutions operate as the number of second-level school leavers is declining on an annual basis.

The future population numbers expected at DKIT is shown in Table 6.1 which is largely based on the DKIT Strategic Plan. It is estimated that DKIT's current total population of the Campus, including staff, students and full time contractors is 5,765 people. It is expected that within the next two years the total Campus population will grow by 10% to 6,370 and will increase by another 9% to 6,972 up to 2010/11.

The student population includes both full time and part time students. According to the DKIT Strategic Plan, the number of full time students is expected to grow to 4,523 in 2010/11. For purposes of this study the number of full time students in 2008/9 was calculated by interpolation. No population growth information was available for part time students. It was therefore assumed that part time students will grow at similar rates to full time students. Based on the above assumptions it is expected that the number of part time students will increase from the existing 1,500 to 1,650 in 2008/9 and 1799 in 2010/11. It should be noted however, that generally most part time students at the Campus arrives after full time students have left. Therefore the impact of part time students on available car parking is not considered to be significant.

Information on the expected growth for staff was obtained from the DKIT Estate Office. There is currently 265 academic and 150 non academic staff employed at DKIT. It is expected that the total number of staff including academic (331No.) and non academic (189No.) in 2010/11 would be 520. For purposes of this study the number of staff in 2008/9 was calculated by interpolation.

There are currently 100 contractors employed for the operation of the Regional Development Centre Incubator Units. It is however expected that the number of contractors would remain at existing levels.

The growth in the number of staff and students on Campus expected for future years will increase the demand for more car parking spaces. There are currently 714 marked car parking spaces on Campus. It is also estimated that there are currently up to 300 to 350 vehicles parked in non designated areas on Campus. If no mobility management measures are undertaken to reduce the number of staff and students driving to Campus, it is estimated that a total of up to 1,170 car parking spaces would need to be provided in 2008/9 to satisfy existing levels of car parking demand and up to 1,300 car parking spaces in 2011/12.

It is estimated that it costs up to €1,200 to provide a surface car parking space, excluding land value, and up to €10,000 to provide a parking space in a multi storey or underground car park. Based on the above, cost for parking provision can be between €700,000 to €5.8 million up to 2011/12 if the demand for car parking is not managed.

It is also expensive to maintain car parking spaces. Currently car park maintenance costs run annually up to €40,000 per annum. The cost for multi-storey car parking provision could be up to 3 times that.

Table 6.1: DKIT Future Staff and Student Numbers

	Students				Staff				Contractors		Total	
	Full Time		Part Time		Academic		Non Academic					
	No.	% Growth	No.	% Growth	No.	% Growth	No.	% Growth	No.	% Growth	No.	% Growth
Existing	3,750		1,500		265		150		100		5,765	
2008/9	4,137	10%	1,650	10%	298	12%	170	12%	100	0%	6,370	10%
2010/11	4,523	9%	1,799	9%	331	11%	189	11%	100	0%	6,972	9%

6.2 Green Park Development

Planning permission has been granted for a mixed use Campus proposed development, located to the southeast of the existing Campus. The location of the proposed development is shown in Figure 6.1. The development will include the following land use components:

Land Use Component	Gross Floor Area (GFA)	Units
• Hotel/Conference Centre	7764 sqm	
Bedrooms		100 beds
Conference Centre		300 persons
• Office	5,819 sqm	variable
• Medical Centre	1,400 sqm	
• Sports Building	3,101 sqm	
• Faculty Building	2,610 sqm	500 students
• Student Services Centre	1,050 sqm	variable
• Student Apartments	13,740 sqm	400 students
• Total GFA	35,484 sqm	

A total of 387 car parking spaces will be provided for the development on site. All of these car parking spaces provided are associated with the hotel, office and sports building, which are mostly not associated with Campus activity. It is expected that the majority of traffic associated with this development will enter the site from the entrance off the N52 Inner Relief Road. The traffic impact on the internal road network of the Campus would therefore only be limited to this access.

It is however important that cars associated with the above development do not spill over to the Campus car parks. This could potentially include office employees arriving at work earlier than staff and students.

The Campus related components of the development including the faculty building, student services centre, medical centre and student apartments are not expected to generate additional car trips to Campus as it is intended to serve the existing Campus population.

The development is generally expected to have a positive impact on Campus car parking. This would be achieved by the student accommodation which is expected to potentially reduce the number of vehicle trips to Campus as students living on Campus can walk rather than drive. Furthermore the proposed development will include an upgrade of road infrastructure to include cycle lanes along the entrance road and along the N52 Inner Relief Road. Provision is also made for a bus lane through the Campus and along the N52 Inner Relief Road.

7. PROPOSED STRATEGY AND RECOMMENDATIONS

7.1 Introduction

The Mobility and Transportation Strategy developed for DKIT Campus comprises a series of measures aimed at reducing the overall dependency on the use of private car, promoting and encouraging alternative more sustainable modes of transport to and from Campus and addressing traffic management issues identified on Campus.

The strategy seeks to optimise the use of existing infrastructure, supports planned infrastructure improvements and introduce appropriate demand management measures to meet future modal share targets set.

The success of the strategy depends on a partnership between DKIT, the Local and District Authority and public transport providers within the area. It is important that the proposed strategy is agreed and adopted by the DKIT Governing Board to ensure that the strategy can be effectively implemented by DKIT Management.

7.2 Walking to Campus

7.2.1 Potential Modal Shift

According to the travel survey results, 3.0% of total staff and 11.0% of students currently walk to Campus. The survey also revealed that, at present, 17.5% of staff and more than a quarter (27.6%) of students travel less than 2 miles daily to and from Campus. A distance of 2 miles is considered to be suitable for walking. Although not all those living within walking distance will walk, these figures indicate a potential modal shift for both staff and students currently living within walking distance but travelling to Campus by car.

7.2.2 Improvement of the Pedestrian Environment

An extensive footpath network is already established on Campus along the internal road network and linking buildings and other facilities with one another. Adequate road crossing facilities are also provided at strategic locations. The major concern regarding footpaths however is obstruction caused by cars parked illegally. This has serious implications for disabled persons. Visually Impaired persons who daily would follow a specific footpath can get injured or confused if an unexpected object is in their way. Persons in wheelchairs cannot make use of footpath facilities, forcing them to make use of roads.

It is therefore proposed that footpaths and disabled facilities on the DKIT Campus should be kept clutter free, safe, secure, well lit and convenient to use. The main challenge in achieving the above objective is to prevent cars parking illegally. Illegal parking is addressed later in this report as part of the Parking Strategy.

The topography of Dundalk is rather flat, which makes walking a real alternative to the car. Walking is an excellent way to keep fit and it is free but many will be not inclined to walk due to prevalent health conditions or inclement weather. Footpaths are available along all of the roads adjacent to the Campus. Road crossing facilities are also available at most junctions in Dundalk town. One of the objectives of Dundalk County Council is to improve the pedestrian environment of Dundalk to promote more pedestrian trips. Some of the initiatives include the creation of pedestrian friendly areas, restricting vehicle access to certain areas, providing additional crossing facilities at junctions including Zebra, Pelican and Puffin crossings and the redesign of signal controls to be more pedestrian friendly.

DKIT can take a number of measures which can be implemented with minimal costs to encourage walking:

- Raise awareness of the health benefits of walking through promotional material. Walking to work is a great way of introducing daily exercise;
- A detailed inventory of the footpaths to Campus can be carried out (including footpaths from bus stops) to identify areas where footpath links are broken, requires maintenance, are obstructed or present a security issue. These issues identified should then be documented and presented to the Local Authority to be addressed in order to establish a high quality footpath network to Campus;
- Disincentives for driving to work, such as daily payment for parking and taking sterner measures for illegal parking (including clamping) should be introduced to make walking a more attractive option than car based travel;

7.3 Cycling to Campus

7.3.1 Potential Modal Shift

According to the travel survey carried out, 1.7% of staff and 2.2% of students indicated that they currently cycle to Campus. A distance of 4 miles is considered to be within acceptable cycle distance and therefore taking into account that a total of 39.0% of staff and 36.0% of students live within 4km from the Campus, there is significant potential for increasing cycling to Campus.

7.3.2 Improvement of the Cycling Environment

There are currently no cycle route facilities on Campus. The road network of the Campus is however small, with narrow roads of limited lengths. Vehicle speeds on Campus is therefore relatively low and therefore the introduction of a cycle route network would not improve cyclist safety significantly. Again the best way of improving the cycling environment on Campus would be to keep roads clear of cars parking illegally along roads, causing obstruction to cyclists and hampering sight distances at junctions.

The flat topography of Dundalk also makes cycling also a viable alternative mode of transport as opposed to car based transport. A dedicated cycle lane currently runs along the Old Dublin Road towards Dundalk town centre, to the north of the Campus and also along the same road to the south of the N52 junction. This effectively only leaves the section of the Old Dublin Road adjacent to the Campus without cycle lanes.

It is proposed that DKIT liaise with the Local Authority encourage an effort to complete the cycle lanes on Old Dublin Road and provide an uninterrupted cycle link to the Campus. This could be facilitated through the objective of Dundalk County Council to provide dedicated bus lanes along this route as well as along the Dundalk Eastern Bypass. It is furthermore proposed that Dundalk County Council should be encouraged to provide cycle crossing facilities at Hoey's Road junction and the Campus Main Entrance.

Cycling is another way of introducing physical activity into everyday life which can reduce stress, risk of heart disease and can improve general health. DKIT can undertake the following measures to increase the number of staff and students cycling:

- Current cycle parking facilities are located in Car Park 3. These cycle parking spaces are not extensively used as bicycles are chained to signage, doors and other non designated areas.

The existing cycle parking spaces are considered to be rather isolated and do not provide any protection from the elements. It is proposed that covered and secured cycle parking spaces should be provided to encourage cycling. Cyclists normally would try to park cycles as close to their destinations as possible. It is therefore proposed that cycle parking should be provided at many locations across the Campus, as close as possible to building entrances, without having negative input on the appearances of buildings.

It is therefore proposed that additional cycle parking is provided. A total of 500 cycle parking spaces should be distributed on Campus which would allow the existing number of staff and students cycling to Campus to grow to the mode split targets set in Tables 8.1 and 8.2 of this report. It is proposed that within the short term a total of 350 spaces are provided which would be increased to 500 spaces in the medium term (3-5 years). Figure 7.1 shows recommended locations for additional cycle parking. These spaces are located as close as possible building entrances without significantly impacting on the architectural appearance of the buildings.

Cycle racks should be such that the cycle frame and possibly both wheels can be locked to the parking fixture.

It is important that cyclists feel that their bikes are secure when they use such facilities and thieves should be deterred by placing facilities which are over-looked from windows, entrances, public spaces and security cameras. Adequate lighting should be provided.

- A Bicycle Users Group (BUG) should be established which is a forum for people who want to improve facilities for cyclists and encourage others to cycle. It also provides a channel for cyclists to meet up socially and discuss any cycling issues that should be addressed.
- DKIT should consider the provision of additional lockers for cyclists to store equipment and clothing and shower facilities;
- DKIT should consider subsidising part of the cost of obtaining a bike amongst staff members as part of an overall Mobility Management Incentives options package offered.
- Cycling should be promoted and publicised. Local maps showing cycle routes to the Campus are very useful and informative to potential cyclists. Cycle routes can also be included in the annual student handbook for DKIT. Consider option could be given to cycle awareness events which can include a 'Biker's Breakfast' on for example Car Free Day.

7.4 Public Transport

7.4.1 Potential Modal Shift

Public transport serving DKIT Campus primarily consists of bus services. However another potential mode of public transport is the Dublin to Belfast railway line which links Dundalk to many other population centres within the region.

According to the travel survey results, only 1.7% of staff and 10.7% of students currently make use of bus transport to Campus. The survey also revealed that virtually no staff and students travel by railway line to the Campus.

The analysis of staff and student living locations indicates that there is a potential for shift to public transport.

7.4.1.1 Bus services

There are currently a number of bus routes to Dundalk from the surrounding counties. However, it is expected that one of the major reasons why staff and students are not using these services is that these services do not serve the Campus directly but terminate at the Dundalk bus terminus. No service links the bus terminus to the Campus leaving staff and students stranded. The bus terminus is located further away than the accepted walking distance.

The living location analysis carried out for the Campus population however has shown that more than 60 staff and 1000 students currently live along existing bus routes but only a small minority of them make use of these services.

7.4.1.2 Railway Services

The living location analysis has shown that more than 232 staff and 942 students live within the catchment area of the Dublin to Belfast railway line. Staff and students living within this corridor can potentially walk, cycle or drive to the nearest station in the town or village they are living and travel to Dundalk.

The Dublin to Belfast railway line runs through Dundalk and the railway station is located within the town centre. The station however is located 2.5km from DKIT Campus. The distance between the railway station and Campus is considered to be too far to comfortably walk. This is probably one of the major reasons for staff and students not to make use of the railway service.

7.4.2 Improving the public transport environment

In view of the above, it is proposed that bus services operators are presented with the analysis results of staff and students carried out to explore the possibility of extending the current bus services to cover areas with staff and student living concentrations. Figure 7.2 shows 2 potential more direct bus routes to service DKIT which would link more than 30 (10%) staff members and 393 (10%) students. It is very important though that existing or new bus routes should be provided that serve the Campus directly to make it viable for staff and students to use. It is not expected that all staff and students will make use of bus services even if it is available, but more and more will be inclined to make use of these services, as it becomes more difficult to find a parking space on Campus.

It is also proposed that DKIT investigate the possibility of increasing the frequency of existing bus services to make the use of it more attractive. DKIT is expected to generate a substantial income from charging for car parking which could be partly used to subsidise more buses on existing routes. The expected costs involved in this and the revenue to be generated for charging car parks is discussed in Section 10.

DKIT currently have problems with private bus operators parking on the bus stops during day time, from the morning to the afternoon. It is proposed that DKIT should provide a formal bus parking area on site for buses. The location of the bus parking is discussed further in Section 7.6.4.

As mentioned above, it is expected that despite the high number of staff and students living within the catchment area of the Dublin to Belfast railway line, the service is currently under utilised mainly due to the more than 2.5km walking distance between the Dundalk railway station and the Campus.

To make rail a feasible option for staff and students, it is proposed that a public transportation link should be provided. This link could also serve the Dundalk bus terminus. The link can be provided by a shuttle bus service running between the station and Campus or rerouting an existing local bus service to cover the link. It is however important that the service covering this link should be synchronised with the arrival schedule of trains to avoid staff and students waiting more than 10 minutes at the station or Campus to avail of this service.

It is proposed that DKIT provides this service in the first instance. When the service is well established and used, it would naturally come to the attention of other bus companies to provide this service instead. DKIT should consider operating this service in partnership with other organisations within the vicinity for example Xerox. Alternatively this service can be provided by a bus company and also serve other industrial and commercial premises within the area.

Public transport can provide a good alternative to the car for many staff and students there are many other measures that can be undertaken to encourage increased public transport use:

- Staff and students should be made aware of the benefits of using public transport which include: being able to relax, read and work; the cost of public transport use is often less

than the real cost of the same journey by car; no need to find a scarce parking space; journey time can be quicker than by car and a chance to socialise;

- Staff and students need to be made aware of public transport options available for their journey. This can be achieved by providing easy to understand time tables and maps indicating bus routes, bus stops and the railway station. The information made available should also include typical journey times on the various routes. This information can be provided in the student annual student hand book, distributed on a leaflet for example during open days, provided on posters on notice boards and other strategic locations around the Campus and made available on the DKIT website;
- It is proposed that a public transport user group is established where discussions are held to identify ways in which the existing public transport services can be improved. This may include alterations to bus timings to coincide with Campus peak periods; identifying additional staff and student living concentrations that can be served by bus, possible rerouting of bus routes to improve services and providing better waiting facilities at bus stops including shelters, seats and information on routes and timetables;
- To raise the profile of public transport, it should be made more visible amongst staff and students. One way of making it more visible is to host a public transport road show where information is exhibited for example in the cafeteria. Public transport operators can be invited to the road show to answer questions of interested staff and students.

7.5 Car Sharing

According to the travel survey carried out, 83.8% of staff driving to Campus, have no passengers in the car compared to 44.0% of students with no passengers.

Car sharing can be a very effective way of reducing peak hour congestion and the demand on car parks. Car sharing involves two or more people sharing a car for their journey. It is appealing because it reduces stress, can bring direct cost savings and can provide an opportunity to socialise. In addition, it does not involve giving up the convenience of the car, but at the same time reduces traffic.

The living location analysis carried out has shown that large concentrations of staff and students live in the same locations and could potentially car share if not making use of other modes of transport.

It is proposed that a car sharing scheme is initiated on Campus. This can be facilitated on the DKIT website where people interested in car sharing can register and come in contact with others.

Car sharing could be encouraged in the following ways:

- Provision of car share parking spaces at a prime location on Campus. It is proposed that initially only 30 spaces should be allocated as car share spaces. Only registered vehicles with a car share sticker on it may park in these designated spaces or would otherwise be clamped. As car sharing numbers increase, more spaces can be allocated to car sharing;
- Problems can occur for car sharers if the sharing arrangement breaks down or emergencies occur. Car sharing should aim to limit these problems by guaranteeing a ride home by offering a free taxi ride in the case of an emergency or if the arrangement breaks down;
- Reduced car park charge rates for staff and students in the car sharing scheme.

7.6 Car Park Management

7.6.1 Introduction

Car park management is an important aspect of the implementation of any sustainable transportation plan.

DKIT is currently experiencing serious problems with the number of staff and students parking on Campus. The car parks are currently operating over capacity with cars spilling over onto the internal road network, service areas, bus stops and other non designated areas.

Car parking on Campus is currently free and no penalty or restrictions is imposed for cars parking illegally. As long as this is the case, the existing car parking issues will continue to prevail.

It is not sustainable to continue to try and unrestricted to satisfy car parking demand. If more car parking spaces are provided to solve the existing car park problems, more staff and students would be inclined to travel to Campus by car providing only temporary relieve in the short term. By trying to provide enough spaces in a fair way to satisfy the demand of all on Campus would mean that every staff member and student should have the option to park on Campus.

The most effective way of attacking this problem is to introduce car parking demand management measures which would include a combination of clamping and introducing a car park payment system.

7.6.2 Proposed Car Park Payment System

Car parking pricing is a very effective tool to manage car parking demand. With no price for parking on Campus, all staff and students (the demand) has the right to park on Campus, but not all can necessarily obtain a space everyday because there is only a limited supply of spaces. If car parking is set at a price, staff and students could choose to drive to Campus and pay for the 'privilege' to park on the supply of limited spaces, while others choose not to pay this price and use an alternative mode of transport.

As discussed previously in this report, by improving the walking, cycling and public transport environment, more choice will be provided for staff and students in choosing a mode of transport.

It is proposed that a pay and display system should be introduced to the Campus. A pay and display system is where a ticket is purchased from a machine and displayed in the window of the vehicle. The pay and display system is considered to be the most appropriate for DKIT compared to other payment systems such as a permit or barrier system where drivers pay on exit or on foot. The pay and display system is considered to have the following benefits:

- The system is easy to use and minimises bureaucracy, compared to for example a permit system;
- Installation and maintenance cost is cheap compared to a barrier system and is appropriate for surface car parking. Pay and display machines can be installed in each car park and requires minimum land take;
- The system is robust, minimum breakdown is experienced as mechanical moving parts in ticket machine is limited;
- The system does not cause any traffic hold up at entrances compared to the barrier system which have limited access capacity;
- The payment system is flexible. Different rates can be applied to different parking zones on Campus and the system can be programmed to distinguish between peak periods and off peak periods and in term and out of term.

- Technology has improved pay and display systems significantly. A smart card and display unit is currently available where credit can be purchased on a card which makes the use of the system more easy and there is no need to carry change;
- The above smart card and display unit has the ability to provide information on car park usage including arrival and departure profiles and duration of stay. This information is invaluable for the planning of future car parking and events taking place on Campus;
- The system can accommodate users with more than one car by switching the display unit from one car to another.

By raising the cost of driving and parking on the Campus, staff and students are expected to make a more careful choice on their mode of transport to travel to Campus. The number of staff and students who switch to an alternative mode of transport depends on the cost rate of parking implemented at the availability of alternative modes of transport. The price for parking should be carefully considered so as not to drive potential students away to other tertiary institutions.

A parking charge of €1.00 an hour is currently implemented in pay and display car parks in Dundalk town centre. Arup have also reviewed pay parking at other tertiary educational institutes nationally. Table 7.1 below shows the rates currently paid at other tertiary educational institutes.

Table 7.1: Pay Parking Rates paid at other Educational Institutions

Institute	Current rates paid
University College Cork	On Campus: €1 per hour for first 4 hours and €1.50 for 4 hours + Off Campus: €2.00 per day
University of Limerick	€2.00 per day
Dublin City University	€1.00 for < 2 hours €3.00 for between 2-5 hours €5.00 for between 5-8 hours €12.00 for 8 hours +
National University Ireland, Galway	€1.00 per hour for visitor parking

It is difficult to establish an appropriate parking rate to be charged for parking at this stage. The best way to establish an appropriate rate would be to float the rate until a certain agreed percentage of car parking spaces remain vacant during peak periods to allow sufficient car space turn over and to accommodate acceptable search times for open spaces. The recommended percentage vacant spaces for commercial development are ideally between 10 – 15%. However, this percentage, equating to 70 – 107 spaces at DKIT, is considered too high for a tertiary education facility. A more appropriate percentage of vacant spaces would be within the region of 5%, where approximately 36 spaces are vacant.

