Strategic Assessment for Provision of Indoor Bowling Centres

North Lincolnshire Council

Sport England Facilities Planning Model Report

19 August 2021

ORH is the trading name of Operational Research in Health Limited, a company registered in England with company number 2676859.

Disclaimer

The information in this report is presented in good faith using the information available to ORH and Sport England at the time of preparation. It is provided on the basis that the authors of the report are not liable to any person or organisation for any damage or loss which may occur in relation to taking, or not taking, action in respect of any information or advice within the document.

Accreditations

Other than data provided by North Lincolnshire Council and Sport England, this report also contains data from the following sources:

Population based on 2011 Census data and modified by 2018-based Subnational.

Population Projections for Local Authorities. Adapted from data from the Office for National Statistics licensed under the Open Government Licence v.3.0.

Index of Multiple Deprivation data contains public sector information licensed under the Open Government Licence v3.0.

EXECUTIVE SUMMARY

Introduction and Description of the Study

i. North Lincolnshire Council is reviewing the current provision of indoor bowling centres (IBCs) and assessing the future demand and level of provision required up to 2038 and beyond. The Council has commissioned a Sport England Facility Planning Model (FPM) local assessment to develop an evidence base to support this strategic planning.

ii. The overall aims of the FPM work are to:

- Assess the extent to which the Scunthorpe Indoor Bowls Centre is meeting the demand for indoor bowls across the North Lincolnshire Council area in 2021.
- Assess the impact that the population change from 2021 to 2038 has on the demand for indoor bowls and its distribution across the North Lincolnshire Council area.

iii. The FPM study builds up a picture of change and includes assessments based on different runs. These include the indoor bowling centres and population in the neighbouring local authorities to North Lincolnshire, as the assessments are based on the catchment area of the centres, and these extend across local authority boundaries.

iv. The FPM modelling runs are:

- **Run 1** – Supply, demand, and access to indoor bowling centres in 2021. This run provides a baseline assessment of current provision and can be used to compare with the extent of change in Run 2.
- **Run 2** – Supply, demand, and access to indoor bowling centres in 2038, based on the impact of population change to 2038. The population change includes (1) the ageing of the resident population between 2021 and 2038 and (2) the increase in the North Lincolnshire total population. Run 2 provides the future assessment of need and evidence base for indoor bowls provision. It provides the forward evidence base for application in the Council's Indoor Built Sports Facilities Strategy

v. The next section of the report provides the strategic overview of findings on participation, supply and demand, accessibility, future actions/interventions.

vi. The main report sets out all findings under each of the seven assessment headings, with the key findings to support the strategic overview numbered and in bold typeface.

Strategic Overview

Participation in Indoor Bowling

vii. Indoor bowling centres are a very important facility type for people aged 60+. Participation in indoor bowling is highest in the five-year age bands from 65-80+ for both genders and is highest in the 80+ age band for males and the 75-79 age band for females.

viii. Whilst participation is low, at around 1% of males and 0.5% of females in these age bands there is quite a high frequency of participation by people who do bowl, at over twice a week for both genders. Participation is club based and with a focus on competition play as well as recreational play. Given the activity can take up to 2 hours, it does provide for physical activity and for social interaction over a long period of time.

ix. For residents who do bowl, there is not a real alternative indoor facility type, other than possibly swimming pools, for this age range to participate in a sport and undertake physical activity.

x. For all these reasons it is an important facility type, even if the numbers playing the sport are not high. This importance is recognised by North Lincolnshire Council with the initial provision of the Scunthorpe IBC, continuing investment in the centre with upgraded rink lighting, and replacement of the carpet, and further modernisation of the centre is being planned. The Council along with Scunthorpe Indoor Bowls Club and the English Indoor Bowling Association (EIBA) have undertaken a recent joint marketing and promotion initiative to promote the sport and increase the membership at the centre.

xi. The Council's strategic aim is to increase activity by all age groups but especially those who are least active (under 30 minutes of activity a week). The Council is focusing its leisure centres as health and wellbeing centres meeting local community needs, such as social prescribing/GP referral and active ageing work. This means that there are other opportunities for people who play indoor bowls to also be more active and use other services through these programmes. Furthermore, council community centres and outdoor facilities provide for short mat bowls, walking football and walking netball. Overall, the sporting and activity offer for this age range does extend beyond indoor bowls.

Supply and Demand for Indoor Bowling in North Lincolnshire

xii. **The headline finding is Scunthorpe IBC does meet the demand for indoor bowling from North Lincolnshire residents in both 2021 and projected forward to 2038.**

xiii. **The Scunthorpe IBC needs to be retained to meet the demand for indoor bowling from North Lincolnshire residents**

xiv. The seven-rink centre is estimated to be 37% full in the weekly peak period in 2021 and 49% full in 2038. The weekly peak period is 46.5 hours, and the centre is open for a total of 61 hours per week. It is worth noting that the Council is considering replacing the rink carpet, improving the ventilation, and upgrading the rink lighting as medium-term aspirations. At this time the Council will make the centre a 6-rink centre to provide wider individual rinks. Currently they are the minimum width based on the EIBA criteria. A 6-rink centre would increase the used capacity of the centre from the current levels set out in the FPM study. The FPM findings support this action by the Council.

xv. When simply comparing the North Lincolnshire residents demand for indoor bowls with Scunthorpe IBC supply, demand is for 3 rinks in 2021, increasing to 4 rinks in 2038. The centre has a supply of 6.3 rinks in both years, based on the hours in the weekly peak period.

xvi. Based on the demand located within the catchment area of Scunthorpe IBC, 65% of the North Lincolnshire demand for indoor bowling is satisfied/met. This may seem to be a low percentage, but the vast majority of the 35% unmet demand is locational. Namely, it is demand located outside the catchment area of the Scunthorpe IBC, or any of the centres in neighbouring local authorities.

xvii. In an authority such as North Lincolnshire, which has a large land area, lots of small, dispersed settlements and with the one indoor bowling centre, there will always be some demand located outside the catchment area of a centre.

xviii. This locational unmet demand equates to a total of 1.0 rink in 2020 and 1.4 rinks in 2038. The unmet demand is dispersed in very low values across the authority and there is not a cluster of unmet demand in one location (see Maps **6.1** and **6.2** in Unmet Demand Section).

Accessibility

xix. In 2020, 92% of the North Lincolnshire satisfied demand is met at the Scunthorpe IBC and is 95% in 2038.

xx. In short, the Scunthorpe Centre is located in the right place, and it correlates very well with the location of the North Lincolnshire demand for indoor bowling. To reinforce this point, the authority is exporting just 22 visits per week in both years to centres in neighbouring authorities. The majority of this exported demand is from Barton-upon-Humber, and it goes to the Marina Recreation Centre in Kingston-Upon-Hull.

Interventions and Future Actions

xxi. The Scunthorpe IBC opened in 1978 and is now 43 years old. It is owned, managed, and maintained by North Lincolnshire Council. The Council has continually invested in the modernisation of the centre, with carpet replacements, and improvements to the social areas.

xxii. Scunthorpe Indoor Bowls Club is responsible for managing and delivering the indoor bowling programme, including development work to increase participation/membership, and making one rink available for casual pay and play use. The club competes in intra/inter club competitions, as well as County and Regional competitions and is affiliated to the EIBA.

xxiii. In recent years, the membership has declined slightly but due to the joint intervention of the Club, the Council and the EIBA, a development programme to promote the sport and for a health benefit, as well as participation, has increased the membership.

xxiv. Longer term based on the age and condition of the centre and with the need for more major investment, there could well be a cost benefit case for re-providing the Scunthorpe IBC.

xxv. Undoubtedly based on the FPM findings, Scunthorpe is the best location for a new centre to maintain the highest accessibility for most residents in North Lincolnshire. Projecting

the future participation rates for indoor bowling is the most challenging part of any future assessment, the Scunthorpe Indoor Bowls Club has stabilised its membership at between 300-340 members and this needs to continue.

xxvi. Based on the FPM assessment and applying the current rates and frequency of participation to the North Lincolnshire population in 2038, a new indoor bowling centre should be a 4-rink centre. Should the membership increase and be sustained at over 400 members then provision of a 5-rink centre should be considered in any feasibility study.

xxvii. If there is a feasibility study at some future date for a new centre, then an updated FPM assessment should be undertaken at that time to provide, an updated evidence base for indoor bowling.

The Facilities Planning Model

xxviii. The FPM study is a quantitative, accessibility and spatial assessment of the supply, demand, and access to indoor bowing centres. It assesses how these factors change based on projected population change and if there are options to change the supply of indoor bowling centres.

xxix. The FPM study provides a hard evidence base that can inform consultations and provide a rounded evidence base. This can then be used in the development of North Lincolnshire Council's strategic planning for the provision of indoor bowling centres.

Contents

1. INTRODUCTION

1.1 North Lincolnshire Council is reviewing the current provision for indoor bowling and assessing the future demand and level of provision up to 2038 and beyond. The Council commissioned a Sport England Facilities Planning Model (FPM) local assessment to develop an evidence base for indoor bowling centres (IBCs).

1.2 The evidence base will be applied in the Council's Indoor Built Indoor Sports Facilities Strategy.

1.3 The FPM study builds up a picture of change and includes assessments based on different runs. These runs include the indoor bowling centre provision and population in the neighbouring local authorities to North Lincolnshire. This is because the assessments are based on the catchment area of the facility locations, and these extend across local authority boundaries.

1.4 The FPM separate modelling runs are:

- **Run 1** – Supply, demand, and access to indoor bowling centres in 2020. This run provides a baseline assessment of current provision and can be used to compare with the extent of change in Run 2.

- **Run 2** – Supply, demand, and access to indoor bowling centres in 2038, based on the impact of population change to 2038. The population change includes (1) the ageing of the resident population from 2021 to 2038 and the impact this has on participation in indoor bowling and (2) the increase in the North Lincolnshire total population. Run 2 provides the future assessment of need and evidence base for indoor bowls provision. It provides the forward evidence base for application in the Council's Indoor Built Sports Facilities Strategy.

The Study Area

1.5 Customers of indoor bowling centres do not reflect local authority boundaries. While there are management, and possibly pricing, incentives for customers to use sports facilities located in the local authority area where they live, residents make choices about which venues they use.

1.6 This applies less to indoor bowling as there are far fewer indoor bowling centres than other facility types, so choice is much more limited. It involves extensive travel, to not participate at the venue closest to where residents live.

1.7 In determining the position across the North Lincolnshire area, it is important to take full account of the indoor bowling centres in the neighbouring local authorities. In particular, to assess the impact of overlapping catchment areas from facilities located outside North Lincolnshire but where the catchment area extends into the authority and vice versa.

1.8 The nearest facility for some North Lincolnshire residents may be outside the authority (known as exported demand), whilst for residents of neighbouring authorities, their nearest centre maybe inside North Lincolnshire (known as imported demand).

1.9 To take account of these impacts, a study area is established which places North Lincolnshire at the centre of the study and includes the neighbouring local authorities. A map of the study area is set out below.

Map 1.1: Study Area for the North Lincolnshire Indoor Bowling Assessment

Report Structure, Content and Sequence

1.10 The findings for North Lincolnshire are set out in a series of tables for each of the two runs. This allows a 'read across' to see the specific impact of changes between Runs 1 and 2 and builds up the picture of change.

1.11 The headings for each table are total supply; total demand; supply and demand balance; satisfied demand; unmet demand; used capacity; and local share. The definition of each heading is set out at the beginning of the report of findings.

1.12 Maps to support the findings on indoor bowling locations, total demand, unmet demand, the driving, and walking catchment area of the centres, import and export of demand and local share of access to indoor bowling venues are also included.

1.13 Where valid to do so, the findings for the neighbouring authorities to North Lincolnshire are also set out, and a commentary is provided on these comparable findings.

1.14 All the maps for the study are provided in Appendix **1** and Appendix **2** gives a description of the FPM and its parameters.

2. INDOOR BOWLING CENTRE SUPPLY

Table 2.1: Indoor Bowling Centres Supply North Lincolnshire 2020-2038

Total Supply	RUN 1	RUN 2
North Lincolnshire UA	**2020**	**2038**
Number of IBC halls	1	1
Number of IBC sites	1	1
Supply of total IBC space in rinks	7	7
Supply of publicly available rinks, scaled with hours available in the peak period	6.3	6.3
Supply of total IBC space in visits per week peak period	809	809
Rinks per 10,000 population	0.4	0.4

Definition of supply – this is the supply or capacity of the indoor bowling centres which are available for public and club use in the weekly peak period. The supply is expressed in number of visits that a centre can accommodate in the weekly peak period and in the number of rinks.

2.1 In runs 1 and 2 there is one IBC located in North Lincolnshire, the Scunthorpe Indoor Bowls Centre. The **first key finding** is the Scunthorpe IBC has seven rinks and is the largest indoor bowling centre in the study area. There are a further seven IBCs within the study area, and there are a total of 40 rinks across the study area.

2.2 A summary description of the IBCs in North Lincolnshire and across the study area is set out in Table **2.2**.

Table 2.2: Indoor Bowling Centres North Lincolnshire and the Study Area Runs 1-2

Name of Site	Dimensions	Area	Rinks	Site Year Built	Site Year Refurb	Public/ Commercial
North Lincolnshire						
Scunthorpe Indoor Bowls Centre	37 x 29	1049	7	1978	1995	P
West Lindsey						
Dunholme & District Indoor Bowls Club	37 x 23	821	5	1984	1993	P
Eat Riding of Yorkshire						
Hornsea & District Indoor Bowls Club	36 x 27	972	6	1998	2015	P
Middleton on the Wolds Bowls Club	38 x 11	418	2	2000		P
North Cave Indoor Bowls Club	36 x 30	1080	6	1990	2012	P
Kingston-upon-Hull						
Marina Recreation Centre	40 x 18	720	4	1984	2012	P
North East Lincolnshire						
Grimsby Leisure Centre	35 x 20	700	4	1975	2006	P
Doncaster						
Doncaster Indoor Bowls Club	36 x 28	994	6	2001	2014	P

2.3 The Scunthorpe Indoor Bowls Centre opened in 1978 and is the second oldest centre in the study area, after the Grimsby Leisure Centre (4 rinks) which opened in 1975. The most recent centre to open is the Doncaster Indoor Bowls Club (6 rinks) which opened in 2001. The average age of all the centres in 2020 is 32 years.

2.4 There is one IBC in five authorities, North Lincolnshire, West Lindsey, Kingston-Upon-Hull, North East Lincolnshire, and Doncaster. There are three IBCs located in the East Riding of Yorkshire with a total of 14 rinks.

2.5 North Lincolnshire has 0.4 rinks per 10,000 population in 2020. In comparison with the neighbouring authorities, North Lincolnshire has the second highest provision along with the East Riding of Yorkshire. The highest provisions is located in West Lindsey at 0.5 rinks per 10,000 population, the lowest supply is located in Kingston-Upon-Hull and Doncaster each with 0.2 rinks per 10,000 population.

2.6 The Yorkshire Region average is 0.2 rinks per 10,000 population and for England wide it is 0.3 rinks per 10,000 population, in 2020.

2.7 The findings on rinks per 10,000 population are set out because some local authorities like to know how their quantitative provision compares with elsewhere, it is not setting a standard of provision. The supply and demand for IBCs in North Lincolnshire is based on the findings from all seven headings analysed in the report.

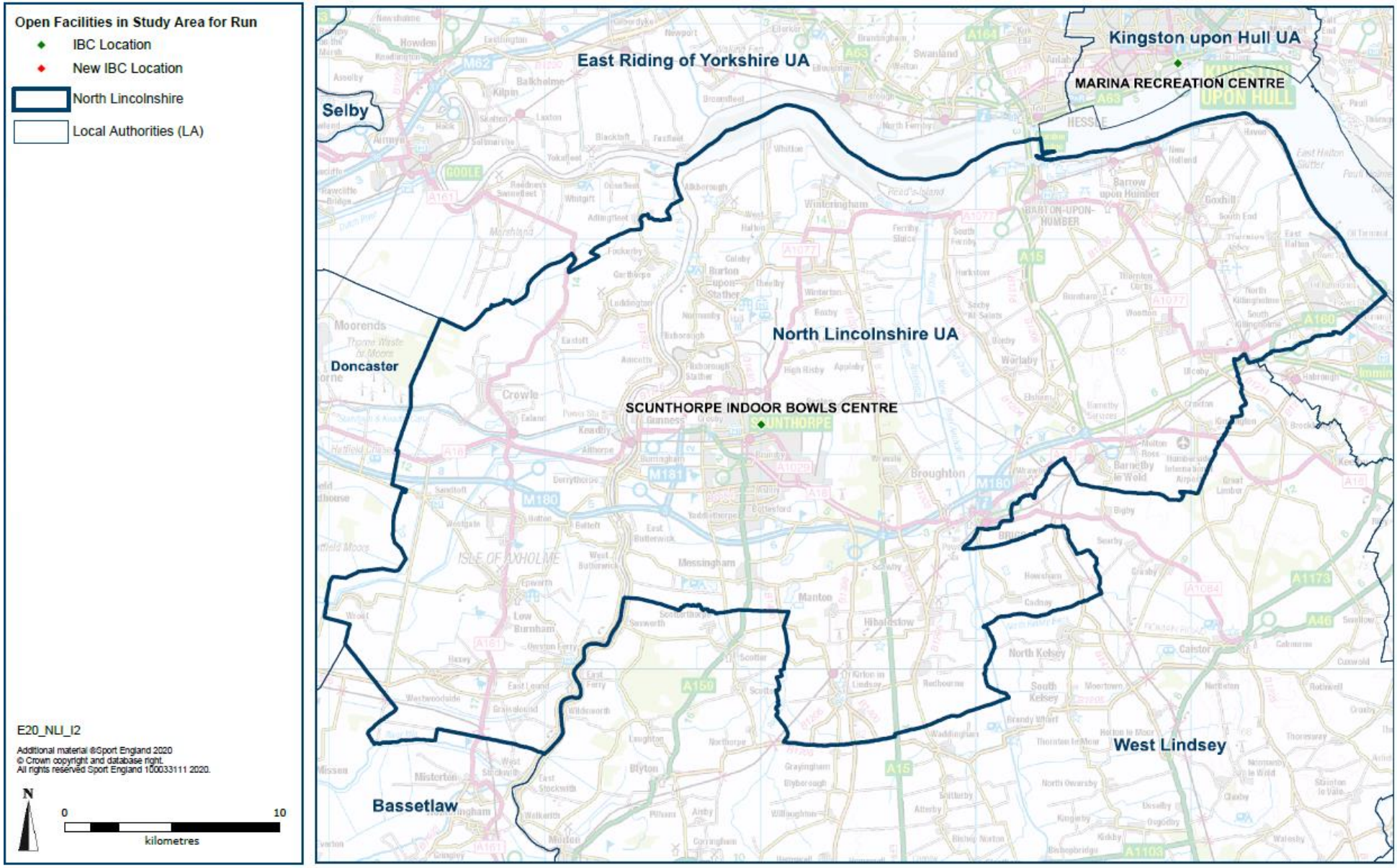
Table 2.3: Number of rinks per 10,000 population for all authorities 2020-2038

Rinks per 10,000 population	RUN 1	RUN 2
Local Authority	**2020**	**2038**
North Lincolnshire UA	**0.4**	**0.4**
West Lindsey	0.5	0.5
East Riding of Yorkshire UA	0.4	0.4
Kingston upon Hull UA	0.2	0.2
North East Lincolnshire UA	0.3	0.3
Doncaster	0.2	0.2

Indoor Bowling Centre Locations

2.8 Map **2.1** shows the location of the Scunthorpe IBC and there are no changes in the supply to 2038. The nearest indoor bowling centre to North Lincolnshire is located at the Marina Recreation Centre in Kingston-Upon-Hull.

