



Facilities Planning Model Assessment of  
Swimming Pool Provision for  
Bromsgrove District Council

Bespoke Report

29 July 2022

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### **The Facilities Planning Model (FPM)**

It is most important to set out that the FPM study is a quantitative, accessibility and spatial assessment of the supply, demand, and access to swimming pools. It assesses how these factors change based on projected population growth and options to change the swimming pool supply.

The FPM study provides an assessment that can inform consultations, to then provide a rounded evidence base. This can then be applied in the development of the Council's strategic planning for the provision of swimming pools.

### **Accreditations**

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## EXECUTIVE SUMMARY

### Introduction

- 0.1 Bromsgrove District Council (also referred to as Bromsgrove, or the District) is reviewing the current provision of swimming pools and assessing future demand and level of provision required to 2040.
- 0.2 The FPM modelling runs are to provide:
- **Run 1** – a baseline assessment of provision in 2021.
  - **Run 2** – a forward assessment of demand for swimming pools and its distribution, based on the projected changes in population from 2021 to 2040.
- 0.3 The main report sets out the full set of findings under each of the seven assessment headings.
- 0.4 The next section of the report provides the headline strategic overview, the key findings and interventions arising from the FPM study on supply, demand and accessibility.

### Headline Strategic Overview

- 0.5 Bromsgrove residents have a good supply of accessible swimming pools to meet demand in both 2021 and 2040. A significant proportion of this demand is met by pools in neighbouring local authority areas.
- 0.6 Bromsgrove swimming pools meet the demand of a high proportion of non-residents, where approximately one in three visits to a Bromsgrove pool is imported. Over half the imported visits are from Redditch.
- 0.7 Therefore, there is a high degree of imported and exported demand, and cross-boundary planning for pool provision will be important.
- 0.8 In 2021, Bromsgrove Sports and Leisure Centre has 100% used capacity and is therefore uncomfortably busy. This will be even more acute in 2040 when nearly a quarter of the demand for the pool will be forced to choose other pools to meet their demand.
- 0.9 There is some spare capacity within the existing supply to potentially offset the high utilisation at Bromsgrove Sports and Leisure Centre.

### Key Findings

- 0.10 The key findings that underpin the headline strategic overview are as follows:
1. There is no change in the capacity of swimming pools between 2021 and 2040, but the facilities do age and become less attractive.
  2. There is spare capacity in both runs, which could increase the pool supply in the peak period by up to 182 sqm of water.

3. Demand for swimming pools increases by 11% between 2021 and 2040 and equates to 115 sqm of additional water space. The proposed new housing growth areas to 2030 generate increased demand in areas with little demand in 2021.
4. There is good accessibility to pools in the District.
5. Bromsgrove has a very high level of satisfied demand in both 2021 and 2040.
6. Of this satisfied demand, approximately 37% is from residents of Bromsgrove using pools located in neighbouring local authority areas.
7. Unmet demand is low across the District and there is little justification for new pool provision.
8. The overall used capacity of Bromsgrove pools is above the Sport England defined comfort level of 70%.
9. At the fully utilised Bromsgrove Sport and Leisure Centre, demand is having to be redistributed to other pools by 2040.
10. There is a very high level of imported demand, particularly from Redditch.
11. Between 2021 and 2040, Bromsgrove's local share drops from a surplus position to a deficit position, primarily because the existing facilities become older and less attractive. Local share is particularly poor in the north of the District.

## **Interventions and Next Steps**

- 0.11 Between 2021 and 2040, the existing pools become less attractive to residents. Bromsgrove Sports and Leisure Centre, the most modern facility, will have even more demand placed on it. This will result in over-utilisation and residents not being able to access their pool of choice. Refurbishment or replacement of the other pool sites should be supported where possible.
- 0.12 There is some spare capacity in the existing supply, notably at Bromsgrove School, which is only open for half the peak-time hours. Encouraging/supporting the school to increase its opening times could help offset some of the over-utilisation of Bromsgrove Sports and Leisure Centre. This may involve a major change in the management approach at the school moving towards a pay and play type operation. There may be an opportunity to facilitate this increase in capacity if the investment of developer contributions were made available to upgrade community facilities to meet the new housing growth demand.
- 0.13 The pool situation in Redditch (highlighted in the Redditch FPM report) means many Redditch residents are travelling to pools in Bromsgrove, making them busier than they would be otherwise. Implementing the recommendations to address the need for additional pool provision will go some way to alleviate the additional pressure on Bromsgrove's swimming pools. For example, re-opening Kingsley Sports Centre in Redditch does contribute to some reduction in use of the Bromsgrove swimming pools.
- 0.14 A significant proportion of Bromsgrove residents use pools in Birmingham South. The north of the District has the lowest levels of local share. Birmingham South has even lower levels of local share and has higher levels of unmet demand and reachable unmet demand.

Working with Birmingham City Council is recommended to review its pool provision situation and future planning for swimming pools, which may justify additional pool provision.

- 0.15 These interventions and suggested next steps are based on the FPM findings and should be considered as a key part of the all-round evidence base currently being developed to inform the Bromsgrove Built Facilities Strategy. Combining the FPM assessment with the wider review of provision will lead to well considered options on the best ways to meet the projected demand for swimming pools up to 2040 and beyond.

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## 1. INTRODUCTION

1.1 Bromsgrove District Council is reviewing the current provision of swimming pools and assessing the future provision required to 2040.

1.2 The key drivers for the work are to:

- Provide a 2021 evidence base for swimming pools in the District.
- Assess how the supply of swimming pools is meeting demand in the District in 2021.
- Provide a forward assessment of need and an evidence base for swimming pools to 2040, based on the projected population change in the District and across the study area.

1.3 The outputs from the FPM assessment will be applied in:

- The Council's indoor sports facilities strategic planning work.
- Development of planning policies for swimming pool provision.

1.4 The sequence of work is based on assessments known as runs, as described in the Executive Summary.

### *The Study Area*

1.5 The assessments include the swimming pools and population in the District and its neighbouring local authority areas, which is known as the study area. This is because the assessments are based on the catchment areas of swimming pools, which extend across local authority boundaries (see Map 1.1).

1.6 The origins of customers of swimming pools do not reflect local authority boundaries. While there are management and pricing incentives for customers to use sports facilities in the same local authority area, additional factors that can influence which swimming pools people will choose to use include:

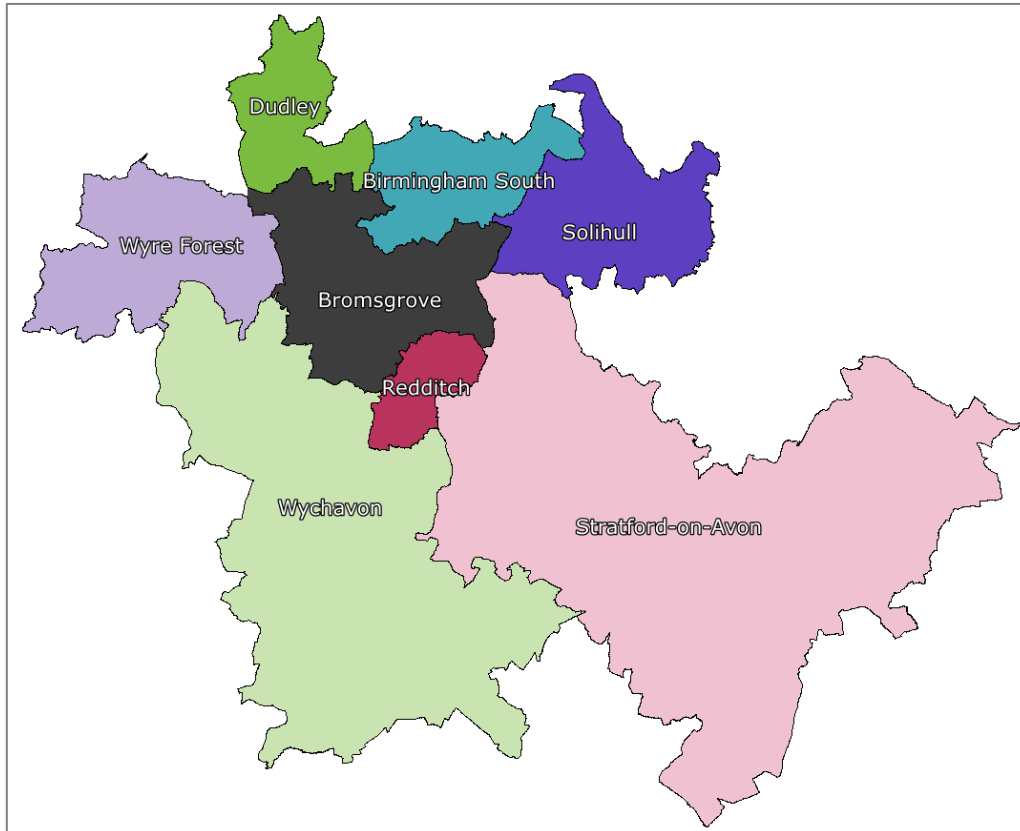
- How close the venue is to where residents live or work.
- Other facilities at the same site, such as a gym or studio.
- The programming of the pool with swimming activities that appeal to residents and are available at times that fit with the lifestyle of residents.
- The age and condition of the facility and inherently its attractiveness.

1.7 Increasingly, the quality of swimming pools and their offer are of more importance to residents in their choice of swimming pools. New facilities will have a significant draw because of the quality of the venues.

1.8 In determining the position across the District, it is important to take full account of the swimming pools and population in neighbouring local authority areas and, in particular, to assess the impact of swimming pools located outside the District but with catchment areas that extend into the District, and vice versa.

- 1.9 The most attractive facility for some Bromsgrove residents may be outside the District (known as exported demand). For residents of neighbouring local authorities, their most attractive swimming pool may be inside the District (known as imported demand).
- 1.10 To take account of these factors, a study area is established that places Bromsgrove at its centre and includes the neighbouring local authority areas.

**Map 1.1: Study Area for Bromsgrove District Council Swimming Pools Assessment**



*Report Structure, Content and Sequence*

- 1.11 The findings for the Bromsgrove assessment are set out in a series of tables for both 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.
- 1.12 The headings for each table are:
- Total Supply
  - Total Demand
  - Accessibility
  - Satisfied Demand
  - Unmet Demand
  - Used Capacity
  - Local Share
- 1.13 The terms listed above are defined beneath the tables.



- 1.14 To support the findings, this report also includes maps that show swimming pool locations, demand, deprivation, driving and walking coverage, public transport access, unmet demand and local share.
- 1.15 Where valid, the findings for neighbouring local authorities are set out. A commentary is provided on these comparable findings. For example, some local authorities like to know how their findings on sqm of water per 1,000 population compare with those of neighbouring local authorities.
- 1.16 The key findings in each of the sections are numbered and highlighted in bold typeface.
- 1.17 Details of the swimming pools in the neighbouring local authority areas for the assessment are set out in Appendix **1**, and all maps for the study are provided in Appendix **2**. The FPM and its parameters are described in Appendix **3**.

## 2. SWIMMING POOL SUPPLY

**Key finding 1** is that there is no change in the capacity of swimming pools between 2021 and 2040, but facilities do age and become less attractive.

**Key finding 2** is that there is spare capacity in both runs, which could increase the pool supply in the weekly peak period by up to 182 sqm.

**Table 2.1: Supply of Swimming Pools in Bromsgrove by Run**

Total Supply	RUN 1	RUN 2
Bromsgrove	2021	2040
Number of pools	5	5
Number of pool sites	4	4
Supply in sqm of water	1,177	1,177
Supply in sqm of water scaled with hours available in peak period	995	995
Supply in visits per week in peak period	8,710	8,710
Average year built of sites	2000	2000
Average age of sites	21	40

**Definition of supply** – This is the supply or capacity of the swimming pools available for community and swimming club use in the weekly peak period. Supply is expressed in the number of visits that a pool can accommodate in the weekly peak period and in square metres of water.

**Weekly peak period** – This is when the majority of visits take place and when users have most flexibility to visit. The peak period for swimming pools is one hour on weekday mornings, one hour on weekday lunchtimes, five and a half hours on weekday evenings, and seven and a half hours on weekend days. This gives a total of 52.5 hours per week. The modelling and recommendations are based on the ability of the public to access facilities during this weekly peak period.

2.1 **Key finding 1** is that, other than the age and attractiveness of the facilities, there is no change in the supply of swimming pools between 2021 and 2040. In both runs, there are five individual swimming pools across four sites in the District.

2.2 The total water space is 1,177 sqm, of which 995 sqm is available for community use for the full 52.5 hours in the weekly peak period. The pools can accommodate 8,710 visits per week in the peak period with the hours available at peak times. For context, Sport England's recommended affordable community four-lane pool is 25m x 8.5m, which is 212.5 sqm of water (assuming lane width of 2.125m).

- 2.3 **Key finding 2** is that there is spare capacity in both runs. Maximising the potential capacity available at peak times could accommodate an extra 1,592 visits per week in the peak period, which could increase the pool supply in the peak period by up to 182 sqm.
- 2.4 Bromsgrove has one local-authority-owned (public) leisure centre, one educational site and two commercial sites.
- 2.5 The public site, Bromsgrove Sports and Leisure Centre:
- Is the largest swimming pool in the District.
  - Has a Sport England recommended-size community pool.
  - Is the only site with a dedicated learner pool.
  - Accounts for 40% of the District's total water space.
  - Can provide for the whole range of swimming-based activities.
- 2.6 The Bromsgrove Sports and Leisure Centre main pool is open for the maximum peak-time hours and the majority of the off-peak period, whereas the learner pool is open for just over half the time during peak and off-peak periods.
- 2.7 Bromsgrove School has a 25m four-lane pool. It is only open for half the peak-time hours and for only five hours per week in the off-peak period.
- 2.8 The two commercial swimming pool sites in the District are open for the maximum peak hours and for the majority of the off-peak period. The sites are:
- David Lloyd Club, which has a full-size 25m six-lane pool.
  - Spindles Health Club, which has a non-standard 18m x 9m pool.
- 2.9 Commercial swimming pools provide a more limited programme of use than public leisure centres and provide mainly recreational swimming for the centre membership.
- 2.10 Construction and refurbishment information for the pools is as follows:
- Bromsgrove Sports and Leisure Centre opened in 2017 and has an attractiveness weighting of 100% in 2021. It is still the most modern and attractive facility in 2040, with a weighting of 78%.
  - Bromsgrove School pool was built in 1989 and refurbished in 2012. Its attractiveness weighting decreases from 82% in 2021 to 28% in 2040.
  - David Lloyd Club opened in 2002 and was refurbished in 2015. Its attractiveness weighting decreases from 95% in 2021 to 45% in 2040.
  - Spindles Health Club opened in 1990 and was refurbished in 1996. Its attractiveness weighting decreases from 60% in 2021 to 28% in 2040.
- 2.11 The average age of the four swimming pool sites increases from 21 years in 2021 to 40 years in 2040.

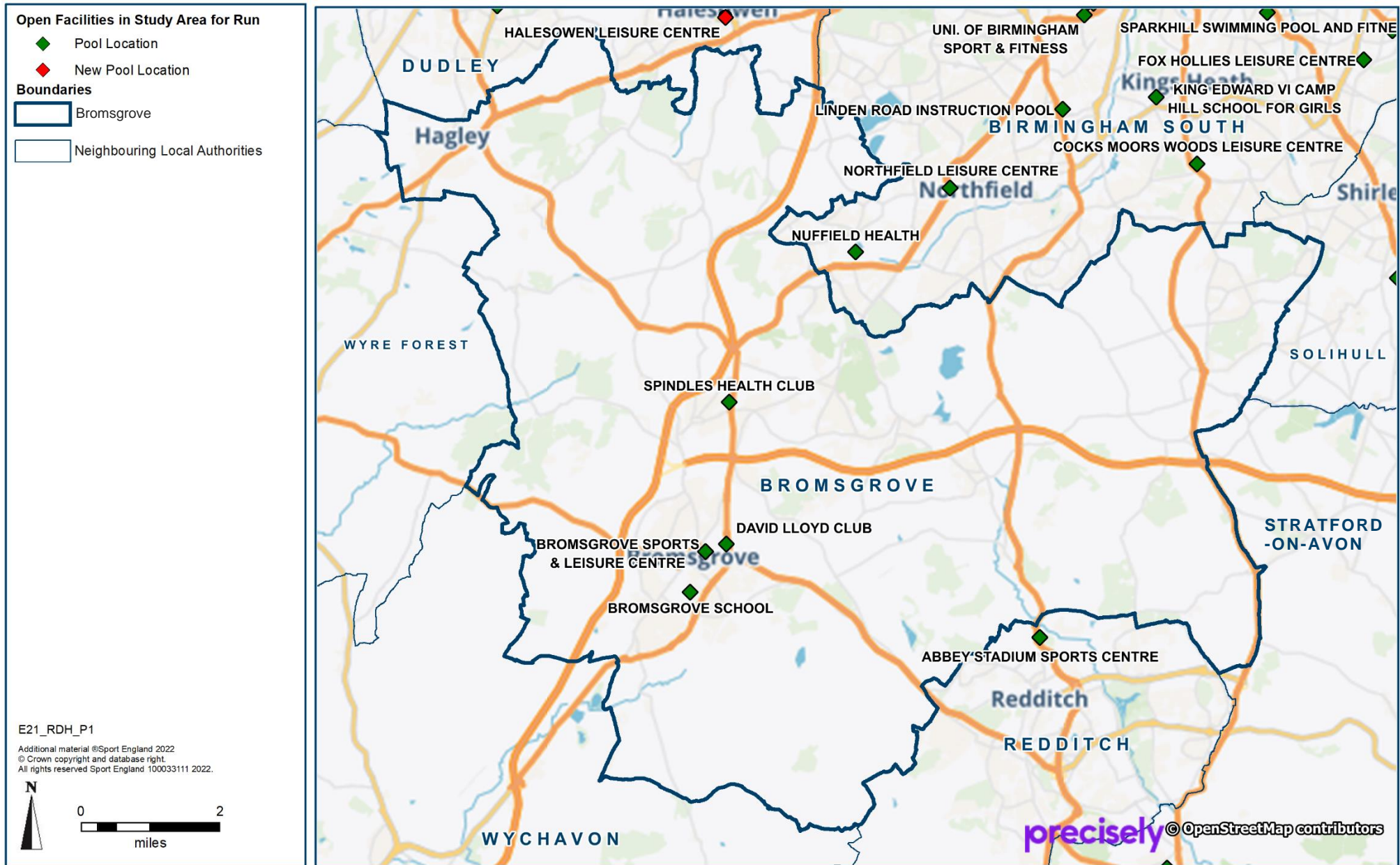
Table 2.2: Details of Swimming Pools in Bromsgrove included in the Runs

Site	Operation	Facility Type	Dimensions (m)	Area (sqm)	Year Built	Year Refurb	Attraction Weighting		Peak Hours	Total Hours	Capacity (visits in weekly peak period)
							2021	2040			
Bromsgrove School	Edu.	4-lane	25 x 9	225	1989	2012	82%	28%	26	31	975
Bromsgrove Sports and Leisure Centre	Public	6-lane	25 x 13	325	2017		100%	78%	52.5	95	3,474
		Learner	20 x 7	140					27	66.25	
David Lloyd Club	Comm.	6-lane	25 x 13	325	2002	2015	95%	45%	52.5	108	2,844
Spindles Health Club	Comm.	4-lane	18 x 9	162	1990	1996	60%	28%	52.5	103.5	1,418

### *Swimming Pool Locations*

- 2.12 The locations of the current swimming pools are shown as green diamonds and the future provision is shown as a red diamond in Map **2.1** (Run 2).
- 2.13 Three of the pool sites are within the main population centre of Bromsgrove, with only Spindles Health Club located outside Bromsgrove in Catshill.
- 2.14 Several swimming pools in the neighbouring local authority areas are close to the District boundary. The extent to which the District's residents can access these pools is reported in the Exported Demand and Satisfied Demand sections.