It is recommended that DKIT introduce an initial parking rate of €0.50 per hour which should be reviewed at the end of each term period to arrive at a more appropriate rate.

A pay and display system will generate additional revenue for DKIT, which can be used to improve and promote the measures proposed in this Strategy to promote and improve alternative modes of transport. The expected income to be generated from charging car parking is discussed in Section 10.

It is proposed that the car park charging should be in effect during weekdays during term periods. Daily weekday car parking hours should cover peak periods and it is therefore proposed that paid parking should be applied between the hours of 08:00 to 18:00.

From a political point of view it is proposed that the introduction of pay and display on Campus should be implemented on a phased basis. It is proposed that the pay and display should take place in 3 phases. Phase 1 would include pay and display in car park 1 which comprises 140 spaces. This should be implemented as one of the first activities of the strategy. Phase 2 would include pay and display in car parks 2, 3 and 4 which includes with car park 1, a total of 410 spaces. In phase 3 all car parks should be charged. The pay and display strategy is shown in Figure 7.3.

7.6.3 Vehicle Clamping

Illegal parking taking place currently on Campus is considered to be a safety risk. Emergency accesses is blocked by vehicles, vehicles parked on double yellow lines causes obstruction to through traffic and interferes with sight distances at junctions and corners on the road network. Illegally parked cars grinds the effective operation of the Campus to a stand still as designated service areas are blocked and large vehicles are not able to perform turning manoeuvres.

The existing and future operation of bus services on Campus is also constrained by cars and buses parking on bus bays.

To address the above issues and also to ensure the effective operation of the proposed pay and display system to be introduced, it is proposed that a car park management company is employed to control parking on the Campus.

Parking management companies delivers their services free of charge. They would provide free warning signs and regularly patrol the Campus. Their income would be generated solely from the vehicle clamp/release fee. It is proposed that all vehicles not parked within a designated parking bay and showing a pay and display ticket or a display unit should be clamped.

Clamping will only be in operation during the term period, during weekdays from 08:00 – 18:00 for vehicles without valid pay and display tickets. Any vehicle however not within a designated parking space at any time should be clamped to avoid blockage of emergency accesses, fire escapes, obstruction of sight distances etc.

7.6.4 Additional Parking Provision

It is proposed that vehicle clamping should be implemented as one of the first measures to address the above mentioned concerns.

The introduction of clamping could however have a significant impact on the accessibility of the Campus. It is therefore proposed as an interim measure that an additional 150 car parking spaces are provided on Campus to maintain accessibility of the Campus in the short term. As the implementation of the strategy is progressed, this car park could be decommissioned. The location of the proposed car park is shown in Figure 7.2. In section 4.8, the number of mobility impaired spaces on Campus was reviewed and it was established that currently there is a shortfall of 9 spaces. It is proposed that these spaces are provided at the location shown on Figure 7.1.

It is also proposed that bus parking is provided on this site for private buses serving the Campus and waiting until the afternoon before leaving. The clamping policy on Campus could therefore be extended to any vehicles (car or bus) parked on bus laybys both internal and external to the Campus.

7.6.5 Impact of the Proposed Car Park Management Strategy

It is expected that the proposed car park management strategy would address the concerns raised with illegal parking in the short term via the proposed clamping introduced on Campus. It is expected that the number of cars on Campus during the peak operating period will be reduced immediately but it is unrealistic to expect that cars on Campus would reduce enough to fully address the concern of parking in non designated areas. Therefore the additional 150 car parking spaces are proposed as an interim measure to provide temporary relief for a certain percentage of staff and students parking in non designated areas.

The introduction of pay car parking over the 5 year period provides DKIT staff and opportunity to gradually become accustomed to pay car parking. It is however important that advance notice should be provided for every new phase of pay parking introduced.

8. SUSTAINABLE TRANSPORT PLAN TARGETS

8.1 Introduction

Based on the development of the strategies outlined previously, together with proposed improvements to public transport infrastructure serving DKIT, it is possible to set targets for the different modes of transport on a quantitative basis. The mode targets set in this report are preliminary, and based on the base line data obtained in the travel survey and the recommendations made in the previous section. It is likely that these targets will be reviewed and updated on a regular basis throughout the lifetime of the plan.

The modal split targets set should be realistic and challenging in order to make a tangible difference over a period of time. Modal split targets are set for future year scenarios, up to 2011, which coincides with the life time of this Strategy.

8.2 Walking

According to the travel survey 17.5% of staff and 27.6% of students live within 2 miles from Campus and can potentially walk to Campus compared to 3.0% and 11.0% that currently do.

The introduction of a pay and display system and clamping on Campus is expected to have a positive effect on the number of staff and students walking to Campus. Not all staff and students living within walking distance but currently driving would switch to walking. Although in the minority, the travel survey has revealed that some staff and students need a car during the day or drive due to health reasons. Similar studies elsewhere has shown that realistically less than half of car drivers within walking distance will switch to walking regardless of the extent of mobility measures implemented. A modal split target of 7.0% (currently 3.0%) is assumed for staff walking to Campus and 17% (currently 11.0%) students walking over the next 5 years.

8.3 Cycling

The potential for cycling to Campus is significant considering that 39.0% of staff and 36.0% of students live within cycling distance (4 miles) to Campus. The existing number of staff and students cycling to Campus is very low (1.7% staff and 2.2% students).

Cycle facilities to Campus are expected to improve in the future with the introduction of new bus corridors on roads adjacent to the Campus. There are many measures that DKIT can undertake as outlined in Section 7.3 to improve the cycling experience on Campus.

Based on the above the modal split target set for staff is 5.0% (1.7% currently) and 8% (2.2% currently) for students cycling. However these targets are conservative and can potentially be set much higher during initial reviews of this Plan.

8.4 Public Transport

The living location analysis carried out for DKIT Campus has shown that there are many towns and villages with high numbers of staff and student that could potentially be served by bus. Potential bus routes have been identified as part of this study which covers the living locations of more than 50 staff and almost 900 students. In addition, by providing a shuttle bus service or encouraging a scheduled bus service between the Dundalk railway station, and the Campus, 30.8% staff and 22.5% students currently living within the catchment area of the railway line can potentially travel to Campus by train.

DKIT should promote public transport vigorously by implementing the proposed measures identified in Section 8.4 to make staff and students aware of the services provided.

Currently only 1.7% of staff and 10.7% of students make use of bus services to Campus. The potential for future use of buses is however estimated to be at least 30% for staff and 40% for students. It is therefore assumed that realistically a mode split for bus should be set at 10% for staff and 20% for students over the next 5 years.

Virtually no staff or students make use of train services to Campus despite the fact that high concentrations of staff and students live within the catchment area of the railway line. It is proposed that a future mode split target of 3.0% for staff and 5% of students is set for the next five years. Although this is very conservative targets, a more realistic view of the service will be provided after the proposed shuttle bus service between the railway station and Campus has been up and running for a few months.

8.5 Car Sharing

5.6% of staff and 15.8% of students travelling to Campus are passengers in a car and effectively car sharing. 83.8% of staff and 44.0% of students travelling to Campus by car though drive alone with no passengers and can be regarded as the potential for car sharing. It is believed that there is potential for car sharing but due to constraints such as arriving at different times and school runs car sharing will only be taken up by a minority group. The introduction of car sharing at DKIT is expected to decrease driver only trips by 4% for staff and 2% for students.

8.6 Summary and Conclusions

Based on the above information and assumptions made, the Sustainable Transportation Strategy target modal splits for staff and students travelling to DKIT Campus are presented in Tables 8.1 and 8.2, respectively. It is expected that significant modal split shifts from car based transport can be achieved within the next 5 years. The most significant change to current behaviour patterns are expected to take place when the pay and display and clamping are implemented. Car park management measures such as these are considered to be the most effective way of persuading people to seriously investigate other modes of transport. As long as car parking is free, people will continue to drive. It is proposed that the car park payment system and parking strategy should be carried out in the short term (next 2-3 years) and therefore the majority of modal split change will occur within this period.

It should be the objective of DKIT to achieve the modal split targets proposed through the implementation of the initiatives outlined in this report. Realisation of these targets however is also dependant on other role players including the Local Authority and public transport service providers.

It is estimated that currently there can be up to 1,064 cars parked on designated and non designated areas during a typical day on Campus, contributing to the existing mode splits of 87.9% staff and 35% students (adjusted) driving to Campus. The number of cars on Campus is expected to reduce if the set mode split targets are achieved. When the same car parking turnover rates that currently exist on Campus is used the number of cars on Campus during a typical day is estimated to be within the region of 800 to 900 in 2008/9 and within the region of 650 to 750 in 2010/11.

DKIT therefore requires additional car parking in the short term to provide for parking requirements in the interim. The additional car parking required would be in the region of 150 car parking spaces. These car parking spaces can potentially be provided on a future building development site and can be decommissioned at a later stage.

Table 8.1: Target Modal Split for Staff

Transport Mode	Current Modal Split	Modal Split Target 2008/9	Mode split target 2010/11
Car Driver	87.9%	77%	65%
Car Passenger	5.6%	8%	10%
Bus	1.7%	5%	10%
Train	0.0%	2%	3%
Cycling	1.7%	3%	5%
Walking	3.0%	5%	7%
Total	100.0%	100%	100%

Table 8.2: Target Modal Split for Students

Transport Mode	*Current Modal Split	Modal Split Target 2008/9	Mode split target 2010/11
Car Driver	35%	27%	23%
Car Passenger	16%	18%	18%
Bus	17%	19%	20%
Train	0.4%	2%	3%
Cycling	4%	6%	7%
Walking	25%	26%	27%
Other	2.6	2.0	2.0
Total	100.0%	100%	100%

*Student current mode split have been adjusted to show reality

9. COMMUTING STRATEGY MANAGEMENT

9.1 Appointment of a Manager

The role of the Manager involves the day-to-day management and co-ordination of the Plan.

The Manager will be the person who champions the project at all levels. This means maintaining senior management support, and maintaining communication and promotion right across the University. He/she is also responsible for external communications with organisations such as the Dundalk Town Council, Bus Eireann, Iarnrod Eireann, private bus operators and any other organisations that are involved with the transportation of staff and students to Campus.

The specific role of the Manager is not exhaustive, but may include the following:

- Finalising the measures proposed in the Sustainable Transport Strategy to reduce reliance on private vehicle travel and promote alternative modes of transport that are more sustainable;
- Monitor compliance of the Sustainable Transport Strategy targets set;
- Marketing of the Sustainable Transport Strategy Initiatives;
- Ensure that the momentum of the Sustainable Transport Strategy is sustained; and
- Take appropriate action with regard to transportation elements that need addressing.

9.2 Formation of Sustainable Transport Plan Steering Group

A steering group operating in support of the Sustainable Transport Manager can spread the work load, improve information quality and foster a sense of wider ownership and involvement. The steering group should ideally consist of 5 to 10 people who represent the key divisions and interest groups within the Institution. The group should also include senior administration members and the Sustainable Transport Manager, who will act as facilitator. The group can often include representation from external influencing bodies such as the Local Authority and public transport providers.

The specific role of the steering group may include the following:

- Approval of the measures proposed in the Sustainable Transport Plan to reduce reliance on private vehicle travel and promote alternative modes of transport that are more sustainable;
- Ensure the targets set for the Sustainable Transport Plan are met;
- Marketing of the Sustainable Transport Plan Initiatives; and
- Report problems and issues involved with transportation elements that need to be addressed.

9.3 Sustainable Energy Ireland 2020 Project

Dundalk has been selected as the base for the Sustainable Energy Ireland project. The project is promoted by Sustainable Energy Ireland, which will look at how sustainable energy principles could be used by industry, business, hospitals and residential developments.

The project also involves a number of partners including Dundalk town council, Dundalk Institute of Technology, the Irish Development Agency and Enterprise Ireland, the Dundalk Technology Group, Newry and Dundalk pi polar city group.

The first phase of the plan has evolved into the Dundalk Sustainable Energy zone on the south of the town which encompasses DKIT, the Louth County Hospital, local business and industrial including Xerox, Heinz, JJB sports and local developers.

Many of the activities proposed in the Sustainable Traffic Management Strategy can be implemented in a joint venture with the above mentioned stakeholders as part of the Dundalk 2020 Project. This could for example include the provision of a communal shuttle bus service from the railway station/town centre to the southern part of Dundalk, using bio or equivalent Renewable Energy sources as fuel. This could also include the development of an extensive cycle network in the area, linking sites with one another and improving safety at road crossings for both pedestrians and cyclists. Communal resources of stakeholders could also subsidise bus services to the area. The above activities can be facilitated under the umbrella of a Mobility Management frame work, which involves all of the stakeholders.

9.4 Sustainable Transport Plan Marketing

9.4.1 Introduction

The overall objective of the Sustainable Transport Plan is to promote sustainable transport policies and to achieve a behavioural change in travel habits of staff and students at DKIT Campus. A prerequisite to achieving this goal is to promote accurate perceptions among the Campus population about the positive aspects of public transport. People can be encouraged to change travel behaviour if options are presented in an attractive way, with supporting information to back it up. People can also be introduced to alternative ways of commuting through the development of new initiatives and schemes as part of the Sustainable Transport Plan.

9.4.2 Developing a Marketing Strategy

The DKIT Campus survey revealed a number of selling points for the Sustainable Transport Plan:

- The potential for increased walking and cycling to Campus by liaising with the Local Authority to improve routes to Campus and provide for safer road crossing. Improved facilities to be provided for cyclists on Campus;
- Potential for the creation of new bus routes to Campus serving all major staff and student population concentrations within County Louth and surrounding counties;
- Provision of a shuttle link or encouragement of a scheduled bus service between the Dundalk Station and the Campus;
- Potential car sharing scheme to reduce the number of single car journeys to Campus;

Students and staff should feel that the commuter plan is not directed against car users, but rather as providing a range of alternative ways of travelling to Campus that are cheaper, shorter in distance and more sustainable.

The marketing strategy should have a clear focus:

to reduce the single occupancy car-based trips and make use of sustainable modes of transport.

Different strategies should also be aimed at specific target groups within the staff and student populations such as:

Car sharing between staff members within an area where alternative modes of transport are limited;

- Walking for staff and students who stay on within walking distance of the Campus;

- Cycling for staff and students living within cycling distance of the Campus;
- Public transport for people living within towns/villages served by public transport services to the Campus such as the proposed bus routes and the railway line.

It is useful to brand the Sustainable Transport Plan with an accessible and meaningful umbrella title such as: 'Cruising Campus' or 'Way to Go!' or 'Hop on'.

It is also important to produce a time table for promotional activity that is continuous and keeps the momentum going. The launch of the car share scheme, the introduction of the shuttle bus or new bus routes, for example, are important phases that can help to promote the Sustainable Transport Plan.

The advance planning of promotional activity also enables the Sustainable Transport Manager to capitalise on national or international promotional events, such as European Car Free Day, to launch and promote new initiatives.

DKIT has a number of existing methods of communicating to staff and students. All of these methods should be used and new methods should be initiated. Some methods available for communication are the following:

- Newsletters, posters and leaflets
- E-mail newsletters
- Group e-mails for target groups
- Intranet
- Presentations to interest groups
- Promotional events
- Promotional gifts and competition prizes.

10. IMPLEMENTATION PROGRAMME AND COST SCHEDULE

The implementation of the Sustainable Traffic Management Strategy will take place over a 5 year period. Table 10.1 provides a list of proposed activities to be undertaken over the course of the 5 years and the associated costs to implement them. The implementation programme should not be viewed as a final list of activities to be undertaken but should be reviewed annually to track working progress and include additional activities identified.

The implementation programme has been divided into three phases which are outlined below:

10.1 Phase 1: 2006/7

The first phase is up to 2007. The cost for implementing the activities over this phase is estimated to be approximately €461,000.

The current rate of car parking charging in Dundalk Town Centre is €1.00 per hour. It is proposed that an initial rate of €0.50 is charged for parking on Campus which should be reviewed at a later stage. It is however proposed that pay and display should be introduced on a phased basis over the life time of this strategy. For the first phase which should be implemented immediately, it is proposed that the most centrally located car park should be charged, namely Car Park 1 which currently has 140 car parking spaces.

Once the paid car parking is introduced and it is assumed that the majority of parking charges would only be collected during the term period (i.e. approximately 30 weeks, 8 hours a day, for the 140 car parking spaces available), it is estimated that annual revenue in the region of €80,000 to €90,000 per annum will be raised.

10.2 Phase 2: 2008/9

The second phase of the implementation programme stretches over the two year period, 2008/9. The total implementation cost for the activities to be carried out over this period is expected to be approximately €67,000.

It is proposed to introduce pay and display car parking into Car Parks 2, 3 and 4 as part of the second Phase. Therefore a total of 410 car parking spaces will generate revenue over this period. The expected income to be generated during phase two on an annual basis should be in the region of €250,000. Therefore a total income of approximately €500,000 can be expected to be generated to finance the activities listed for this phase. The revenue expected to be generated in Phase 2 by the pay and display is expected to be close to the cost to cover the activities to be undertaken and it also leaves scope for additional activities to be undertaken.

10.3 Phase 3: 2009/10

The third phase of the implementation programme stretches over the two year period, 2010/11. The total implementation cost for the activities to be carried out over this period is expected to be approximately of €750,000.

During Phase 3 of the implementation strategy, paid car parking should be introduced in all car parks. The expected income to be generated during phase three on an annual basis should be in the region of €518,000 per annum.

The income received from the paid car parking would therefore cover the cost of the activities of phase three. The remainder of the income can be used to finance additional activities identified and also to finance other sustainable energy related projects.

Table 10.1: Implementation Programme and Cost Strategy

	2006/7	Cost	2008/9	Cost	2010/11	Cost
Publicity/Marketing	Launching of Campus Sustainable Travel Awareness to promote walking, cycling, public transport and car sharing,	€15,000	Ongoing Publicity/Marketing of Strategy – road show, introduction of new measures	€10,000	Ongoing Publicity/Marketing of Strategy – road show, introduction of new measures	€10,000
	Appointment of Sustainable transport manager and steering group	€10,000	Sustainable Transport Strategy Management	€10,000	Sustainable Transport Strategy Management	€10,000
Walking	Inventory of existing walkways to Campus.	€15,000	Facilitation of focus group meetings at least twice annually to discuss quality of footpaths, maintenance, safety, security and lighting both internal and external of Campus	€10,000	Facilitation of focus group meetings	€10,000
	Discuss inventory results with Local Authority	N/A			Inventory of walkways to Campus	€10,000
			Liaison with Local Authority to address issues raised	N/A	Liaison with Local Authority to address issues raised	N/A
Cycling	Completion of Cycle Lanes along Dublin Road	N/A	Support of Bicycle Users Group and focus group meetings to review quality of cycle network, road safety, security, lighting and facilities provided on Campus	€15,000	Support of Bicycle Users Group and focus group meetings	€15,000
	Establishing Bicycle Users Group	€10,000			Inventory of Cycle Routes to Campus	€20,000
	Inventory of Cycle Routes to Campus	€20,000	Provide more cycle parking, showering facilities and lockers.	€150,000	Maintenance of Campus cycle facilities and secured cycle parking	€20,000
	Discuss inventory results with Local Authority	N/A	Improve security for cycle parking	€50,000		

Table continue on next page. . .

Table 10.1 Continued . . .

Bus and Train	Provision of a shuttle bus service between Campus, Railway Station and Town Bus Terminus in conjunction with other stakeholders Liasé with private bus operators to establish 2 additional direct routes to Campus	€100,000	Continued operation of shuttle bus service between Campus, Railway Station and Town Bus Terminus Provide finance to increase frequency of existing bus services to make it more attractive for users	€50,000	Review of bus routes and staff and student living locations Possible establishment/ increase of frequency of existing bus routes	€20,000
		N/A		€200,000		€500,000
Car Sharing	Create website and database for car sharing	€10,000	Maintain car sharing scheme and introduction of shared car parking spaces.	€30,000	Maintain car sharing scheme and maintenance of shared car parking spaces.	€20,000
Car Park Management	Clamping vehicles causing obstruction to Building Fire Exit Doors, Delivery areas, footpaths, waste removal areas and parking on Double yellow Lines.	€20,000	Introduce Pay and Display in Car Parks 2, 3 and 4.	€42,000	Introduce pay and Display in remaining car parks on Campus	€70,000
	Introduce Pay and Display in Car Park 1.	€21,000				
	Provision of additional 150 car parking spaces and bus park, including signage and public lighting.	€240,000				
Monitoring			Review of Strategy and follow up travel survey	€30,000	Prepare Sustainable Traffic Management Plan for next 5 years	€45,000
Total Cost		€461,000		€567,000		€750,000

11. MONITORING

A fundamental part of any Sustainable Transport Strategy is the regular monitoring of the scheme, determining progress, identifying problem areas and initiating corrective measures if required. It is important to remember that success is not measured purely in terms of modal change among staff and students. There are some other benefits that can be measured which include:

- A reduction in the environmental impact of staff and student travel patterns;
- A more environmentally friendly organisational image
- A positive organisational profile and good public relations;
- Improved staff and student morale resulting from 'inclusion' in a process that is sustainable and promotes healthy lifestyles;
- Financial gain for staff and students;
- Attraction of additional staff and students to the Campus as a result of better and a greater variety of access to the Campus;

Measures to monitor the success of the Sustainable Transport Strategy may include a follow up survey once the plan has been implemented. It is then possible to do a qualitative evaluation which is directly comparable to the baseline information obtained during the first travel survey in 2006.