Map 2.1: Location of Indoor Bowling Centres in North Lincolnshire



3. DEMAND FOR INDOOR BOWLING CENTRES

Table 3.1: Demand for Indoor Bowling Centres North Lincolnshire 2020-2038

Total Demand	RUN 1	RUN 2
North Lincolnshire UA	2020	2038
Population	173,143	177,331
Visits demand – visits per week peak period	467	625
Equivalent in rinks	3.0	4.0
% of population without access to a car	20.2	20.2

Definition of total demand – This represents the total demand for indoor bowling by both genders and for seven five-year age bands from 0 to 80+ and is calculated as the percentage of each age band/gender that participates. This is added to the frequency of participation in each age band/gender to arrive at a total demand figure, which is expressed in visits in the weekly peak period and square metres of water. The FPM parameters for the percentage of participation and frequency of participation, for both genders and for different age bands, are set out in Appendix **2**.

3.1 The North Lincolnshire population in 2020 is 173,143 people and it is projected to increase to 177,331 people by 2038.

3.2 The **second key finding** is the North Lincolnshire total demand for indoor bowling in 2020 is 467 visits per week in the weekly peak period and this equates to a total demand for 3.0 rinks. The total demand is projected to increase to 625 visits in the weekly peak period by 2038 and this equates to a demand for 4.0 rinks.

3.3 Related to the second key finding, there is a projected 2.4% increase in the total population across North Lincolnshire between 2020 and 2038 and a projected 34% increase in the total demand for indoor bowling, albeit the increase in demand only equates to 1 rink and there are 7 rinks at the Scunthorpe IBC.

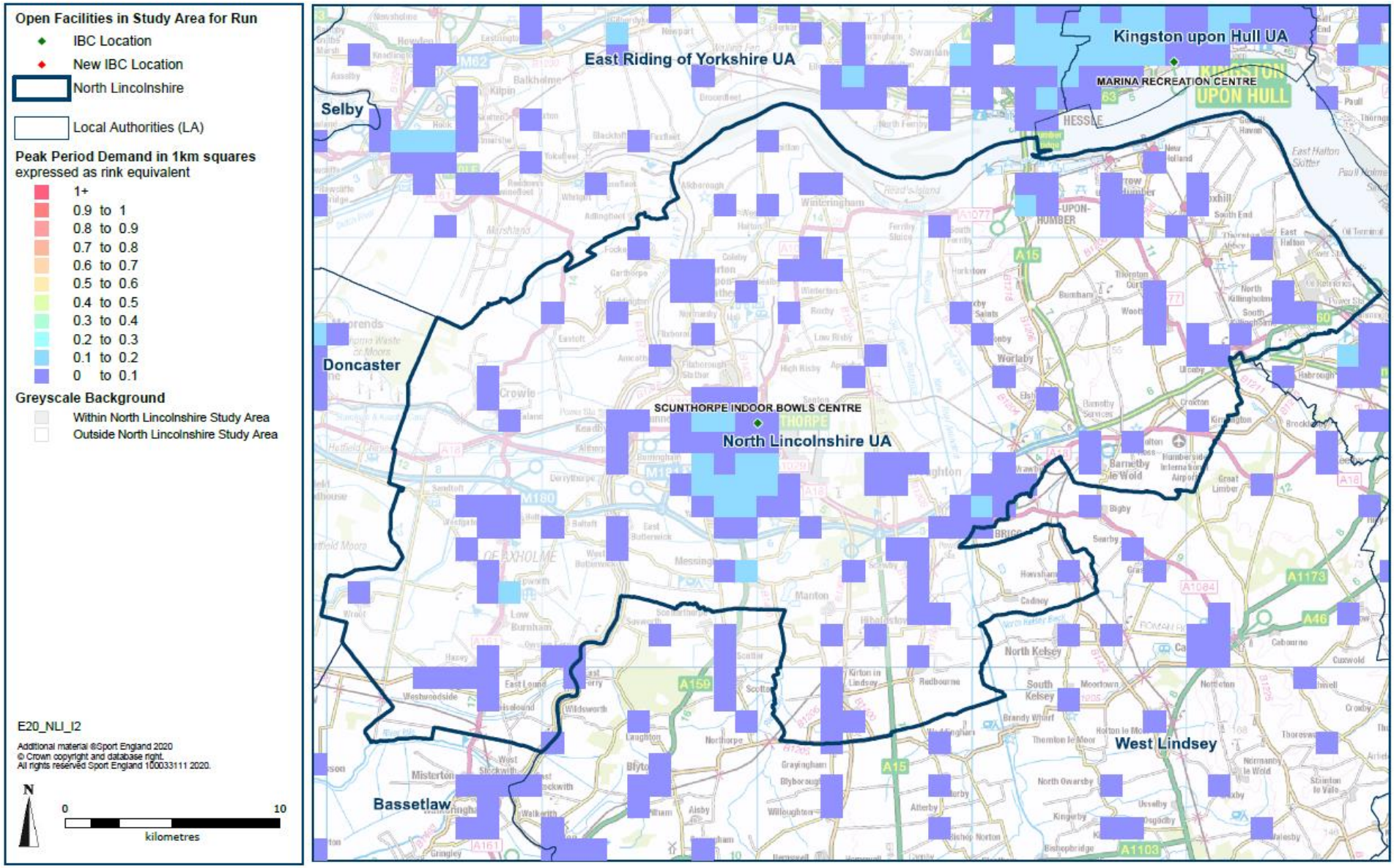
3.4 The location and scale of the total demand for indoor bowling across North Lincolnshire for 2020 is shown in Map **3.1** and in Map **3.2** for 2038.

3.5 The demand values are expressed in number of rinks contained within 1km grid squares. The values in the indigo squares are 0.0-0.1 of a rink, and the blue squares 0.1-0.2 of a rink.

3.6 Between the two years the distribution of demand does not change, it simply increases slightly in scale in the same areas, namely Scunthorpe and Barton-upon-Humber. In both years, the highest demand is clustered in and around Scunthorpe, where it totals 2 rinks in 2020 and 3 rinks in 2038. Demand for indoor bowling in the Barton-upon-Humber area, totals up to 1 rink in both years. After that, the demand for indoor bowling is distributed across the authority in very low values of between 0.0-0.1 of a rink in the indigo 1k grid squares.

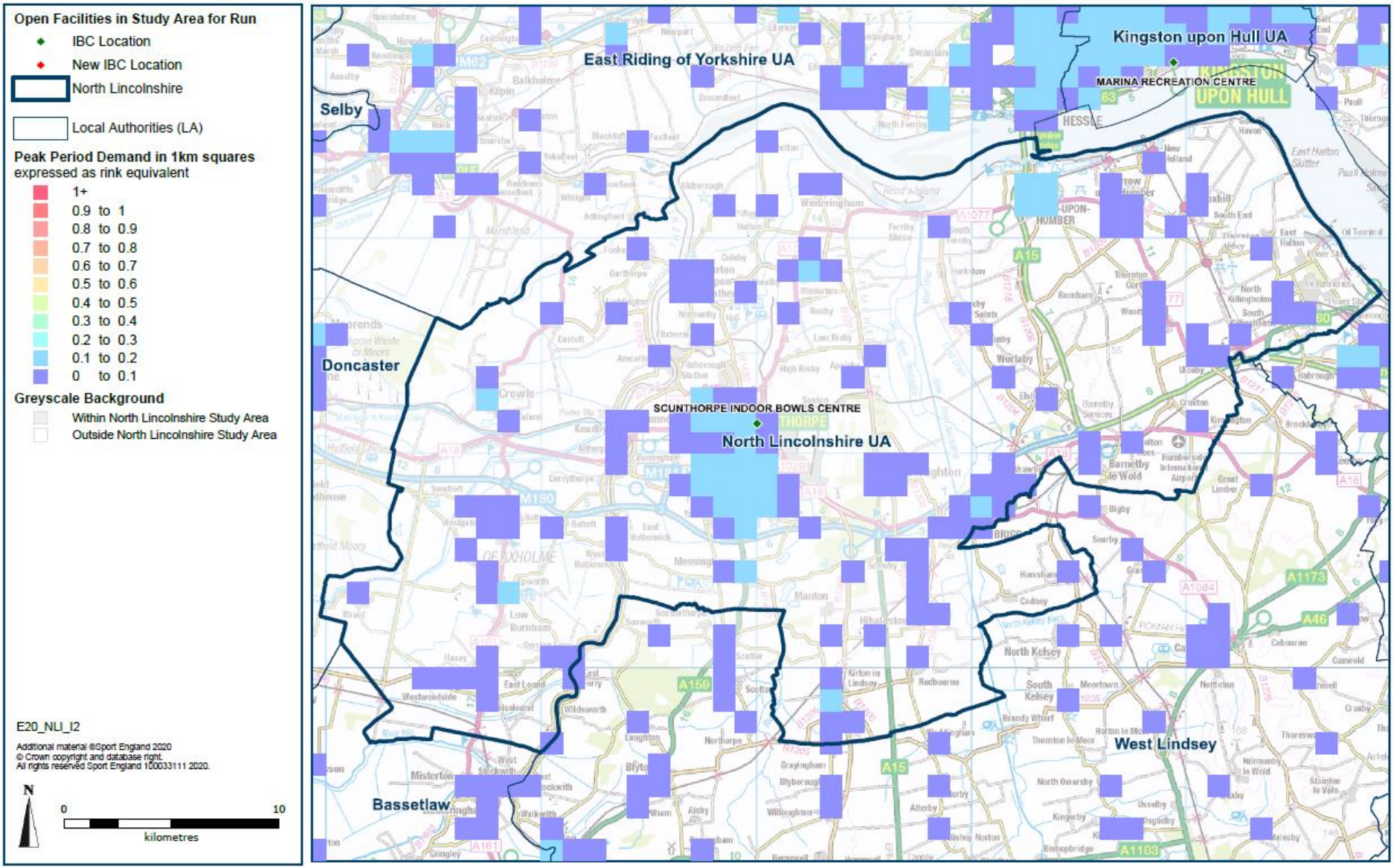
Map 3.1: Run 1 Total Demand for Indoor Bowling North Lincolnshire 2020

Facility Planning Model peak period demand aggregated at 1km square grid (figure labels) and shown thematically (colours). Peak period demand at 1km square grid level expressed as rink equivalent.



Map 3.2: Run 2 Total Demand for Indoor Bowling North Lincolnshire 2038

Facility Planning Model peak period demand aggregated at 1km square grid (figure labels) and shown thematically (colours). Peak period demand at 1km square grid level expressed as rink equivalent.



Access and Travel Patterns to IBCs

3.7 In North Lincolnshire, 20.2% of residents do not have access to a car, based on the 2011 Census. The Yorkshire Region average is 26.7% and England-wide 24.9% of the population who do not have access to a car.

Table 3.3: Modal Split of Satisfied Demand for IBCs North Lincolnshire 2021-2028

Modal Split of Satisfied Demand	RUN 1	RUN 2
North Lincolnshire UA	2021	2037
% of demand satisfied who travelled by car	93.6	93.7
% of demand satisfied who travelled by foot	1.9	1.8
% of demand satisfied who travelled by public transport	4.5	4.6

3.8 Car access does influence travel patterns for indoor bowling and virtually all visits are by car, reflecting participation is by a much older population. The findings for North Lincolnshire are that just under 94% of visits are made by car (up to 30 minutes' drive time) with 2% by walking (up to 40 minutes' walk or 2 miles) and just under 5% are by public transport (30 minutes travel at half speed of car).

4. SUPPLY AND DEMAND BALANCE

Table 4.1: Supply and Demand Balance North Lincolnshire 2020-2038

Supply/Demand Balance	RUN 1	RUN 2
North Lincolnshire UA	2020	2038
Supply - IBC provision (rinks) scaled to take account of hours available for community use	6.3	6.3
Demand - IBC provision (rinks)	3.0	4.0
Supply/Demand balance - variation in IBC provision (rinks) available compared to the minimum required to meet demand	3.3	2.3

Definition of supply and demand balance – This compares the total demand generated for indoor bowls within North Lincolnshire with the total supply of indoor bowling centres within North Lincolnshire. It therefore represents an assumption that all the demand for indoor bowls is met by all the supply of indoor bowling centres within North Lincolnshire (note: it does the same for the other local authorities in the study area).
In short, supply and demand balance is not based on where the indoor bowling centres are located and their catchment area extending into other authorities, nor on the catchment areas of pools in neighbouring authorities extending into North Lincolnshire. More detailed modelling based on the catchment areas of indoor bowling centres is set out under Satisfied Demand, Unmet Demand and Used Capacity.
The reason for presenting the supply and demand balance is that some local authorities like to understand how their total supply of pools compares with their total

4.1 In Run 1 the North Lincolnshire demand for indoor bowling is for 3.0 rinks and the supply available in the weekly peak period is 6.3 rinks. The weekly peak period is 10am-4pm and 6pm-8pm on weekdays, and 10am-2pm and 4pm-6pm at the weekend.

4.2 The Scunthorpe Indoor Bowls Centre is open for 46.5 hours in the peak period out of a possible peak period 52 hours. This is 89% of the hours in the peak period so the supply is scaled to take account of hours available for community use, which is 6.3 rinks.

4.3 Demand increases to 4 rinks by 2038 and the supply is unchanged at 6.3 rinks. Therefore, in 2038 supply exceeds demand by 2.3. rinks.

4.4 To repeat, this is the closed quantified assessment and is simply comparing the North Lincolnshire demand for indoor bowling with the North Lincolnshire supply. It is not based on the catchment area of IBCs across local authority boundaries. How much of the North

4.5 Lincolnshire demand for indoor bowling can be met, based on the catchment area of IBCs, is set out under subsequent headings.

Supply and Demand Balance for Surrounding Authorities

4.6 The supply and demand balance for all the authorities in the study area is set out in Table **4.2** below. The **third key finding** is that in 2020 supply exceeds demand in the other authorities, overall supply exceeds demand by 9.6 rinks.

4.7 In 2038 demand is projected to exceed supply in three authorities, in East Riding of Yorkshire by 0.5 rinks, in Kingston-Upon-Hull by 0.7 rinks and in Doncaster by 0.6 rinks. In the other two authorities supply exceeds demand by 1.0 rink in West Lindsey and by 0.5 of a rink in North East Lincolnshire.

4.8 Overall, across the study area, supply is projected to exceed demand by 2.0 rinks by 2038. These findings indicate that when the assessment is based on the catchment area of centres across local authority boundaries, the level of demand for indoor bowling which can be met is likely to be quite high, with unmet demand quite low. These findings are examined under the next two set of headings.

Table 4.2: Supply and Demand Balance for Indoor Bowling Across the Study Area 2020-2038

Variation in rinks of provision available compared to the minimum required to meet demand	RUN 1	RUN 2
Local Authority	**2020**	**2038**
North Lincolnshire UA	**3.3**	**2.3**
West Lindsey	1.7	1.0
East Riding of Yorkshire UA	2.1	-0.5
Kingston upon Hull UA	0.1	-0.7
North East Lincolnshire UA	1.3	0.5
Doncaster	1.1	-0.6
Study Area Total	**9.6**	**2.0**

5. SATISFIED DEMAND FOR INDOOR BOWLING

Table 5.1: Satisfied Demand for Indoor Bowling North Lincolnshire 2020-2038

North Lincolnshire UA	RUN 1	RUN 2
Satisfied Demand	**2020**	**2038**
Total number of visits which are met visits per week peak period	307	404
% of total demand satisfied	65.7	64.6
Demand Retained visits per week peak period	285	383
Demand Retained - as a % of Satisfied Demand	92.8	94.8
Demand Exported visits per week peak period	22	21
Demand Exported - as a % of Satisfied Demand	7.2	5.2

Definition satisfied demand – This represents the proportion of total demand that is met by the capacity at the IBCs from North Lincolnshire residents who live within the driving, walking or public transport catchment area of an IBC. This includes IBCs located both inside and outside North Lincolnshire.

5.1 The **fourth key finding** is that in 2020, 65.7% of North Lincolnshire's demand for indoor bowling can be met and in 2038 is 64.6%. It decreases very slightly because of the projected increase in demand from population growth with an assumed no change in supply of IBCs in North Lincolnshire or across the study area.

5.2 The findings for satisfied demand across the study area are set out in Table **5.2** below. The range in 2020 is 45.4% of total demand met in West Lindsey to 78.9% of total demand satisfied in North East Lincolnshire.

Table 5.2: Percentage of Satisfied Demand for Indoor Bowling across the Study Area 2020-2038

% of Total Demand Satisfied	RUN 1	RUN 2
Local Authority	**2020**	**2038**
North Lincolnshire UA	**65.7**	**64.7**
West Lindsey	45.4	45.5
East Riding of Yorkshire UA	54.4	49.9
Kingston upon Hull UA	63.2	55.9
North East Lincolnshire UA	78.9	78.9
Doncaster	65.6	65.0

Retained Demand

5.3 A subset of the satisfied demand findings is retained demand, which measures how much of the North Lincolnshire demand for indoor bowling is retained at the Scunthorpe IBC. This assessment is based on the catchment area of this centre and the North Lincolnshire resident demand within the catchment area.

5.4 The findings in Table **5.1** show that retained demand is very high and the **fifth key finding** is that 92.8% of the North Lincolnshire satisfied demand in 2020 and 94.8% in 2038 is retained within North Lincolnshire. In summary, the Scunthorpe IBC is the nearest centre for all but 5-7% of the North Lincolnshire satisfied demand for indoor bowling in both years.

5.5 The **sixth key finding** is that retained demand is extremely high level and it evidences that the location and catchment area of the Scunthorpe IBC is a very good location to meet the North Lincolnshire residents demand for indoor bowling in 2020 and projected forward to 2038.

Exported Demand

5.6 The residue of satisfied demand, after retained demand, is exported demand. This is based on North Lincolnshire residents who are situated within the catchment of an IBC located outside the authority and using it.

5.7 In Run 1, the model's findings are that just 7.2% of the North Lincolnshire demand for indoor bowling is exported and met at centres in neighbouring local authorities (22 visits per week), this decreases to 5.2% in 2038 (21 visits per week). To repeat, the model distributes demand on the basis of residents using a centre that they are within the catchment of.

5.8 The scale and destination of the North Lincolnshire exported demand in visits per week in the weekly peak period for runs 1 and 2 is set out in Table **5.3**.

5.9 As the table shows, the total exported demand is very low for all authorities. By way of context and comparison, the figures in the North Lincolnshire row show the demand retained within North Lincolnshire, with 285 visits per week in the weekly peak period in 2020 and 383 visits in 2038.