Map 2.1: Location of Swimming Pool Sites in Bromsgrove Run 2 (2040)



### 3. DEMAND FOR SWIMMING POOLS

**Key finding 3** is that demand for swimming pools increases by 11% between 2021 and 2040 and equates to 115 sqm of additional water space. The proposed new housing growth areas to 2030 generate increased demand in areas with little demand in 2021.

**Table 3.1: Demand for Swimming Pools in Bromsgrove by Run**

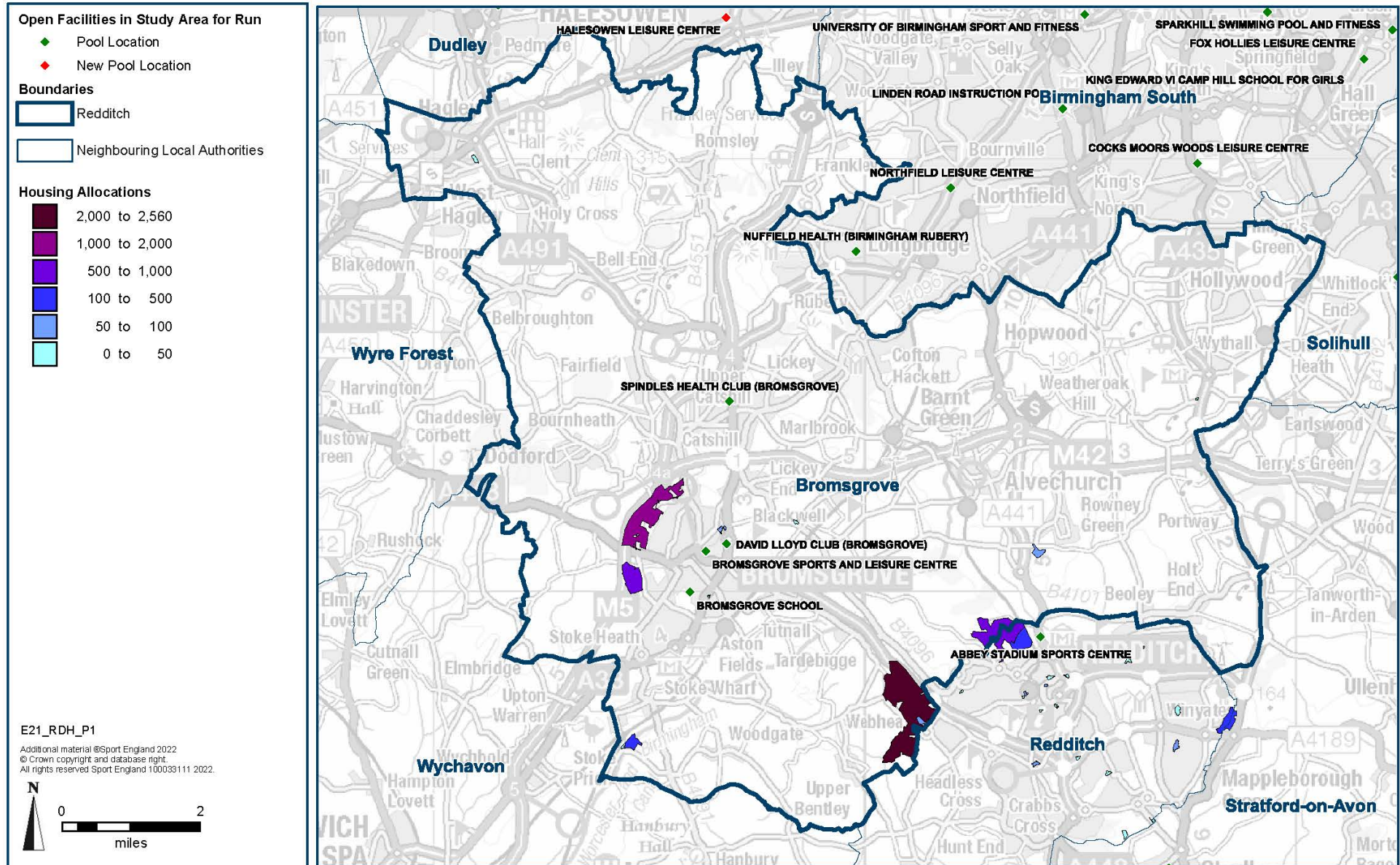
Total Demand	RUN 1	RUN 2
Bromsgrove	2021	2040
Population	101,447	115,103
Visits demanded in weekly peak period	6,544	7,245
Demand in sqm of water with comfort factor included	1,076	1,191

**Definition of total demand** – This represents the total demand for swimming by gender and for seven five-year age bands from 0 to 65+ 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 gender and for different age bands, are calculated from Sport England’s Active Lives survey up to November 2019 and are set out in Appendix 3.

- 3.1 The District’s population in 2021 is 101,447. In 2040, the population is projected to be 115,103, an increase of 13%.
- 3.2 The District’s population forecast is taken from the ONS 2018-based sub-national projections. The geographical distribution of the population in the FPM for 2040 includes housing growth sites to 2030 provided by the Council, which are shown on Map 3.1.
- 3.3 The largest development, of 2,560 homes, is the expansion of Redditch town into the south of the District, which accounts for 53% of the proposed new housing allocations. There is also a significant development proposed to the west of Bromsgrove town of 1,300 homes, which is 27% of the allocations.
- 3.4 These proposals are in addition to new housing already permitted or planned for in existing development plans. It is important to note that the Local Plan to 2040 is currently at Regulation 18 stage only, and these proposals may change during Local Plan preparation.

### Map 3.1: Housing Growth Areas in Bromsgrove to 2040 (Run 2)

Sites and allocations supplied by Bromsgrove District Council.





### *Change in Demand*

- 3.5 The total demand for swimming pools by Bromsgrove residents in 2040 is 7,245 visits per week in the peak period, which equates to 1,191 sqm of water, considering a 70% comfort factor.
- 3.6 **Key finding 3** is that demand for swimming pools increases by 11% between 2021 and 2040 and this equates to 701 visits per week in the peak period or 115 sqm of additional water space. The proposed new housing growth areas in 2040 generate increased demand in areas with little demand in 2021, noticeably in Redditch town.
- 3.7 The highest demand for water space are the same areas in both 2021 (see Map 3.2) and 2040 (see Map 3.3). These are:
- Bromsgrove town (Sidemoor area), with 43 sqm of demand in 2021 and 44 sqm in 2040.
  - Rubery, with 41 sqm of demand in both runs.
- 3.8 The ageing of the resident population between 2021 and 2040 will influence the demand for swimming pools. It can mean that there are fewer people in the main age bands for swimming participation in 2040 than in 2021. (The swimming pool participation and frequency rates by age and gender are set out in Appendix 3.)
- 3.9 Therefore, the increase in demand for swimming from population growth is then offset by the ageing of the much larger resident population. The modelling assumes the participation rate and frequency of swimming participation remain constant.

### *Demand in the Study Area*

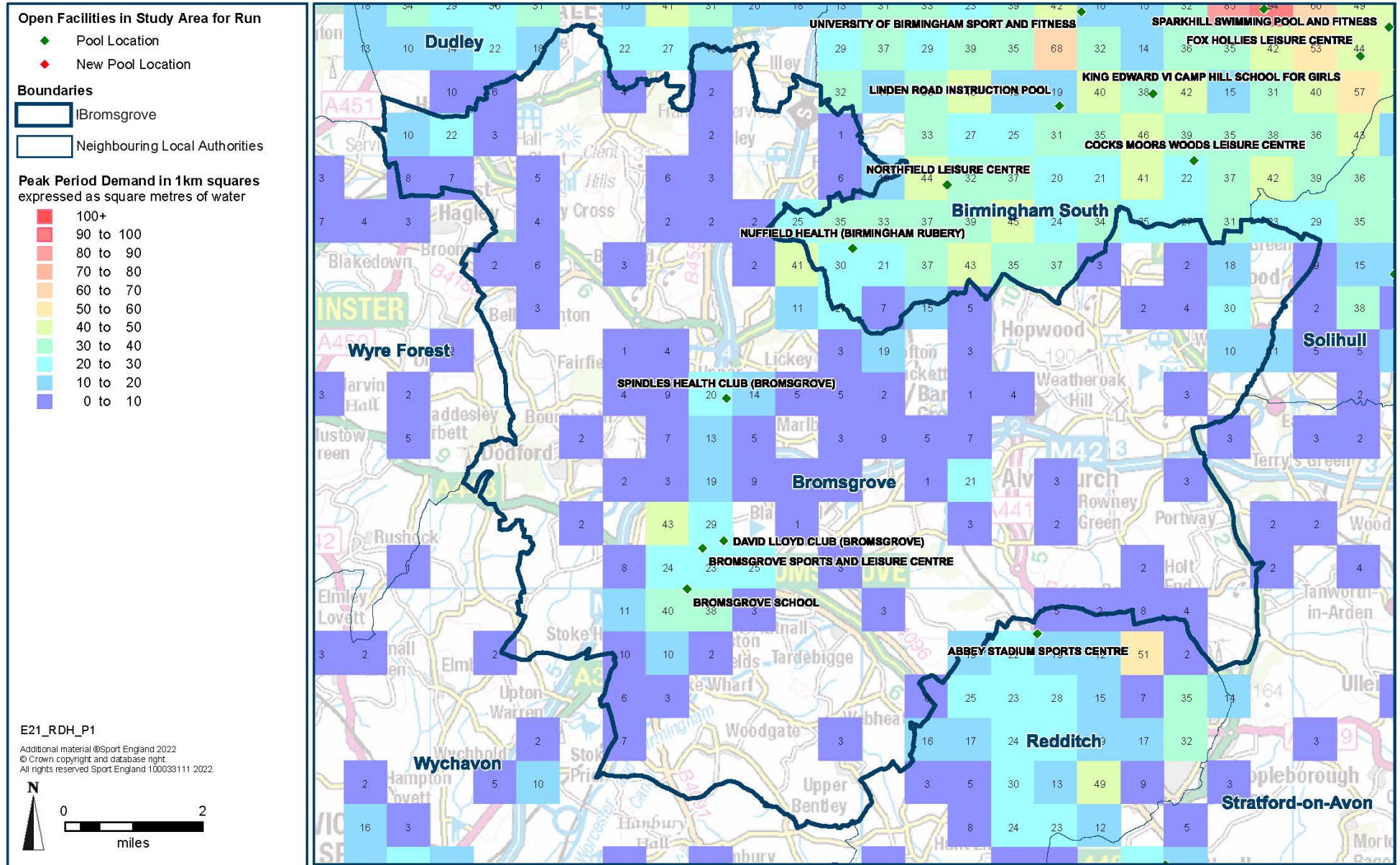
- 3.10 Bromsgrove has the third highest increase in demand among the local authorities in the study area with only Redditch having a decrease in demand between 2021 and 2040.

**Table 3.2: Demand for Swimming by Local Authority**

Demand in sqm of water considering a 'comfort' factor	RUN 1	RUN 2	% Change
Local Authority	2021	2040	2021-2040
Bromsgrove	1,076	1,191	10.7%
Birmingham South	6,186	6,517	5.4%
Dudley	3,518	3,719	5.7%
Solihull	2,371	2,572	8.5%
Stratford-on-Avon	1,395	1,644	17.9%
Redditch	934	909	-2.7%
Wychavon	1,399	1,616	15.6%
Wyre Forest	1,083	1,132	4.5%

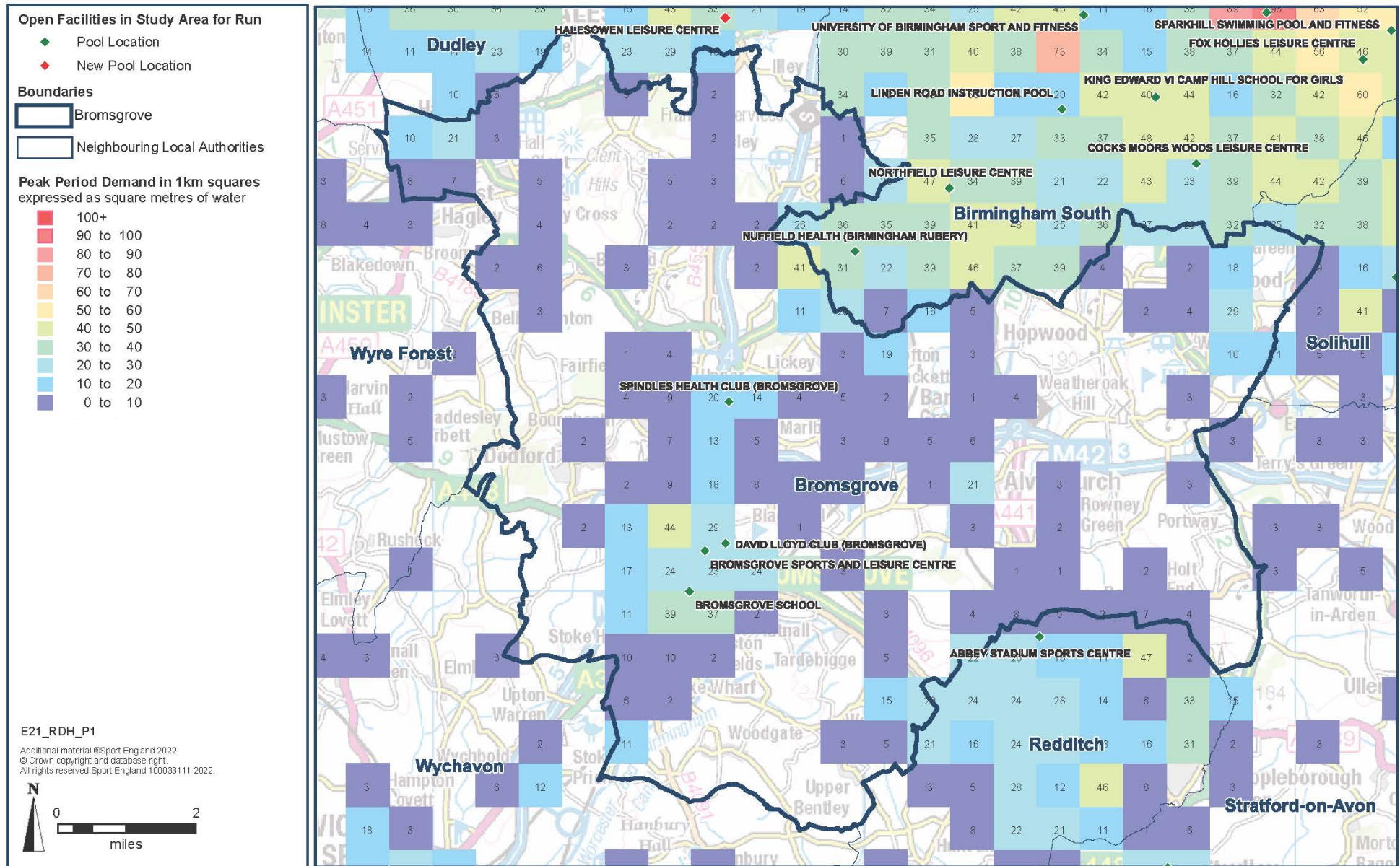
Map 3.2: Demand for Swimming Pools in Bromsgrove 2021 (Run 1)

FPM peak period demand aggregated at 1km square grid expressed as square metres of water and shown thematically (colours).



### Map 3.3: Demand for Swimming Pools in Bromsgrove 2040 (Run 2)

FPM peak period demand aggregated at 1km square grid expressed as square metres of water and shown thematically (colours).