The results of the above can be further complemented by observation exercises, such as traffic counts to obtain more accurate information with regard to the utilisation of different modes.

It is also important to communicate the results of the monitoring to relevant groups such as DKIT administration, staff and students and even external bodies such as the Local Authorities and Bus Operators.

Staff and students in particular need to be kept informed. The direct benefits of change, such as a reduction in environmental impacts, or increased access will be of most interest to those directly involved. The success will also persuade some staff and students who are not involved to find out more about the initiatives.

12. CONCLUSIONS

The development of this Sustainable Transport Strategy for DKIT represents an initiative to take control of their own travel and parking requirements. The plan promotes sustainable transport policies for the Campus, the use of public transport, cycling and walking and introduces a car parking demand management strategy for the Campus.

The plan sets ambitious targets for changes in the travel patterns/modes for the Campus population.

There is already an extensive public transport, cycling and footpath network available in Dundalk and the Local Authority has plans in place to improve this infrastructure significantly. However, this study has shown that currently there are crucial links missing in these networks which is enough to persuade staff and students to continue to travel by car to Campus. It is believed that if these links are provided including an uninterrupted cycle lane along Dublin Road and a shuttle bus service between the Campus and the Dundalk Railway Station and Bus Terminus, the journey to Campus will become much easier and staff and students will be more inclined to make use of alternative modes of transport. It is also considered important for DKIT to actively promote alternative modes of transport amongst staff and students and provide information on time tables, routes distances etc.

It is however difficult to successfully reduce the number of cars at any premises without increasing the cost for driving. It is therefore proposed that free parking should be abolished and pay and display meters should be installed in all car parks. Pay and display can generate revenue which can be used to assist all commuters including Campus shuttle bus service, sheltered and secure cycle areas, establishing a bicycle users group, shower facilities and lockers; increased security for pedestrians and sponsoring activities of the sustainable transport manager and steering group in promoting sustainable transport.

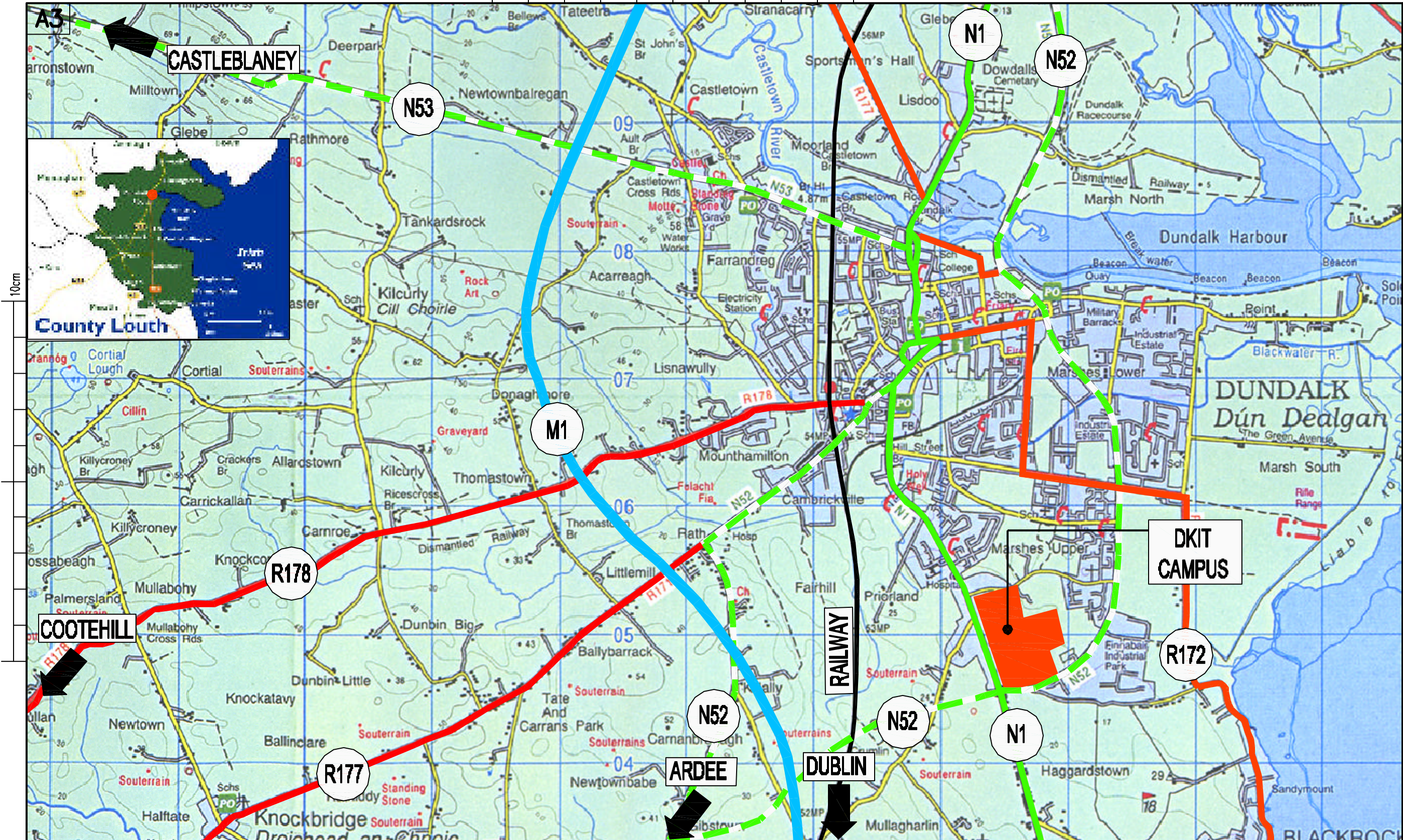
DKIT is encouraged to implement the proposed measures and to continuously monitor the success achieved. Where necessary, corrective measures needs to be taken and mode split targets have to be adjusted to reflect the situation on the ground.

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FIGURES

Figure 1 Figure Description

10cm - SCALE WITH CAUTION AS DISTORTION CAN OCCUR



Rev.	Date	By	Description	Chd By

Job Title
**D.K.I.T. SUSTAINABLE TRAFFIC
MANAGEMENT STRATEGY**

Drawing Title
SITE LOCATION PLAN

Drawing Status
INFORMATION

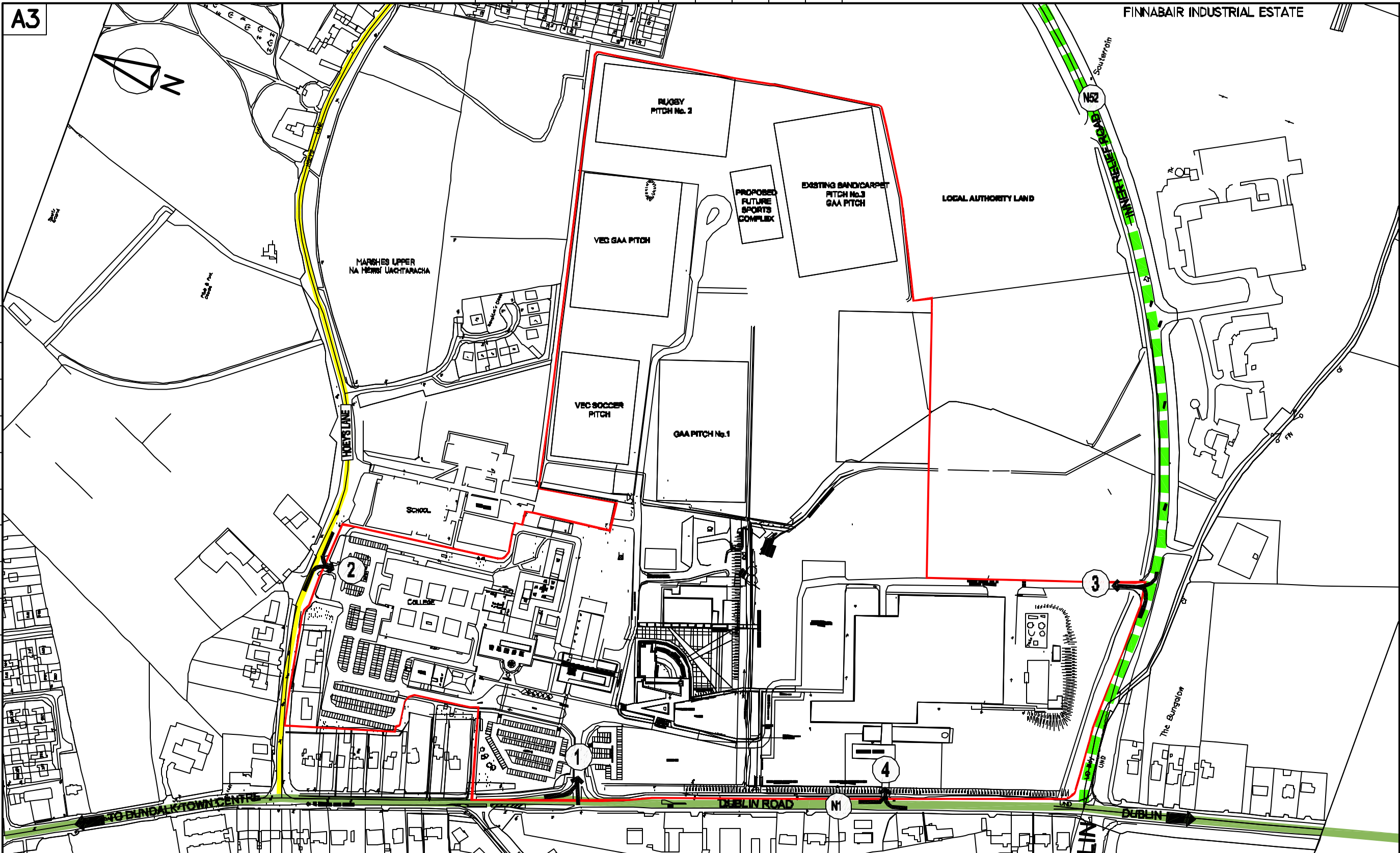
ARUP
10 Wellington Road Dublin 4
Tel 01-6144000 Fax 01-6683169
Email info@arup.com

DUBLIN CORK LIMERICK

Scale: NTS
Checked: Approved: Date: 23/03/06

Job No. D5099.20
Drawing No. FIGURE 4.1
Rev. P1

10cm - SCALE WITH CAUTION AS DISTORTION CAN OCCUR



- ① MAIN D.K.I.T. CAMPUS ENTRANCE
- ② HOEY'S LANE ENTRANCE
- ③ CARROLL ENTRANCE
- ④ P.J. CARROLL'S BUILDING ENTRANCE

— SITE BOUNDARY

Job Title
**D.K.I.T. SUSTAINABLE TRAFFIC
MANAGEMENT STRATEGY**

Drawing Title
CAMPUS ENTRANCES

ARUP
10 Wellington Road Dublin 4
Tel 01-6144000 Fax 01-6683169
Email arup@arup.com
DUBLIN CORK LIMERICK

Scale: NTS
Checked: Approved: Date: 23/03/06
Author: EC

Job No. D5099.20
Drawing No. FIGURE 4.2
Rev. P1

Drawing Status
INFORMATION

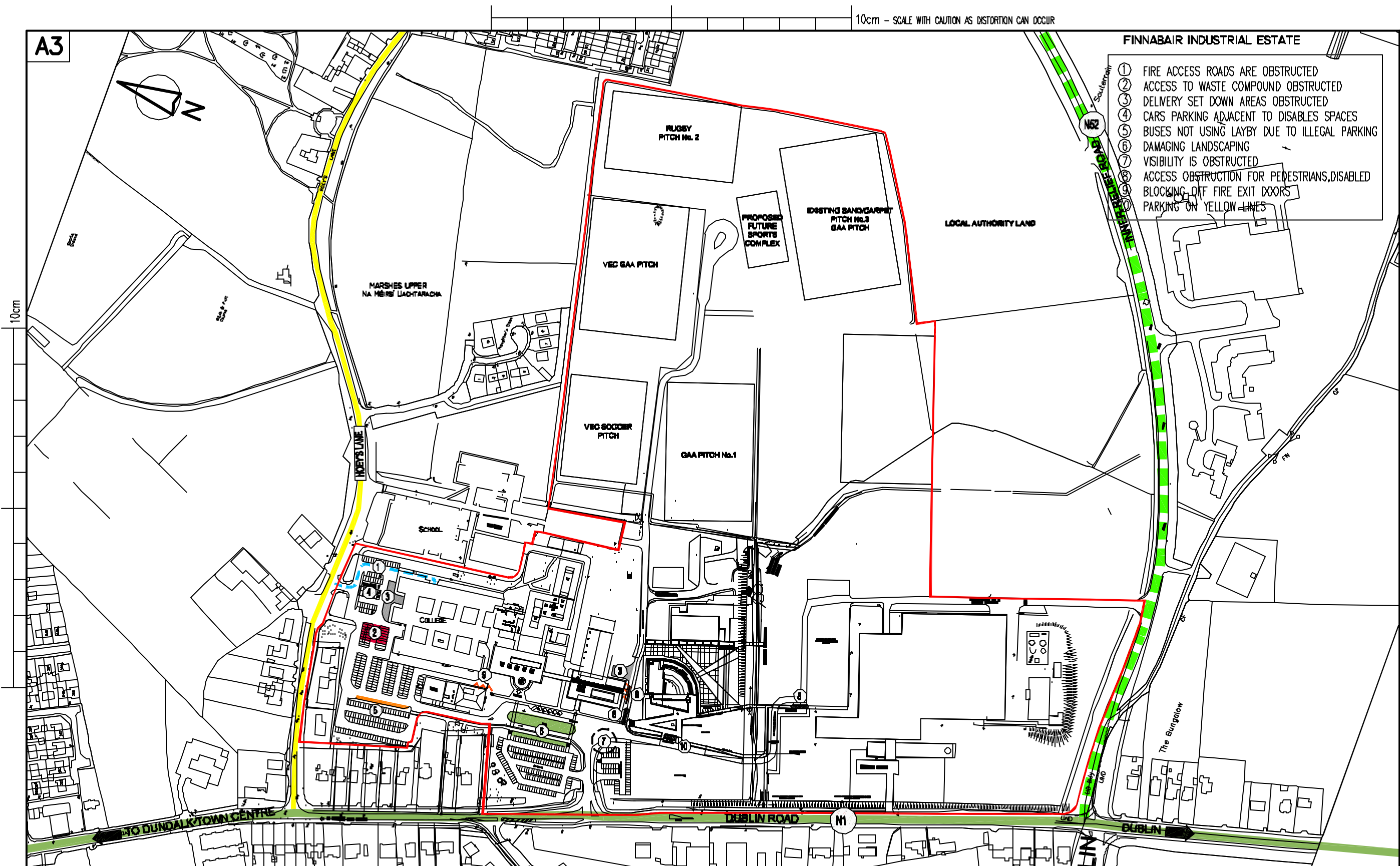
Rev.	Date	By	Description	Chk By

10cm - SCALE WITH CAUTION AS DISTORTION CAN OCCUR

A3

FINNABAIR INDUSTRIAL ESTATE

- ① FIRE ACCESS ROADS ARE OBSTRUCTED
- ② ACCESS TO WASTE COMPOUND OBSTRUCTED
- ③ DELIVERY SET DOWN AREAS OBSTRUCTED
- ④ CARS PARKING ADJACENT TO DISABLES SPACES
- ⑤ BUSES NOT USING LAYBY DUE TO ILLEGAL PARKING
- ⑥ DAMAGING LANDSCAPING
- ⑦ VISIBILITY IS OBSTRUCTED
- ⑧ ACCESS OBSTRUCTION FOR PEDESTRIANS,DISABLED
- ⑨ BLOCKING OFF FIRE EXIT DOORS
- ⑩ PARKING ON YELLOW LINES



Rev.	Date	By	Description	Chd By

Job Title
**D.K.I.T. SUSTAINABLE TRAFFIC
MANAGEMENT STRATEGY**

Drawing Title
TRAFFIC MANAGEMENT ISSUES

Drawing Status
INFORMATION

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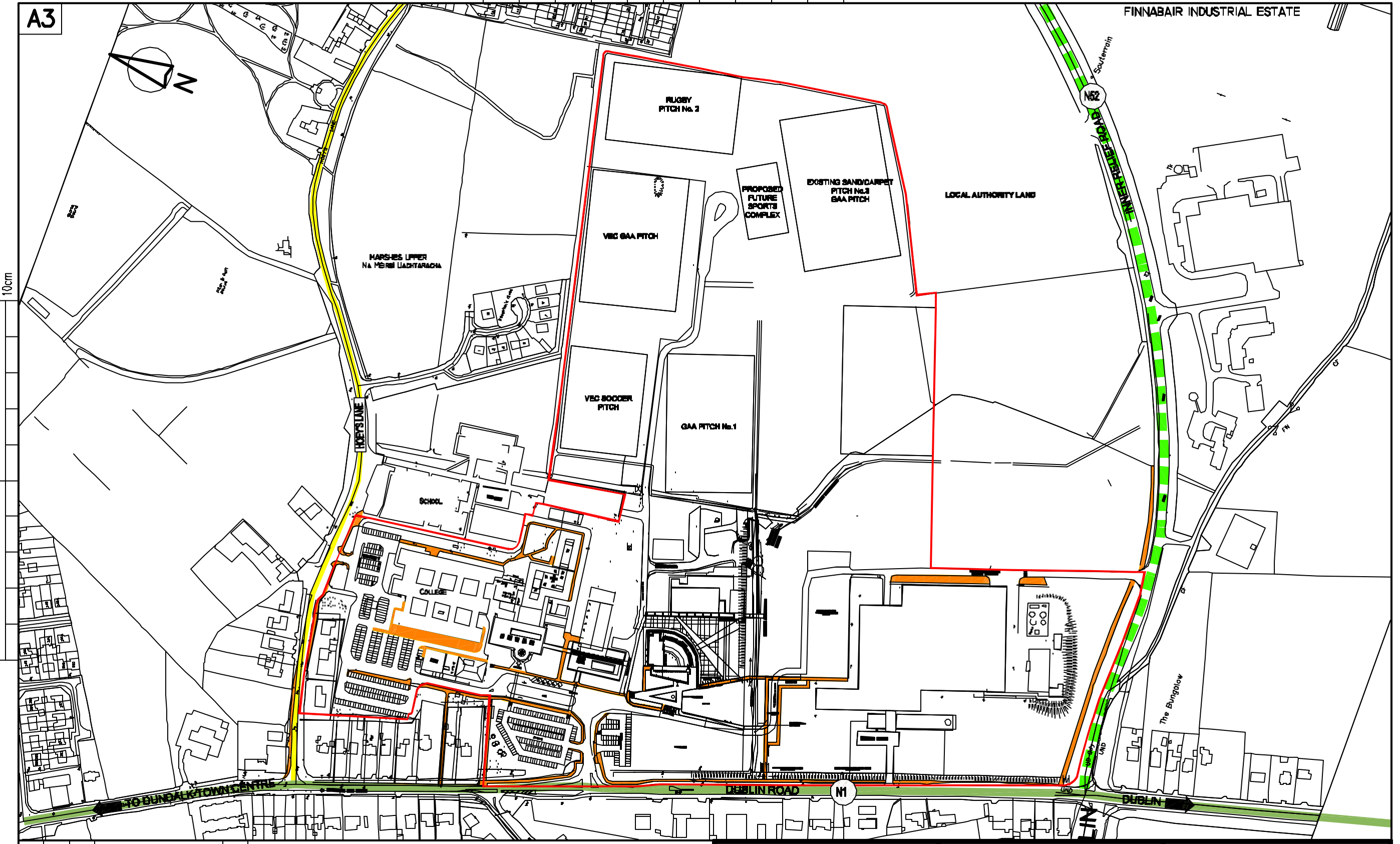
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Job No. **D5099.20** Drawing No. **FIGURE 4.4** Rev. **P1**

10cm - SCALE WITH CAUTION AS DISTORTION CAN OCCUR

A3

FINNABAIR INDUSTRIAL ESTATE



- FOOTPATHS
- SITE BOUNDARY

Job Title
**D.K.I.T. SUSTAINABLE TRAFFIC
MANAGEMENT STRATEGY**

Drawing Title
PEDESTRIAN FACILITIES

ARUP
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Tel 01-6144000 Fax 01-6683169
Email arup@arup.com