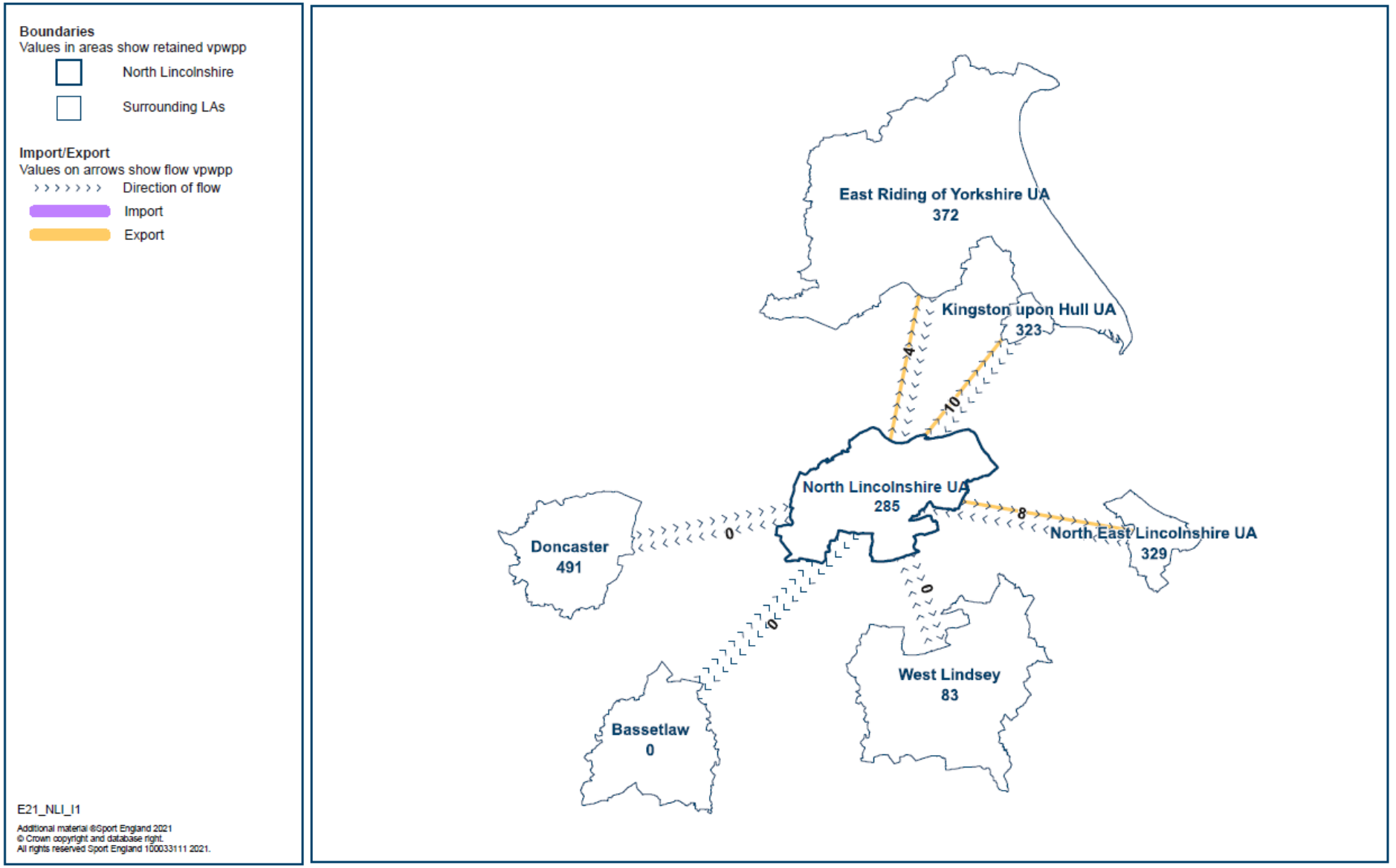
Table 5.3: Export of North Lincolnshire Satisfied Demand for Indoor Bowling 2020-2038

Export (visits per week peak period)	RUN 1	RUN 2
Local Authority	**2021**	**2038**
North Lincolnshire UA	**285**	**383**
West Lindsey	0	0
East Riding of Yorkshire UA	4	6
Kingston upon Hull UA	10	4
North East Lincolnshire UA	8	10
Doncaster	0	0

5.10 The findings in Table **5.3** can also be presented in map form and these are set out in Map **5.1** for 2020. Given there is virtually no difference in 2038, only the 2020 map is included. The figure within each authority map, is the number of indoor bowling visits retained within the authority from its own population.

Map 5.1: Run 1 Export of North Lincolnshire Satisfied Demand for Indoor Bowling Centres 2020

Facility Planning Model imported and exported demand between study area and surrounding local authorities shown thematically (size of lines) as visits per week in the peak period.



6. UNMET DEMAND FOR INDOOR BOWLING

Table 6.1: Unmet Demand for Indoor Bowling North Lincolnshire 2020-2038

Unmet Demand	RUN 1	RUN 2
North Lincolnshire UA	**2020**	**2038**
Total number of visits per week in the peak period not currently being met	160	220
Unmet demand as a % of total demand	34.3	35.2
Equivalent in Rinks	1.0	1.4
% of Unmet Demand due to:		
Lack of Capacity -	5.9	8.8
Outside Catchment -	94.3	91.4
Outside Catchment:	94.3	91.4
% of Unmet demand who do not have access to a car	40.9	39.9
% of Unmet demand who have access to a car	53.4	51.5
Lack of Capacity:	5.9	8.8
% of Unmet demand who do not have access to a car	0.0	0.0
% of Unmet demand who have access to a car	5.8	8.7

The **unmet demand definition** has two parts to it: demand for indoor bowling which cannot be met because (1) there is too much demand for any particular centre within its catchment area and there is a lack of capacity; or (2) the demand is located outside the catchment area of an IBC and is then classified as unmet demand.

6.1 The **seventh key finding** is the North Lincolnshire total unmet demand in percentage terms is high at 34.3% of total demand in Run 1 and 35.2% in Run 2. However, in terms of rinks the unmet demand is low and equates to 1.0 rink in 2020 and 1.4 rinks in 2038.

6.2 The **eighth key finding** is that in both years, the vast majority of unmet demand is due to demand located outside the catchment area of an IBC, which is 94.3% of total unmet demand in 2020 and 91.4% in 2038.

6.3 Unmet demand from lack of IBC capacity increases slightly between the two years because of the increase in demand from population growth. It is 5.9% of total unmet demand in 2020 and 8.8% in 2038.

6.4 Returning to unmet demand located outside a catchment, this will always exist because it is not possible to get complete spatial coverage, whereby all areas of an authority are inside the catchment area of an IBC.

6.5 This is especially true for walkers, where a 20-minute walk is only 1 mile, which by definition is quite a small catchment area. Also, some residents do not have access to a car and they either walk or use public transport to access an IBC. The percentage of unmet demand outside catchment who do not have access to a car, accounts for 41% of the unmet demand outside catchment in 2020 and 40% in in 2038.

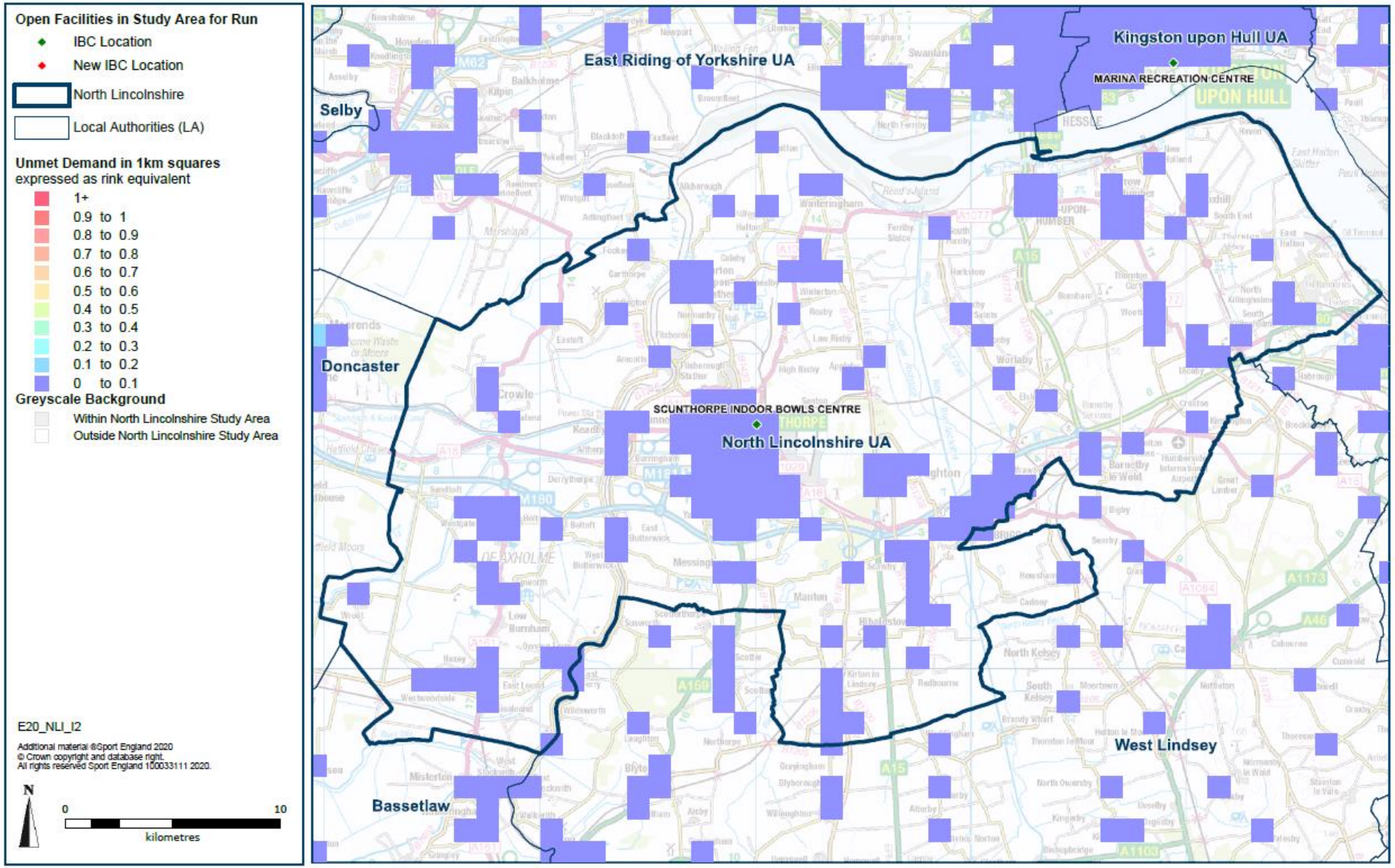
6.6 As with the other facilities the key point is, not that unmet demand outside catchment exists but the scale and at 1.0 rink in 2020 and 1.4 rinks in 2038 it is low.

6.7 The location and scale of the North Lincolnshire unmet demand from both sources is shown in Map **6.1** for 2020 and Map **6.2** for 2038.

6.8 The unmet demand is represented in colour coded one kilometre grid squares, with the values shown in each square. As the legend on the left hand side of the maps shows, all the unmet demand across the authority is coloured indigo and this is the lowest category of unmet demand at 0.0-0.1 of a rink. Unmet demand is clustered in and around the main settlements and is most extensive in and around Scunthorpe.

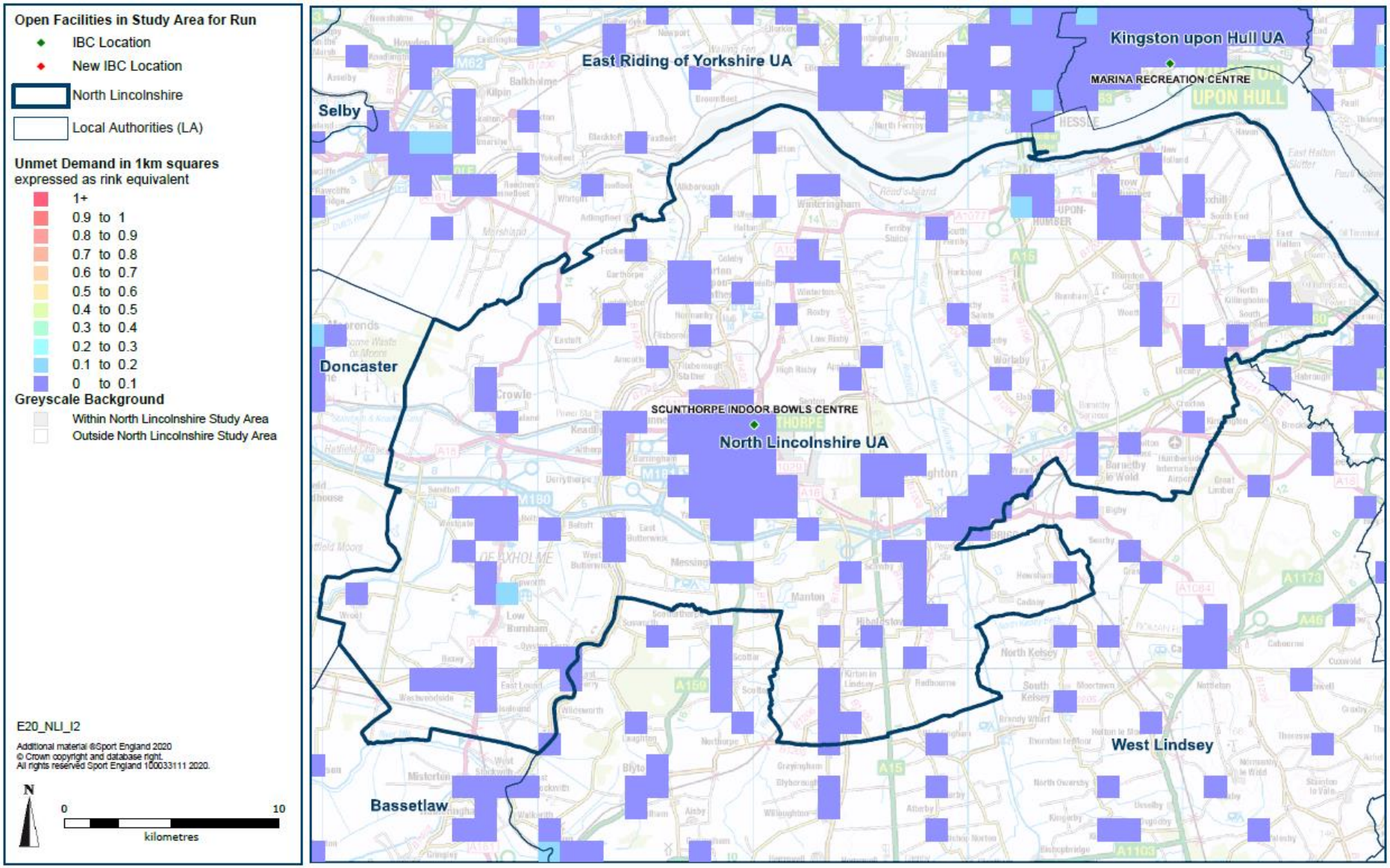
Map 6.1: Run 1 Unmet Demand for Indoor Bowling Centres North Lincolnshire 2020

Facility Planning Model unmet demand aggregated at 1km square grid (figure labels) and shown thematically (colours). Unmet demand at 1km square grid level expressed as rink equivalent.



Map 6.2: Run 2 Unmet Demand for Indoor Bowling Centres North Lincolnshire 2038

Facility Planning Model unmet demand aggregated at 1km square grid (figure labels) and shown thematically (colours). Unmet demand at 1km square grid level expressed as rink equivalent.



Driving Catchment Area for Indoor Bowling Centres

6.9 An illustration of how many IBCs can be accessed by North Lincolnshire residents, based on where they live and a 20-minute drive time catchment area of the IBC locations, is set out in Map **6.3**. There are no changes in the IBC locations from 2020 to 2038.

6.10 The maps include IBCs located in neighbouring authorities and where the catchment area extends into North Lincolnshire.

6.11 Residents living in the large pale-yellow area have access to the Scunthorpe IBC within 20 minutes' drive and residents in the small area, in and around Barton-upon-Humber, have access to the Marina Recreation Centre in Kingston-upon-Hull.

6.12 Residents living in the area which shows the base map, are outside the 20-minute drive time of the Scunthorpe IBC or any other IBC.

6.13 The 20-minute drive time catchment accounts for approximately 90% of visits. The drive time in the FPM is a 30-minute drive time catchment and the FPM uses a distance decay function, where the further a user is from a facility, the less likely they will travel.

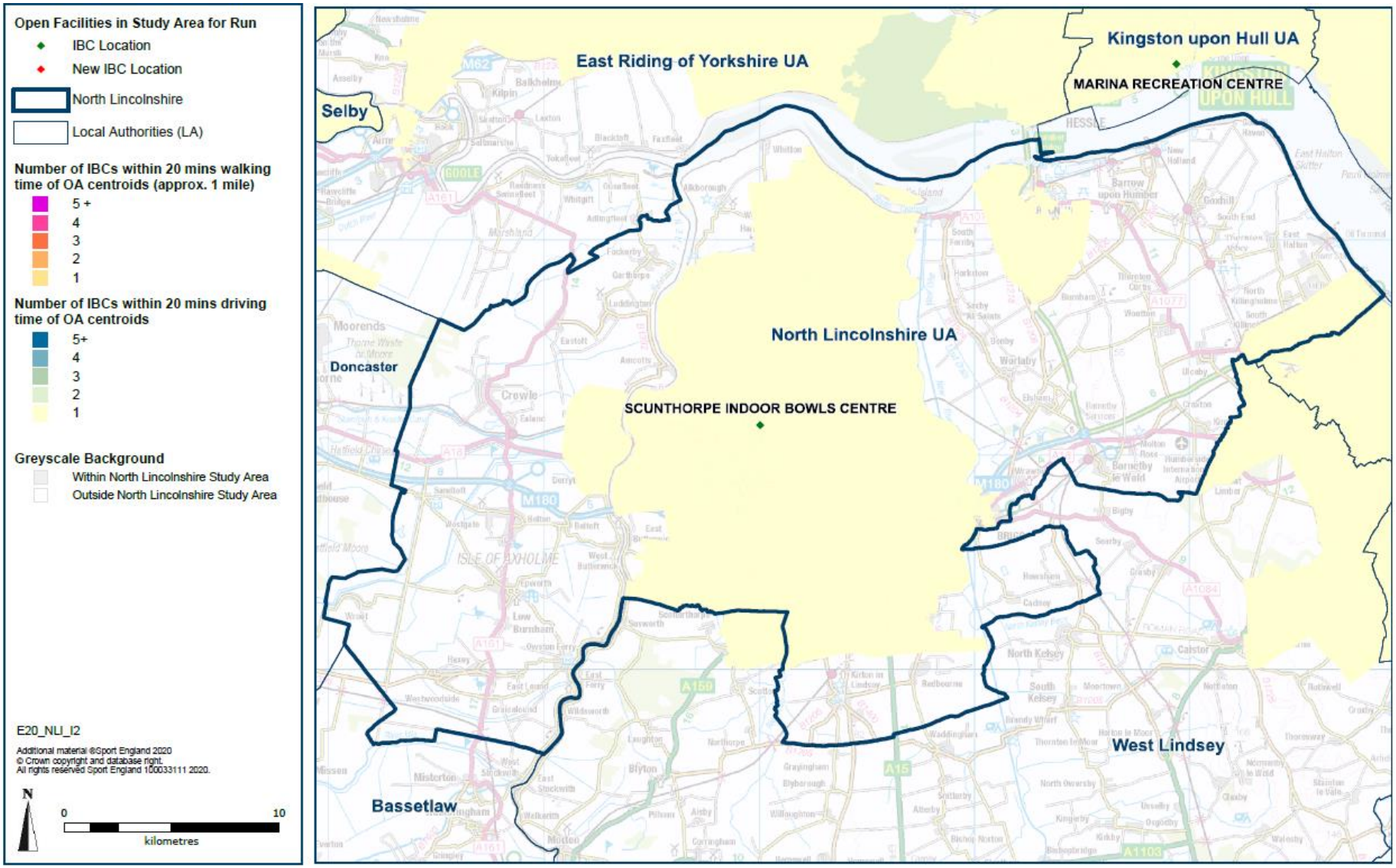
6.14 It is acknowledged that a 30-minute drive time catchment will include nearly all the North Lincolnshire authority area. Some demand for indoor bowling is located in Barton-upon-Humber and the nearest centre for this demand is the Marina Recreation Centre in Kingston-upon-Hull. However, the Scunthorpe club membership does include some bowlers who live in Barton-upon-Humber.