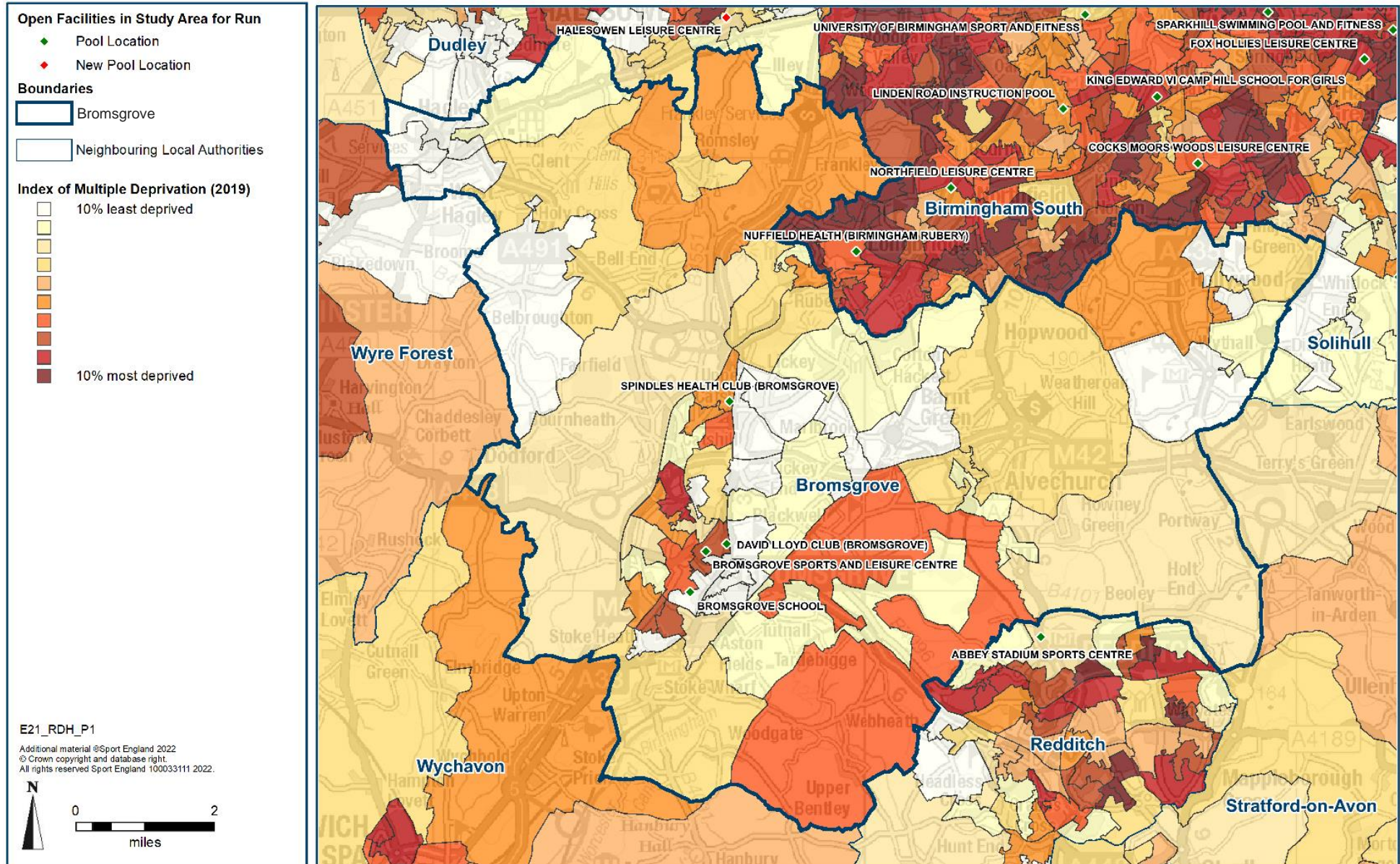


### *Deprivation*

- 3.11 The Index of Multiple Deprivation (IMD) score is used in the FPM to limit whether people will use commercial facilities, such as David Lloyd Club and Spindles Health Club (see Appendix **3** for definition of IMD). A weighting factor is incorporated to reflect the cost element often associated with commercial facilities. The assumption is that the higher the IMD score (less affluence), the less likely the population of the LSOA would choose to go to a commercial facility.
- 3.12 None of the District's lower super output areas (LSOAs) are in the most deprived 10% nationally. Overall, Bromsgrove ranks in the top 15% of least-deprived local authorities.
- 3.13 Deprivation varies across the District, as shown in Map **3.4**.
- The two commercial facilities are both located on the edge of areas of low deprivation and are therefore less likely to be affected by the cost being prohibitive to residents.
  - Bromsgrove Sports and Leisure Centre is more centrally located in an area that is one of the 30% most deprived nationally but is also close to areas of low deprivation.
  - Bromsgrove School is located in an area that is one of the 40% most deprived nationally and is very close to areas with the lowest deprivation in the District.

### Map 3.4: Deprivation in Bromsgrove Run 2 (2040)

Deprivation shown thematically (colours) at lower super output area level by decile.



## 4. ACCESSIBILITY

**Key finding 4** is that there is good accessibility to pools in the District.

**Table 4.1: Travel Modal Split of Bromsgrove Demand to Swimming Pools by Run**

Accessibility	RUN 1	RUN 2
Bromsgrove	2021	2040
% of population without access to a car	11.7	11.7
% of population within a 20-minute walk of a pool	32.1	29.1
% of demand satisfied who travelled by car	85.5	86.3
% of demand satisfied who travelled on foot	9.5	8.5
% of demand satisfied who travelled by public transport	5.1	5.2

**Definition of accessibility** – For residents without access to a car, travel to swimming pools by public transport or on foot is the choice of travel. The FPM uses a distance decay function where the further a user is from a facility, the less likely they will travel. A description of the distance decay function is set out in Appendix 3. The travel-time limits used are:

- Drive is 30 minutes.
- Public transport is 30 minutes (at half the speed of a car).
- Walking is 40 minutes (two miles).

On average, a 20-minute travel time accounts for approximately 90% of visits to a swimming pool.

4.1 **Key finding 4** is that there is good accessibility to pools in the District.

- A low percentage of residents (12%) do not have access to a car.
- A relatively high proportion of residents (32% in 2021 and 29% in 2040) can access a pool on foot within 20 minutes.
- All pools are located within a five-minute walk of a bus stop (see Map 4.2).

4.2 The proportion of Bromsgrove’s population who do not have access to a car is lower than the national average of 25% and the West Midlands Region average of 24% and reflects the more rural nature of the District.

4.3 For residents without access to a car, a network of accessible swimming pools by other means is important in order to encourage swimming participation.

### *Walking Access*

4.4 In Run 1, 32% of the District’s residents are within a 20-minute walk of a swimming pool. This decreases to 29% in Run 2 because of the location of the new housing sites.

- 4.5 Residents in the yellow area in Map **4.1** are within a 20-minute walk (one mile) of one of the swimming pool sites. Residents in the small dark-orange area are within walking distance of three sites.
- 4.6 The FPM uses a distance decay function where the further a user is from a facility, the less likely they will travel. Therefore, not all residents in these areas will walk to a swimming pool and some may travel further.

### *Public Transport Access*

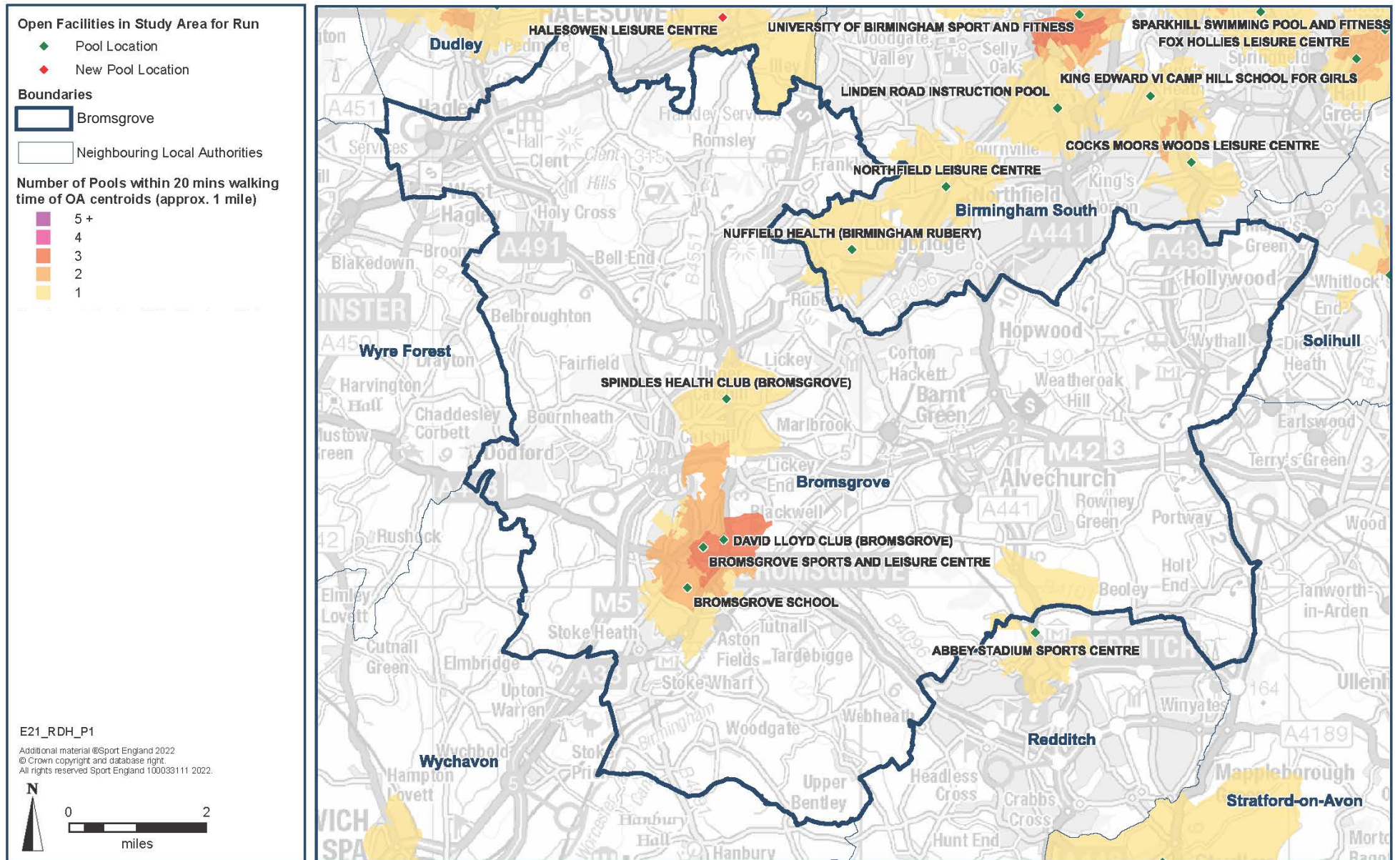
- 4.7 All swimming pool sites in the District are about a five-minute walk from a bus stop. None of the sites are within a 15-minute walk of a railway station (see Map **4.2**).
- 4.8 It should be noted that while some District residents can get to a swimming pool from a public transport stop, it may not mean they can get to a swimming pool within 20 minutes from home via a combination of walking and public transport. Also, in rural areas the service may not be regular.

### *Driving Access*

- 4.9 Residents in the southeast of the District, in the yellow area in Map **4.3**, have access to the fewest swimming pool sites. They can drive to between one and five swimming pool sites within 20 minutes. Residents in the north of the District, in the dark-blue areas in Map **4.3**, have access to the most sites, with more than 25 swimming pool sites within a 20-minute drive.

### Map 4.1: Walking Access to Swimming Pools in Run 2 (2020)

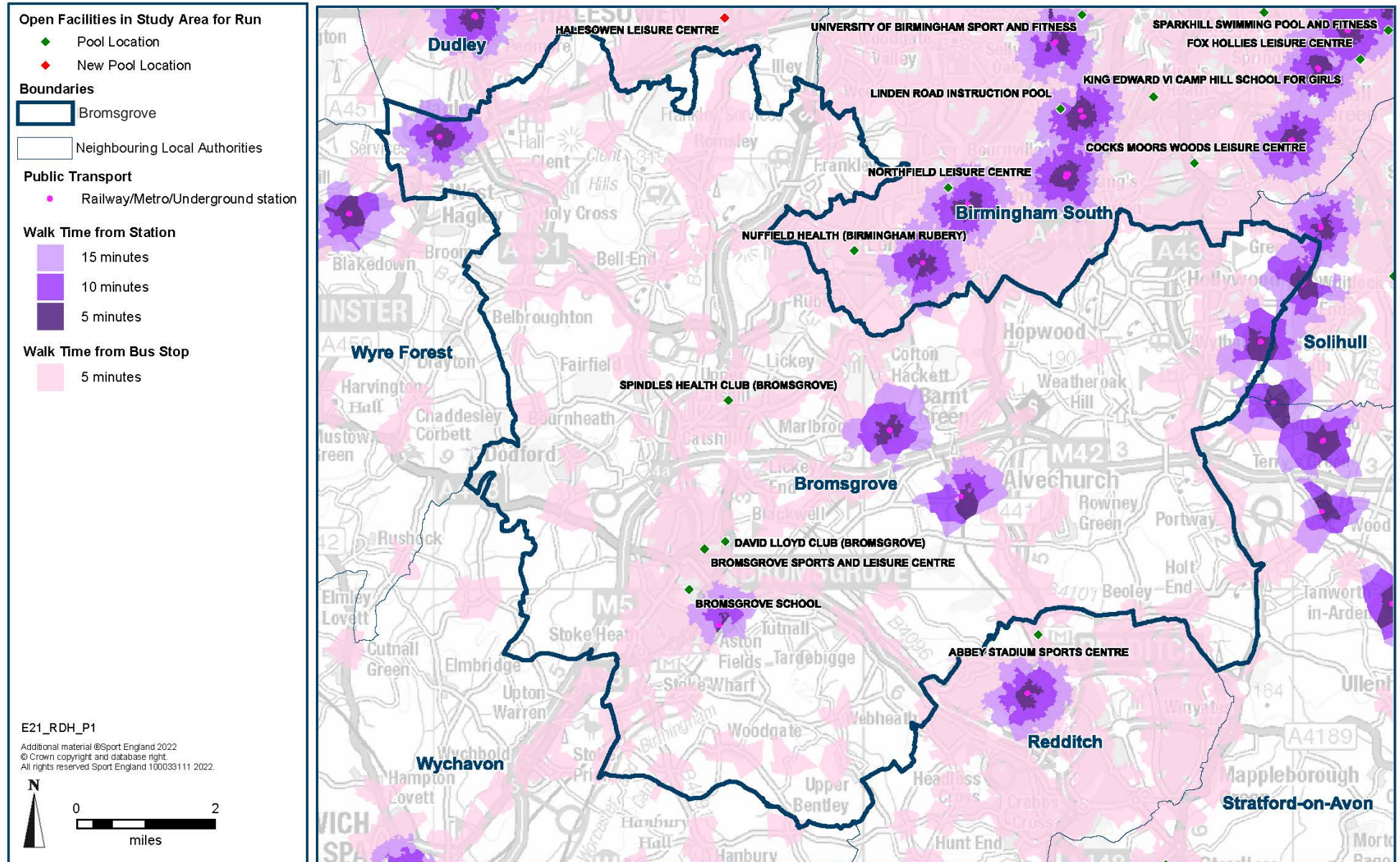
FPM coverage shown thematically (colours) at output area level expressed as the number of pool sites within a 20-minute walk of output area centroid.





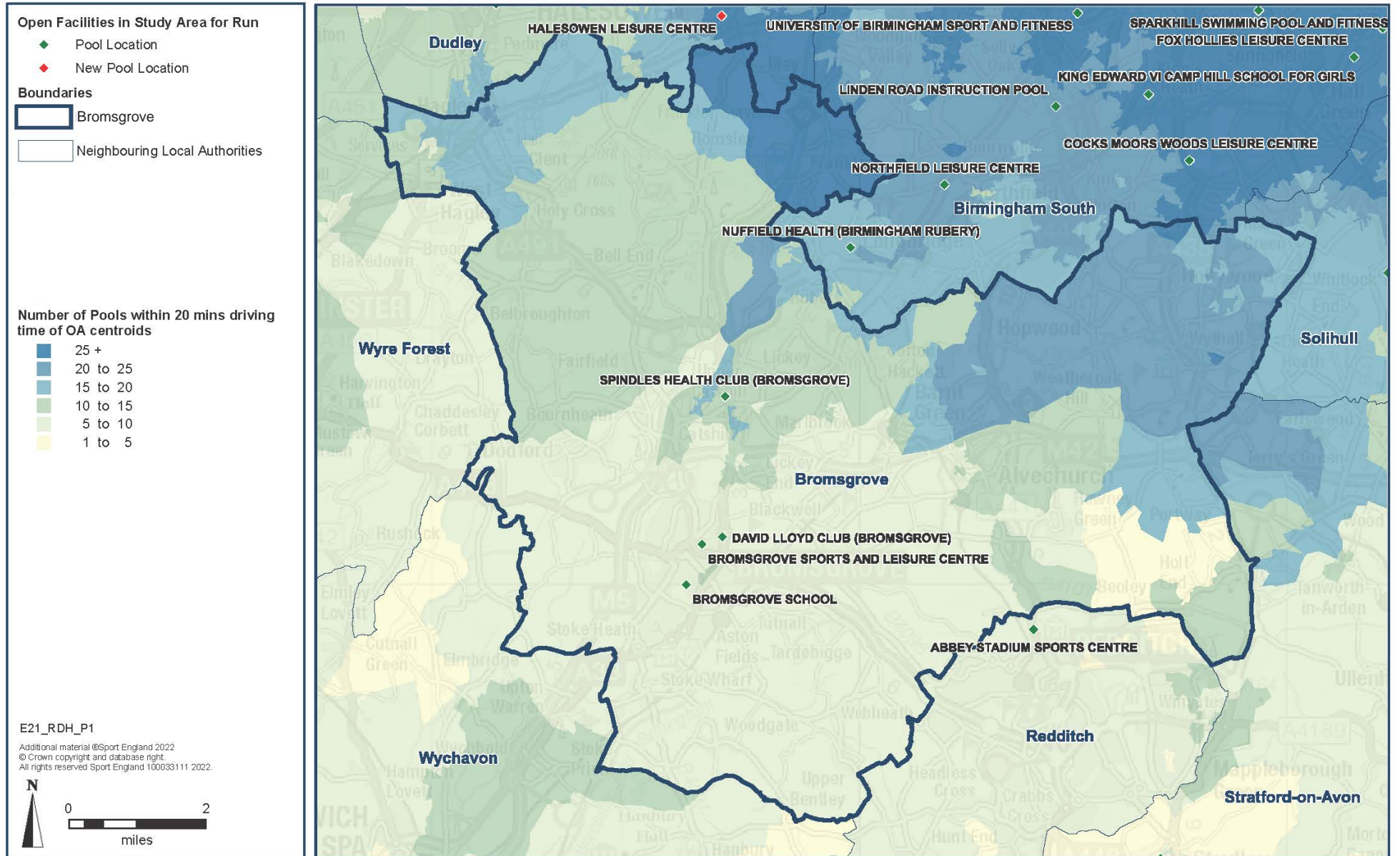
### Map 4.2: Walking Access to Public Transport in Bromsgrove Run 2 (2040)

Areas within walking time shown thematically (colours) from bus, coach and tram stops, and railway, metro and underground stations.