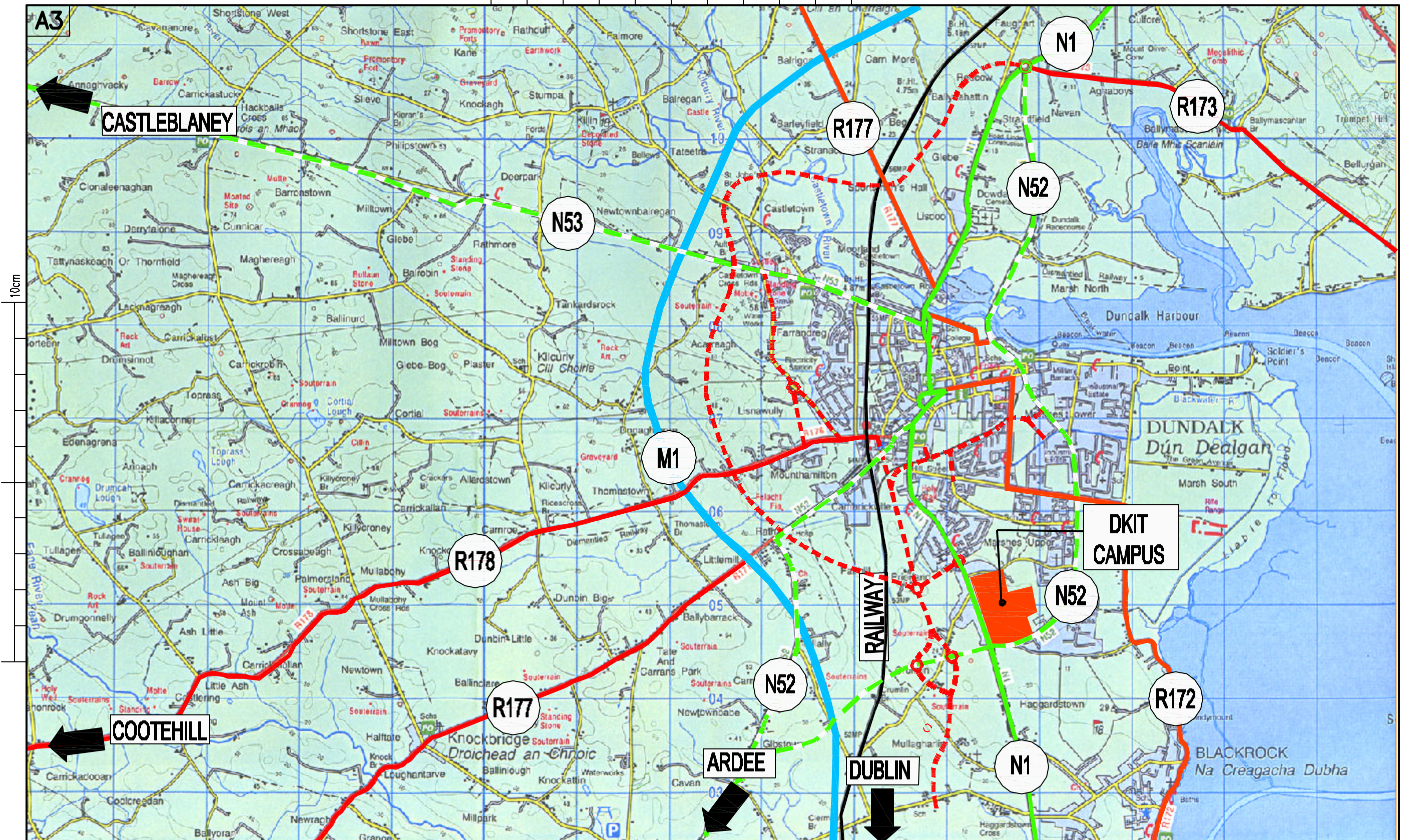
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Checked: Approved: Date: 23/03/06

Drawing Status
INFORMATION

Job No. **D5099.20** Drawing No. **FIGURE 4.5** Rev. **P1**

Rev.	Date	By	Description	Chd By

10cm - SCALE WITH CAUTION AS DISTORTION CAN OCCUR



--- FUTURE INNER WESTERN RELIEF ROAD

Job Title
**D.K.I.T. SUSTAINABLE TRAFFIC
MANAGEMENT STRATEGY**

Drawing Title
**FUTURE AND SURROUNDING
ROAD NETWORK**

Drawing Status
INFORMATION

ARUP

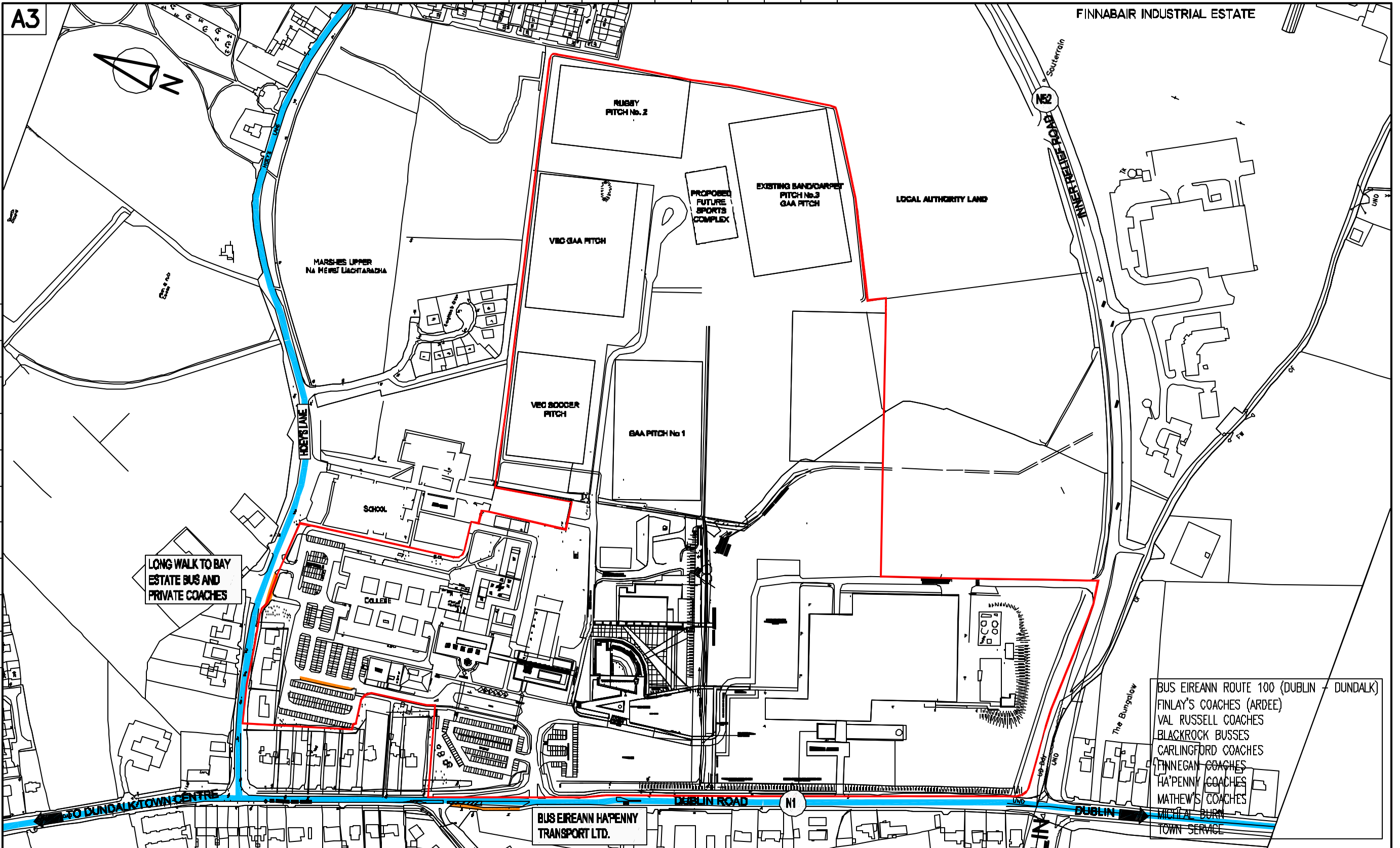
10 Wellington Road Dublin 4
Tel 01-6144000 Fax 01-6683169
Email info@arup.com

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Scale: NTS
Checked: Approved: Date: 23/03/06

Job No. D5099.20
Drawing No. FIGURE 4.6
Rev. P1

10cm - SCALE WITH CAUTION AS DISTORTION CAN OCCUR



Rev.	Date	By	Description	Chd By

- EXISTING BUS ROUTES
- BUS STOP FACILITIES
- SITE BOUNDARY

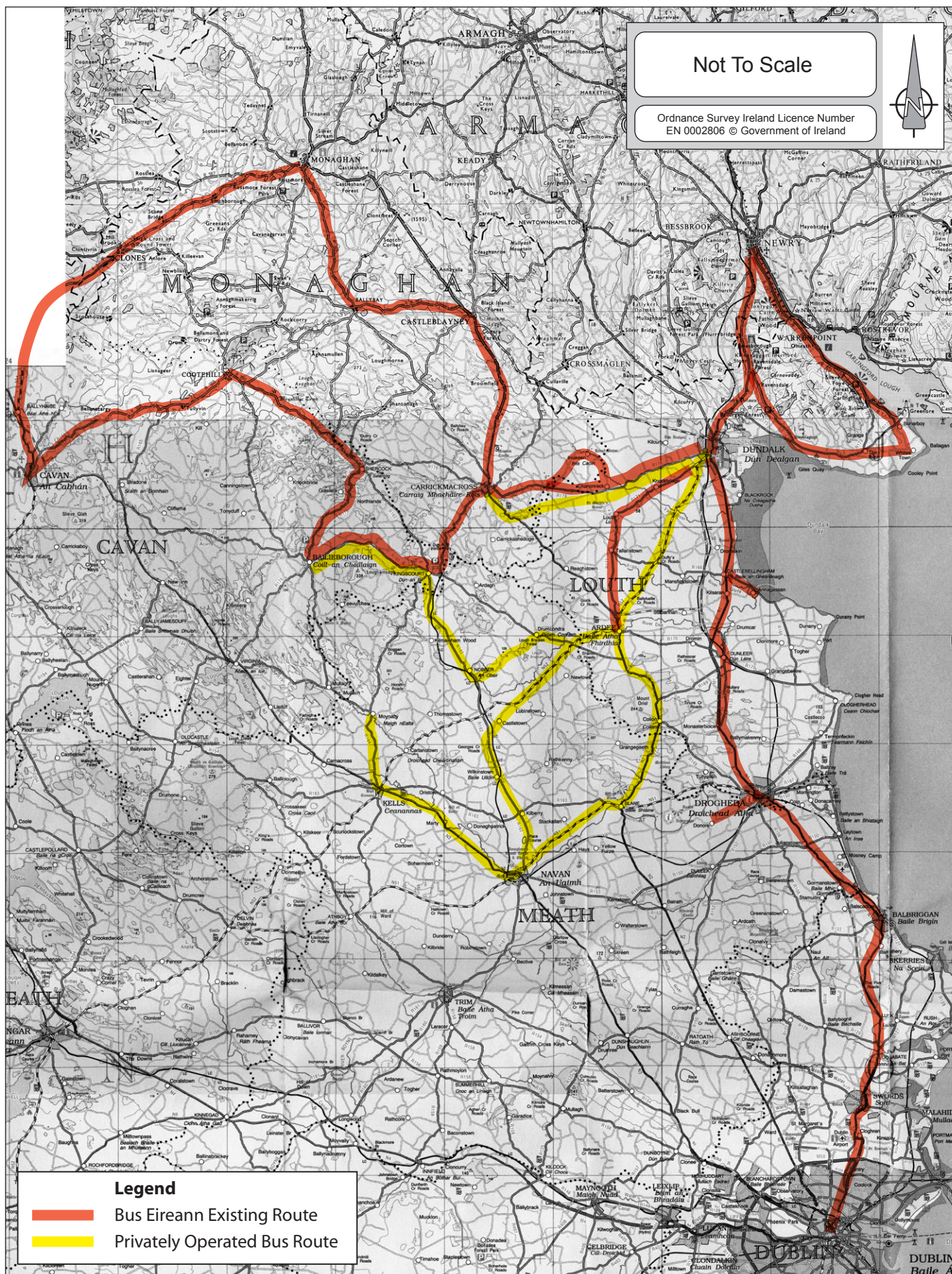
Job Title
**D.K.I.T. SUSTAINABLE TRAFFIC
MANAGEMENT STRATEGY**

Drawing Title
BUS STOP FACILITIES

Drawing Status
INFORMATION

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10 Wellington Road Dublin 4
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Email info@arup.com
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Scale: NTS
Checked: Approved: Date: 23/03/06
Job No: D5099.20
Drawing No: **FIGURE 4.7**
Rev: P1