Walking Catchment Area for Indoor Bowling Centres

6.15 Mapping for a 20-minute/1 mile walking catchment area of IBCs is set out in Map **6.4**. By definition, this is a small catchment area; residents in the area shaded beige are within a 20-minute walking time of the Scunthorpe IBC, which accounts for approximately 90% of visits by walkers. However, the FPM uses a distance decay function, where the further a user is from a facility, the less likely they will travel.

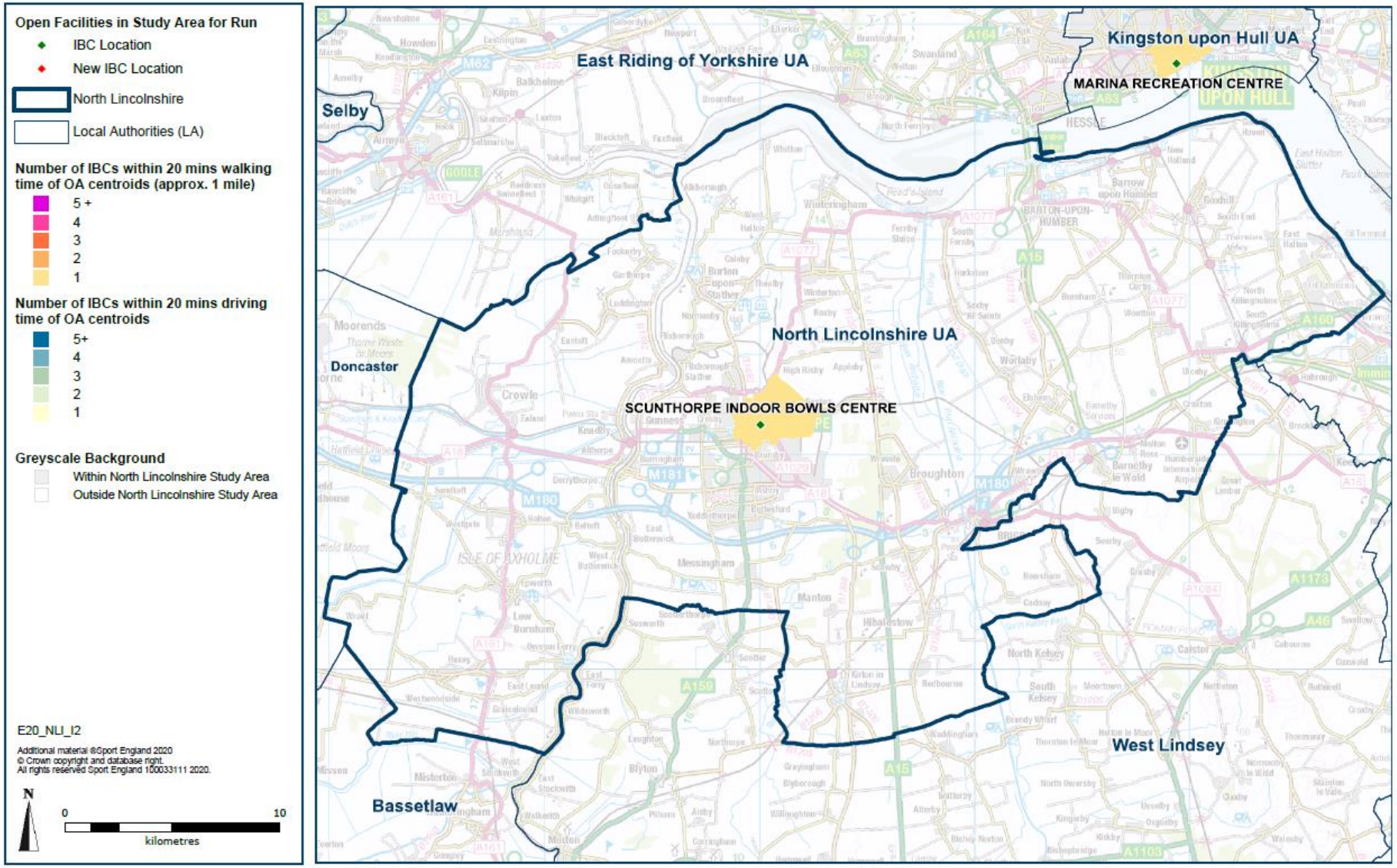
Map 6.3: Access to Indoor Bowling Centres based on the Driving Catchment Area

Facility Planning Model catchments shown thematically (colours) at output are level expressed as the number of IBCs within 20 minutes' travel time of output area centroid.



Map 6.4: Access to Indoor Bowling Centres based on the Walking Catchment Area

Facility Planning Model catchments shown thematically (colours) at output are level expressed as the number of IBCs within 20 minutes' travel time of output area centroid.



7. USED CAPACITY OF FACILITIES

Table 7.1: Used Capacity of Indoor Bowling Centres North Lincolnshire 2020-2038

Used Capacity	RUN 1	RUN 2
North Lincolnshire UA	**2020**	**2038**
Total number of visits used of current capacity (visits per week peak period)	297	399
% of overall capacity of IBCs used	36.7	49.3
% of visits made to IBCs by walkers	1.9	1.8
% of visits made to IBCs by road	98.0	98.1
Visits Imported;		
Number of visits imported) (visits per week peak period)	12.0	16.0
As a % of used capacity	4.0	4.0
Visits Retained:		
Number of Visits retained (visits per week peak period)	285	383
As a % of used capacity	96.0	96.0

Definition of used capacity – This is a measure of usage at IBCs and estimates how well used or full facilities are.

7.1 The **ninth key finding** is that the Scunthorpe Indoor Bowling Centre is estimated to be 36.7% full at peak times in 2020 and 49.3% full in 2038. This is based on the hours in the peak period that the centre is available, which is 46.5 hours per week. The findings on estimated used capacity for all the IBCs in the study area are set out in Table **7.2**.

7.2 As the table shows, the highest estimated used capacity is 100% at peak times at the Marina Recreation Centre in Hull, which has 44 hours available in the weekly peak period and total weekly hours of 64 hours. There is scope to increase the hours in the weekly peak period to the maximum of 52 hours to accommodate more usage and reduce the estimated used capacity figure.

7.3 This centre is the nearest centre for indoor bowling demand located in Barton-upon-Humber which totals 1 rink in 2020 (Map **3.1** Demand section). The 20-minute drive time area for this centre extends to Barton-upon-Humber (Map **6.3** Unmet Demand section).

7.4 Estimated used capacity is next highest at the Doncaster Indoor Bowls Club at 76% over the 52 hours available for use in the weekly peak period. This centre location is outside a 20-minute drive time for North Lincolnshire residents.

7.5 The Grimsby Leisure Centre IBC in North East Lincolnshire has an estimated used capacity of 58% in the weekly peak period for the 52 hours it is available. This is a 4-rink centre, and its 20 minutes' drive time area does extend to a very small area of North Lincolnshire in the far south east of the authority (Map **6.3** Unmet Demand section).

7.6 The Scunthorpe IBC has the fourth highest estimated used capacity in the study area at 37% in the weekly peak period in 2020 and 49% in 2038.

Table 7.2: Used Capacity of the Indoor Bowling Centres in the Study Area 2020

Name of Site	Type	Dimensions	Rinks	Site Year Built	Site Year Refurb	Hours in Peak Period	Total Hours Available	Site Capacity visits	**% of Capacity Used**	% of Capacity Not Used	Site Capacity Used in the Peak Period
North Lincolnshire								**809**	**37%**	**63%**	**297**
Scunthorpe Indoor Bowls Centre	Main	37 x 29	7	1978	1995	46.5	61	809	37%	63%	297
West Lindsey								**563**	**18%**	**82%**	**100**
Dunholme & District Indoor Bowls Club	Main	37 x 23	5	1984	1993	45	62	563	18%	82%	100
Eat Riding of Yorkshire								**1,437**	**26%**	**74%**	**379**
Hornsea & District Indoor Bowls Club	Main	36 x 27	6	1998	2015	28	33	252	34%	66%	87
Middleton on the Wolds Bowls Club	Main	38 x 11	2	2000		52	91	312	36%	64%	114
North Cave Indoor Bowls Club	Main	36 x 30	6	1990	2012	48.5	83	873	20%	80%	179
Kingston-upon-Hull								**528**	**100%**	**0%**	**528**
Marina Recreation Centre	Main	40 x 18	4	1984	2012	44	64	528	100%	0%	528
North East Lincolnshire								**624**	**58%**	**42%**	**365**
Grimsby Leisure Centre	Main	35 x 20	4	1975	2006	52	105	624	58%	42%	365
Doncaster								**936**	**76%**	**24%**	**715**
Doncaster Indoor Bowls Club	Main	36 x 28	6	2001	2014	52	84	936	76%	24%	715

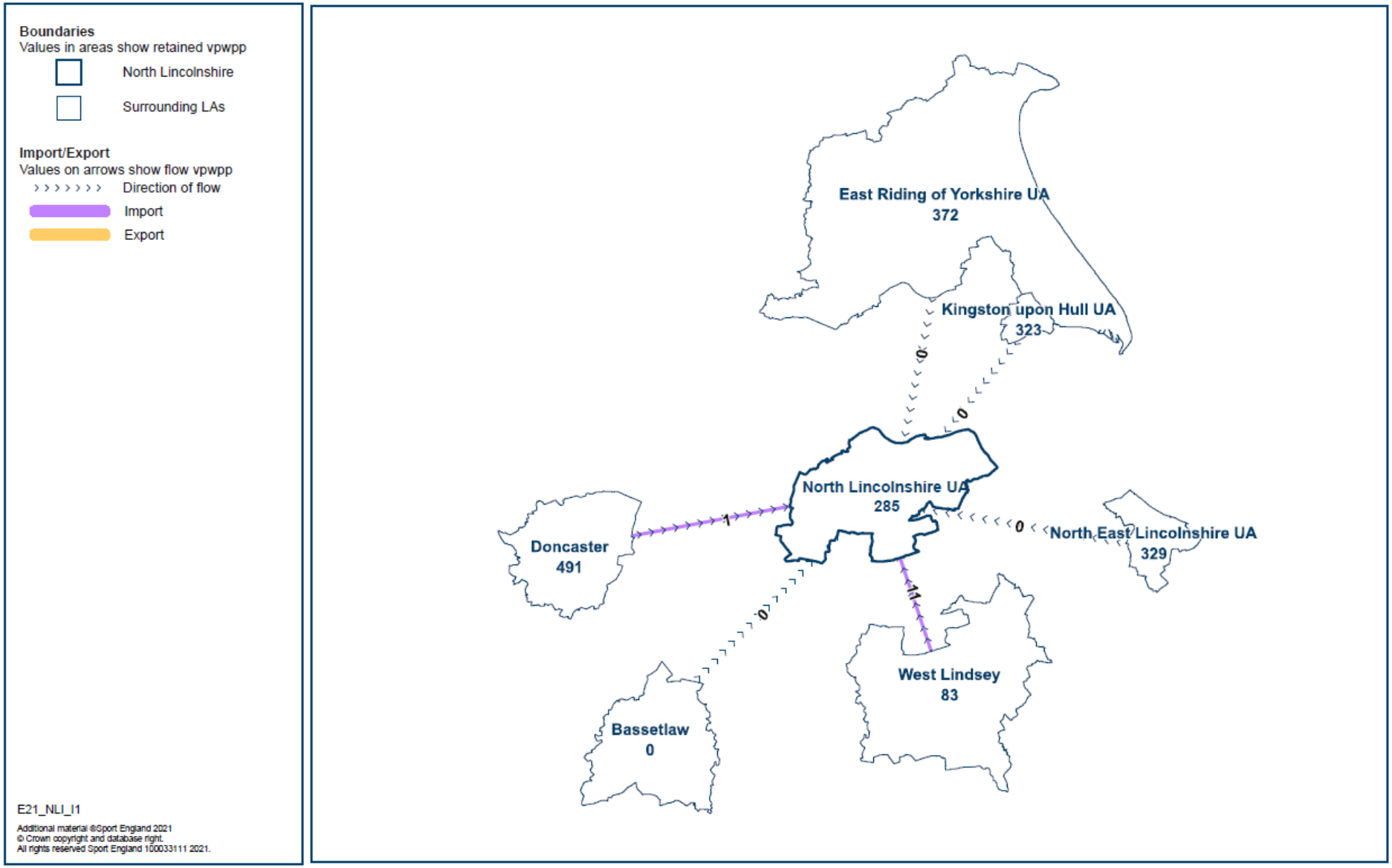
Imported Demand

7.7 Imported demand is reported under used capacity, because it measures the demand from residents who live outside North Lincolnshire but can access Scunthorpe IBC as they are located within its catchment. If these residents use Scunthorpe IBC, then their usage becomes part of the used capacity of the centre.

7.8 The **tenth key finding** is on imported demand, and it is consistent with all the other findings about the catchment area of Scunthorpe IBC, namely, that it has an almost unique catchment area. In 2020 imported demand is just 12 visits in the weekly peak period and 16 visits in 2038. Virtually all of this imported demand comes from West Lindsey, as shown in Map **7.1** for 2020 and Map **7.2** for 2038.

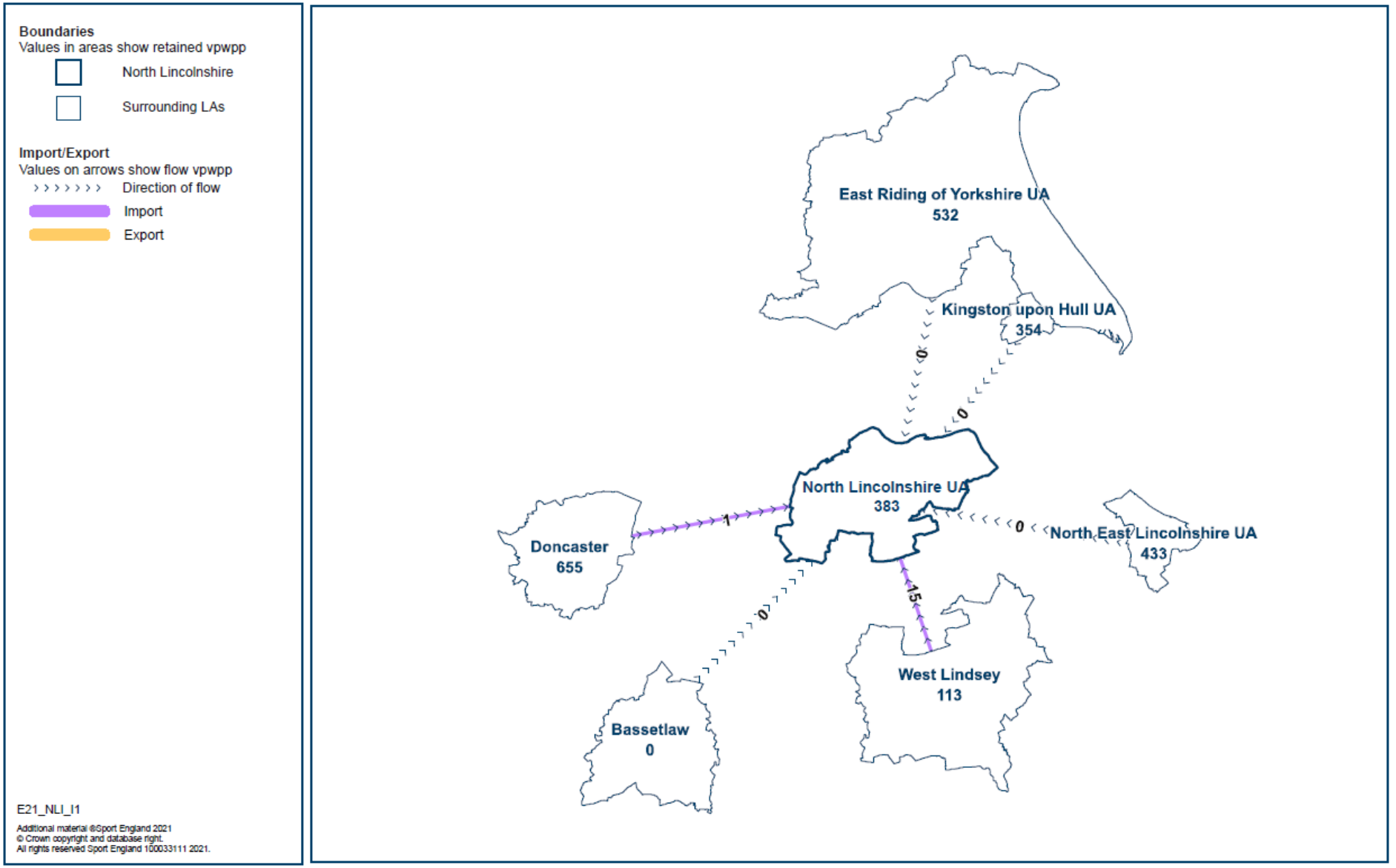
Map 7.1: Imported Demand for Indoor Bowling 2020

Facility Planning Model imported and exported demand between study area and surrounding local authorities shown thematically (size of lines) as visits per week in the peak period.



Map 7.2: Imported Demand for Indoor Bowling 2038

Facility Planning Model imported and exported demand between study area and surrounding local authorities shown thematically (size of lines) as visits per week in the peak period.



8. LOCAL SHARE OF FACILITIES

Table 8.1: Local Share of Indoor Bowling Centres North Lincolnshire 2020-2038

Local Share	RUN 1	RUN 2
North Lincolnshire UA	**2020**	**2038**
Local Share: <1 supply less than demand, >1 supply greater than demand	1.75	1.31
Score - with 100 = FPM Total (England and also including adjoining LAs in Scotland and Wales)	101.2	101.6
+/- from FPM Total (England and also including adjoining LAs in Scotland and Wales)	1.2	1.6

Local share has quite a complicated **definition** – it helps to show which areas have a better or worse share of facility provision. It considers the size, availability, and quality of facilities, as well as travel modes. Local share is useful for looking at 'equity' of provision. Local share is the available capacity that people want to go to in an area, divided by the demand for that capacity in the area. Local share decreases as facilities age.

8.1 A value of 1 for local share means that the level of supply just matches demand, while a value of less than 1 indicates a shortage of supply and a value greater than 1 indicates a surplus.

8.2 In Run 1 North Lincolnshire has a local share of 1.75 therefore supply is greater than demand. It decreases in Run 2 to 1.31 because of the projected population increase, so there are more people to share the same supply of the Scunthorpe IBC.