### Map 4.3: Driving Access to Swimming Pools in Run 2 (2040)

FPM coverage shown thematically (colours) at output area level expressed as the number of pool sites within a 20-minute drive of output area centroid.



## 5. SATISFIED DEMAND FOR SWIMMING

**Key finding 5** is that Bromsgrove has a very high level of satisfied demand in both 2021 and 2040.

**Key finding 6** is that approximately 37% of Bromsgrove's satisfied demand is from residents of Bromsgrove using pools located in neighbouring local authority areas.

**Table 5.1: Satisfied Demand for Swimming in Bromsgrove by Run**

Satisfied Demand	RUN 1	RUN 2
Bromsgrove	2021	2040
Number of visits which are met per week in peak period	6,205	6,840
% of total demand satisfied	94.8	94.4
Number of visits retained per week in peak period	3,941	4,253
Demand retained as a % of satisfied demand	63.5	62.2
Number of visits exported per week in peak period	2,263	2,587
Demand exported as a % of satisfied demand	36.5	37.8

**Definition of satisfied demand** – This represents the proportion of total demand that is met by the capacity at the swimming pools from District residents who live within the driving, walking or public transport catchment area of a pool. This includes pools located both within and outside the District.

- 5.1 **Key finding 5** is that Bromsgrove has a very high level of satisfied demand in both 2021 and 2040, at more than 94%. This is higher than in all neighbouring local authority areas. (Details of the swimming pools in the neighbouring local authority areas are listed in Appendix 1).

**Table 5.2: Percentage of Satisfied Demand for Swimming in Study Area by Run**

% of Total Demand Satisfied	RUN 1	RUN 2
Local Authority	2021	2040
<b>Bromsgrove</b>	<b>94.8</b>	<b>94.4</b>
Birmingham South	88.4	87.8
Dudley	90.2	90.5
Solihull	93.2	92.7
Stratford-on-Avon	89.8	89.4
Redditch	87.7	86.1
Wychavon	91.5	89.9
Wyre Forest	89.0	88.8

### *Retained Demand*

- 5.2 A subset of the satisfied demand findings shows how much of Bromsgrove’s demand for swimming is retained at pools located within the District. This assessment is based on the catchment area of Bromsgrove pools and residents in the District participating at these pools. This is called retained demand.
- 5.3 The level of demand being met by pools within the District is 65% in 2021 and 62% in 2040.

### *Exported Demand*

- 5.4 The residue of satisfied demand, after retained demand, is exported demand. This is based on Bromsgrove residents who live within the travel time of a swimming pool outside the District and use that swimming pool.
- 5.5 **Key finding 6** is that approximately 37% of Bromsgrove’s satisfied demand is from residents of Bromsgrove using pools located in neighbouring local authority areas. This is a significant proportion of met demand and indicates the importance of pool provision in adjoining local authority areas to residents of Bromsgrove.
- 5.6 The largest export is to Birmingham South: in 2021, nearly half of residents have their demand met outside the District using pools in Birmingham South. There is an increase between 2021 and 2040 in residents who use Dudley pools because the new facility at Halesowen is available. There is also an increase between 2021 and 2040 in residents using pools in Redditch because of the new housing development close to Redditch.

**Table 5.3: Export Destination of Bromsgrove Satisfied Demand by Run**

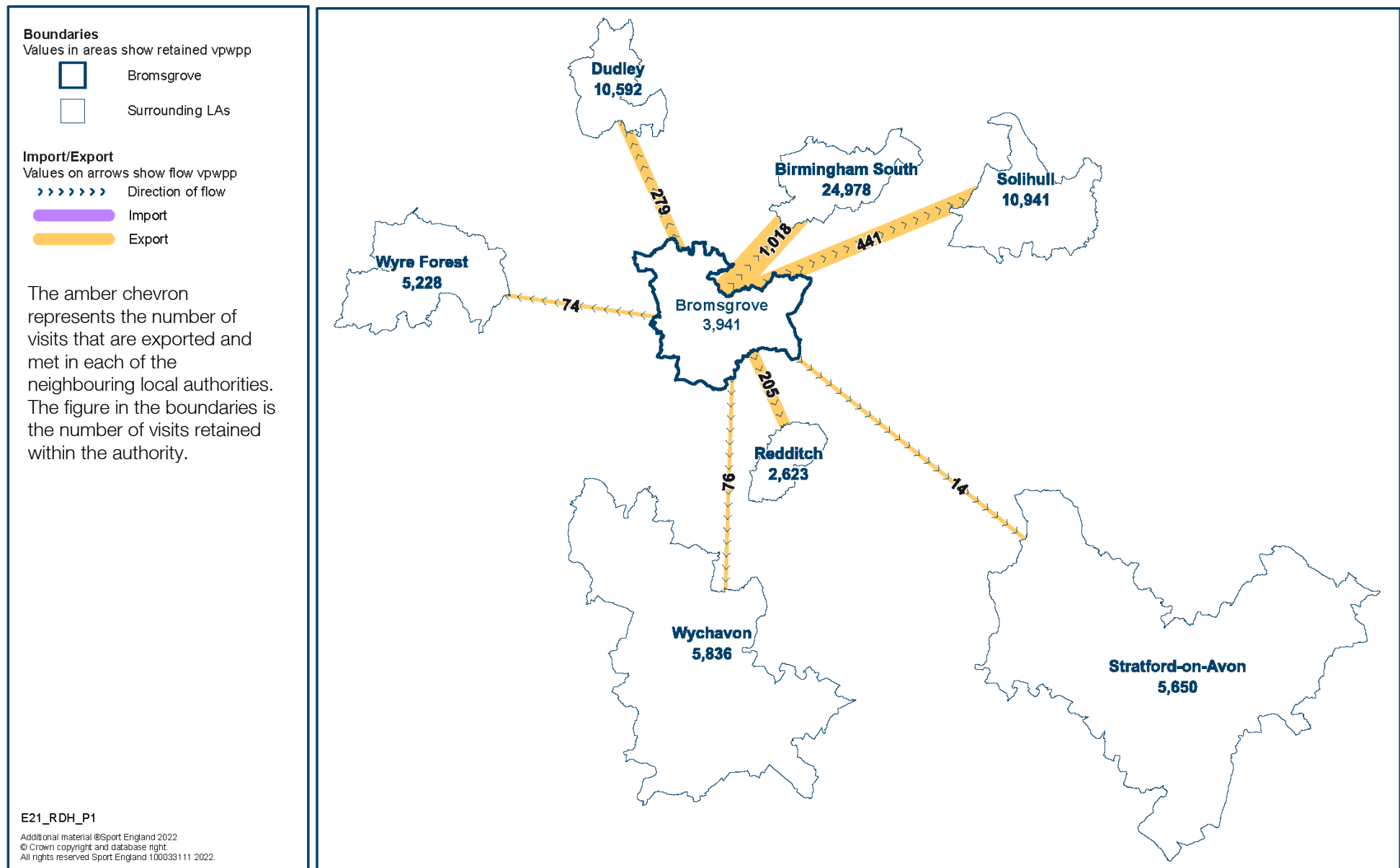
Export (visits per week peak period)	RUN 1	RUN 2
Local Authority	2021	2040
<b>Bromsgrove</b>	<b>3,941</b>	<b>4,253</b>
Birmingham South	1,018	976
Dudley	279	500
Solihull	441	447
Stratford-on-Avon	14	24
Redditch	205	328
Wychavon	76	103
Wyre Forest	74	53

Note: The figures for Bromsgrove are the level of satisfied demand retained within the authority.

- 5.7 Exported demand is shown spatially in Map 5.1 for Run 1 and Map 5.2 for Run 2.

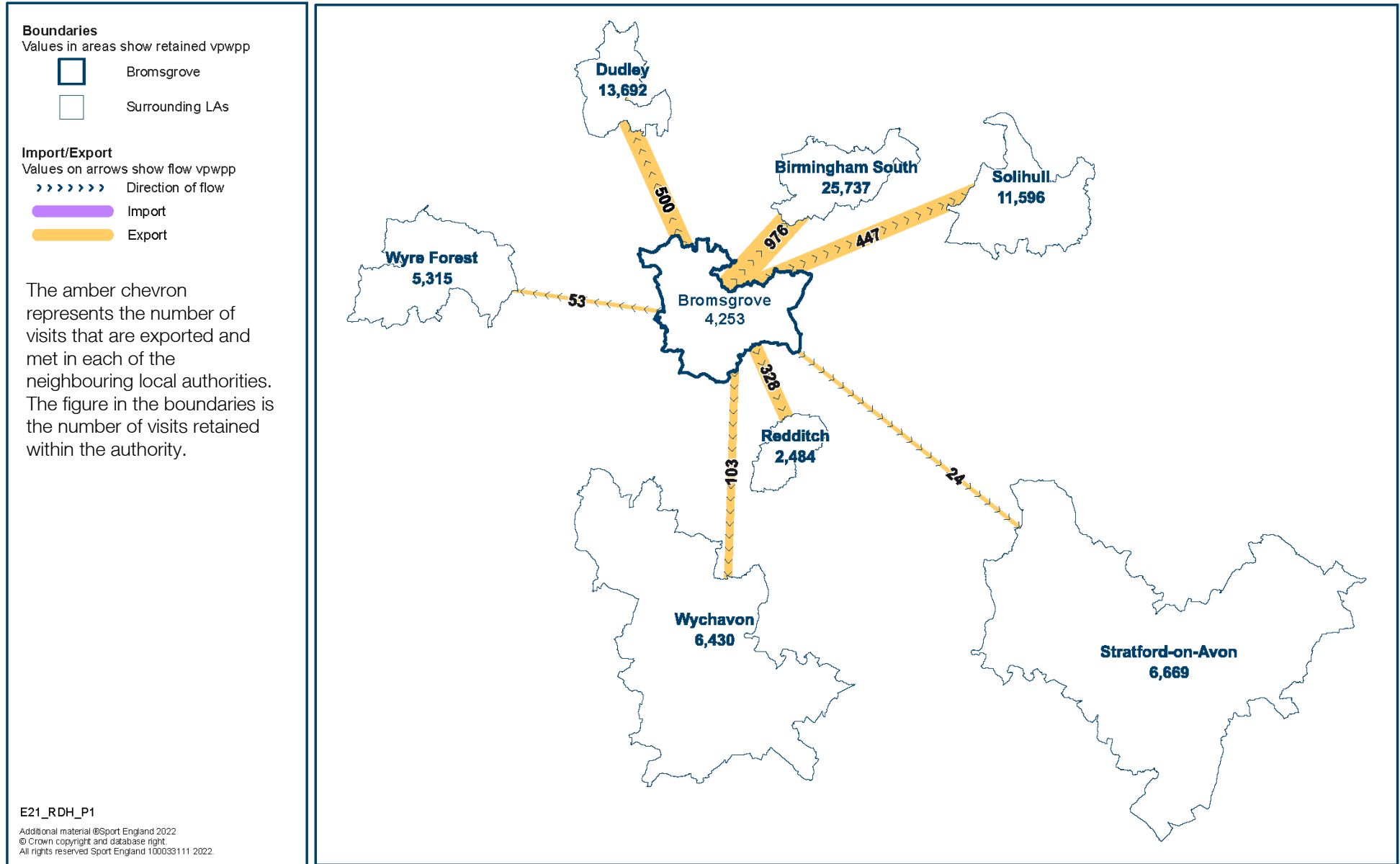
### Map 5.1: Export of Bromsgrove Satisfied Demand for Swimming Run 1 (2021)

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



### Map 5.2: Export of Bromsgrove Satisfied Demand for Swimming Run 2 (2040)

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



## 6. UNMET DEMAND FOR SWIMMING

**Key finding 7** is that unmet demand is low across the District and there is little justification for new pool provision.

**Table 6.1: Unmet Demand for Swimming in Bromsgrove by Run**

Unmet Demand	RUN 1	RUN 2
Bromsgrove	2021	2040
Number of visits unmet per week in peak period	339	405
Unmet demand as a % of total demand	5.2	5.6
Equivalent in sqm of water with comfort factor	56	67
% of unmet demand due to:		
Facility too far away:	86.6	81.7
Without access to a car	71.3	67.8
With access to a car	15.3	13.9
Lack of facility capacity:	13.3	18.2
Without access to a car	7.4	10.5
With access to a car	6.0	7.7

**Definition of unmet demand** – This has two parts to it: demand for swimming pools that cannot be met because:

- There is too much demand for any particular swimming pool within its catchment area and there is a lack of capacity; or
- The demand is located too far away from any swimming pool and is then classified as unmet demand.

- 6.1 In 2040, 6% of the demand from Bromsgrove residents is not met. This represents 405 visits during the weekly peak period and is the equivalent of 67 sqm of water. In comparison, 5% of demand was unmet in 2021, representing 339 visits in the weekly peak period and equivalent to 56 sqm of water. Therefore, very little change.
- 6.2 In 2040, 82% of unmet demand is because swimming pools are too far away from where residents live with 68% being residents without access to a car. This compares to 87% in 2021 (with 71% being residents without access to a car).
- 6.3 Demand too far away from a swimming pool will always exist because it is not possible to achieve complete spatial coverage whereby all areas of a local authority are within walking distance of a swimming pool and not everyone will want, or is able, to drive the full distance.
- 6.4 In 2040, there is a small amount (18%) of unmet demand because accessible pools are at full capacity. This compares to 13% in 2021, meaning pools are becoming increasingly busy by 2040.

### *Location of Unmet Demand*

- 6.5 Unmet demand is highest in the Rubery North area, at just under 8 sqm of water space. The rest of the district has very low unmet demand (see Map 6.1 for Run 2).

### *Meeting Unmet Demand*

- 6.6 Analysis of the spread of unmet demand shows the level of unmet demand that would be met by a potential new facility in any given location. This 'reachable unmet demand' is calculated for each one-kilometre grid square and is shown thematically in Map 6.2 for Run 2.
- 6.7 Accessibility is a major factor in determining reachable unmet demand. Therefore, a location with a good road network has a higher reachable unmet demand than a facility in an area with poor transportation links that make it more difficult for people to move around and get to a facility. It is important to emphasise that reachable unmet demand is not a reflection of need for a particular area.
- 6.8 The highest level of reachable unmet demand is in the Frankley Green area, with up to 131 sqm of water space. It should be noted that Frankley Green is very close to the Birmingham South boundary where there are higher levels of both unmet and reachable unmet demand and where any new pool provision would be more justifiable.
- 6.9 The other area of higher reachable unmet demand is around Marlbrook, with up to 105 sqm of water space equivalent.