Existing Bus Routes

DKIT Sustainable Traffic Management Strategy

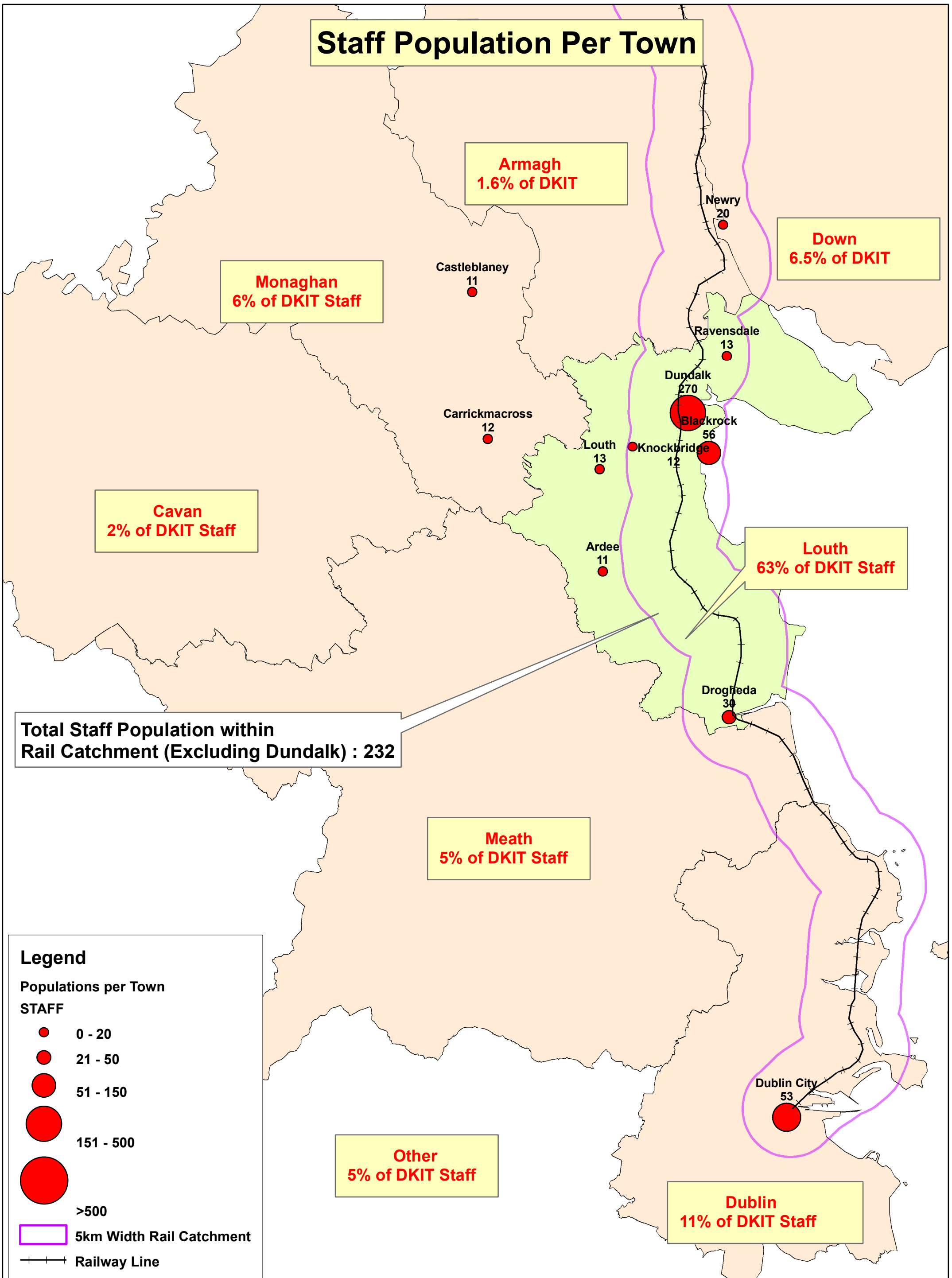
D5099.20

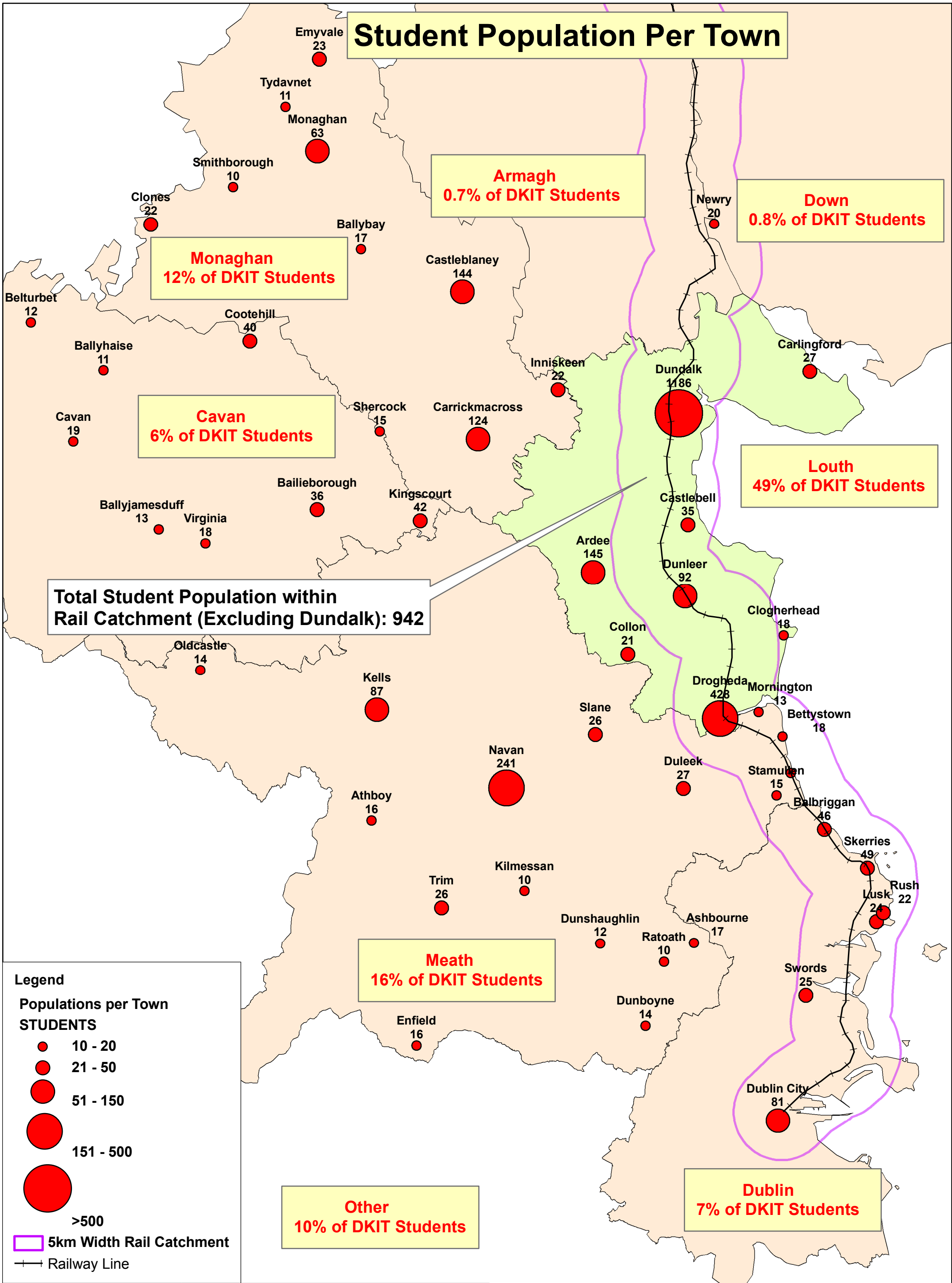
April 2006

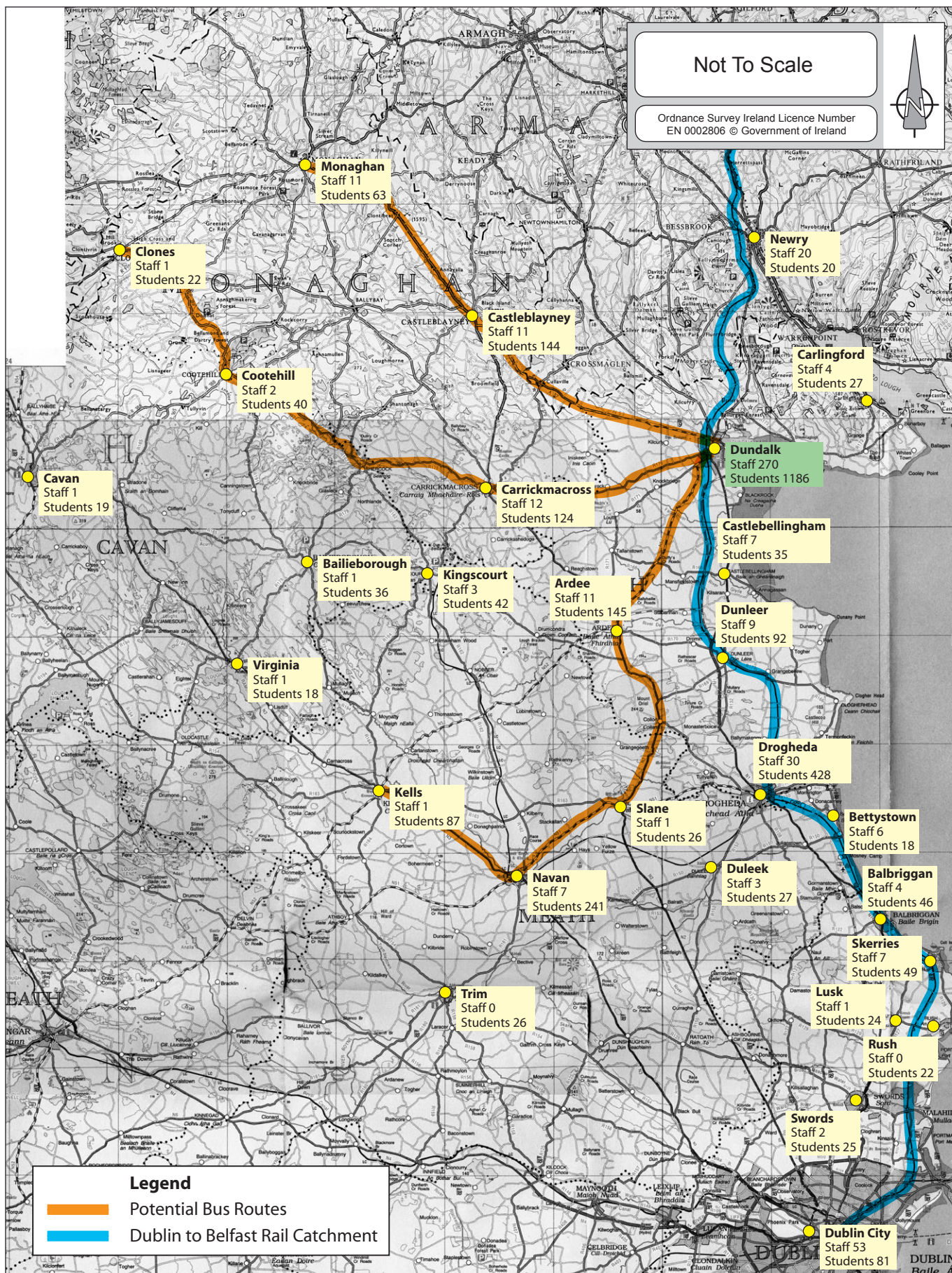
Figure 4.8

ARUP

Staff Population Per Town







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APPENDIX A

**Staff and Student
Travel Survey
Questionnaires**

A.1. STAFF AND STUDENT TRAVEL SURVEY QUESTIONNAIRES

STAFF QUESTIONNAIRE

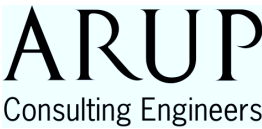


1. **Which group best describes your employment at DKIT?**
☐₁ School of Business and Humanities ☐₂ School of Informatics, Music & Creative Media
☐₃ School of Engineering ☐₄ School of School of Nursing, Midwifery, Health Studies and Applied Studies
☐₅ Administration and Library ☐₆ Technical Support & Caretaking ☐₇ Other
2. **How many days a week are you in DKIT?**
☐₁ 1 ☐₂ 2 ☐₃ 3 ☐₄ 4 ☐₅ 5 ☐₆ 6
3. **At what time do you normally arrive at and depart from DKIT Campus (Please use 24 hour clock)?**
 Arrive :: ₁ (HH:MM) Depart :: ₂ (HH:MM)
4. **What is your permanent address?**

Inside Dundalk <small>Example</small>	<div style="border: 1px solid black; padding: 2px;">Street</div> <div style="border: 1px solid black; padding: 2px; margin-top: 5px;">Hoey's Lane</div>	or	Outside Dundalk <small>Ardee</small>
	Town or Village		
5. **At which location do you most often enter the Campus?**
☐₁ Hoey's Lane ☐₂ DKIT Main Entrance off Dublin Road
☐₃ Access from Inner Relief Road (PJ Carrol's Access)
6. **At which location do you most often exit DKIT?**
☐₁ Hoey's Lane ☐₂ DKIT Main Entrance off Dublin Road
☐₃ Access from Inner Relief Road (PJ Carrols Access)
7. **How do you normally travel to DKIT during a typical week?**
☐₁ Walk ☐₂ Bicycle ☐₃ Bus
☐₄ Train ☐₅ Car driver with passenger(s)
☐₆ Car passenger (car parked at DKIT) ☐₇ Car passenger (dropped off) ☐₈ Car driver with no passenger
☐₉ Motorcycle/Scooter ☐₁₀ Other
8. **What distance is your journey to DKIT each day?**
☐₁ Less than a mile ☐₂ 1 – 2 miles ☐₃ 2 – 4 miles ☐₄ 4 – 10 miles
☐₅ 10 – 20 miles ☐₆ Over 20 miles
9. **What is your typical journey time to DKIT?**
☐₁ 0 – 15 minutes ☐₂ 15 – 30 minutes ☐₃ 30 – 45 minutes
☐₄ 45 – 60 minutes ☐₅ Over 60 minutes
10. **Why do you normally travel to DKIT the way you do?**
☐₁ No alternative ☐₂ No public transport near your home ☐₃ Cheapest way
☐₄ Quickest way ☐₅ Gives flexibility ☐₆ Reliability
☐₇ Health reasons ☐₈ Need a car/van during the day ☐₉ Other.....
11. **If you travel by bus to DKIT, which bus operating service do you use?**

12. **If you travel to DKIT Campus by Car, how many people travel in the car, including the driver?**
☐₁ 1 ☐₂ 2 ☐₃ 3 ☐₄ 4 ☐₅ 5
13. **If you drive, in which car park do you normally park?**
☐₁ I park in a designated car park (Please encircle the relevant car park on the map provided overleaf)
☐₂ I don't park in a designated car park
14. **If you park in a non designated area, please indicate why?**
☐₁ No parking spaces available in car parks by time I am on Campus
☐₂ I want to park as close as possible to my destination in DKIT to minimise walking distance
☐₃ I need my car often during the day and want it close by
☐₄ I don't think by parking in a non designated area bothers anyone
☐₅ Other Reason, please specify:

STAFF QUESTIONNAIRE



General Comments:

If you have any general comments to make on travelling to the Campus grounds, we would be delighted to hear your viewpoint.

.....

.....

.....

Please provide name and contact number for draw: Name:.....Contact No.....

Campus Map



STUDENT QUESTIONNAIRE

1. Which group best describes your studies at DKIT?

- ☐₁ School of Business and Humanities ☐₂ School of Informatics, Music & Creative Media
☐₃ School of Engineering ☐₄ School of School of Nursing, Midwifery, Health Studies and Applied Studies

2. How many days a week are you in DKIT?

- ☐₁ 1 ☐₂ 2 ☐₃ 3 ☐₄ 4 ☐₅ 5 ☐₆ 6

4. At what time do you normally arrive at and depart from DKIT Campus (Please use 24 hour clock)?

Arrive :: ₁ (HH:MM) Depart :: ₂ (HH:MM)

4. What is your permanent address?

Inside Dundalk	or	Outside Dundalk
Street		Town or Village
Example Hoey's Lane		Ardee

5. At which location do you most often enter the Campus?

- ☐₁ Hoey's Lane ☐₂ DKIT Main Entrance off Dublin Road
☐₃ Access from Inner Relief Road (PJ Carrol's Access)

6. At which location do you most often exit DKIT?

- ☐₁ Hoey's Lane ☐₂ DKIT Main Entrance off Dublin Road
☐₃ Access from Inner Relief Road (PJ Carrol's Access)

7. How do you normally travel to DKIT during a typical week?

- ☐₁ Walk ☐₂ Bicycle ☐₃ Bus
☐₄ Train ☐₅ Car driver with passenger(s)
☐₆ Car passenger (car parked at DKIT) ☐₇ Car passenger (dropped off) ☐₈ Car driver with no passenger
☐₉ Motorcycle/Scooter ☐₁₀ Other

8. What distance is your journey to DKIT each day?

- ☐₁ Less than a mile ☐₂ 1 – 2 miles ☐₃ 2 – 4 miles ☐₄ 4 – 10 miles
☐₅ 10 – 20 miles ☐₆ Over 20 miles

9. What is your typical journey time to DKIT?

- ☐₁ 0 – 15 minutes ☐₂ 15 – 30 minutes ☐₃ 30 – 45 minutes
☐₄ 45 – 60 minutes ☐₅ Over 60 minutes

10. Why do you normally travel to DKIT the way you do?

- ☐₁ No alternative ☐₂ No public transport near your home ☐₃ Cheapest way
☐₄ Quickest way ☐₅ Gives flexibility ☐₆ Reliability
☐₇ Health reasons ☐₈ Need a car/van during the day ☐₉ Other.....

11. If you travel by bus to DKIT, which bus operating service do you use?

.....

12. If you travel to DKIT Campus by Car, how many people travel in the car, including the driver?

- ☐₁ 1 ☐₂ 2 ☐₃ 3 ☐₄ 4 ☐₅ 5

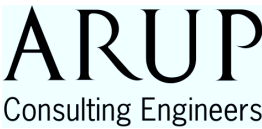
13. If you drive, in which car park do you normally park?

- ☐₁ I park in a designated car park (Please encircle the relevant car park on the map provided overleaf)
☐₂ I don't park in a designated car park

14. If you park in a non designated area, please indicate why?

- ☐₁ No parking spaces available in car parks by time I am on Campus
☐₂ I want to park as close as possible to my destination in DKIT to minimise walking distance
☐₃ I need my car often during the day and want it close by
☐₄ I don't think by parking in a non designated area bothers anyone
☐₅ Other Reason, please specify:

STUDENT QUESTIONNAIRE



General Comments:

If you have any general comments to make on travelling to the university grounds, we would be delighted to hear your viewpoint.

.....

.....

.....

.....

Please provide name and contact number for draw: Name:Contact No.....

Campus Map



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APPENDIX B

**Staff and Student
Travel Survey Results**

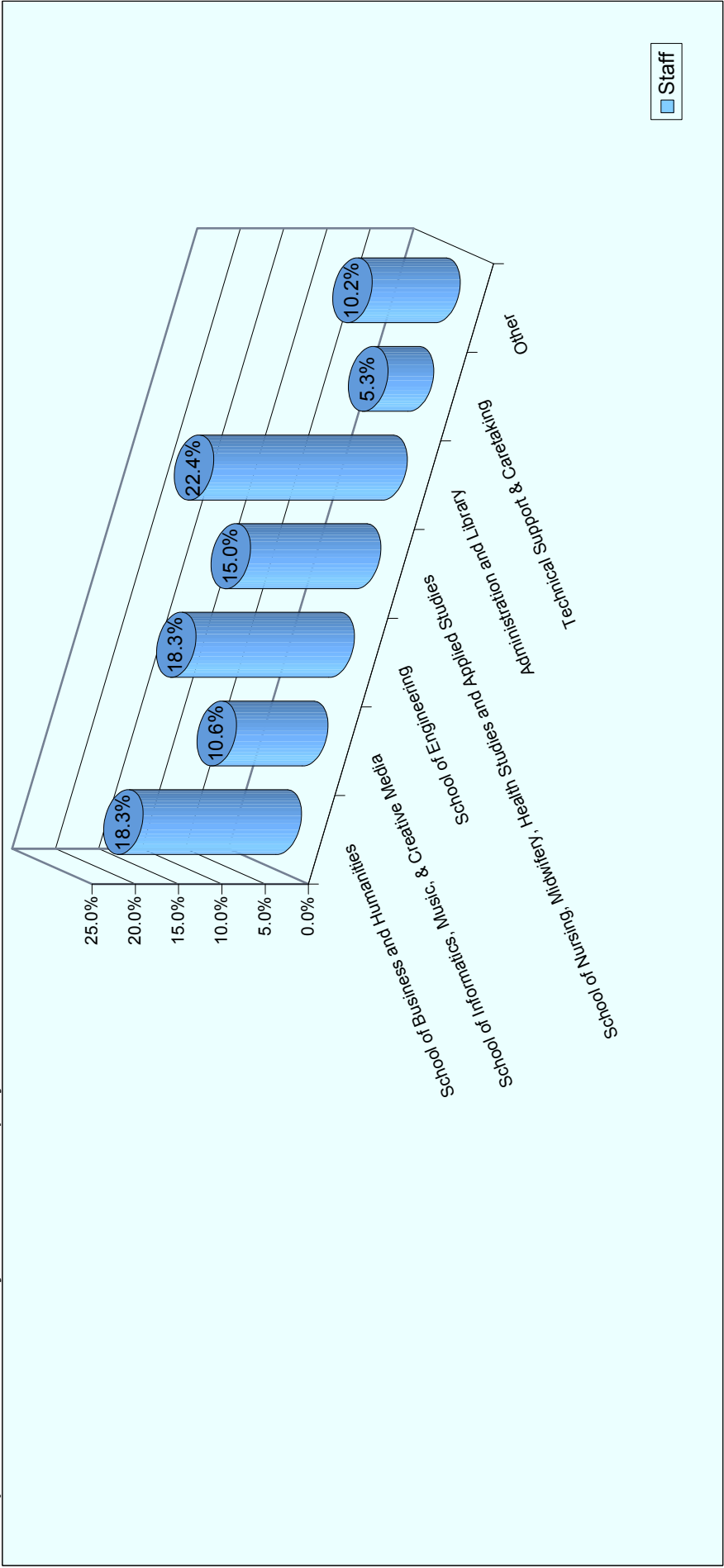
B.1. STAFF AND STUDENT TRAVEL SURVEY RESULTS

Q1 Which group best describes your employment at DKIT?

Answer:	School of Business and Humanities	School of Informatics, Music, & Creative Media	School of Engineering	School of Nursing, Midwifery, Health Studies and Applied Studies	Administration and Library	Technical Support & Caretaking	Other	Total
Staff	45	26	45	37	55	13	25	248
%	18.3%	10.6%	18.3%	15.0%	22.4%	5.3%	10.2%	100%

0.8% *

* % Responses with no data entry / not within the query

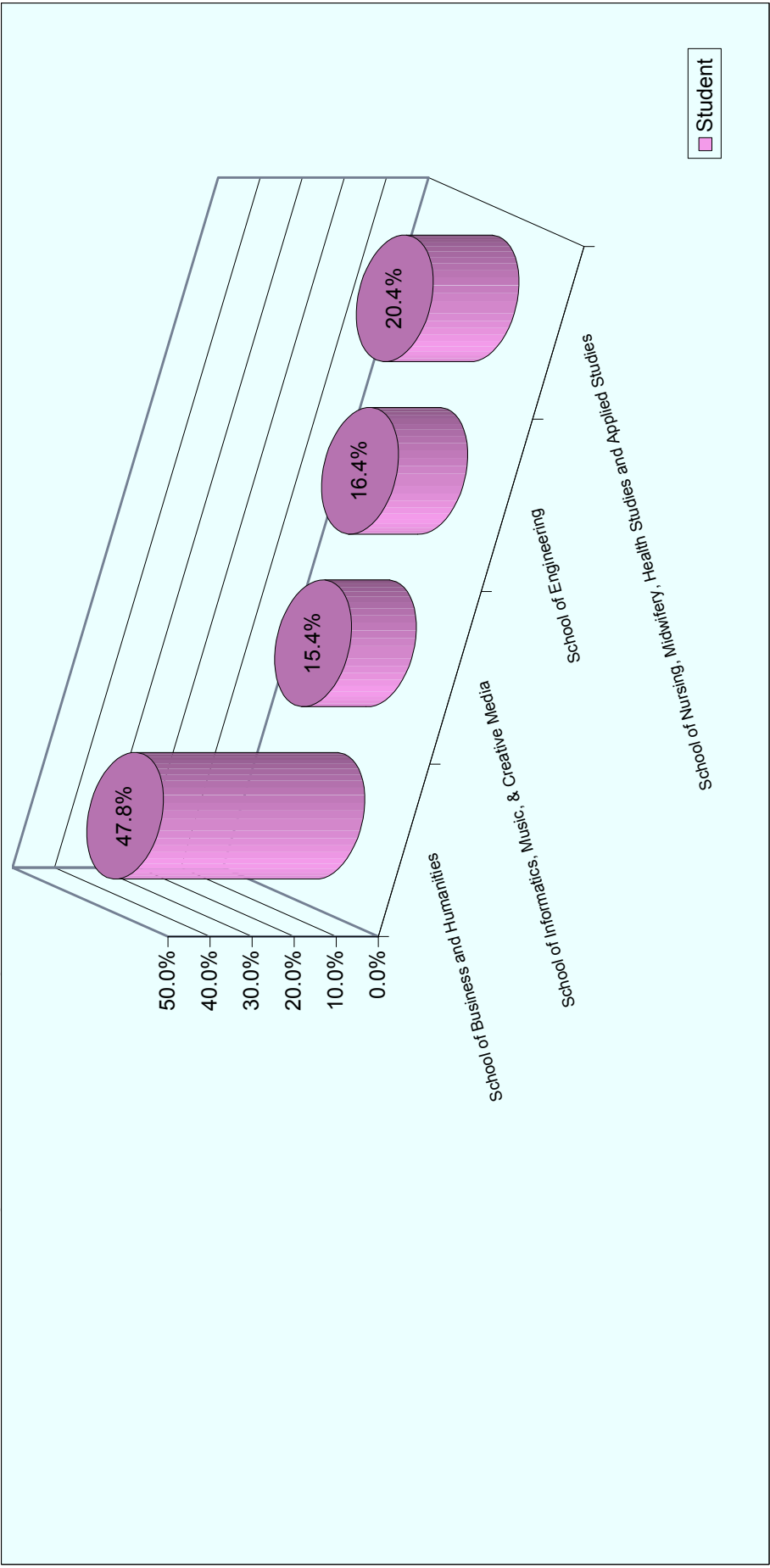


Q1 Which group best describes your studiast at DKIT?

Answer:	School of Business and Humanities	School of Informatics, Music, & Creative Media	School of Engineering	School of Nursing, Midwifery, Health Studies and Applied Studies	Total
Student	218	70	75	93	456
%	47.8%	15.4%	16.4%	20.4%	100%

0.0% *

* % Responses with no data entry / not within the query



Q2 How many days a week are you in DKIT?