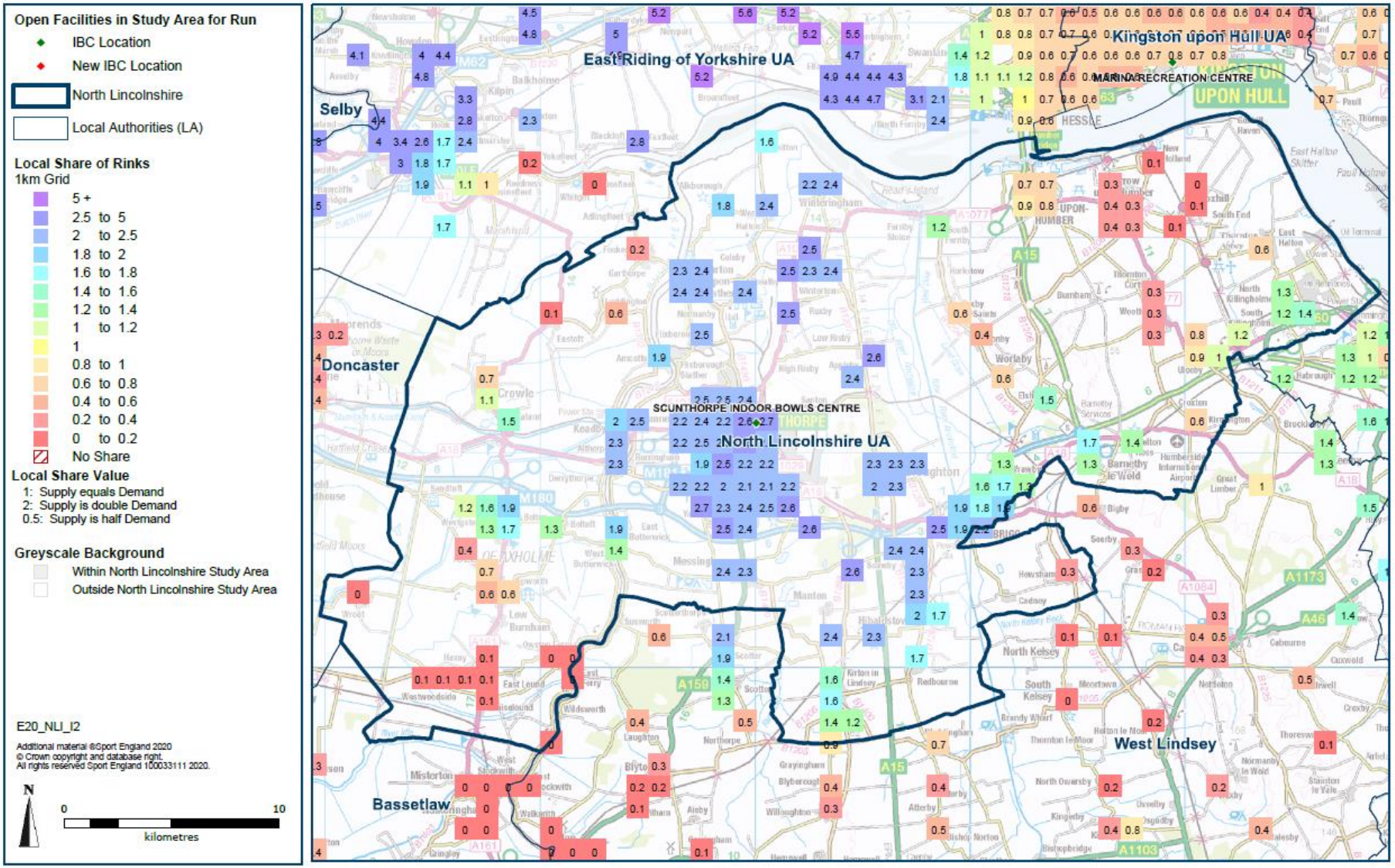
8.3 The distribution of local share and how it varies across North Lincolnshire is set out in Map **8.1** for 2020 and Map **8.2** for 2038. The local share is shown in colour coded squares with different values for each colour.

8.4 In 2020, local share is highest in Scunthorpe area and north of Scunthorpe, where the local share values are in blue, with values of 2.0-2.5. The population in this area has access to the Scunthorpe IBC. Local share is lowest in the area outside the catchment area of the Marina Centre in Hull, most noticeably east of Barton-upon-Humber. Local share is also lowest in the Epworth area which is outside the catchment area of the Doncaster Indoor Bowls Club. These areas are coloured dark pink and have values of 0.0-0.2.

8.5 The findings for 2038 show the same distribution of local share in terms of high and low areas but the values are lower for the Scunthorpe area and its surrounds. This is because of the increase in the population from 2020 to 2038, which is highest in the Scunthorpe area and there is no change, and therefore no increase, in the supply of indoor bowling centres.

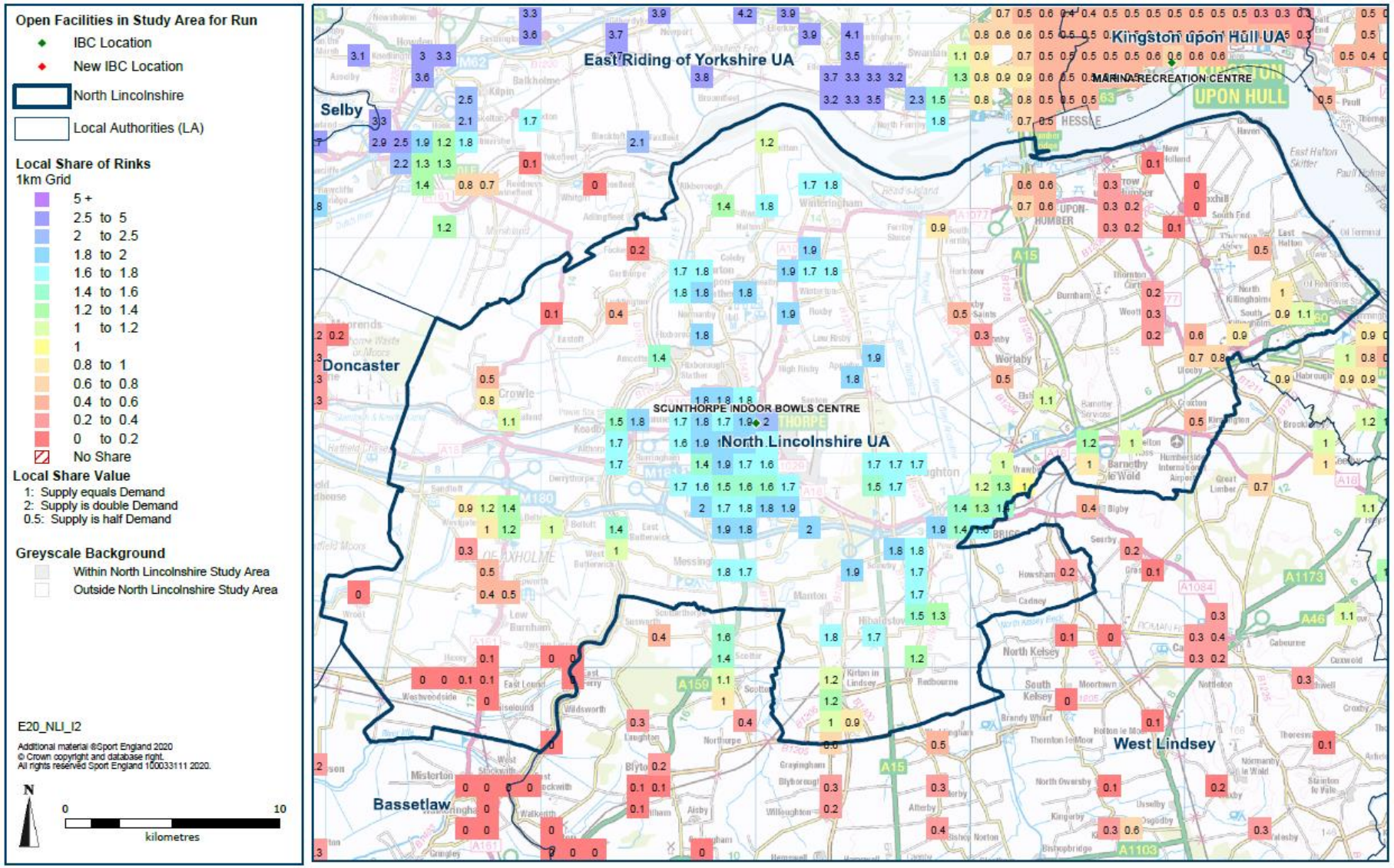
Map 8.1: Run 1 Local Share of Indoor Bowling Centres North Lincolnshire 2020

Facility Planning Model share of water divided by demand. Data outputs shown thematically (colours) and aggregated at 1km square (figure labels).



Map 8.2: Run 2 Local Share of Indoor Bowling Centres North Lincolnshire 2038

Facility Planning Model share of water divided by demand. Data outputs shown thematically (colours) and aggregated at 1km square (figure labels).



9. APPENDIX 1: MAPS

Locations and Catchments Run 1

Locations and Catchments Run 2

Demand Run 1

Demand Run 2

Unmet Demand Run 1

Unmet Demand Run 2

Aggregated Unmet Demand Run 1

Aggregated Unmet Demand Run 2

Local Share Run 1

Local Share Run 2

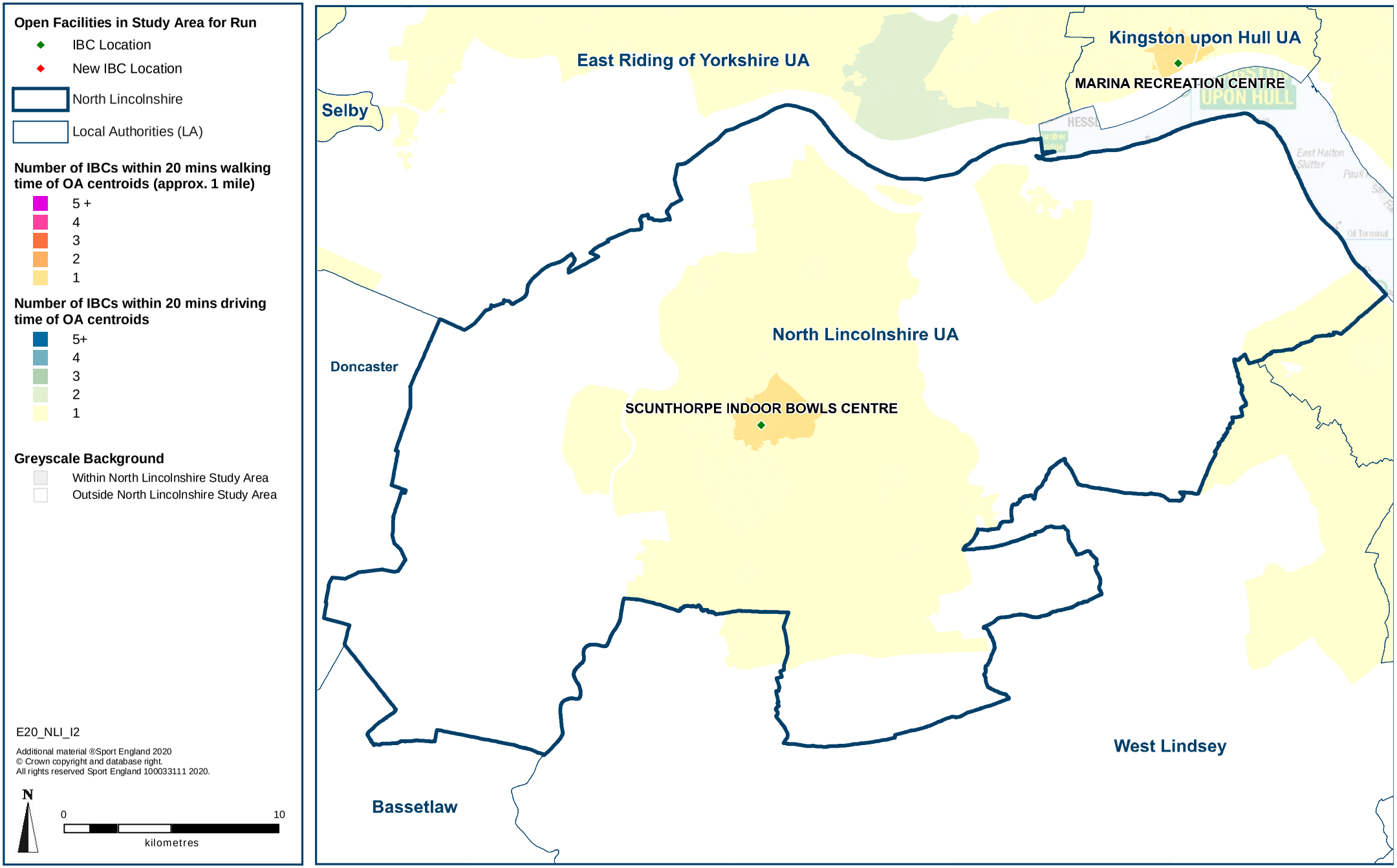
Import/Export Run 1

Import/Export Run 2

Facility Planning Model - IBCs Catchments for North Lincolnshire

Run 1: Existing position (2020)

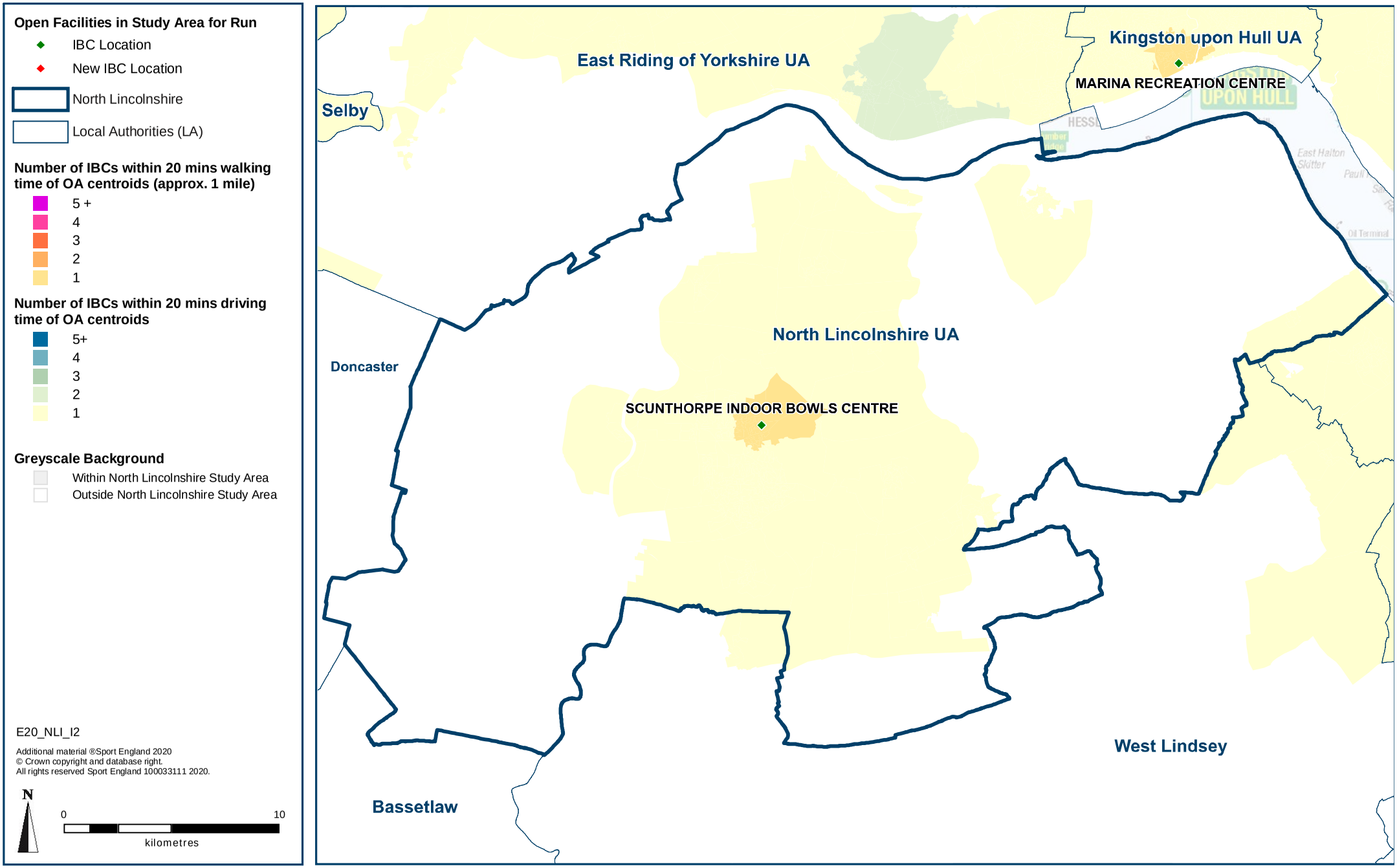
Catchments shown thematically (colours) at output area level expressed as the number of IBCs within 20 minutes travel time of output area centroid.



Facility Planning Model - IBCs Catchments for North Lincolnshire

Run 2: Existing provision with 2038 population

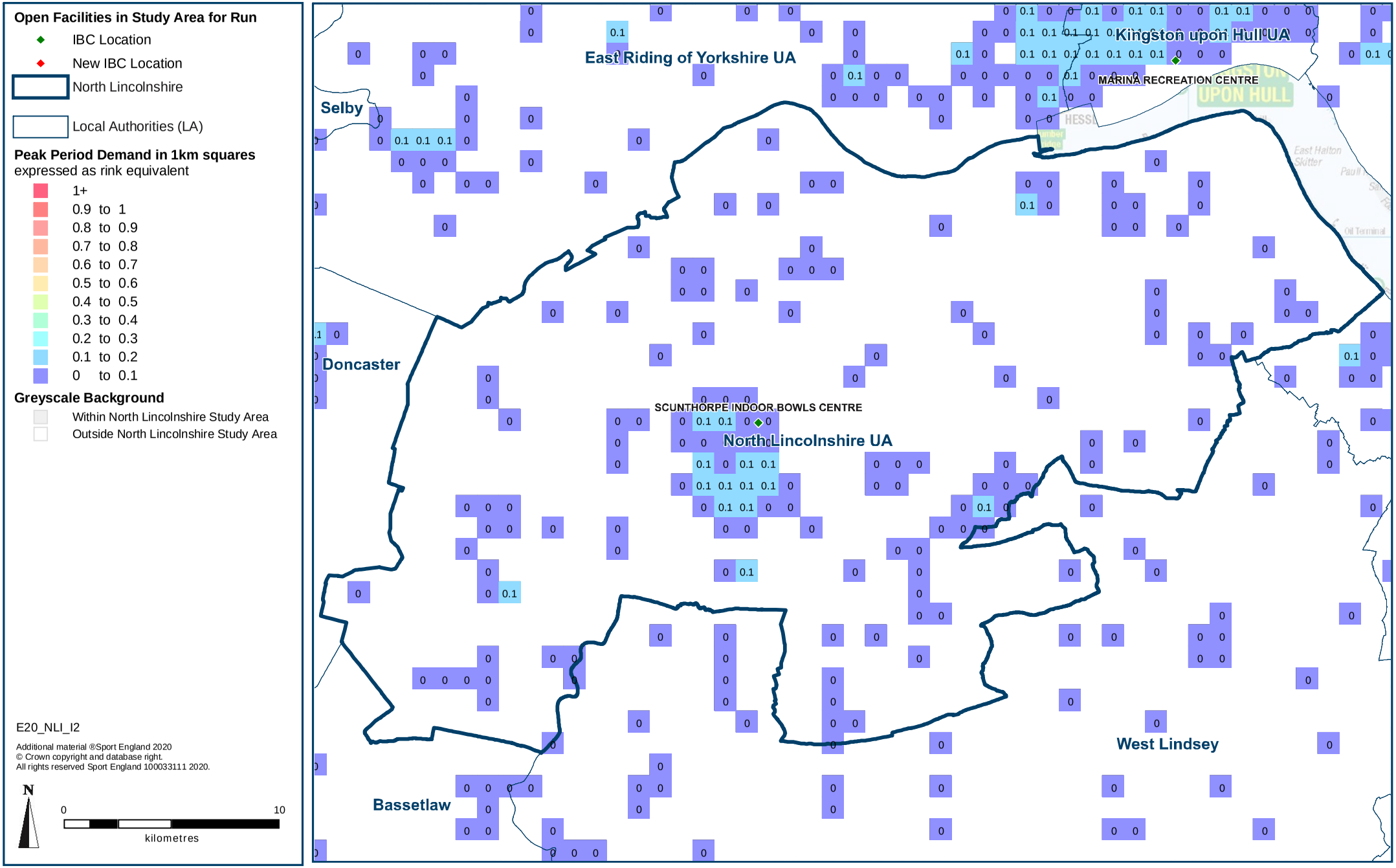
Catchments shown thematically (colours) at output area level expressed as the number of IBCs within 20 minutes travel time of output area centroid.