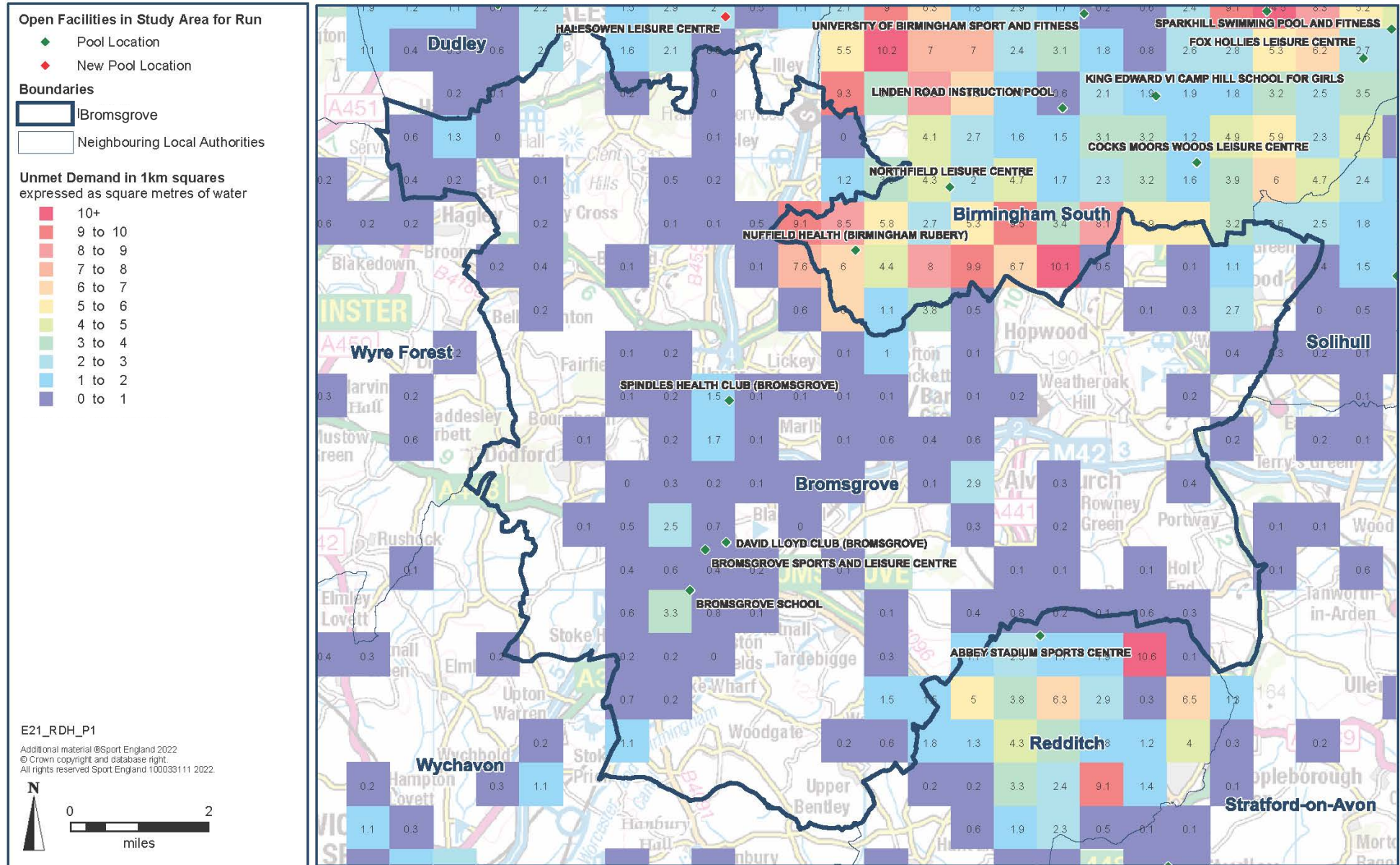
*For context, the minimum amount of water space required to justify a new pool would be 160 sqm, which is a 20m x 8m four-lane pool (assuming lane width of 2m).*

- 6.10 **Key finding 7** is that unmet demand is low across the District. While there are some areas with higher levels of reachable unmet demand, the water space that would satisfy this unmet demand is smaller than a small swimming pool and, therefore, there is little justification for new pool provision of this basis alone.



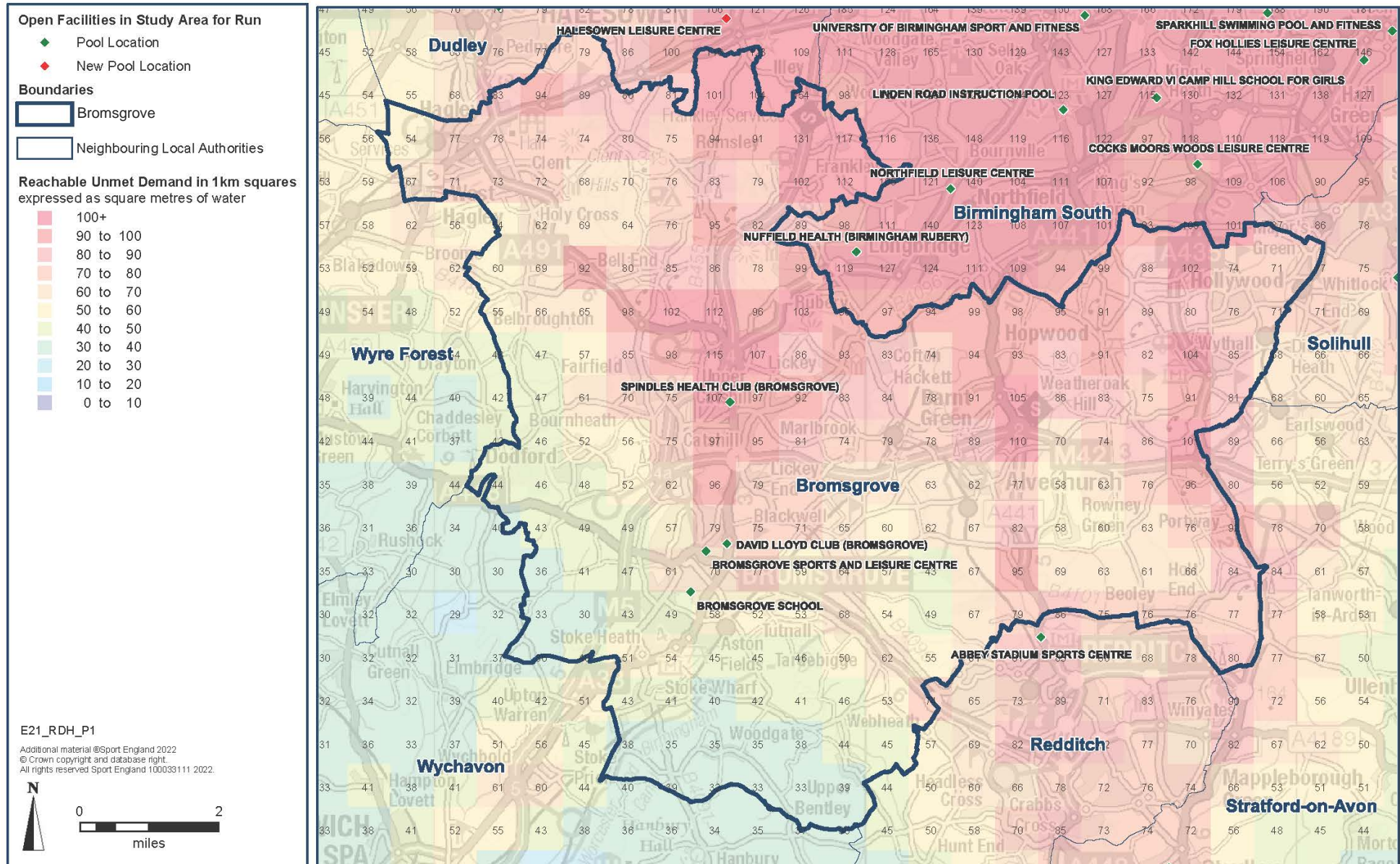
Map 6.1: Unmet Demand for Swimming Pools in Bromsgrove Run 2 (2040)

FPM unmet demand aggregated at 1km square grid expressed as square metres of water and shown thematically (colours).



## Map 6.2: Reachable Unmet Demand for Swimming Pools in Bromsgrove Run 2 (2040)

FPM reachable unmet demand aggregated at 1km square grid expressed as square metres of water (figure labels) and shown thematically (colours).



## 7. USED CAPACITY OF FACILITIES

**Key finding 8** is that the overall used capacity of Bromsgrove pools is above the Sport England defined comfort level of 70%.

**Key finding 9** is that at the fully utilised Bromsgrove Sport and Leisure Centre, demand is having to be redistributed to other pools by 2040.

**Key finding 10** is that there is a very high level of imported demand, particularly from Redditch.

**Table 7.1: Used Capacity of Swimming Pools in Bromsgrove by Run**

Used Capacity	RUN 1	RUN 2
Bromsgrove	2021	2040
Number of visits used of capacity in weekly peak period	6,407	6,436
% of overall capacity of pools used	73.6	73.9
Number of visits imported in weekly peak period	2,465	2,182
Visits imported as a % of used capacity	38.5	33.9
Difference between visits imported and exported	202	-405

**Definition of used capacity** – This is a measure of usage at swimming pools and estimates how well used or how full facilities are. The FPM is designed to include a ‘comfort factor,’ beyond which the venues are too full. The pool itself becomes too crowded to swim comfortably, and the changing and circulation areas also become too congested. In the model, Sport England assumes that usage above 70% of capacity is busy and that the swimming pool is operating at an uncomfortable level.

- 7.1 **Key finding 8** is that, in 2021 and 2040, the overall estimated used capacity of Bromsgrove pools in the weekly peak period is 74%, which is above the Sport England defined comfort level of 70%.
- 7.2 The estimated used capacity for Bromsgrove Sports and Leisure Centre is 100% in the weekly peak period in both runs. In 2040, the other three pools operate below the Sport England defined 70% capacity when pools become busy and operate at an uncomfortable level. In 2021, Bromsgrove School operates at 76% used capacity; however, its attractiveness weighting drops considerably by 2040, making David Lloyd Club comparatively more attractive.

Table 7.2: Used Capacity of Bromsgrove Swimming Pools in Percentages by Run

Utilised Capacity	RUN 1	RUN 2
Individual Sites	2021	2040
Bromsgrove School	76	61
Bromsgrove Sports and Leisure Centre	100	100
David Lloyd Club	53	61
Spindles Health Club	47	44

### *Factors Contributing to Used Capacity*

7.3 There are several reasons for the variation in estimated used capacity for the public leisure centres and commercial sites. Often it is difficult to identify which of these reasons apply because several could be interacting simultaneously, but variation is generally caused by any of the following factors (more detail is provided in subsequent paragraphs):

- The type of site operator (public/commercial).
- The level of demand within the travel-time limit from the site and reachable from other pools.
- The scale of the swimming pool.
- The age of the pool and its 'attractiveness' weighting.
- Imported demand.

7.4 Public leisure centres are more utilised because of their 'draw effect', as follows. Public leisure centres:

- Are accessible for public and swimming club use.
- Have extensive opening hours and are proactively managed to encourage and support swimming participation and physical activity.
- Unlike commercial swimming pools, do not require payment of a monthly membership fee.
- Provide for all activities, learn to swim, recreational swimming, lane and fitness swimming, and swimming development by clubs.

7.5 Commercial swimming pools provide recreational swimming through membership and operate a learn to swim school. The centres are not available for public pay and swim or for club development. Therefore, they offer a more limited programme of use than public leisure centres and are less utilised.

7.6 It is important to consider the scale of the swimming pool site when looking at estimated used capacity.

7.7 All swimming pools in the model are weighted to reflect their age, condition and whether they have been modernised. This is to assess their comparative attractiveness to customers.

7.8 The estimated used capacity by site varies for all these inter-related reasons (including imported demand reviewed below) and should be reviewed with the facility operator.

*Swimming Pools with 100% of Pool Capacity Used*

7.9 When the finding is that a swimming pool is estimated to be full, the FPM tries to re-allocate demand to other swimming pools within the same travel-time area. This is an iterative process and continues until there is no more capacity at the other swimming pool sites to absorb demand. This is known as ‘demand re-distributed after initial allocation’.

7.10 **Key finding 9** is that at the fully utilised Bromsgrove Sport and Leisure Centre, demand is having to be redistributed to other pools by 2040.

7.11 In Run 2, there are 788 visits in the weekly peak period that cannot be met at Bromsgrove Sports and Leisure Centre. This is 23% of the centre’s capacity in the weekly peak period.

**Table 7.3: Visits Re-distributed After Initial Allocation by Run**

Visits Redistributed	RUN 1	RUN 2	Capacity (visits in weekly peak period)
Individual Sites	2021	2040	
Bromsgrove School	172	272	975
Bromsgrove Sports and Leisure Centre	121	-788	3,474
David Lloyd Club	322	723	2,844
Spindles Health Club	185	249	1,418

Note: A minus figure shows the visits that cannot be met at the site. A positive figure shows the number of visits that have been re-allocated to them.

*Imported Demand*

7.12 Imported demand is set out under Used Capacity. If residents of neighbouring local authority areas swim at a site in Bromsgrove, their usage becomes part of the used capacity of Bromsgrove’s swimming pools.

7.13 **Key finding 10** is that there is a very high level of imported demand, particularly from Redditch, where the pool is operating at 100% used capacity in 2021 and 2040.

7.14 Imported demand represents more than 38% of the utilisation of Bromsgrove’s pools in 2021 and 34% in 2040. Redditch residents represent more than 55% of imported demand in both runs.

7.15 Imported demand is shown spatially in Map 7.1 for Run 1 (2021) and Map 7.2 for Run 2 (2040).

Table 7.4: Import Origin of Visits to Swimming Pools in Bromsgrove by Run

Import (visits per week peak period)	RUN 1	RUN 2
Local Authority	2021	2040
<b>Bromsgrove</b>	<b>3,941</b>	<b>4,253</b>
Birmingham South	415	358
Dudley	215	101
Solihull	22	23
Stratford-on-Avon	64	73
Redditch	1,355	1,274
Wychavon	190	164
Wyre Forest	119	108

Note: The figures for Bromsgrove represent the used capacity of the District's pools by its residents.

### *Import/Export Balance*

- 7.16 Bromsgrove is both a big exporter and big importer of demand. On balance, it is a marginal net exporter of demand in 2021 and a marginal net importer of demand in 2040. This high level of import and export between neighbouring authorities demonstrates the importance of swimming pool provision in neighbouring local authority areas.
- 7.17 Looking at the used capacity in neighbouring authority areas it is notable that several have very high used capacity levels in both runs (Birmingham South, Dudley and Wyre Forest are all above 80% used capacity) and Redditch is operating at 100% used capacity, meaning its pool is extremely busy. Most of the imported demand comes from these local authority areas.

### *Future Change*

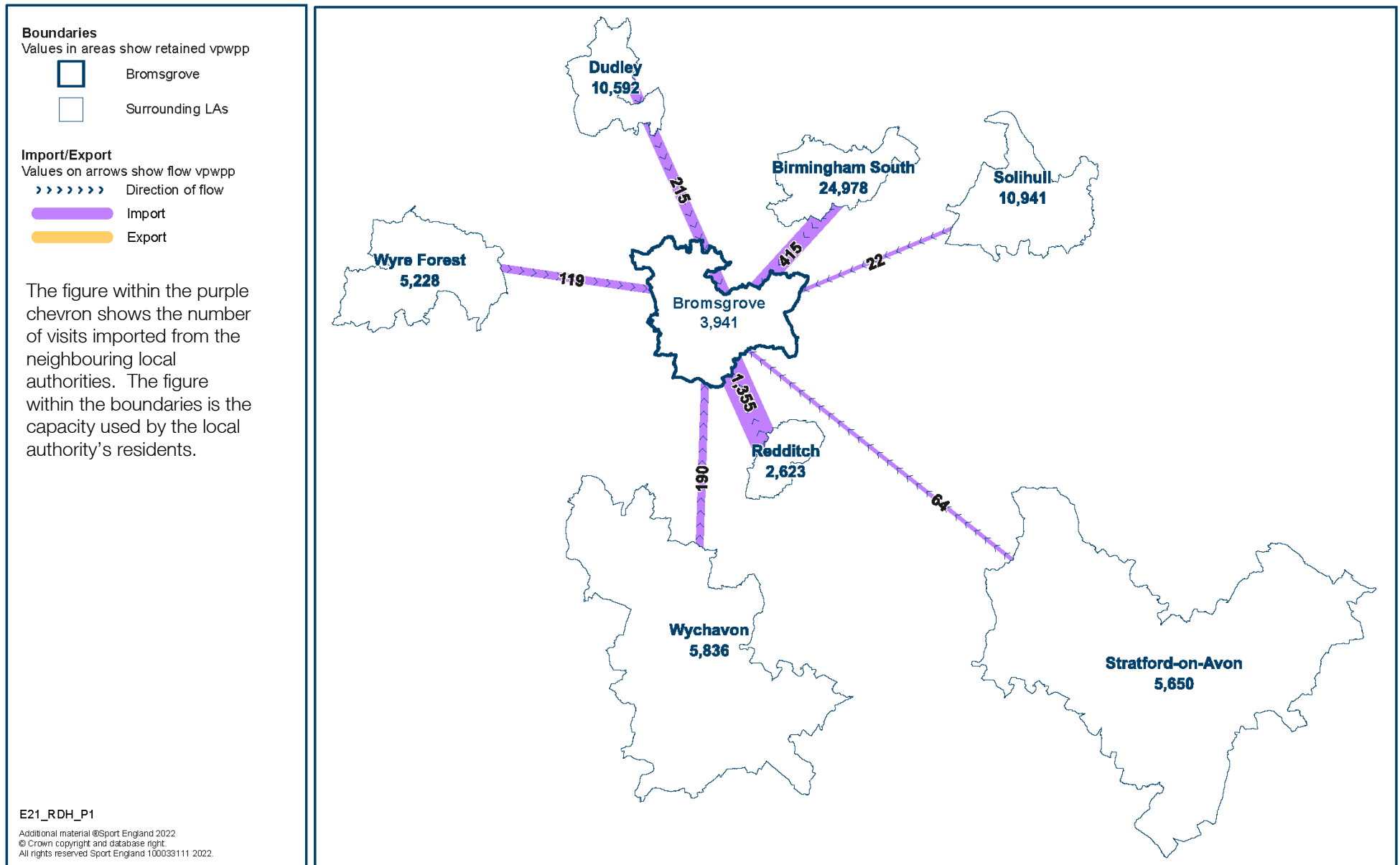
- 7.18 While not specifically looked at in the Bromsgrove FPM runs, we can see the impact of re-opening Kingsley Sports Centre in Redditch on the Bromsgrove pools using the Run 3 data from the Redditch report.