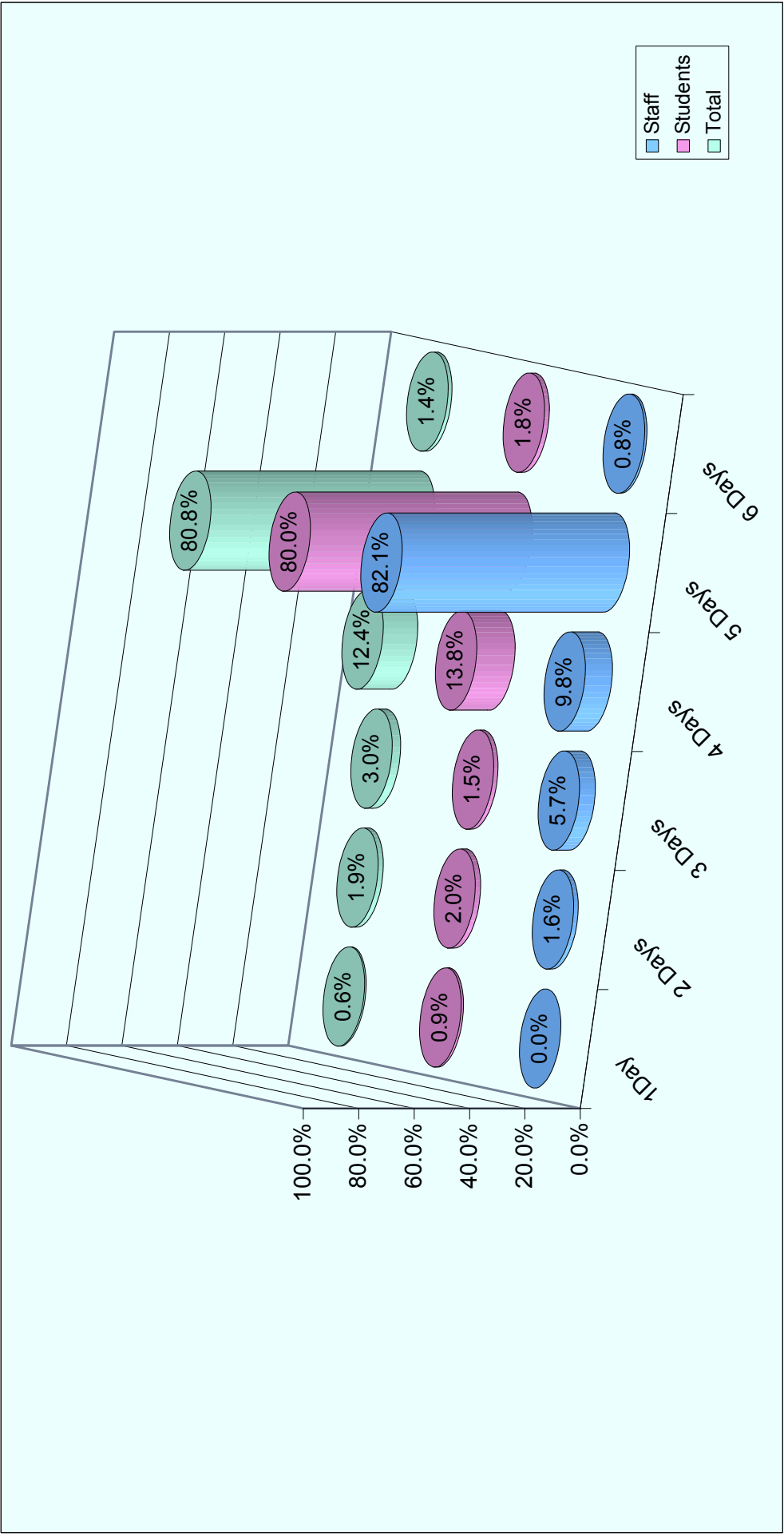
Answer:	1Day	2 Days	3 Days	4 Days	5 Days	6 Days	Total
Staff							
%		0.0%	1.6%	4	14	24	202
				9.8%	82.1%	0.8%	100.0%
Students							
%		4	9	63	365	8	456
		0.9%	2.0%	13.8%	80.0%	1.8%	100.0%
Total							
%		4	13	87	567	10	704
		0.6%	1.9%	12.4%	80.8%	1.4%	100.0%

0.8% *

0.0% *

0.3% *

* % Responses with no data entry / not within the query



Q3 At what time do you normally arrive at DKIT Campus

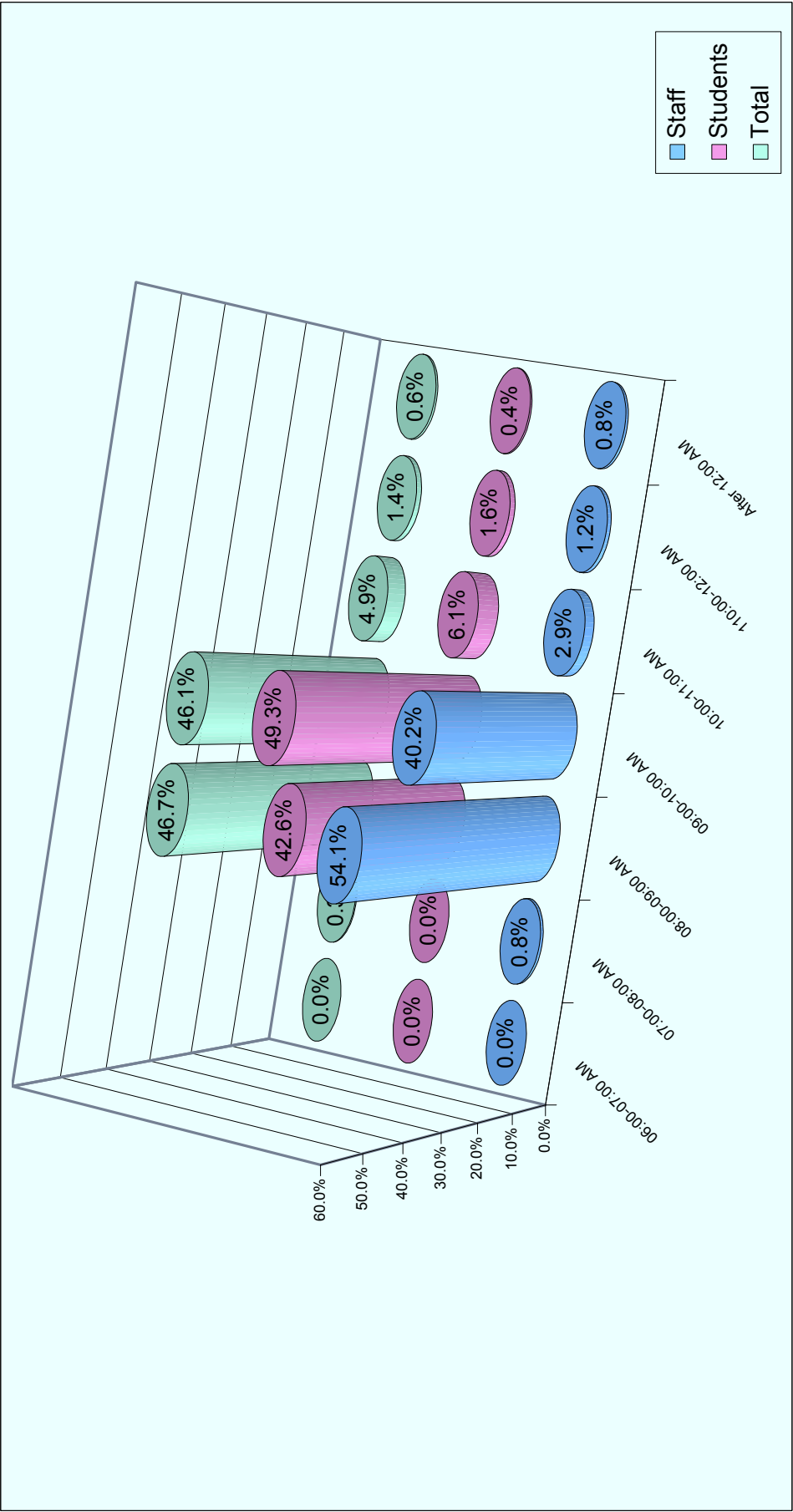
Answer:	06:00-07:00 AM	07:00-08:00 AM	08:00-09:00 AM	09:00-10:00 AM	10:00-11:00 AM	11:00-12:00 AM	After 12:00 AM	Total
Staff	0	2	132	98	7	3	2	248
%	0.0%	0.8%	54.1%	40.2%	2.9%	1.2%	0.8%	100%
Students	0	0	190	220	27	7	2	456
%	0.0%	0.0%	42.6%	49.3%	6.1%	1.6%	0.4%	100%
Total	0	2	322	318	34	10	4	704
%	0.0%	0.3%	46.7%	46.1%	4.9%	1.4%	0.6%	100%

1.6% *

2.2% *

2.0% *

* % Responses with no data entry / not within the query



Q3

At what time do you normally depart from DKIT Campus

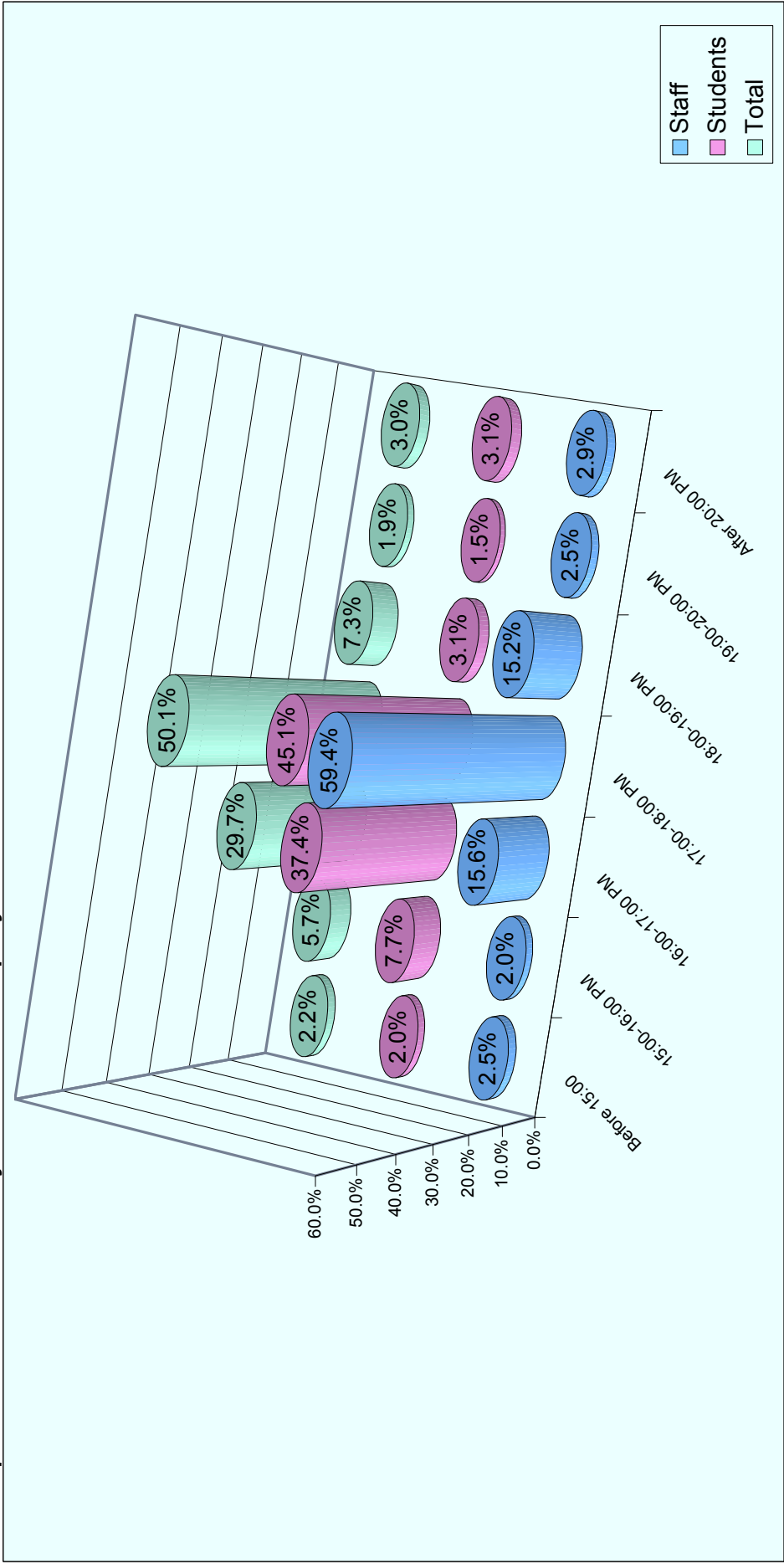
Answer:	Before 15:00	15:00-16:00 PM	16:00-17:00 PM	17:00-18:00 PM	18:00-19:00 PM	19:00-20:00 PM	After 20:00 PM	Total
Staff	6	5	38	145	37	6	7	248
%	2.5%	2.0%	15.6%	59.4%	15.2%	2.5%	2.9%	100%
Students	9	35	169	204	14	7	14	456
%	2.0%	7.7%	37.4%	45.1%	3.1%	1.5%	3.1%	100%
Total	15	40	207	349	51	13	21	704
%	2.2%	5.7%	29.7%	50.1%	7.3%	1.9%	3.0%	100%

1.6% *

0.9% *

1.1% *

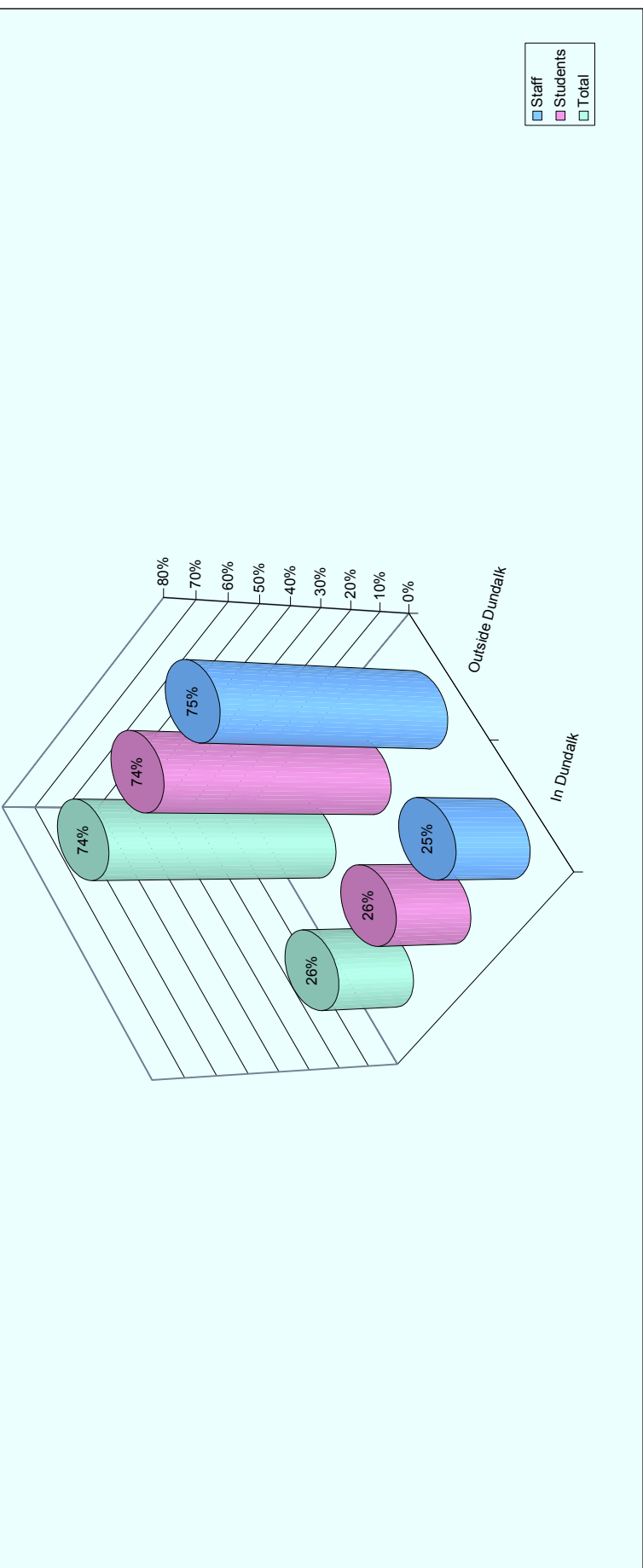
* % Responses with no data entry / not within the query



Q4

What is your permanent address?

Area	Staff		Students		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
In Dundalk	63	25%	125	26%	188	26%
Outside Dundalk	185	75%	364	74%	549	74%
Co Antrim	5	2%	0	0%	5	1%
Co Armagh	4	2%	0	0%	4	1%
Co Cavan	2	1%	9	2%	11	1%
Co Donegal	1	0%	0	0%	1	0%
Co Down	19	8%	5	1%	24	3%
Co Dublin	26	10%	40	8%	66	9%
Co Fermanagh	1	0%	0	0%	1	0%
Co Kildare	1	0%	2	0%	3	0%
Co Londonderry	1	0%	0	0%	1	0%
Co Louth (Excl Dundalk)	91	37%	155	32%	246	33%
Co Meath	20	8%	97	20%	117	16%
Co Monaghan	12	5%	53	11%	65	9%
Co Roscommon	0	0%	1	0%	1	0%
Co Tyrone	2	1%	0	0%	2	0%
Co Westmeath	0	0%	2	0%	2	0%
Total	248	100%	489	100%	737	100%



Q5 At which location do you most often enter the Campus?

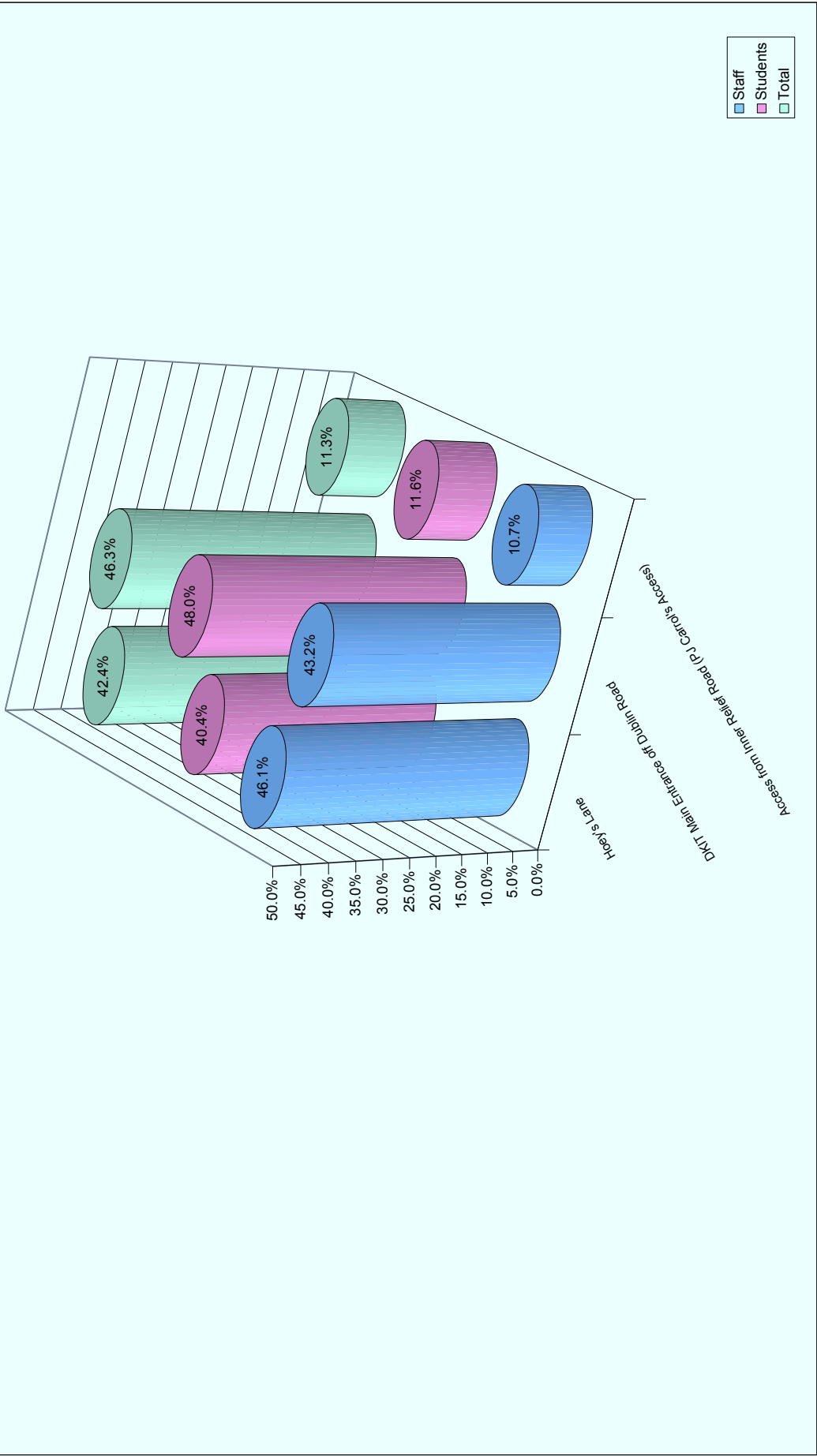
Answer:	Hoey's Lane	DKIT Main Entrance off Dublin Road	Access from Inner Relief Road (PJ Carroll's Access)	Total
Staff	112	105	26	248
%	46.1%	43.2%	10.7%	100%
Students	182	216	52	456
%	40.4%	48.0%	11.6%	100%
Total	294	321	78	704
%	42.4%	46.3%	11.3%	100%

2.0% *

1.3% *

1.6% *

* % Responses with no data entry / not within the query



Q6 At which location do you most often exit DKIT?