Facility Planning Model - IBCs Demand for North Lincolnshire

Run 1: Existing position (2020)

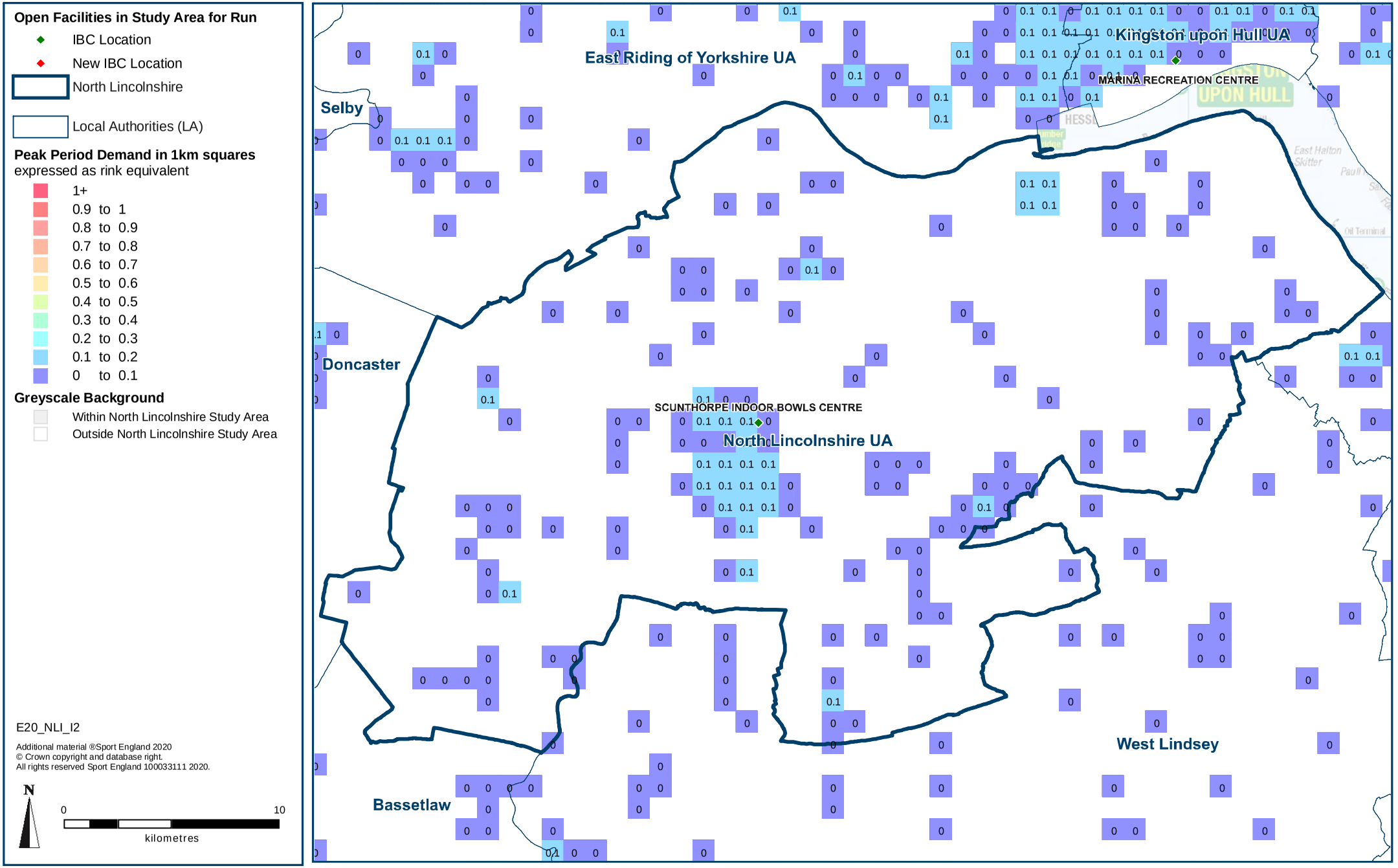
Peak period demand aggregated at 1km square grid (figure labels) and shown thematically (colours). Peak period demand at 1km square grid level expressed as rink equivalent (156 vpwpp = 1 rink).



Facility Planning Model - IBCs Demand for North Lincolnshire

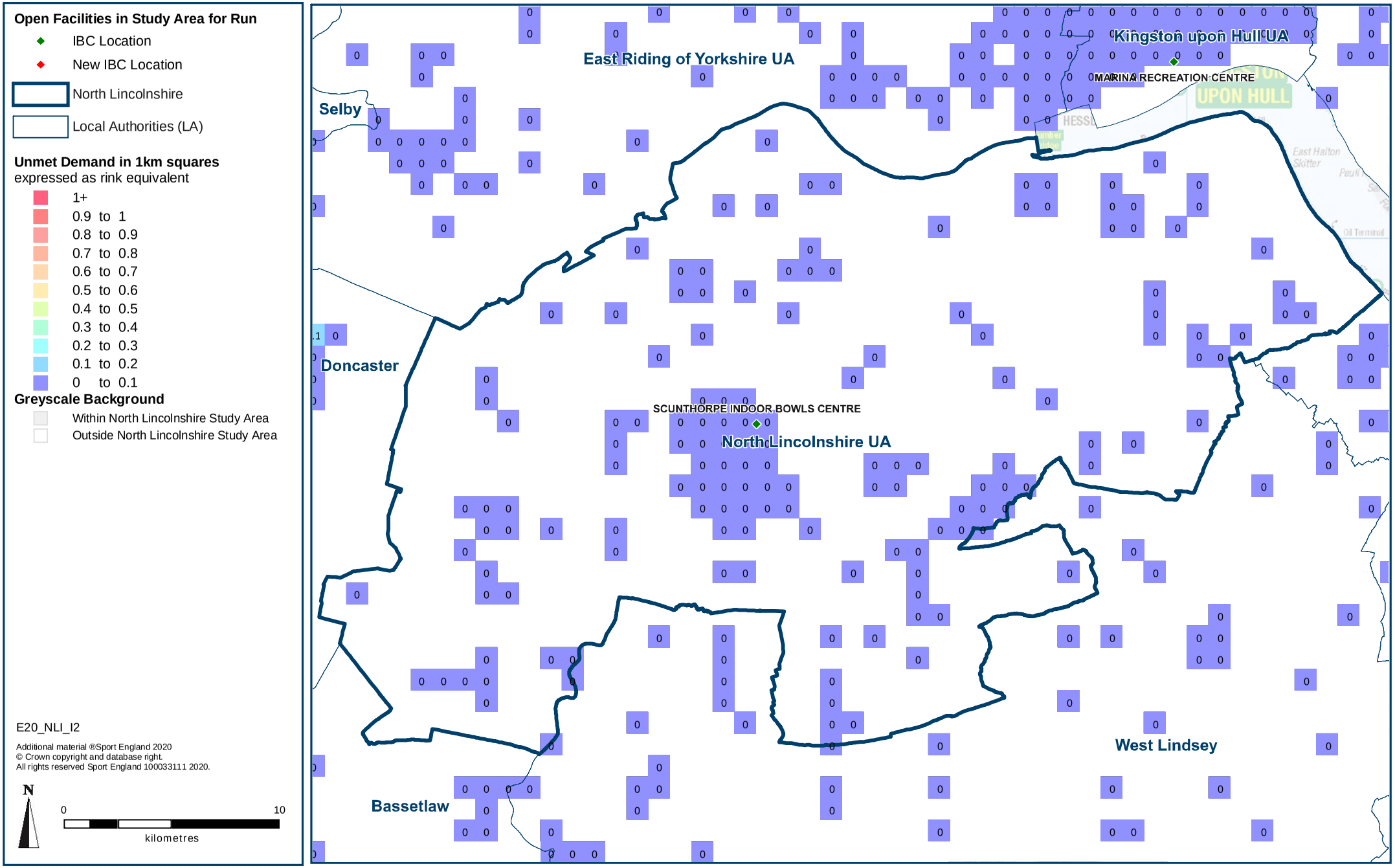
Run 2: Existing provision with 2038 population

Peak period demand aggregated at 1km square grid (figure labels) and shown thematically (colours). Peak period demand at 1km square grid level expressed as rink equivalent (156 vpwpp = 1 rink).



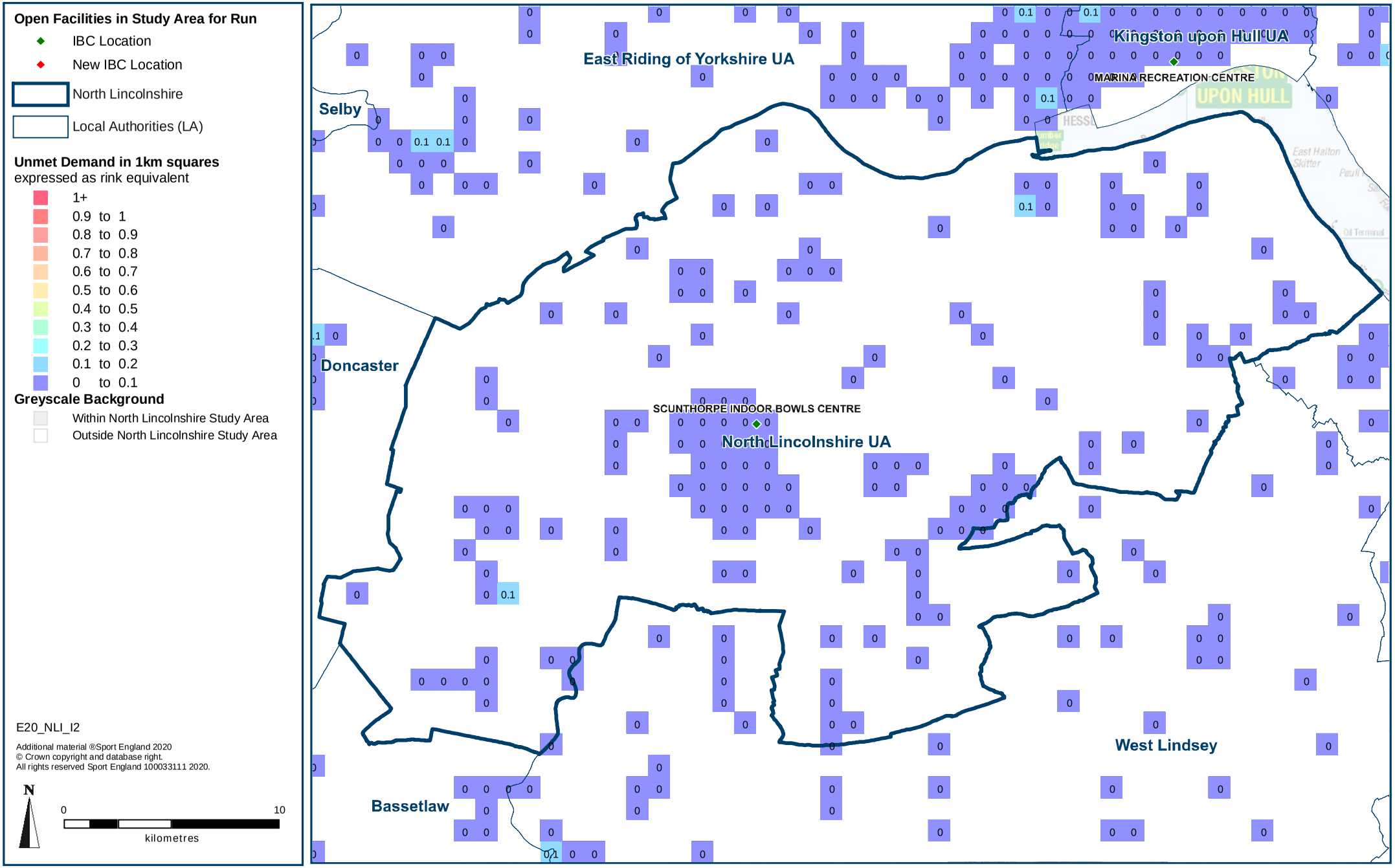
Facility Planning Model - IBCs Unmet Demand for North Lincolnshire
Run 1: Existing position (2020)

Unmet demand aggregated at 1km square grid (figure labels) and shown thematically (colours). Unmet demand at 1km square grid level expressed as rink equivalent (156 vpwpp = 1 rink).



Facility Planning Model - IBCs Unmet Demand for North Lincolnshire
Run 2: Existing provision with 2038 population

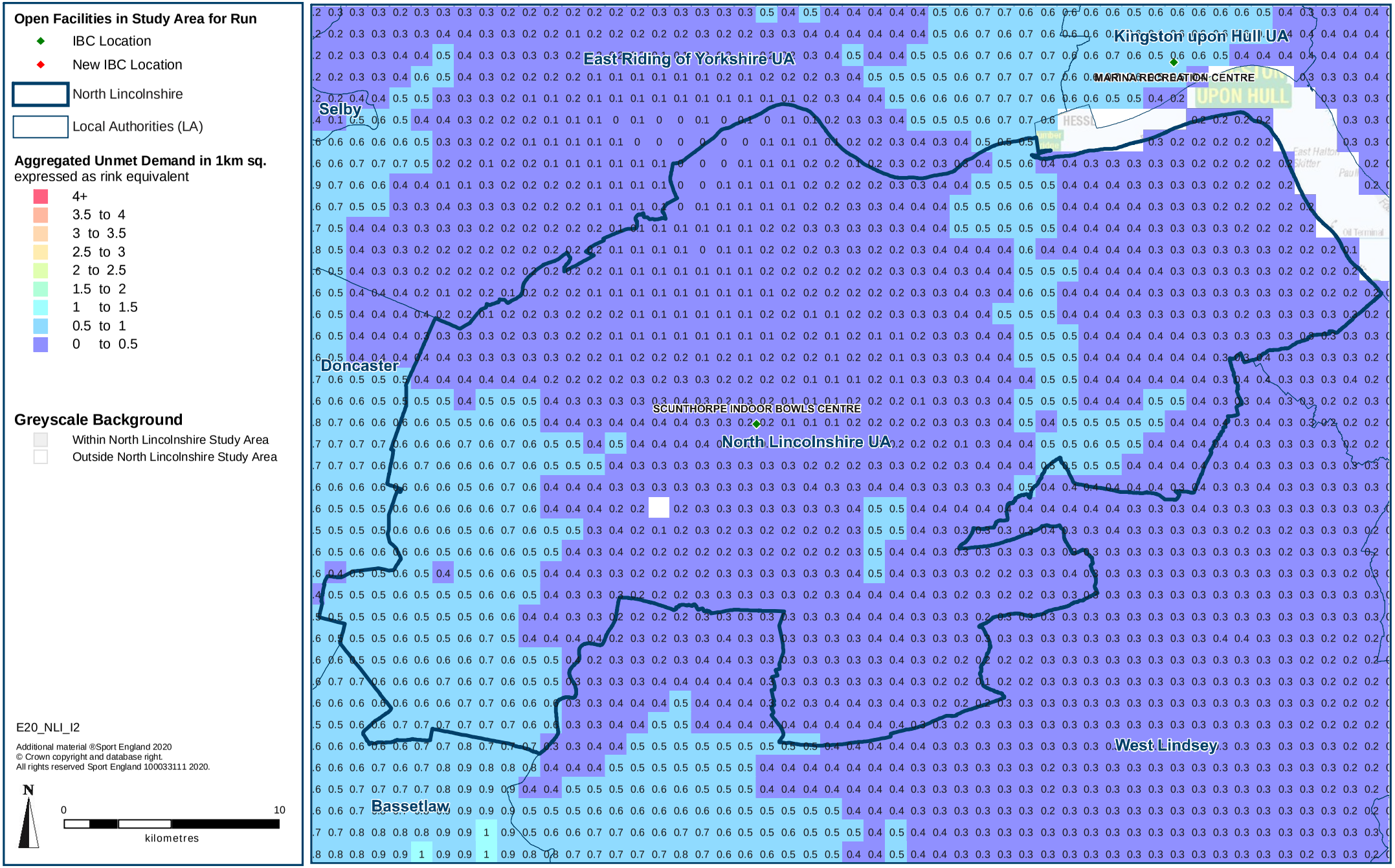
Unmet demand aggregated at 1km square grid (figure labels) and shown thematically (colours). Unmet demand at 1km square grid level expressed as rink equivalent (156 vpwpp = 1 rink).



Facility Planning Model - IBCs Aggregated Unmet Demand for North Lincolnshire

Run 1: Existing position (2020)

Aggregated unmet demand aggregated at 1km square grid (figure labels) and shown thematically (colours). Aggregated unmet demand at 1km square grid level expressed as rink equivalent (156 vpwpp = 1 rink).