Table 7.5 Impact of Kingsley Sports Centre reopening in Redditch on Bromsgrove Pools

Demand and Used Capacity Impact		RUN 2	RUN 3
Bromsgrove		2040	2040
Demand (visits per week in peak period)	Exported to Redditch	328	475
	Imported from Redditch	1,274	884
Used Capacity of Sites (%)	Bromsgrove School	61%	53%
	Bromsgrove Sport and Leisure Centre	100%	100%
	David Lloyd Club	61%	52%
	Spindles Health Club	44%	41%

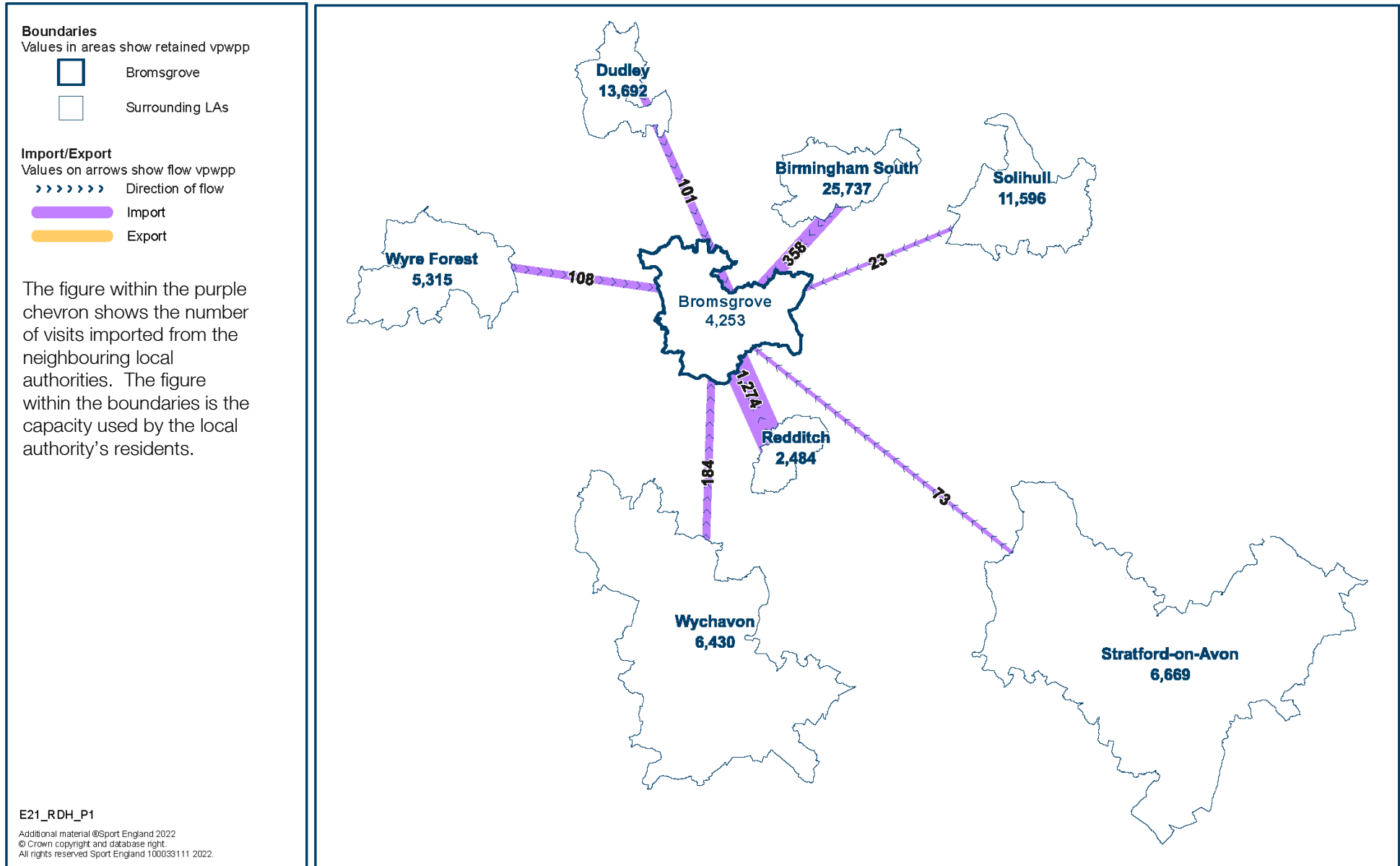
### Map 7.1: Imported Demand Visits per Week in the Peak Period Run 1 (2021)

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



Map 7.2: Imported Demand Visits per Week in the Peak Period Run 2 (2040)

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





## 8. LOCAL SHARE OF FACILITIES

**Key finding 11** is that, between 2021 and 2040, Bromsgrove’s local share drops from a surplus position to a deficit position, primarily because the existing facilities become older and less attractive. Local share is particularly poor in the north of the District.

**Table 8.1: Local Share of Swimming Pools in Bromsgrove by Run**

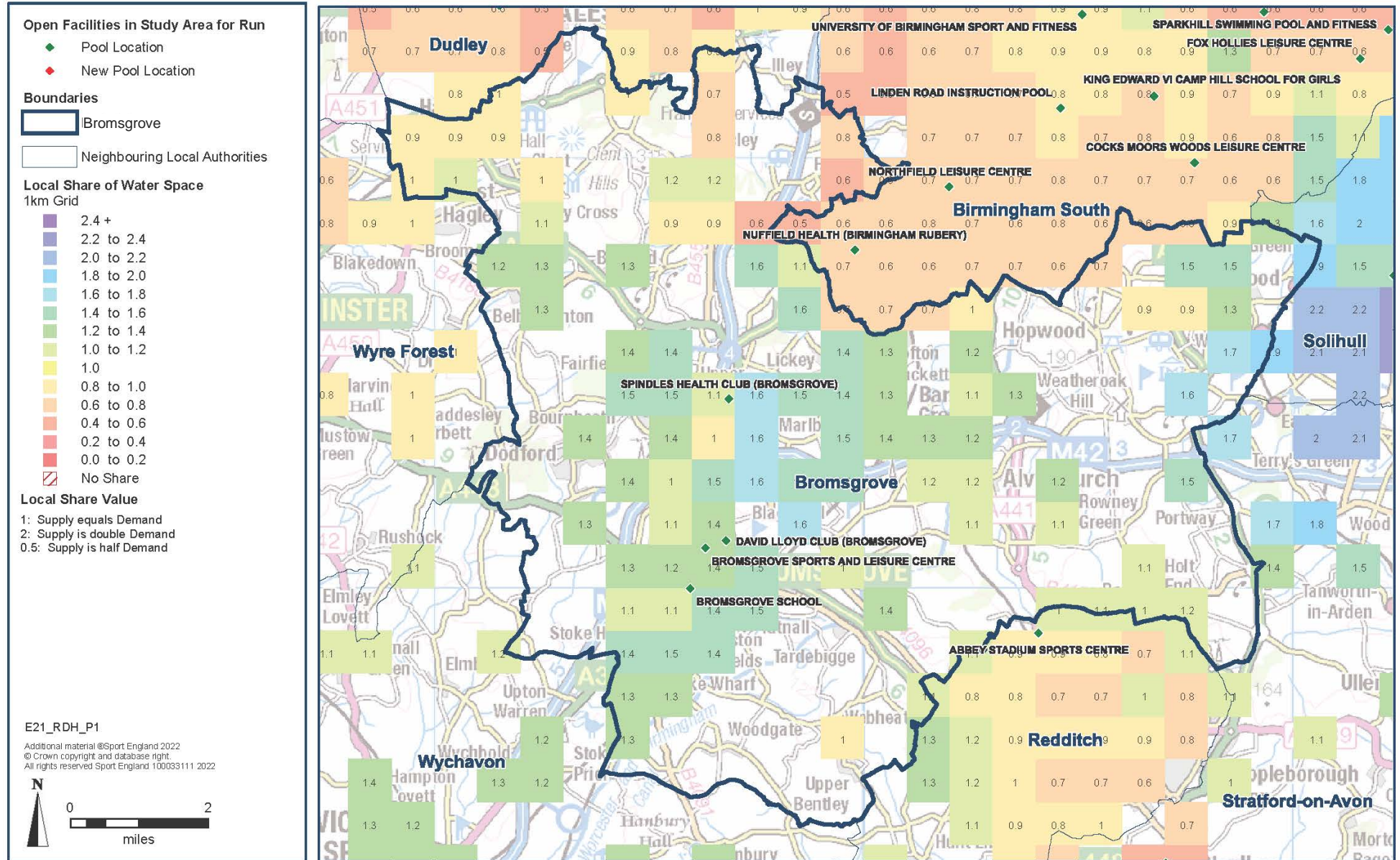
Local Share	RUN 1	RUN 2
Bromsgrove	2021	2040
Local Share: <1 supply less than demand, >1 supply greater than demand	1.29	0.72

**Definition of local share** – This helps show which areas have a better or worse share of facility provision. It considers the size, availability and quality of facilities, and travel modes. Local share is useful for looking at ‘equity’ of provision. Local share is the available capacity that people want to visit in an area, divided by the demand for that capacity in the area. Local share decreases as facilities age.

- 8.1 Local share shows how access and share of swimming pools differs across the local authority area, as follows:
- A value of 1 means that the level of supply just matches demand.
  - A value of less than 1 indicates a shortage of supply.
  - A value greater than 1 indicates a surplus.
- 8.2 Overall, local share identifies the areas of the authority where the share of swimming pools is better and worse. The intervention is to try and increase access for residents in the areas with the poorest access to swimming pools.
- 8.3 **Key finding 11** is that, between 2021 and 2040, Bromsgrove’s local share drops from a surplus position to a deficit position, primarily because the existing facilities become older and less attractive. Local share is particularly poor in the north of the District.
- 8.4 In 2021, local share is poor (below 1) in the north of the District, whereas, the rest of the District is good or very good (1 or above) (see Map **8.1**). By 2040, all areas of the District become poor (drop below one) with the lowest share still being in Romsley and Ruberry in the north (see Map **8.2**).

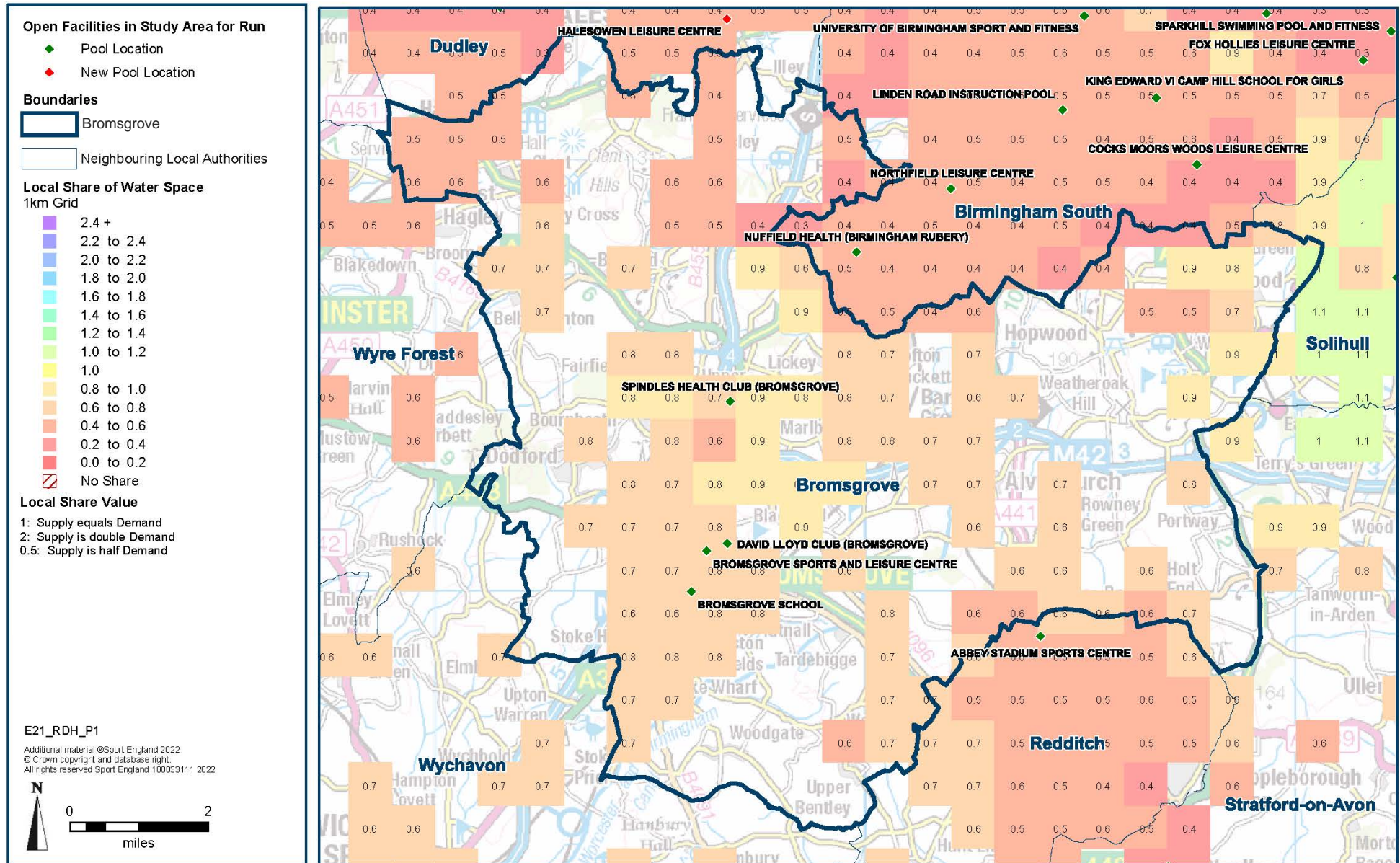
### Map 8.1: Local Share of Swimming Pools Bromsgrove Run 1 (2021)

FPM share of water divided by demand aggregated at 1km square and shown thematically (colours).



## Map 8.2: Local Share of Swimming Pools in Bromsgrove Run 2 (2040)

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



### *Comparative Measure of Provision*

- 8.5 A comparative measure of swimming pool provision is water space per 1,000 population.
- 8.6 Bromsgrove has the second-highest provision of water space per 1,000 population of all the local authorities in the study area, with the exception of Solihull. Bromsgrove provides 11.6 sqm of water per 1,000 population in Run 1, decreasing to 10.2 sqm in Run 2.

**Table 8.2: Water Space per 1,000 Population by Area and Run**

Water space per 1,000 population	RUN 1	RUN 2
Local Authority	2021	2040
<b>Bromsgrove</b>	<b>11.6</b>	<b>10.2</b>
Birmingham South	9.8	9.1
Dudley	6.5	8.3
Solihull	16.6	15.1
Stratford-on-Avon	11.4	9.4
Redditch	4.3	4.3
Wychavon	9.4	7.9
Wyre Forest	9.2	8.5
WEST MIDLANDS TOTAL	11.0	10.1
ENGLAND TOTAL	11.9	11.0

- 8.7 The findings on water space per 1,000 population are reported because some local authorities like to compare their quantitative provision with others; however, it does not set a standard of provision, and should not be used as such.
- 8.8 The supply and demand assessment and evidence base for swimming pools in the District is based on the findings analysed in this report in Sections 2 to 8.

## APPENDIX 1: SWIMMING POOLS IN NEIGHBOURING AUTHORITIES INCLUDED IN THE ASSESSMENT

Site	Operation	Facility Type	Dimensions (m)	Area (sqm)	Year Built	Year Refurb
<b>Birmingham South</b>						
Archbishop Ilsley Catholic School	Public	Main	17 x 10	170	1950	
Cocks Moors Woods Leisure Centre	Public	Leisure	25 x 13	313	1987	
Edgbaston High School for Girls	Public	Main	23 x 10	229	1998	2008
Fox Hollies Leisure Centre	Public	Main	25 x 12	300	1986	2003
Fox Hollies Leisure Centre		Learner	12 x 5	60		
Harborne Pool and Fitness Centre	Public	Main	25 x 13	325	2012	
Harborne Pool and Fitness Centre		Learner	13 x 8	104		
King Edward VI Camp Hill School for Girls	Public	Main	25 x 13	313	1975	2007
King Edward VI High School for Girls	Public	Main	23 x 10	228	1965	1986
King Edward's School	Public	Main	25 x 15	375	1985	
Linden Road Instruction Pool	Public	Main	19 x 9	171	1935	2010
Moseley Road Baths	Public	Main	21 x 10	213	1907	2012
Northfield Leisure Centre	Public	Main	25 x 13	325	2018	
Northfield Leisure Centre		Learner	12 x 10	120		
Nuffield Health (Birmingham Rubery)	Comm.	Main	25 x 6	150	2000	2007
Sparkhill Swimming Pool and Fitness	Comm.	Main	25 x 13	325	2017	
Sparkhill Swimming Pool and Fitness		Learner	13 x 8	104		
Stechford Leisure Centre	Public	Main	25 x 13	325	2018	
Stechford Leisure Centre		Learner	20 x 13	260		
The Blue Coat School	Public	Main	25 x 10	250	1997	
University of Birmingham Sport and Fitness	Public	Main	50 x 17	850	2017	
<b>Dudley</b>						
Crystal Leisure Centre	Public	Main	25 x 10	250	1990	2009
Crystal Leisure Centre		Leisure	24 x 20	480		
David Lloyd Club (Dudley)	Comm.	Main	25 x 15	375	2001	
Dudley Leisure Centre (Run 1 only)	Public	Main	25 x 10	250	1978	2004
Dudley Leisure Centre (Run 1 only)		Learner	10 x 5	50		
Duncan Edwards Leisure Centre (Run 2 only)	Public	Main	25 x 17	425	2022	
Duncan Edwards Leisure Centre (Run 2 only)		Learner	17 x 7	116.2		
Halesowen Leisure Centre (Run 2 only)	Public	Main	33 x 12	400	1963	2022
Halesowen Leisure Centre (Run 2 only)		Learner	15 x 9	135		
Pedmore High School	Public	Main	20 x 8	150	1965	2003
Summerhill School	Public	Main	25 x 8	200	2003	
The Crestwood School	Public	Main	20 x 6	120	1958	
Village Gym (Dudley)	Comm.	Main	25 x 10	250	2000	
<b>Solihull</b>						
Bannatyne Health Club (Solihull)	Comm.	Main	20 x 8	150	1997	2004
Club Moativation (Solihull)	Comm.	Main	17 x 10	170	1990	2005
David Lloyd Club (Solihull Cranmore)	Comm.	Main	25 x 13	313	1998	2022
David Lloyd Club (Solihull Cranmore)		Learner	13 x 13	156		
David Lloyd Club (Solihull Fitness)	Comm.	Main	25 x 8	200	1998	
Livingwell Health Club (Birmingham Metropole)	Comm.	Main	20 x 20	400	1995	2005
North Solihull Sports Centre	Public	Main	33 x 13	426	1979	2008