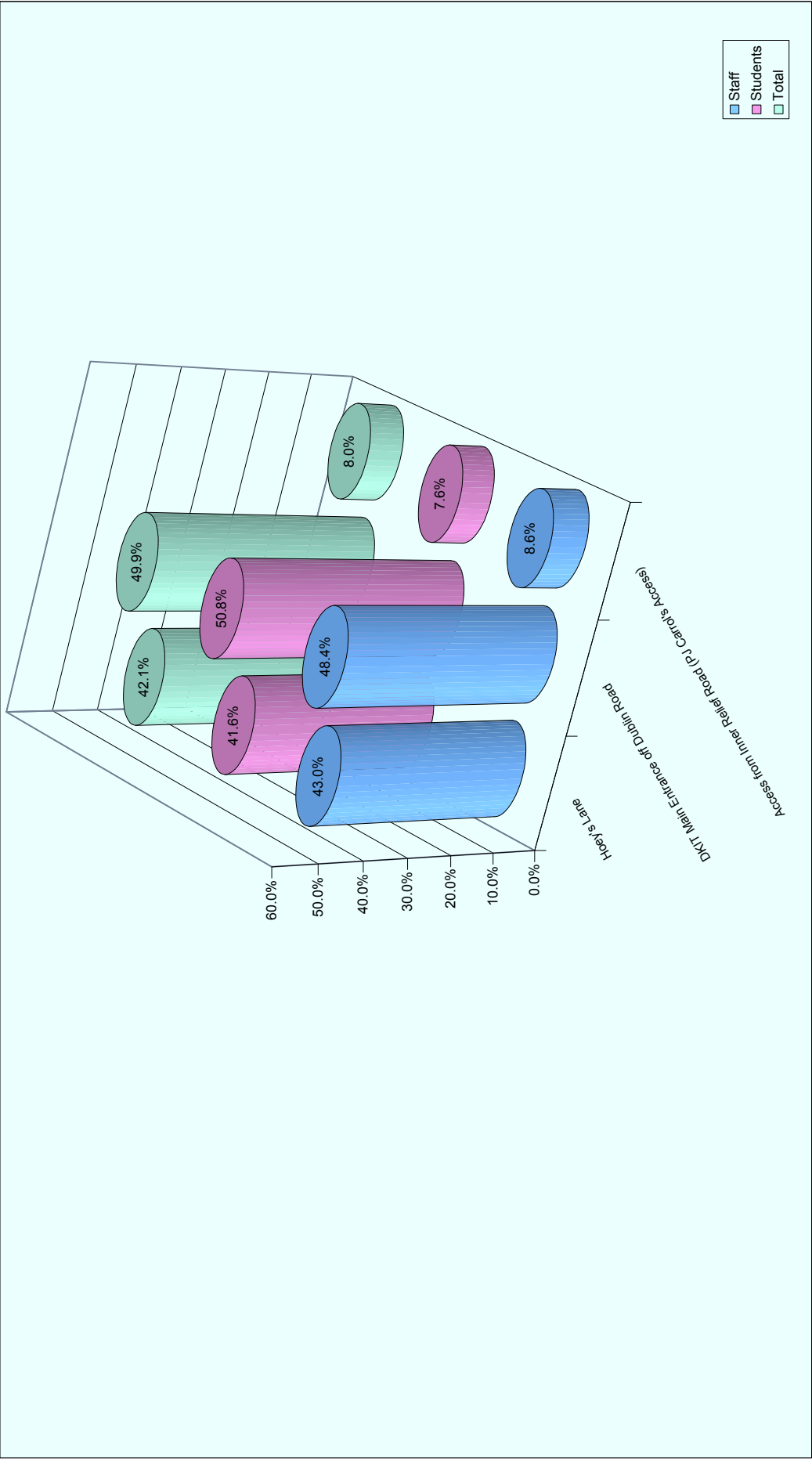
Answer:	Hoey's Lane	DKIT Main Entrance off Dublin Road	Access from Inner Relief Road (PJ Carroll's Access)	Total
Staff	105	118	21	248
%	43.0%	48.4%	8.6%	100%
Students	191	233	35	456
%	41.6%	50.8%	7.6%	100%
Total	296	351	56	704
%	42.1%	49.9%	8.0%	100%

1.6% *

-0.7% *

0.1% *

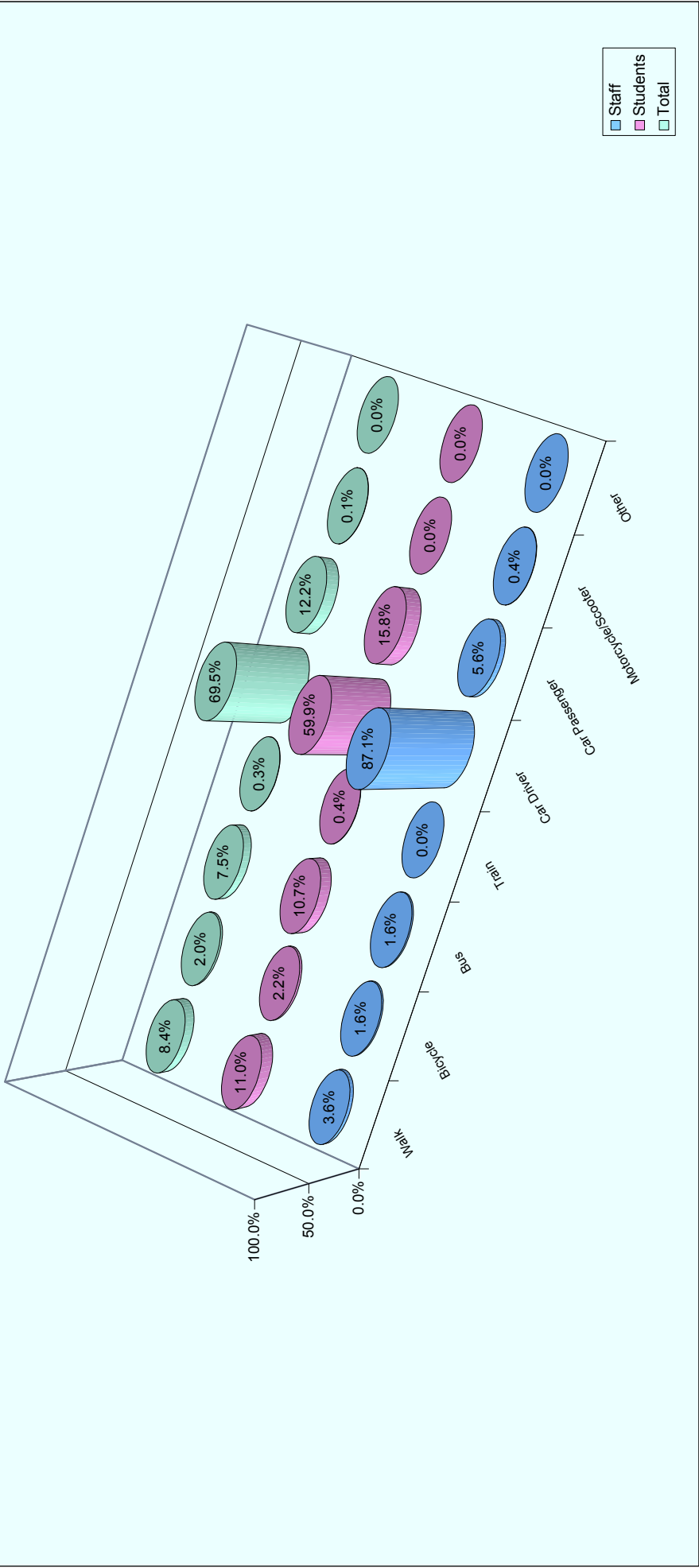
* % Responses with no data entry / not within the query



Q7 How do you normally travel to DKIT during a typical week?

Answer:	Walk	Bicycle	Bus	Train	Car Driver	Car Passenger	Motorcycle/Scooter	Other	Total
Staff	9	4	4	0	216	14	1	0	248
%	3.6%	1.6%	1.6%	0.0%	87.1%	5.6%	0.4%	0.0%	100%
Students	50	10	49	2	273	72	0	0	456
%	11.0%	2.2%	10.7%	0.4%	59.9%	15.8%	0.0%	0.0%	100%
Total	59	14	53	2	489	86	1	0	704
%	8.4%	2.0%	7.5%	0.3%	69.5%	12.2%	0.1%	0.0%	100%

* % Responses with no data entry / not within the query



Q8 What distance is your journey to DKIT each day?

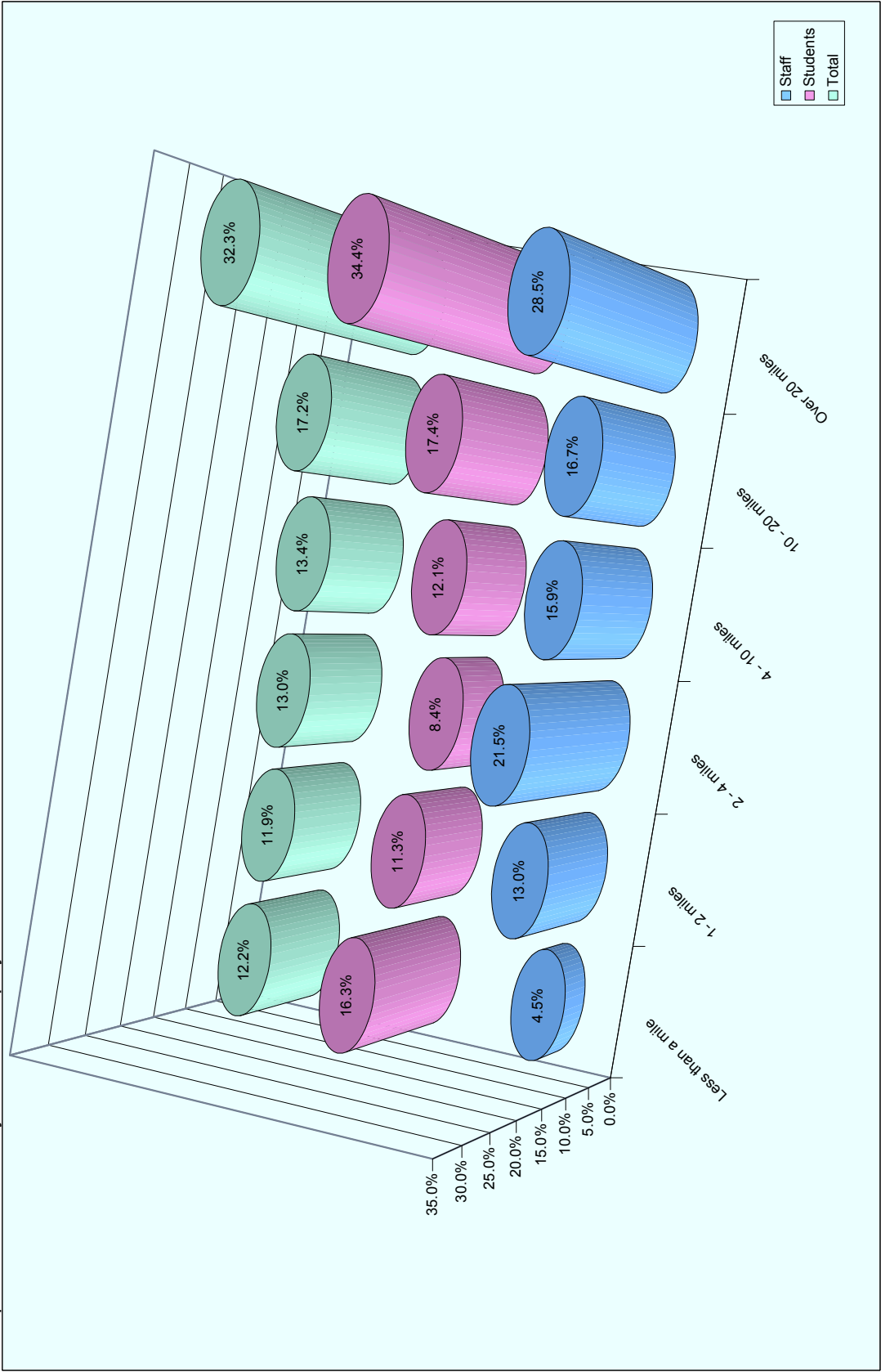
Answer:	Less than a mile	1 - 2 miles	2 - 4 miles	4 - 10 miles	10 - 20 miles	Over 20 miles	Total
Staff	11	32	53	39	41	70	248
%	4.5%	13.0%	21.5%	15.9%	16.7%	28.5%	100%
Students	74	51	38	55	79	156	456
%	16.3%	11.3%	8.4%	12.1%	17.4%	34.4%	100%
Total	85	83	91	94	120	226	704
%	12.2%	11.9%	13.0%	13.4%	17.2%	32.3%	100%

0.8% *

0.7% *

0.7% *

* % Responses with no data entry / not within the query



Q7/Q8 When driving to DKIT, what is the distance of your journey each day?

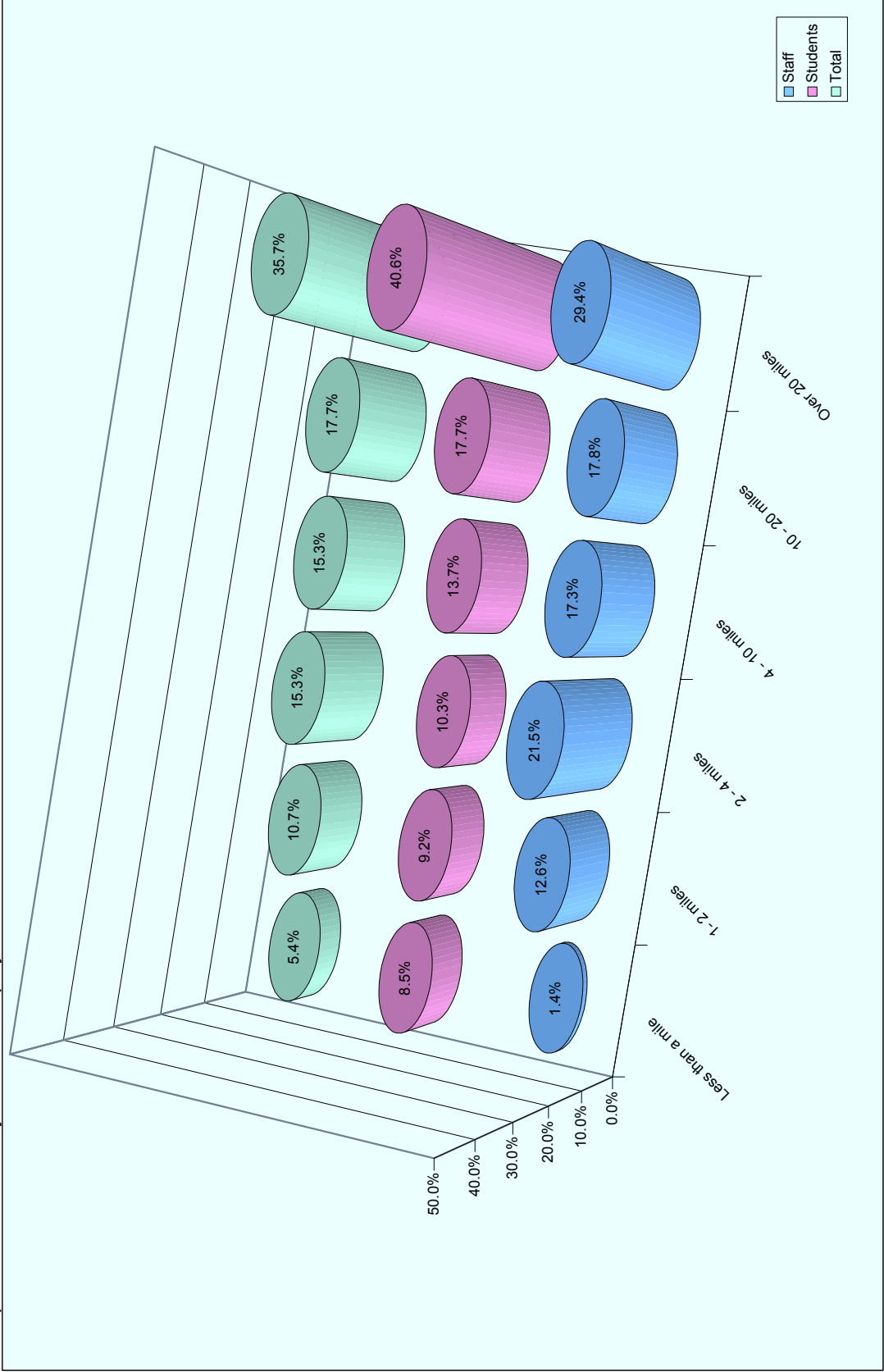
Answer:	Less than a mile	1- 2 miles	2 - 4 miles	4 - 10 miles	10 - 20 miles	Over 20 miles	Total
Staff	3	27	46	37	38	63	248
%	1.4%	12.6%	21.5%	17.3%	17.8%	29.4%	100%
Students	23	25	28	37	48	110	456
%	8.5%	9.2%	10.3%	13.7%	17.7%	40.6%	100%
Total	26	52	74	74	86	173	704
%	5.4%	10.7%	15.3%	15.3%	17.7%	35.7%	100%

13.7% *

40.6% *

31.1% *

* % Responses with no data entry / not within the query

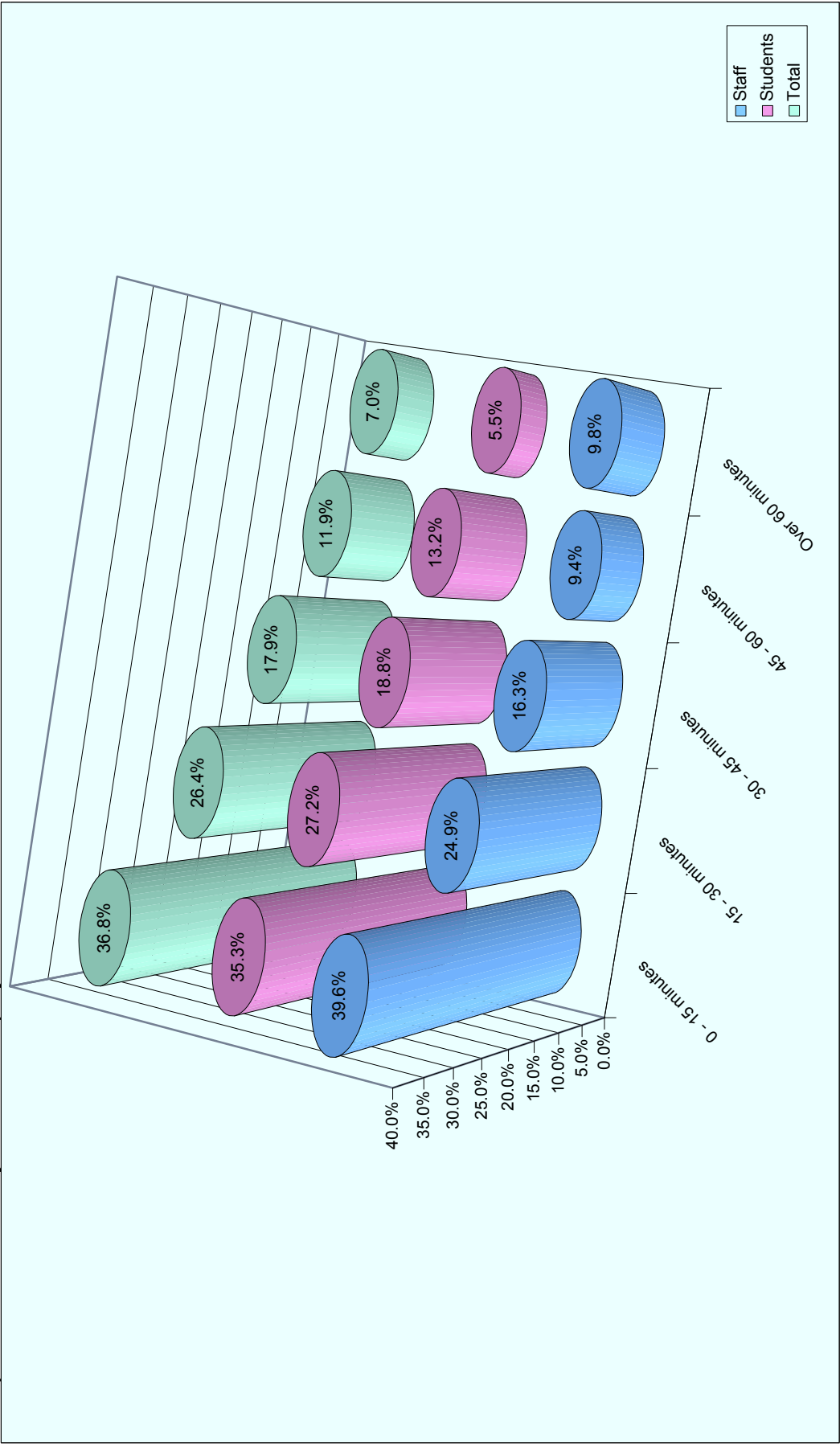


Q9

What is your typical journey time to DKIT?

Answer:	0 - 15 minutes	15 - 30 minutes	30 - 45 minutes	45 - 60 minutes	Over 60 minutes	Total
Staff	97	61	40	23	24	248
%	39.6%	24.9%	16.3%	9.4%	9.8%	100% [*]
Students	160	123	85	60	25	456
%	35.3%	27.2%	18.8%	13.2%	5.5%	100% [*]
Total	257	184	125	83	49	704
%	36.8%	26.4%	17.9%	11.9%	7.0%	100% [*]

^{*} % Responses with no data entry / not within the query



Q10 Why do you normally travel to DKIT the way you do?