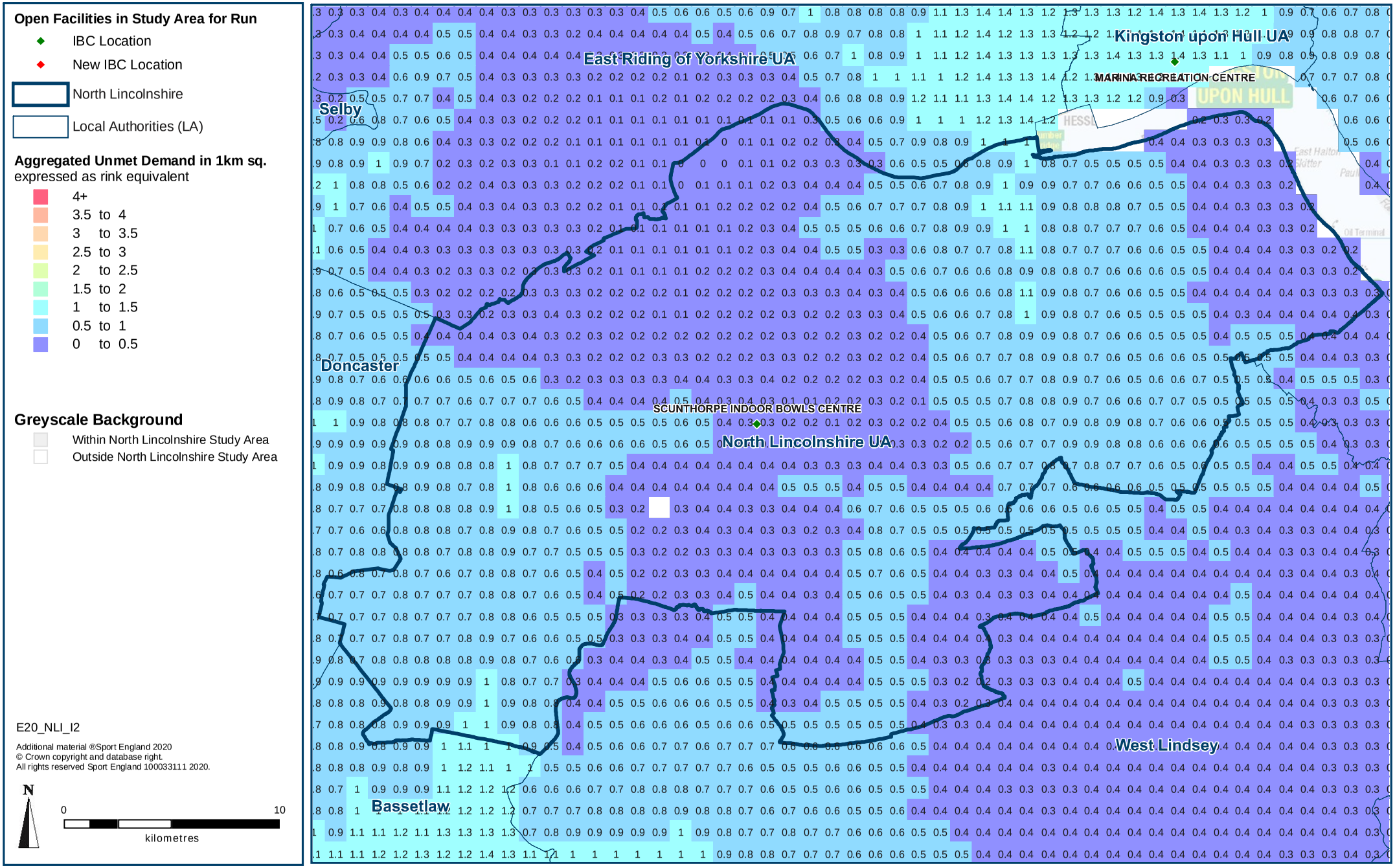


E20_NLI_I2

Facility Planning Model - IBCs Aggregated Unmet Demand for North Lincolnshire

Run 2: Existing provision with 2038 population

Aggregated unmet demand aggregated at 1km square grid (figure labels) and shown thematically (colours). Aggregated unmet demand at 1km square grid level expressed as rink equivalent (156 vpwpp = 1 rink).

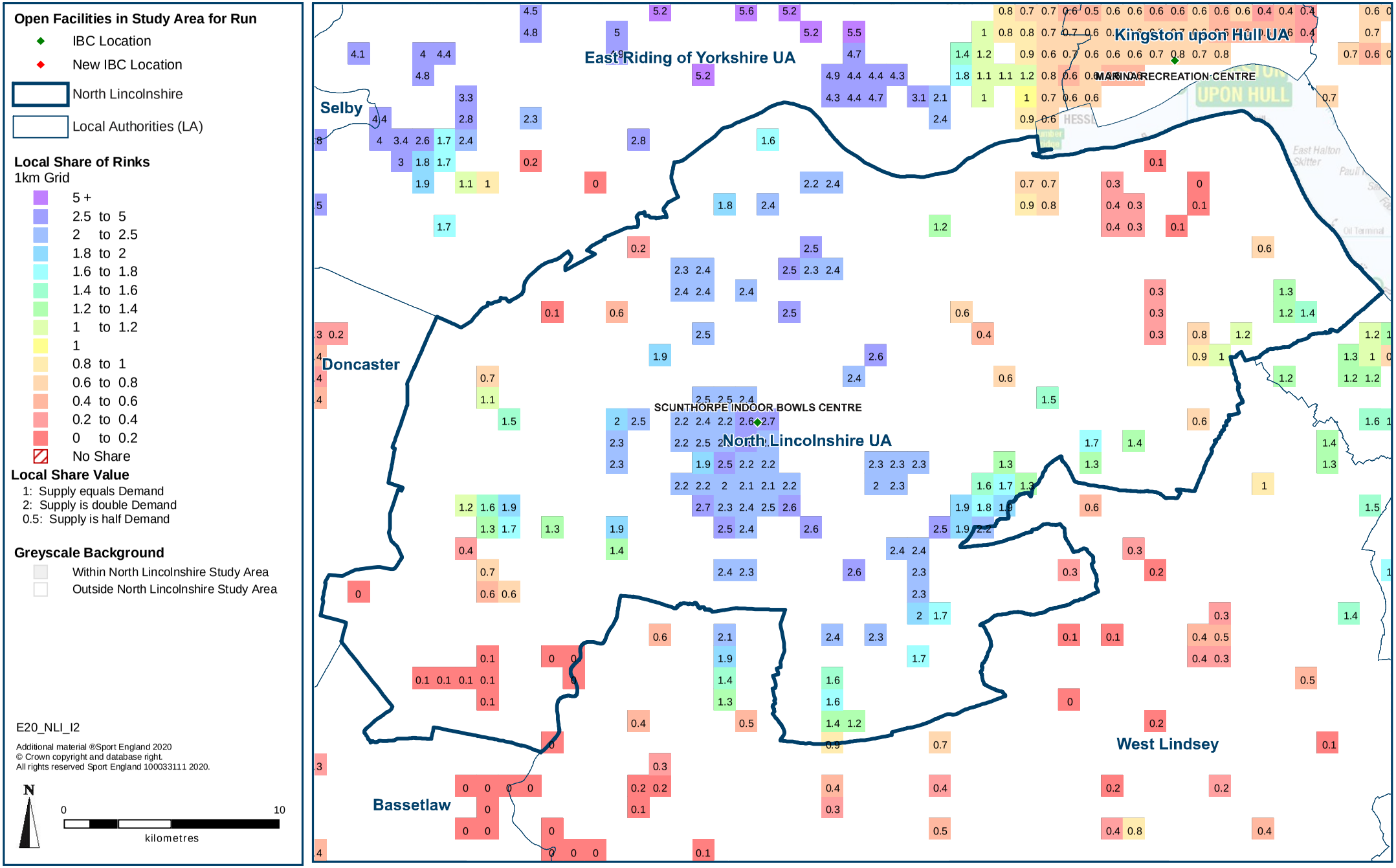


E20_NLI_I2

Facility Planning Model - IBCs Local Share for North Lincolnshire

Run 1: Existing position (2020)

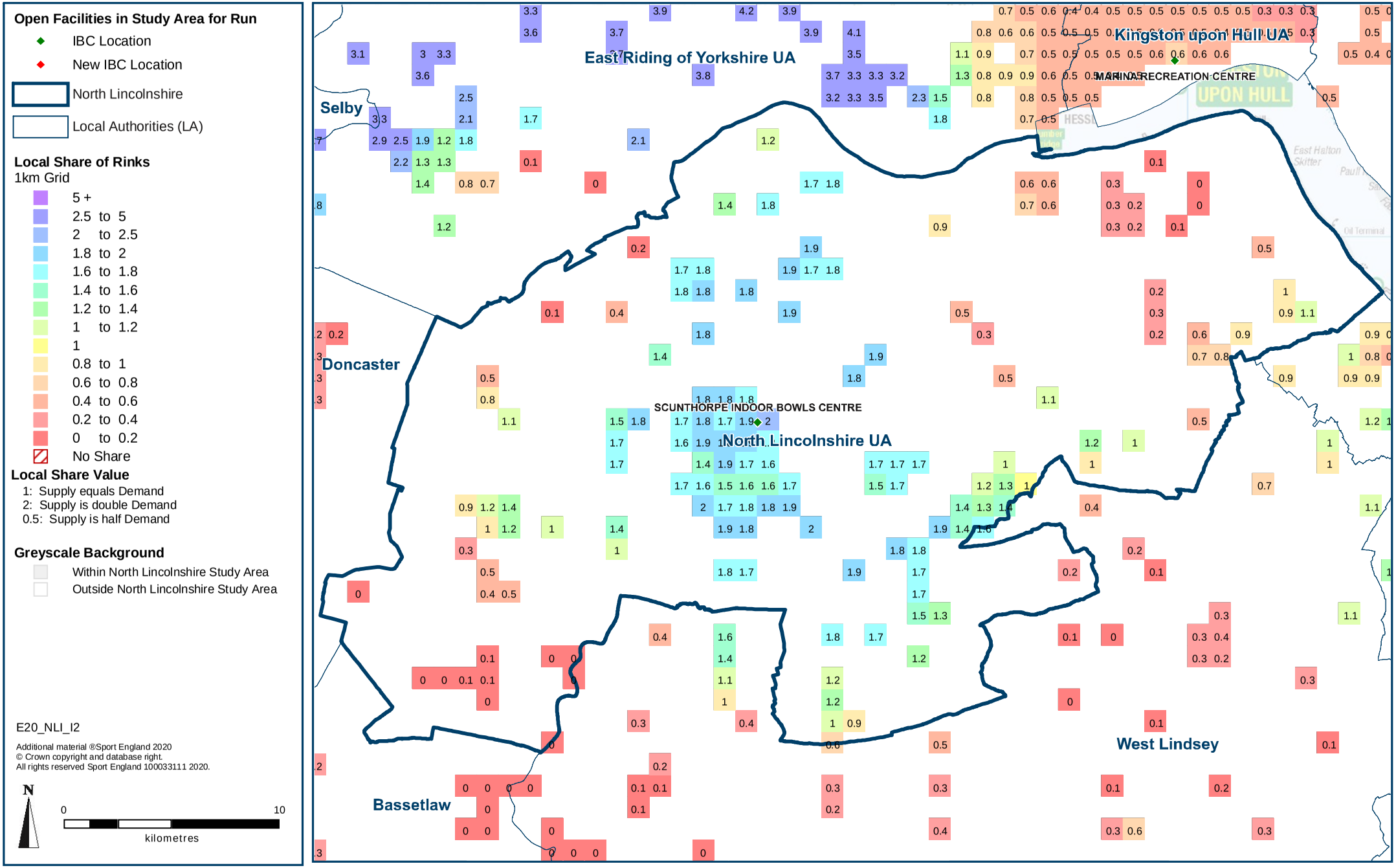
Share of rink divided by demand. Data outputs shown thematically (colours) and aggregated at 1km square (figure labels).



Facility Planning Model - IBCs Local Share for North Lincolnshire

Run 2: Existing provision with 2038 population

Share of rink divided by demand. Data outputs shown thematically (colours) and aggregated at 1km square (figure labels).



Facility Planning Model - Indoor Bowls Import/Export for North Lincolnshire

Run 1: Existing Position (2020)

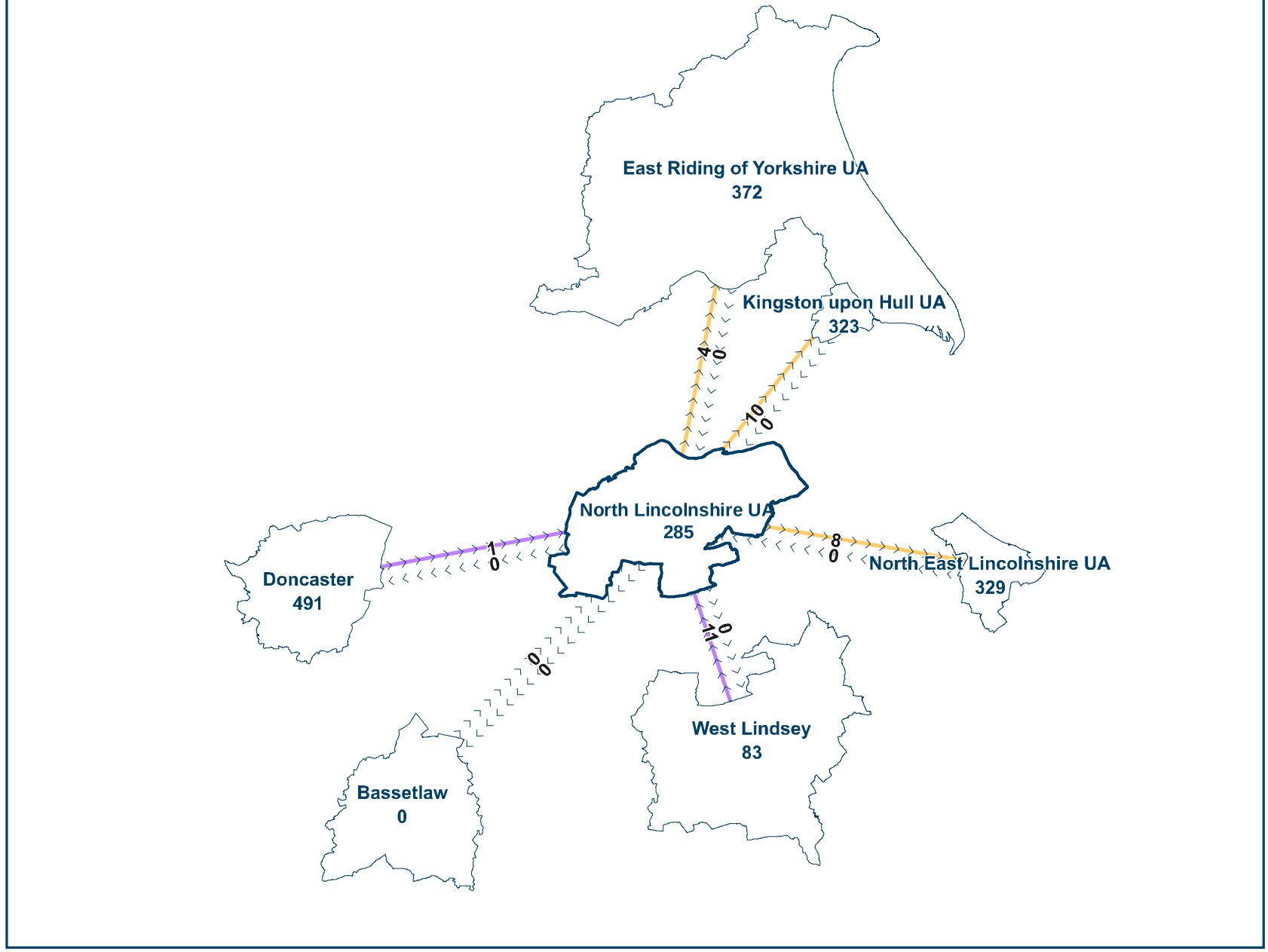
Imported and exported demand between study area and surrounding local authorities shown thematically (size of lines) as visits per week in the peak period.

Boundaries
Values in areas show retained vpwpp

- North Lincolnshire
- Surrounding LAs

Import/Export
Values on arrows show flow vpwpp

- Direction of flow
- Import
- Export



E21_NLI_I1

Facility Planning Model - Indoor Bowls Import/Export for North Lincolnshire

Run 2: Existing provision with 2038 population

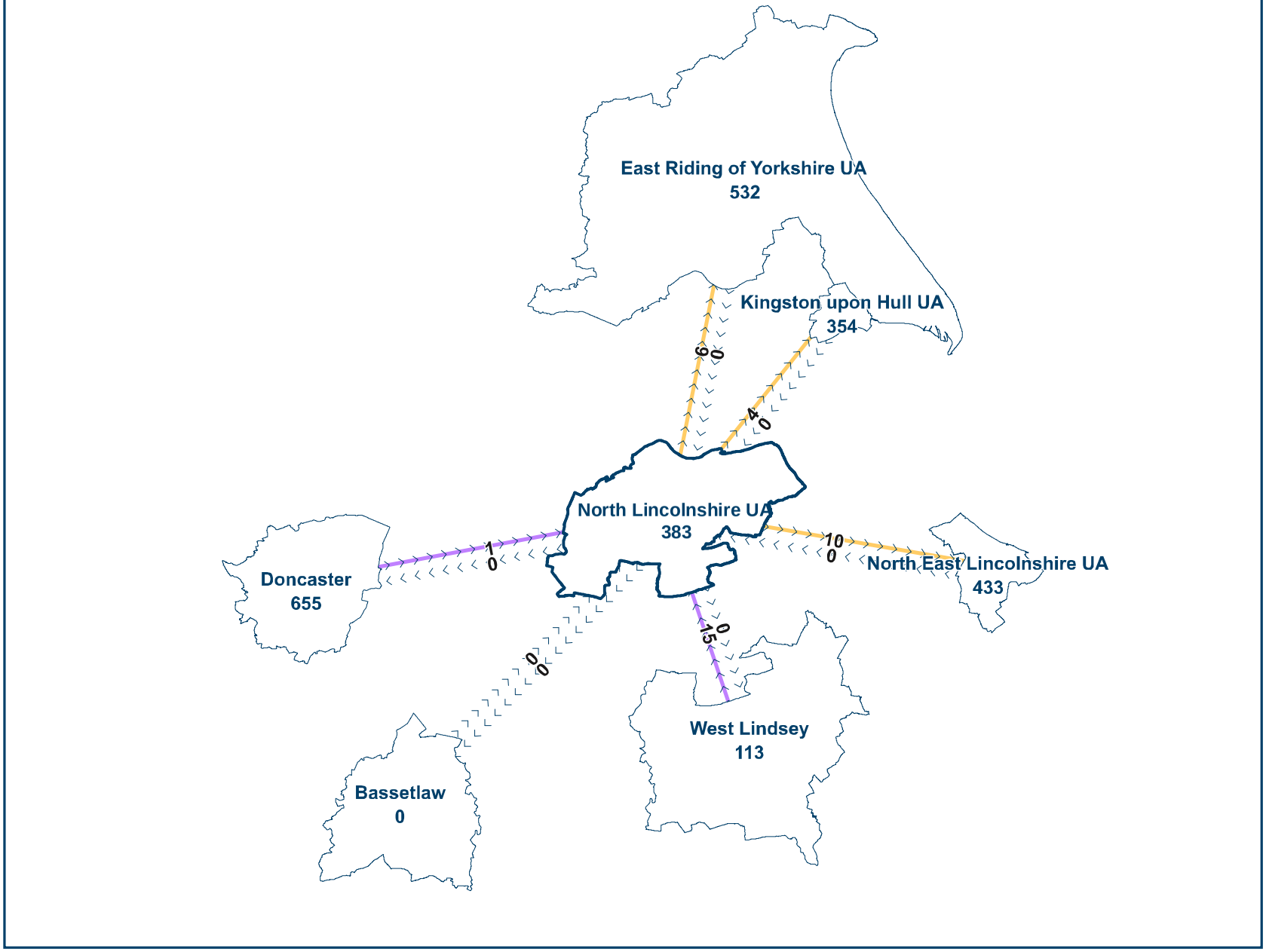
Imported and exported demand between study area and surrounding local authorities shown thematically (size of lines) as visits per week in the peak period.