North Solihull Sports Centre		Learner	17 x 8	128	
Saint Martin's School	Public	Main	25 x 8	200	2003
Smiths Wood Academy	Public	Main	20 x 7	140	2008
Solihull School	Public	Main	24 x 9	204	1970 2008
Tudor Grange Leisure Centre	Public	Main	25 x 18	450	2008 2018
Tudor Grange Leisure Centre		Learner	12 x 8	96	
Tudor Grange Leisure Centre		Diving	12 x 8	96	
Village Gym (Solihull)	Comm.	Main	20 x 9	180	2009
Virgin Active Club (Solihull)	Comm.	Main	25 x 11	263	2001
Virgin Active Club (Solihull)		Learner	11 x 7	74	
<b>Stratford-on-Avon</b>					
Bannatyne Health Club and Spa (Wildmoor)	Comm.	Main	20 x 8	160	2005
Shipston Leisure Centre	Comm.	Main	25 x 10	250	2005
Southam Leisure Centre	Public	Main	25 x 10	250	1988 2004
Stratford Leisure Centre	Public	Main	33 x 12	396	1975 2015
Stratford Leisure Centre		Learner	12 x 10	120	
Studley Leisure Centre	Public	Main	20 x 9	180	1971 2002
Vital Health & Wellbeing (Alveston Manor)	Comm.	Main	18 x 9	162	2003
<b>Redditch</b>					
Abbey Stadium Sports Centre	Public	Main	25 x 12	300	2012
Abbey Stadium Sports Centre		Learner	10 x 7	65	
<b>Wychavon</b>					
David Lloyd Club (Worcester)	Comm.	Main	25 x 12	300	2012
Droitwich Spa Leisure Centre	Public	Main	25 x 13	325	1995
Evesham Leisure Centre	Public	Main	25 x 11	275	2009
Evesham Leisure Centre		Learner	12 x 7	84	
Pershore Leisure Centre	Public	Main	25 x 11	275	2002
<b>Wyre Forest</b>					
Holy Trinity School	Public	Main	23 x 9	207	1965 2012
Mercure Bewdley The Heath Hotel	Comm.	Main	25 x 10	250	1990
Mercure Bewdley The Heath Hotel		Learner	4 x 4	16	
Wyre Forest Leisure Centre	Public	Main	25 x 13	325	2016
Wyre Forest Leisure Centre		Learner	15 x 10	150	

## APPENDIX 2: MAPS

Swimming Pools Coverage Run 1

Swimming Pools Coverage Run 2

Demand Run 1

Demand Run 2

Unmet Demand Run 1

Unmet Demand Run 2

Reachable Unmet Demand Run 1

Reachable Unmet Demand Run 2

Local Share Run 1

Local Share Run 2

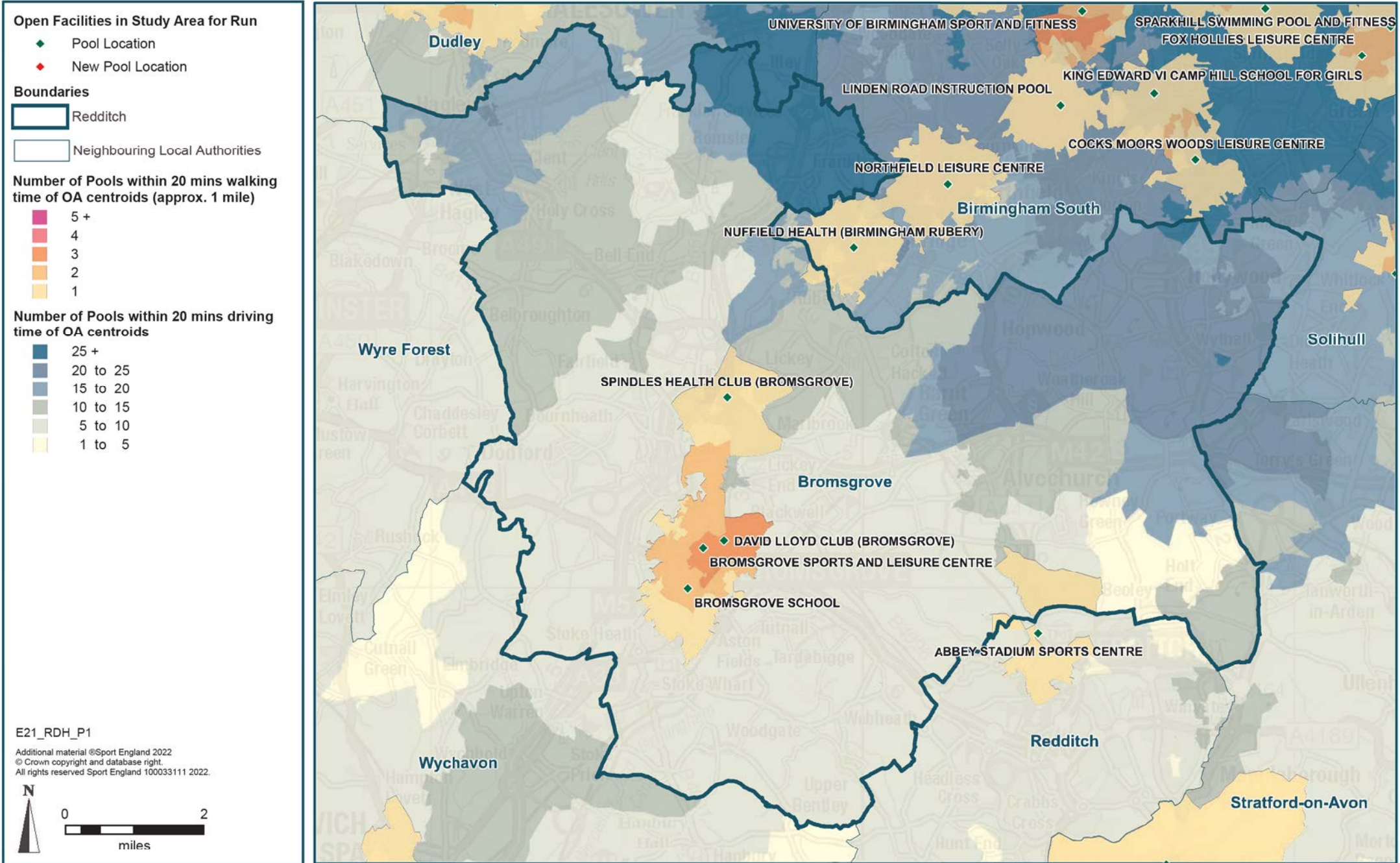
Import/Export Run 1

Import/Export Run 2

# Facility Planning Model - Pools Coverage for Bromsgrove

## Run 1: Existing Position - Year 2021

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

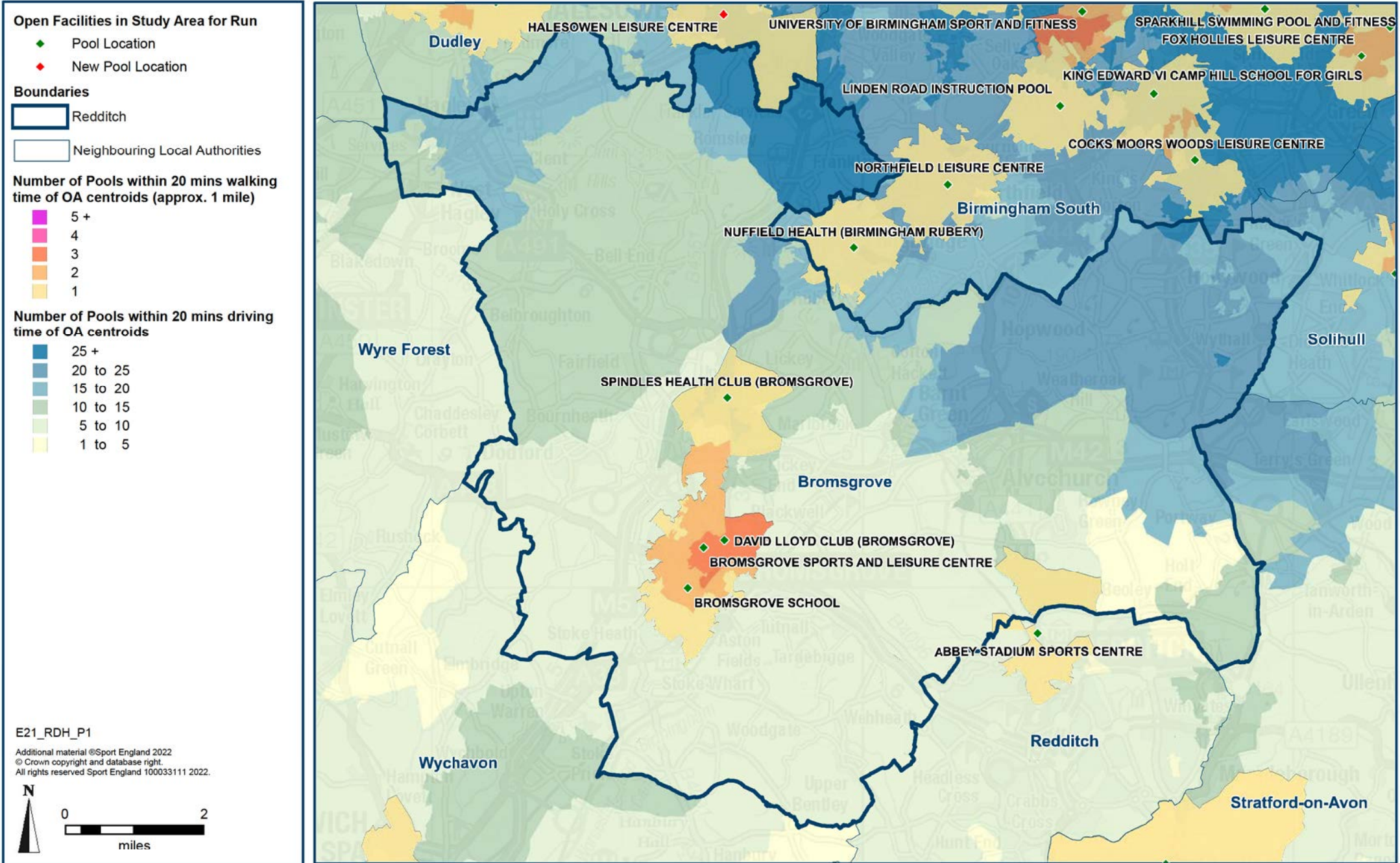




# Facility Planning Model - Pools Coverage for Bromsgrove

## Run 2: Existing Provision - Year 2040

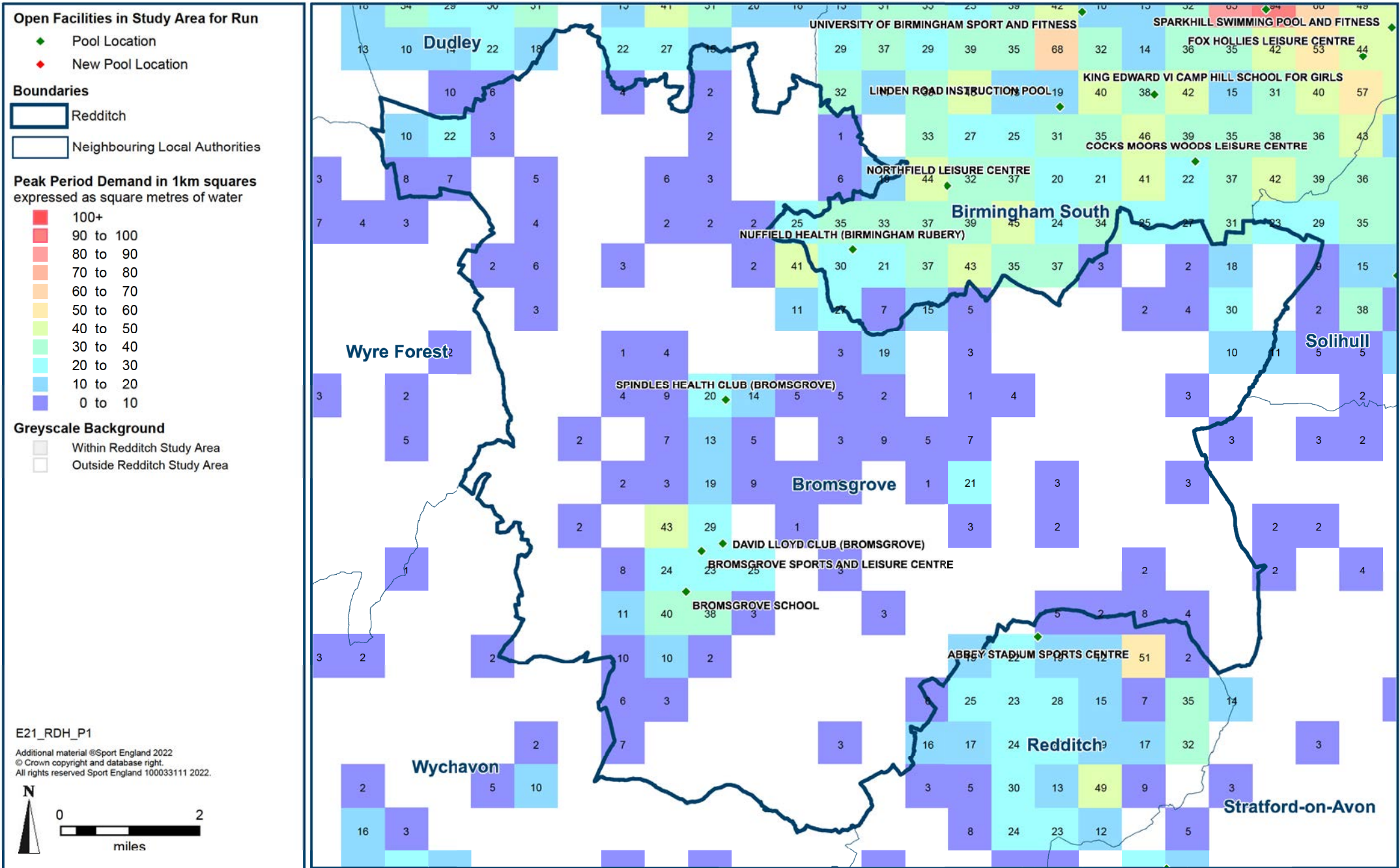
Coverage shown thematically (colours) at output area (OA) level expressed as the number of pools within 20 minutes travel time of output area centroid.



# Facility Planning Model - Pools Demand for Bromsgrove

## Run 1: Existing Position - Year 2021

Peak period demand aggregated at 1km square grid expressed as square metres of water (figure labels) and shown thematically (colours)..