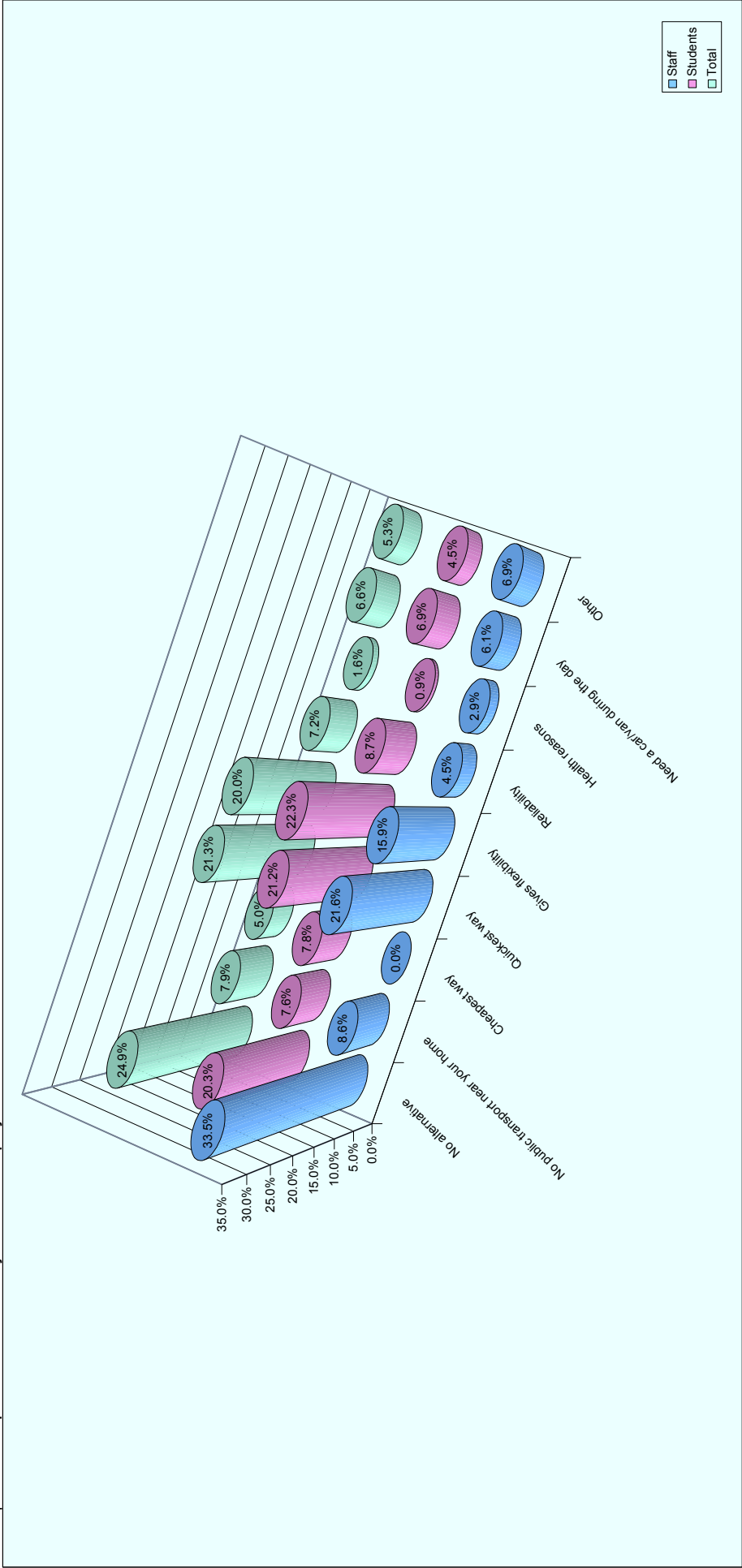
Answer:	No alternative	No public transport near your home	Cheapest way	Quickest way	Gives flexibility	Reliability	Health reasons	Need a car/van during the day	Other	Total
Staff	82	21	0	53	39	11	7	15	17	248
%	33.5%	8.6%	0.0%	21.6%	15.9%	4.5%	2.9%	6.1%	6.9%	100%
Students	91	34	35	95	100	39	4	31	20	456
%	20.3%	7.6%	7.8%	21.2%	22.3%	8.7%	0.9%	6.9%	4.5%	100%
Total	173	55	35	148	139	50	11	46	37	704
%	24.9%	7.9%	5.0%	21.3%	20.0%	7.2%	1.6%	6.6%	5.3%	100%

1.2% *

1.5% *

1.4% *

* % Response * % Responses with no date entry / not within the query



Q11 If you travel by bus to DKIT Campus, what route number(s) is the bus(es) you take?

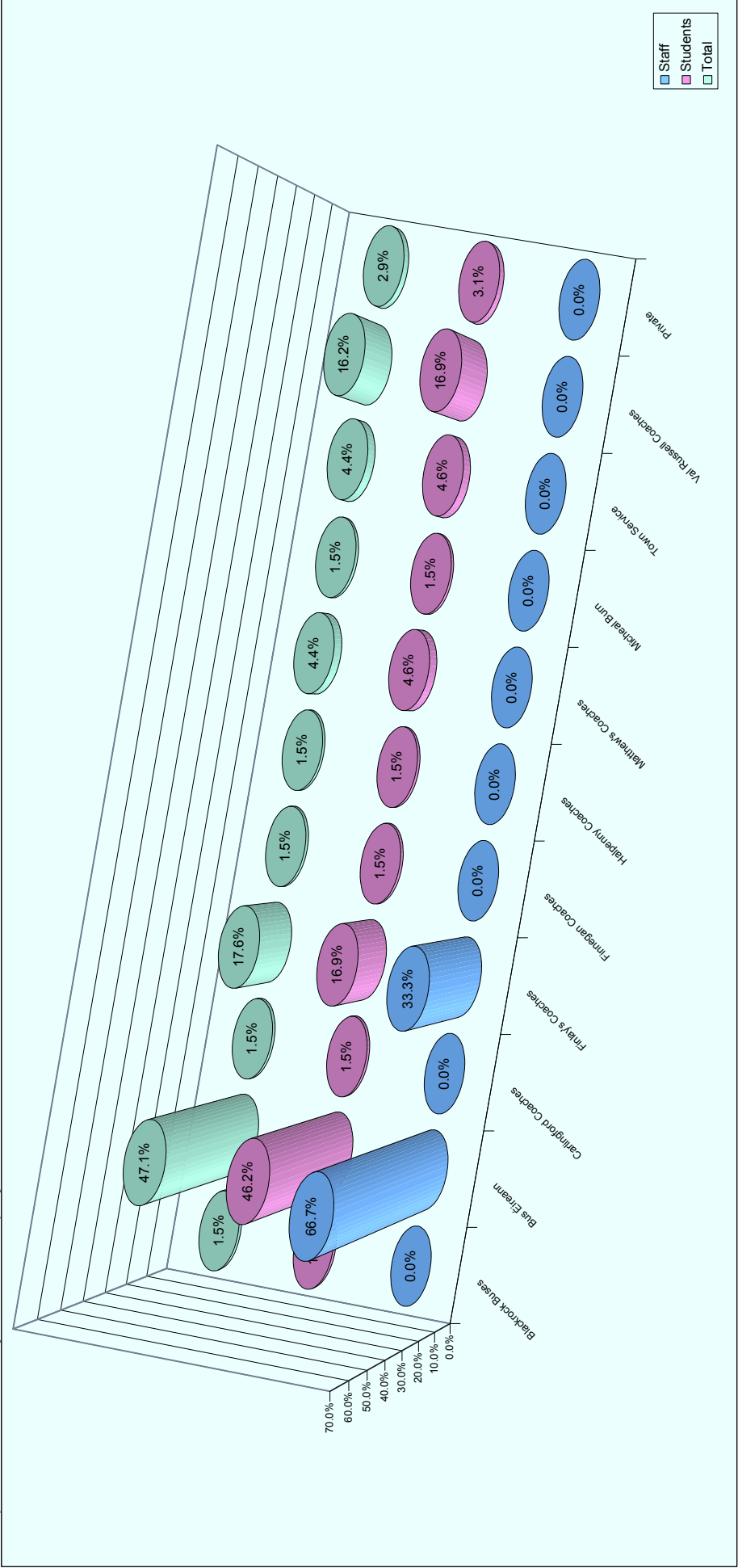
Answer:	Blackrock Buses	Bus Éireann	Carlingford Coaches	Finlay's Coaches	Finnegan Coaches	Halpenny Coaches	Matthew's Coaches	Micheal Burn	Town Service	Val Russell Coaches	Private	Total
Staff	0	2	0	1	0	0	0	0	0	0	0	248
%	0.0%	66.7%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Students	1	30	1	11	1	1	3	1	3	11	2	456
%	1.5%	46.2%	1.5%	16.9%	1.5%	1.5%	4.6%	1.5%	4.6%	16.9%	3.1%	100%
Total	1	32	1	12	1	1	3	1	3	11	2	704
%	1.5%	47.1%	1.5%	17.6%	1.5%	1.5%	4.4%	1.5%	4.4%	16.2%	2.9%	100%

98.8% *

85.7% *

90.3% *

* % Responses with no date entry / not within the query



Q12 If you travel to DKIT Campus by car, how many people travel in the car, including the driver?

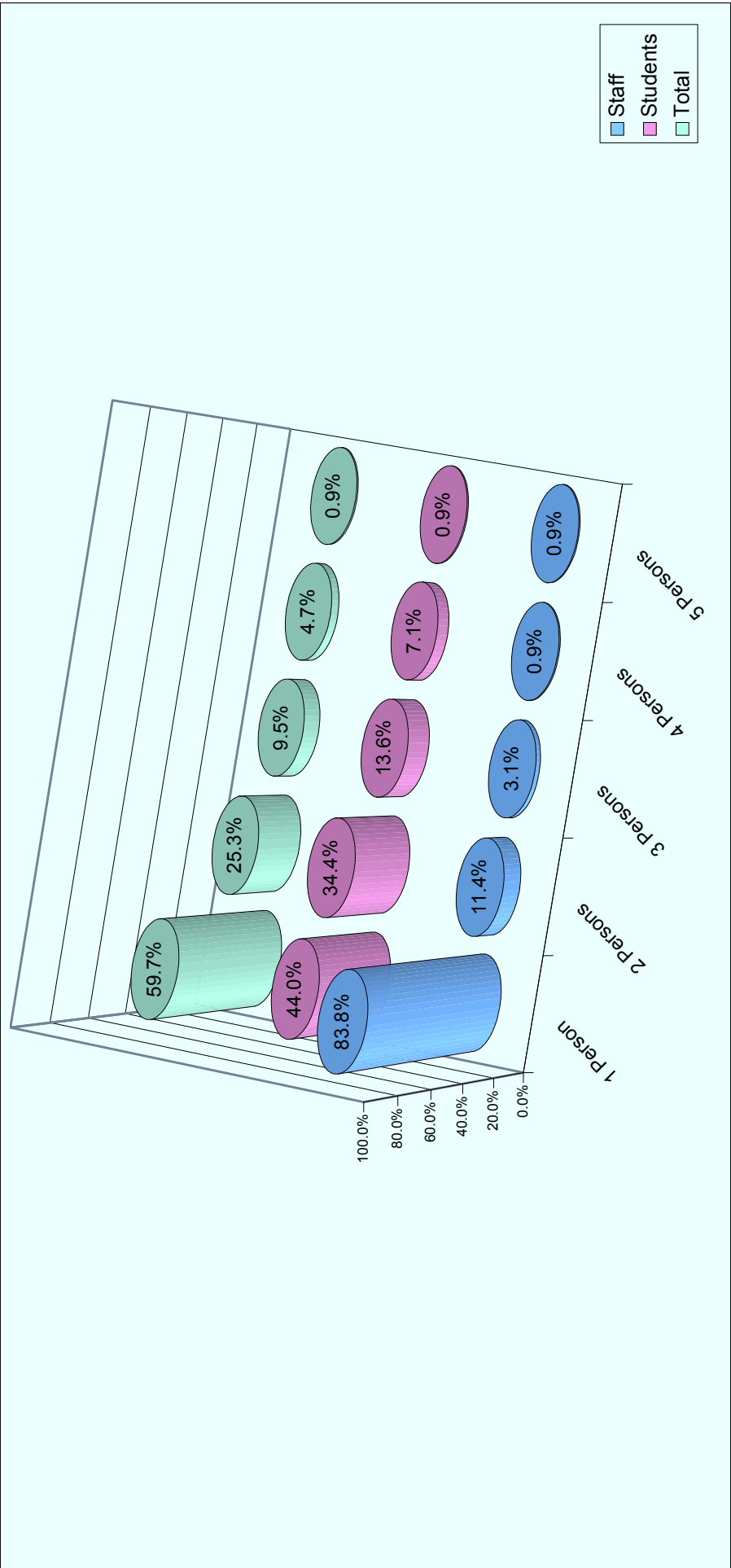
Answer:	1 Person	2 Persons	3 Persons	4 Persons	5 Persons	Total
Staff	191	26	7	2	2	248
%	83.8%	11.4%	3.1%	0.9%	0.9%	100%
Students	155	121	48	25	3	456
%	44.0%	34.4%	13.6%	7.1%	0.9%	100%
Total	346	147	55	27	5	704
%	59.7%	25.3%	9.5%	4.7%	0.9%	100%

8.1% *

22.8% *

17.6% *

* % Responses with no data entry / not within the query



Q13a If you drive, in which car park do you normally park?

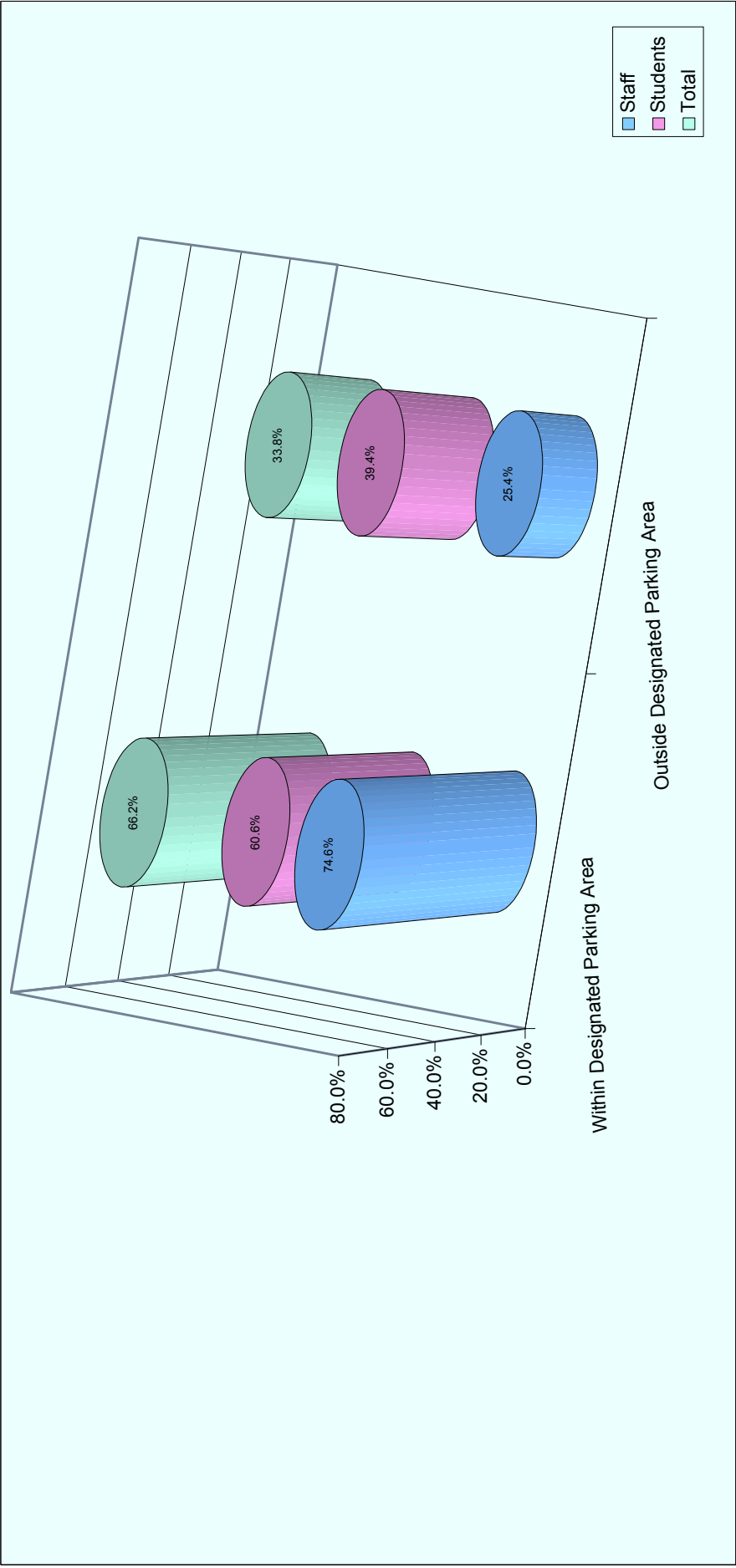
Answer:	Within Designated Parking Area	Outside Designated Parking Area	Total
Staff	156	53	248
%	74.6%	25.4%	100%
Students	194	126	456
%	60.6%	39.4%	100%
Total	350	179	704
%	66.2%	33.8%	100%

15.7% *

29.8% *

24.9% *

* % Responses with no data entry / not within the query



Q13b If you parked in a designated car park, please specify?

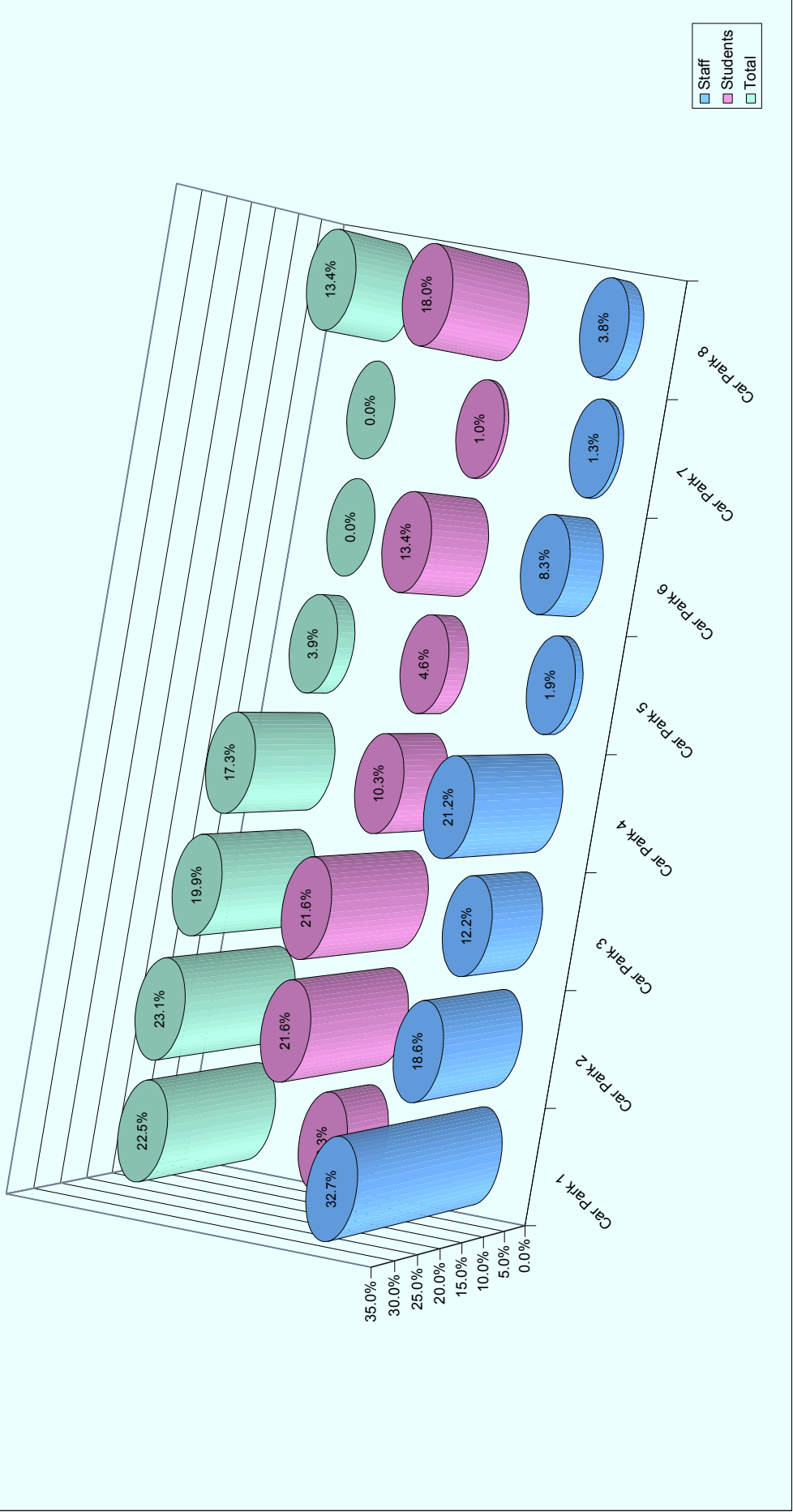
Answer:	Car Park 1	Car Park 2	Car Park 3	Car Park 4	Car Park 5	Car Park 6	Car Park 7	Car Park 8	Total
Staff	51	29	19	33	3	13	2	6	248
%	32.7%	18.6%	12.2%	21.2%	1.9%	8.3%	1.3%	3.8%	100%
Students	18	42	42	20	9	26	2	35	456
%	9.3%	21.6%	21.6%	10.3%	4.6%	13.4%	1.0%	18.0%	100%
Total	69	71	61	53	12			41	704
%	22.5%	23.1%	19.9%	17.3%	3.9%	0.0%	0.0%	13.4%	100%

37.1% *

57.5% *

56.4% *

* % Responses with no data entry / not within the query



Q14 If you park in a non designated area, please indicate why?

Answer:	No Parking spaces available in car parks by time I am on Campus	I want to park as close as possible to my destination in DKIT to minimise walking distance	I need my car often during the day and want it close by	I don't think by parking in a non designated area bothers anyone	Other	Total
Students	192	13	9	7	0	456
%	86.9%	5.9%	4.1%	3.2%	0.0%	100%

51.5% *

* % Responses with no data entry / not within the query