Boundaries
Values in areas show retained vpwpp

- North Lincolnshire
- Surrounding LAs

Import/Export
Values on arrows show flow vpwpp

- Direction of flow
- Import
- Export



E21_NLI_I1

10. APPENDIX 2: MODEL DESCRIPTION, INCLUSION CRITERIA AND MODEL PARAMETERS

Included within this Appendix are the following:

- Model Description
- Facility Inclusion Criteria
- Model Parameters

Model Description

1. Background

1.1. The Facilities Planning Model (FPM) is a computer-based supply/demand model, which has been developed by Edinburgh University in conjunction with **sport**scotland and Sport England since the 1980s.

1.2. The model is a tool for helping to assess the strategic provision of community sports facilities in an area. It is currently applicable for use in assessing the provision of sports halls, swimming pools, indoor bowls centres and artificial grass pitches.

2. Use of FPM

2.1. Sport England uses the FPM as one of its principal tools in helping to assess the strategic need for certain community sports facilities. The FPM has been developed as a means of:

- Assessing requirements for different types of community sports facilities on a local, regional or national scale.
- Helping local authorities to determine an adequate level of sports facility provision to meet their local needs.
- Helping to identify strategic gaps in the provision of sports facilities.
- Comparing alternative options for planned provision, taking account of changes in demand and supply. This includes testing the impact of opening, relocating, and closing facilities, and the likely impact of population changes on the needs for sports facilities.

2.2. Its current use is limited to those sports facility types for which Sport England holds substantial demand data, ie, swimming pools, sports halls, indoor bowls, and artificial grass pitches (AGPs).

2.3. The FPM has been used in the assessment of Lottery funding bids for community facilities, and as a principal planning tool to assist local authorities in planning for the provision of community sports facilities.

3. How the Model Works

3.1. In its simplest form, the model seeks to assess whether the capacity of existing facilities for a particular sport is capable of meeting local demand for that sport, considering how far people are prepared to travel to such a facility.

3.2. In order to do this, the model compares the number of facilities (supply) within an area against the demand for that facility (demand) that the local population will produce, similar to other social gravity models.

3.3. To do this, the FPM works by converting both demand (in terms of people) and supply (facilities) into a single comparable unit. This unit is 'visits per week in the peak period' (VPWPP). Once converted, demand and supply can be compared.

3.4. The FPM uses a set of parameters to define how facilities are used and by whom. These parameters are primarily derived from a combination of data including actual user surveys from a range of sites across the country in areas of good supply, together with participation survey data. These surveys provide core information on the profile of users, such as, the age and gender of users, how often they visit, the distance travelled, duration of stay, and on the facilities themselves, such as, programming, peak times of use, and capacity of facilities.

3.5. This survey information is combined with other sources of data to provide a set of model parameters for each facility type. The original core user data for halls and pools comes from the National Halls and Pools survey undertaken in 1996. This data formed the basis for the National Benchmarking Service (NBS). For AGPs, the core data used comes from the user survey of AGPs carried out in 2005/06 jointly with sportscotland.

3.6. User survey data from the NBS and other appropriate sources are used to update the model's parameters on a regular basis. The parameters are set out at the end of the document, and the main data sources analysed are:

- Active Lives
    - For the adult survey, this data is collected by an online survey or paper questionnaire on behalf of Sport England. Each annual sample includes on the order of 175,000 people and covers the full age/gender range. Detailed questions are asked about 439 sports in terms of participation and frequency.
    - For the children and young people survey, this data is collected through schools with up to three mixed ability classes in up to three randomly chosen year groups completing an online survey.
- National Benchmarking Service
    - This is a centre-based survey whose primary purpose is to enable centres to benchmark themselves against other centres. Sample interviews are conducted on site. The number of people surveyed varies by year depending on how many centres take part. Approximately 10,000 swimmers and 3,500 sports hall users are surveyed per year. This data is used for

journey times, establishing proportions of particular activities in different hall types, the duration of activities and the time of activity (peak period).

- Scottish Health
    - The annual survey is of about 6,600 people (just under 5,000 adults). This data is primarily used to assess participation, frequency, and activity duration.

Other data is used where available. For example, the following data sources are among those which have been used to cross-check results:

- Children's Participation in Culture and Sport, Scottish Government, 2008
- Young People's Participation in Sport, Sports Council for Wales, 2009
- Health & Social Care Information Centre, Lifestyle Statistics, 2012
- Young People and Sport, Sport England, 2002
- Data from Angus Council, 2013/14
- National Pools & Halls Survey, 1996
    - This survey has been used to obtain capacities per sports hall for differing sport types for programming data.

4. Calculating Demand

4.1. Demand is calculated by applying the user information from the parameters, as referred to above, to the population[1]. This produces the number of visits for that facility that will be demanded by the population.

4.2. Depending on the age and gender make-up of the population, this will affect the number of visits an area will generate. In order to reflect the different population make-up of the country, the FPM calculates demand based on the smallest census groupings. These are Output Areas (OAs)[2].

4.3. The use of OAs in the calculation of demand ensures that the FPM is able to reflect and portray differences in demand in areas at the most sensitive level based on available census information. Each OA used is given a demand value in VPWPP by the FPM.

[1] For example, it is estimated that 7.72% of 16-24 year old males will demand to use an AGP 1.67 times a week. This calculation is done separately for the 12 age/gender groupings.

[2] Census Output Areas (OAs) are the smallest grouping of census population data and provide the population information on which the FPM's demand parameters are applied. A demand figure can then be calculated for each OA based on the population profile. There are over 171,300 OAs in England. An OA has a target value of 125 households per OA.

5. Calculating Supply Capacity

5.1. A facility's capacity varies depending on its size (ie, size of pool, hall, pitch number), and how many hours the facility is available for use by the community.

5.2. The FPM calculates a facility's capacity by applying each of the capacity factors taken from the model parameters, such as the assumptions made as to how many 'visits' can be accommodated by the particular facility at any one time. Each facility is then given a capacity figure in VPWPP (see parameters in Section C).

5.3. Based on travel time information[3] taken from the user survey, the FPM then calculates how much demand would be met by the particular facility, having regard to its capacity and how much demand is within the facility's catchment. The FPM includes an important feature of spatial interaction. This feature takes account of the location and capacity of all the facilities, having regard to their location and the size of demand, and assesses whether the facilities are in the right place to meet the demand.

5.4. It is important to note that the FPM does not simply add up the total demand within an area and compare that to the total supply within the same area. This approach would not take account of the spatial aspect of supply against demand in a particular area. For example, if an area had a total demand for 5 facilities, and there were currently 6 facilities within the area, it would be too simplistic to conclude that there was an oversupply of 1 facility as this approach would not take account of whether the 5 facilities are in the correct location for local people to use them within that area. It might be that all the facilities were in one part of the borough, leaving other areas under-provided. An assessment of this kind would not reflect the true picture of provision. The FPM is able to assess supply and demand within an area based on the needs of the population within that area.

5.5. In making calculations as to supply and demand, visits made to sports facilities are not artificially restricted or calculated by reference to administrative boundaries, such as local authority areas. Users are generally expected to use their closest facility. The FPM reflects this through analysing the location of demand against the location of facilities, allowing for cross-boundary movement of visits. For example, if a facility is on the boundary of a local authority, users will generally be expected to come from the population living close to the facility, but who may be in an adjoining authority.

6. Calculating the Capacity of Sports Halls – Hall Space in Courts (HSC)

6.1. The capacity of sports halls is calculated in the same way as described above, with each sports hall site having a capacity in VPWPP. In order for this capacity to be meaningful, these visits are converted into the equivalent of main hall courts, and referred to as 'Hall Space in Courts' (HSC). This 'court' figure is often mistakenly read as being the same as the number of 'marked courts' at the sports halls that are in the Active Places data, but it

[3] To reflect the fact that as distance to a facility increases, fewer visits are made, the FPM uses a travel time distance decay curve, where most users travel up to 20 minutes. The FPM also takes account of the road network when calculating travel times. Car ownership levels, taken from census data, are also considered when calculating how people will travel to facilities.

is not the same. There will usually be a difference between this figure and the number of 'marked courts' in Active Places.

6.2. The reason for this is that the HSC is the 'court' equivalent of all the main and activity halls capacities; this is calculated based on hall size (area) and whether it is the main hall or a secondary (activity) hall. This gives a more accurate reflection of the overall capacity of the halls than simply using the 'marked courts' figure. This is due to two reasons:

- In calculating the capacity of halls, the model uses a different 'At-One-Time' (AOT) parameter for main halls and for activity halls. Activity halls have a greater AOT capacity than main halls – see below. Marked courts can sometimes not properly reflect the size of the actual main hall. For example, a hall may be marked out with 4 courts, when it has space for 5 courts. As the model uses the 'courts' as a unit of size, it is important that the hall's capacity is included as a 5 'court unit' rather than a 4 'court unit'.
- The model calculates the capacity of the sports hall as 'visits per week in the peak period' (VPWPP), and then uses this unit of capacity to compare with demand, which is also calculated as VPWPP. It is often difficult to visualise how much hall space there is when expressed as VPWPP. To make things more meaningful, this capacity in VPWPP is converted back into 'main hall court equivalents' and is noted in the output table as 'Hall Space in Courts'.

7. Facility Attractiveness – for Halls and Pools Only

7.1. Not all facilities are the same, and users will find certain facilities more attractive to use than others. The model attempts to reflect this by introducing an attractiveness weighting factor, which affects the way visits are distributed between facilities. Attractiveness, however, is very subjective. Currently weightings are only used for hall and pool modelling, and a similar approach for AGPs is being developed.

7.2. Attractiveness weightings are based on the following:

- Age/refurbishment weighting – pools and halls: The older a facility is, the less attractive it will be to users. It is recognised that this is a general assumption and that there may be examples where older facilities are more attractive than newly built ones due to excellent local management, programming, and sports development. Additionally, the date of any significant refurbishment is also included within the weighting factor; however, the attractiveness is set lower than a new build of the same year. It is assumed that a refurbishment that is older than 20 years will have a minimal impact on the facility's attractiveness. The information on year built/refurbished is taken from Active Places. A graduated curve is used to allocate the attractiveness weighting by year. This curve levels off at around 1920 with a 20% weighting. The refurbishment weighting is slightly lower than the new built year equivalent.
- Management and ownership weighting – halls only: Due to the large number of halls being provided by the education sector, an assumption is made that, in general, these halls will not provide as balanced a programme than halls run by local authorities, trusts, etc, with school halls more likely to be used by teams and groups

through block booking. A less balanced programme is assumed to be less attractive to a general pay & play user than a standard local authority leisure centre sports hall with a wider range of activities on offer.

7.3. To reflect this, two weightings curves are used for education and non-education halls, a high weighted curve, and a lower weighted curve.

- High weighted curve – includes non-education management and a better balanced programme, more attractive.
- Lower weighted curve – includes educational owned and managed halls, less attractive.

7.4. Commercial facilities – halls and pools: Whilst there are relatively few sports halls provided by the commercial sector, an additional weighing factor is incorporated within the model to reflect the cost element often associated with commercial facilities. For each population output area the Indices of Multiple Deprivation (IMD) score is used to limit whether people will use commercial facilities. The assumption is that, the higher the IMD score (less affluence), the less likely the population of the OA would choose to go to a commercial facility.

8. Comfort Factor – Halls and Pools

8.1. As part of the modelling process, each facility is given a maximum number of visits it can accommodate based on its size, the number of hours it is available for community use, and the 'at one time capacity' figure (pools = 1 user/6m^2, halls = 6 users/court). This gives each facility a 'theoretical capacity'.

8.2. If the facilities were full to their theoretical capacity, then there would simply not be the space to undertake the activity comfortably. In addition, there is a need to take account of a range of activities taking place which have different numbers of users; for example, aqua aerobics will have significantly more participants than lane swimming sessions. Additionally, there may be times and sessions that, while being within the peak period, are less busy and so will have fewer users.

8.3. To account for these factors the notion of a 'comfort factor' is applied within the model. For swimming pools, 70%, and for sports halls, 80%, of their theoretical capacity is considered as being the limit where a facility starts to become uncomfortably busy. (Currently, the comfort factor is <u>not</u> applied to AGPs due to the fact they are predominantly used by teams which have a set number of players, therefore the notion of having a 'less busy' pitch is not applicable.)

8.4. The comfort factor is used in two ways:

- Utilised capacity – How well used is a facility? 'Utilised capacity' figures for facilities are often seen as being very low at 50-60%; however, this needs to be put into context with 70-80% comfort factor levels for pools and halls. The closer utilised capacity gets to the comfort factor level, the busier the facilities are becoming. You should not aim to have facilities operating at 100% of their theoretical capacity, as

this would mean that every session throughout the peak period would be being used to its maximum capacity. This would be both unrealistic in operational terms and unattractive to users.

- Adequately meeting unmet demand – the comfort factor is also used to increase the number of facilities needed to comfortably meet unmet demand. If this comfort factor is not applied, then any facilities provided will be operating at their maximum theoretical capacity, which is not desirable as noted previously.

9. Utilised Capacity (Used Capacity)

9.1. Following on from the comfort factor section, here is more guidance on utilised capacity.

9.2. Utilised capacity refers to how much of a facility's theoretical capacity is being used. This can, at first, appear to be unrealistically low, with area figures being in the 50-60% region. Without any further explanation, it would appear that facilities are half empty. The key point is not to see a facility's theoretical maximum capacity (100%) as being an optimum position. This, in practice, would mean that a facility would need to be completely full every hour it was open during the peak period. This would be both unrealistic from an operational perspective and undesirable from a user's perspective, as the facility would be completely full.

9.3. For example, a 25m, four-lane pool has a theoretical capacity of 2,260 per week, during a 52.5-hour peak period.

9.4. As set out in the table below, usage of a pool will vary throughout the evening, with some sessions being busier than others through programming, such as an aqua-aerobics session between 7pm and 8pm and lane swimming between 8 and 9pm. Other sessions will be quieter, such as between 9 and 10pm. This pattern of use would mean a total of 143 swims taking place. However, the pool's maximum theoretical capacity is 264 visits throughout the evening. In this instance the pool's utilised capacity for the evening would be 54%.

Visits per hour	4-5pm	5-6pm	6-7pm	7-8pm	8-9pm	9-10pm	Total visits for the evening
Theoretical maximum capacity	44	44	44	44	44	44	264
Actual usage	8	30	35	50	15	5	143

9.5. As a guide, 70% utilised capacity is used to indicate that pools are becoming busy, and this is 80% for sports halls. This should be seen only as a guide to help flag when facilities are becoming busier, rather than as a 'hard threshold'.

10. Travel Times Catchments

10.1. The model uses travel times to define facility catchments in terms of driving and walking.

10.2. The Ordnance Survey (OS) MasterMap Highways Network Roads has been used to calculate the off-peak drive times between facilities and the population, observing any one-way and turn restrictions which apply and taking account of delays at junctions and car parking. Each street in the network is assigned a speed for car travel based on the attributes of the road, such as the width of the road, the geographical location of the road, and the density of properties along the street. These travel times have been derived through national survey work, and so are based on actual travel patterns of users. The road speeds used for inner and outer London boroughs have been further enhanced by data from the Department of Transport.

10.3. The walking catchment uses the OS MasterMap Highways Network Paths to calculate travel times along paths and roads, excluding motorways and trunk roads. A standard walking speed of 3 mph is used for all journeys.

10.4. The model includes three different modes of travel – car, public transport, and walking. Car access is also considered in areas of lower access to a car, where the model reduces the number of visits made by car and increases those made on foot.

Facility	Car	Walking	Public Transport
Swimming Pool	72%	18%	10%
Sports Hall	74%	17%	9%
AGP			
Combined	79%	18%	3%
Football	74%	22%	4%
Hockey	97%	2%	1%

10.5. Overall, surveys have shown that the majority of visits made to swimming pools, sports halls and AGPs are made by car, with a significant minority of visits to pools and sports halls being made on foot.

10.6. The model includes a distance decay function, where the further a user is from a facility, the less likely they will travel. Set out below is the survey data with the percentage of visits made within each of the travel times. This shows that almost 90% of all visits, both by car or on foot, are made within 20 minutes. Hence, 20 minutes is often used as a rule of thumb for the catchments for sports halls and pools.

Minutes	Swimming Pools		Sport Halls	
	Car	Walk	Car	Walk
0-10	56%	53%	54%	55%
11-20	35%	34%	36%	32%
21-30	7%	10%	7%	10%
31-45	2%	2%	2%	3%

10.7. For AGPs, there is a similar pattern to halls and pools, with hockey users observed as travelling slightly further (89% travel up to 30 minutes). Therefore, a 20-minute travel time can also be used for ‘combined’ and ‘football’, and 30 minutes for hockey.

Minutes	Artificial Grass Pitches					
	Combined		Football		Hockey	
	Car	Walk	Car	Walk	Car	Walk
0-10	28%	38%	30%	32%	21%	60%
10-20	57%	48%	61%	50%	42%	40%
20-40	14%	12%	9%	15%	31%	0%

NOTE: These are approximate figures and should only be used as a guide.

Facility Inclusion Criteria

Indoor Bowling Centres

The following inclusion criteria were used for this analysis:

- Include all operational IBCs available for community use, ie, pay and play, membership, sports club/community association.
- Exclude all outdoor greens and rinks.
- Exclude all IBCs not available for community use, ie, private use.
- Include all 'planned' facilities and commitments where identified.

Model Parameters

Indoor Bowling Centres 2021

<table>
<tr><td>At-One-Time Capacity</td><td>6 users per rink</td></tr>
<tr><td>Catchment Maps</td><td>Car: 20 minutes
Walking: 1.6 km
Public Transport: at about half the speed of a car

NOTE: Catchment times are indicative, within the context of a distance decay function of the model.</td></tr>
<tr><td>Duration</td><td>2 hours</td></tr>
<tr><td>Participation Percentage

Frequency per Week</td><td>
<table>
<tr><th>Age</th><th>0-15</th><th>16-49</th><th>50-59</th><th>60-64</th><th>65-74</th><th>75-79</th><th>80+</th></tr>
<tr><td>Male</td><td>0.00</td><td>0.03</td><td>0.05</td><td>0.15</td><td>0.56</td><td>0.71</td><td>1.11</td></tr>
<tr><td>Female</td><td>0.00</td><td>0.00</td><td>0.01</td><td>0.14</td><td>0.28</td><td>0.59</td><td>0.20</td></tr>
</table>
<table>
<tr><th>Age</th><th>0-15</th><th>16-49</th><th>50-59</th><th>60-64</th><th>65-74</th><th>75-79</th><th>80+</th></tr>
<tr><td>Male</td><td>0.00</td><td>1.67</td><td>2.13</td><td>2.76</td><td>2.17</td><td>2.14</td><td>2.76</td></tr>
<tr><td>Female</td><td>0.00</td><td>0.00</td><td>2.10</td><td>1.65</td><td>2.06</td><td>2.87</td><td>2.34</td></tr>
</table>
</td></tr>
<tr><td>Peak Period

Proportion in Peak Period</td><td>Weekday: 10:00 to 16:00, 18:00 to 20:00
Weekend: 10:00 to 14:00, 16:00 to 18:00
Total: 52 hours

90%</td></tr>
</table>