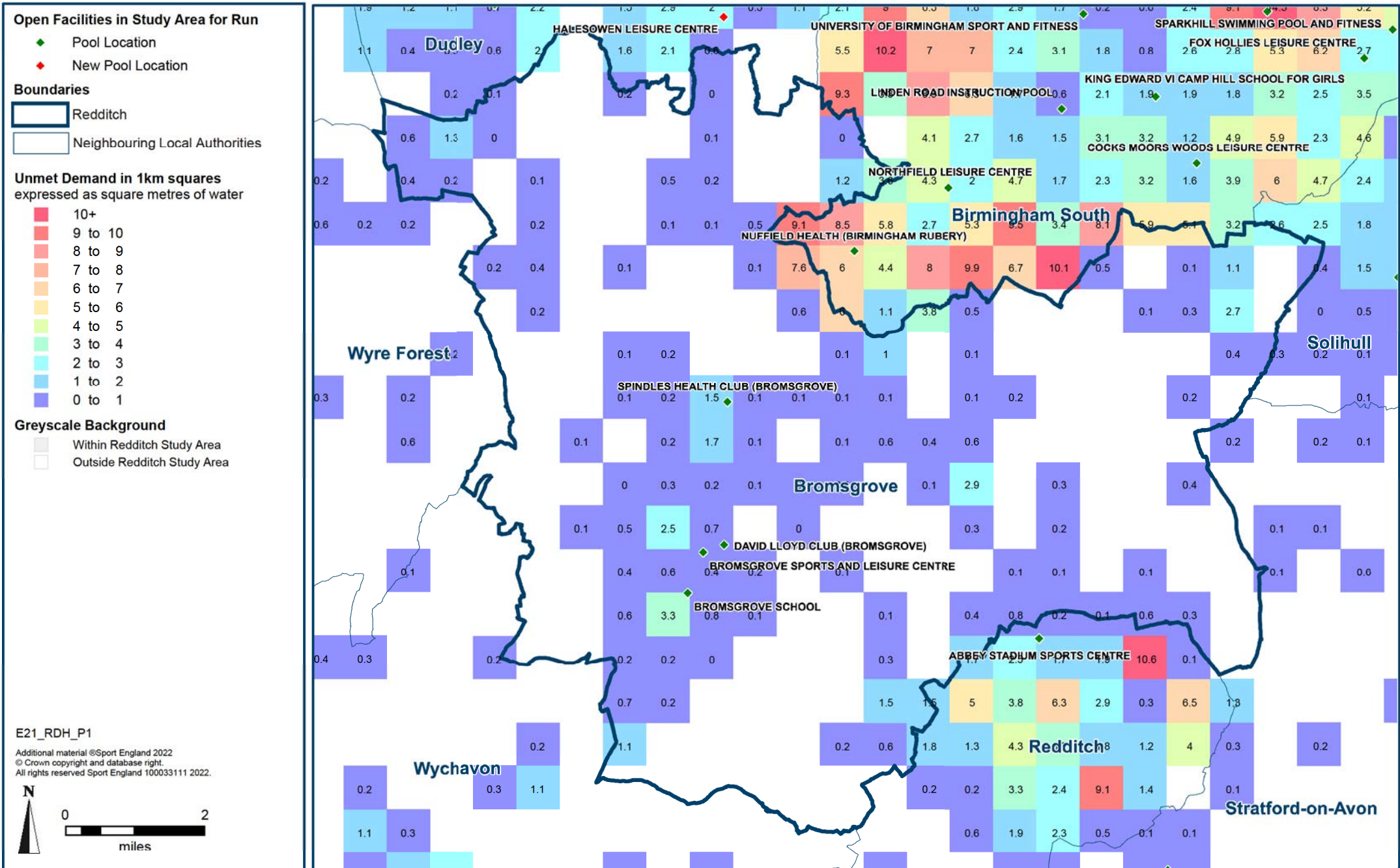




# Facility Planning Model - Pools Unmet Demand for Bromsgrove

## Run 2: Existing Provision - Year 2040

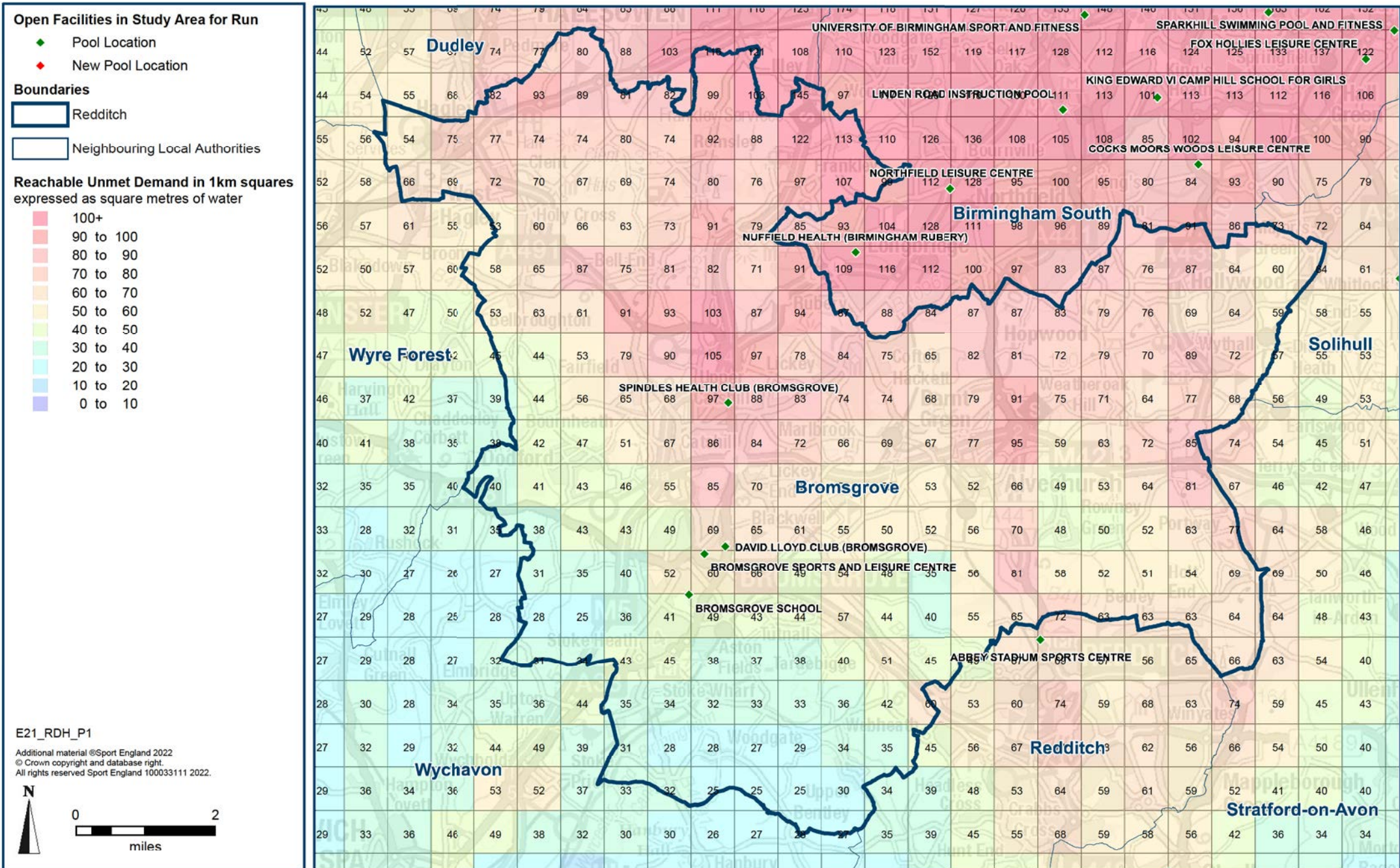
Unmet demand aggregated at 1km square grid expressed as sqm of water (figure labels) and shown thematically (colours).



# Facility Planning Model - Pools Reachable Unmet Demand for Bromsgrove

## Run 1: Existing Position - Year 2021

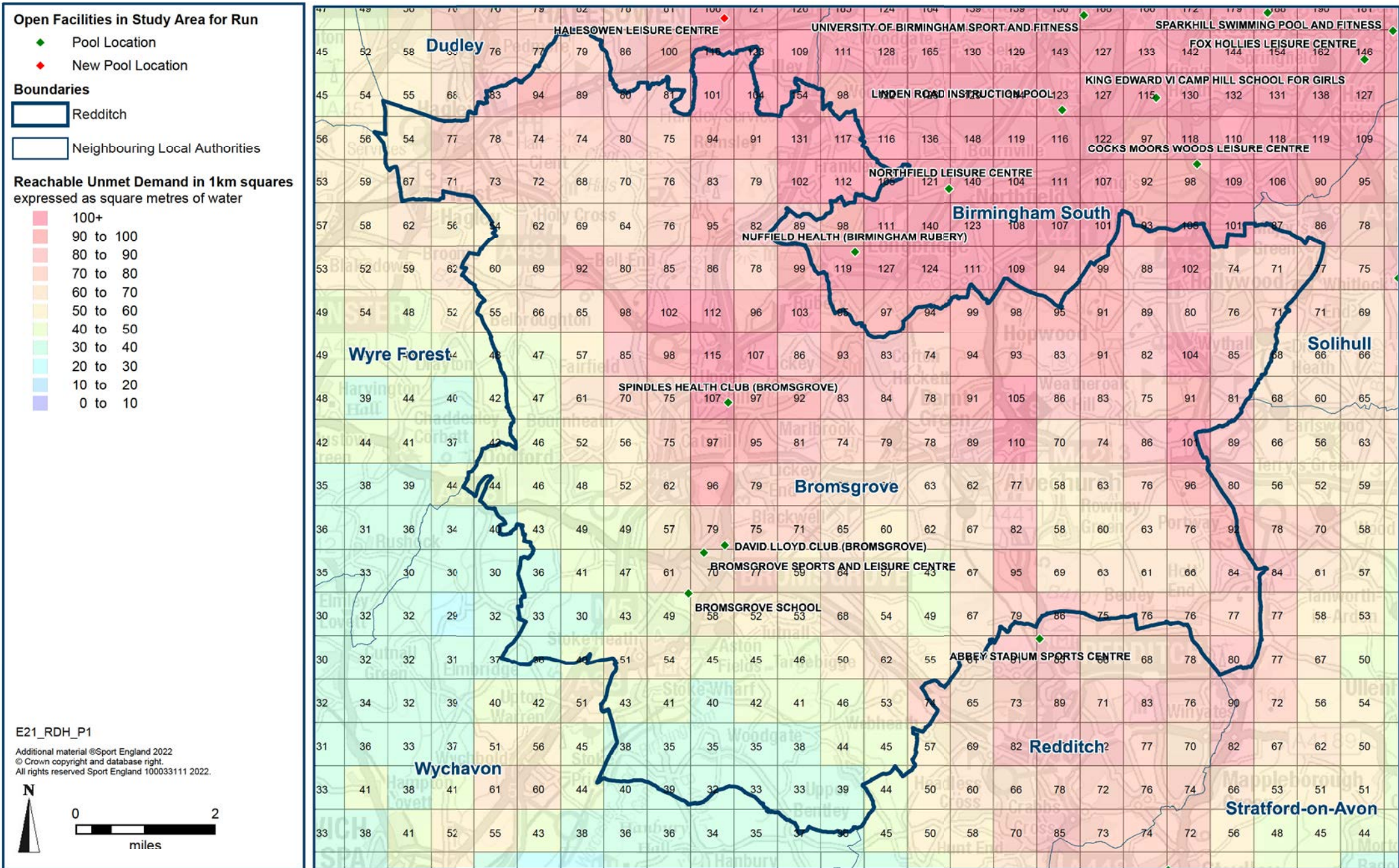
Reachable unmet demand aggregated at 1km square grid expressed in sqm of water (figure labels) and shown thematically (colours).



# Facility Planning Model - Pools Reachable Unmet Demand for Bromsgrove

## Run 2: Existing Provision - Year 2040

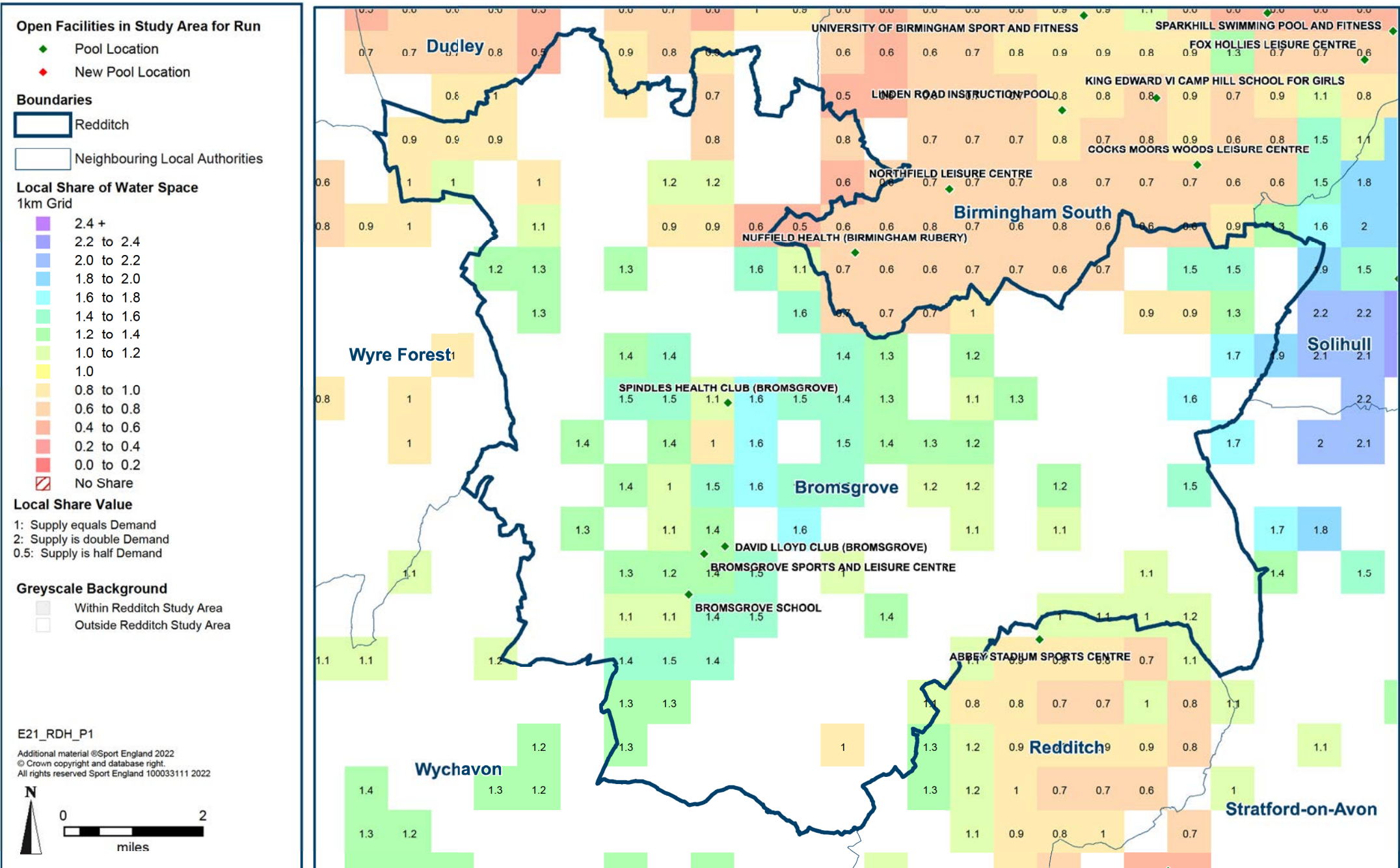
Reachable unmet demand aggregated at 1km square grid expressed in sqm of water (figure labels) and shown thematically (colours).



# Facility Planning Model - Pools Local Share for Bromsgrove

## Run 1: Existing Position - Year 2021

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





# Facility Planning Model - Pools Local Share for Bromsgrove

## Run 2: Existing Provision - Year 2040

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

### Open Facilities in Study Area for Run

- ◆ Pool Location
- ◆ New Pool Location

### Boundaries

- Redditch
- Neighbouring Local Authorities

### Local Share of Water Space 1km Grid

- 2.4 +
- 2.2 to 2.4
- 2.0 to 2.2
- 1.8 to 2.0
- 1.6 to 1.8
- 1.4 to 1.6
- 1.2 to 1.4
- 1.0
- 0.8 to 1.0
- 0.6 to 0.8
- 0.4 to 0.6
- 0.2 to 0.4
- 0.0 to 0.2
- No Share

### Local Share Value

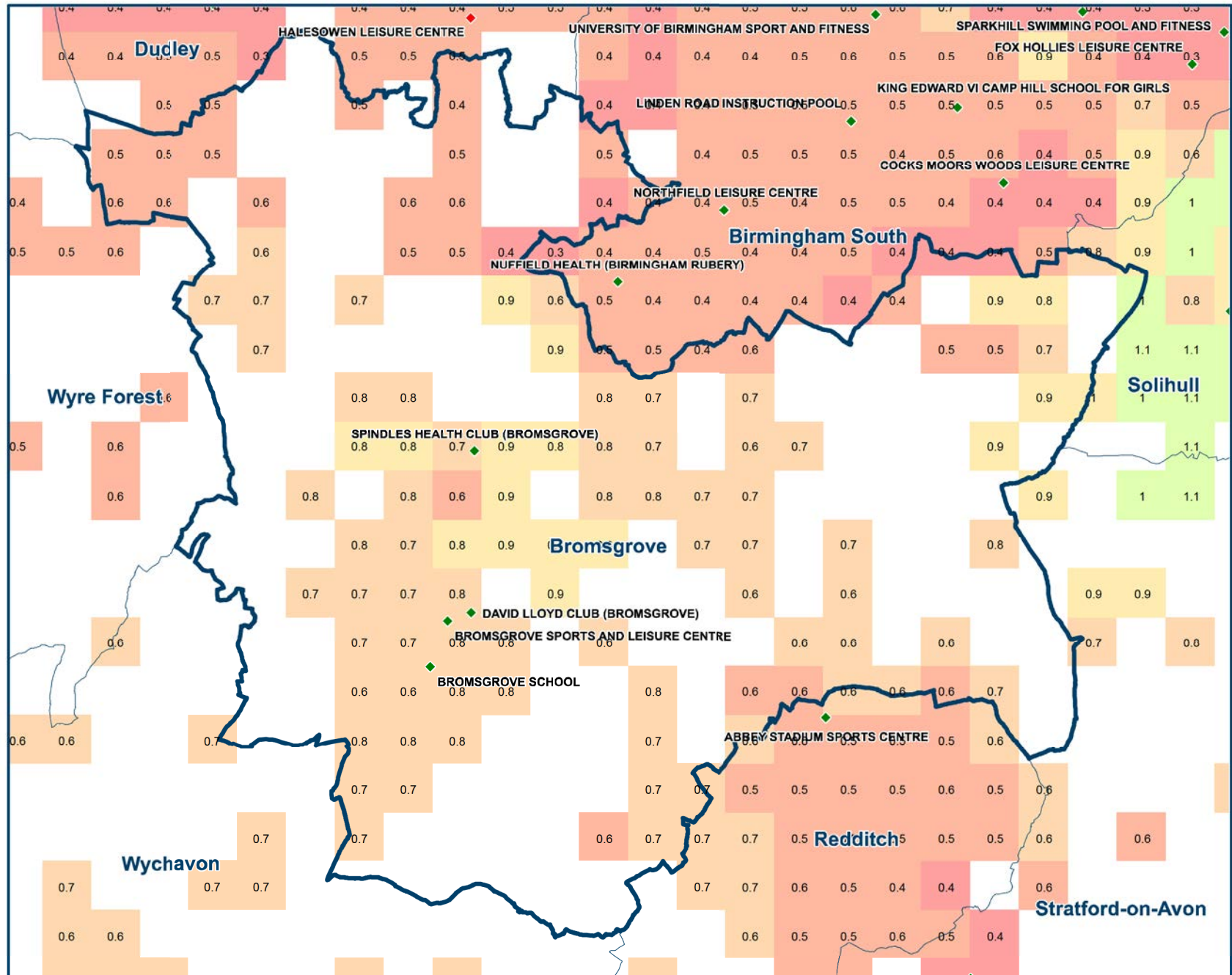
- 1: Supply equals Demand
- 2: Supply is double Demand
- 0.5: Supply is half Demand

### Greyscale Background

- Within Redditch Study Area
- Outside Redditch Study Area

E21\_RDH\_P1

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# Facility Planning Model - Pools Import/Export for Bromsgrove



## Run 1: Existing Position - Year 2021

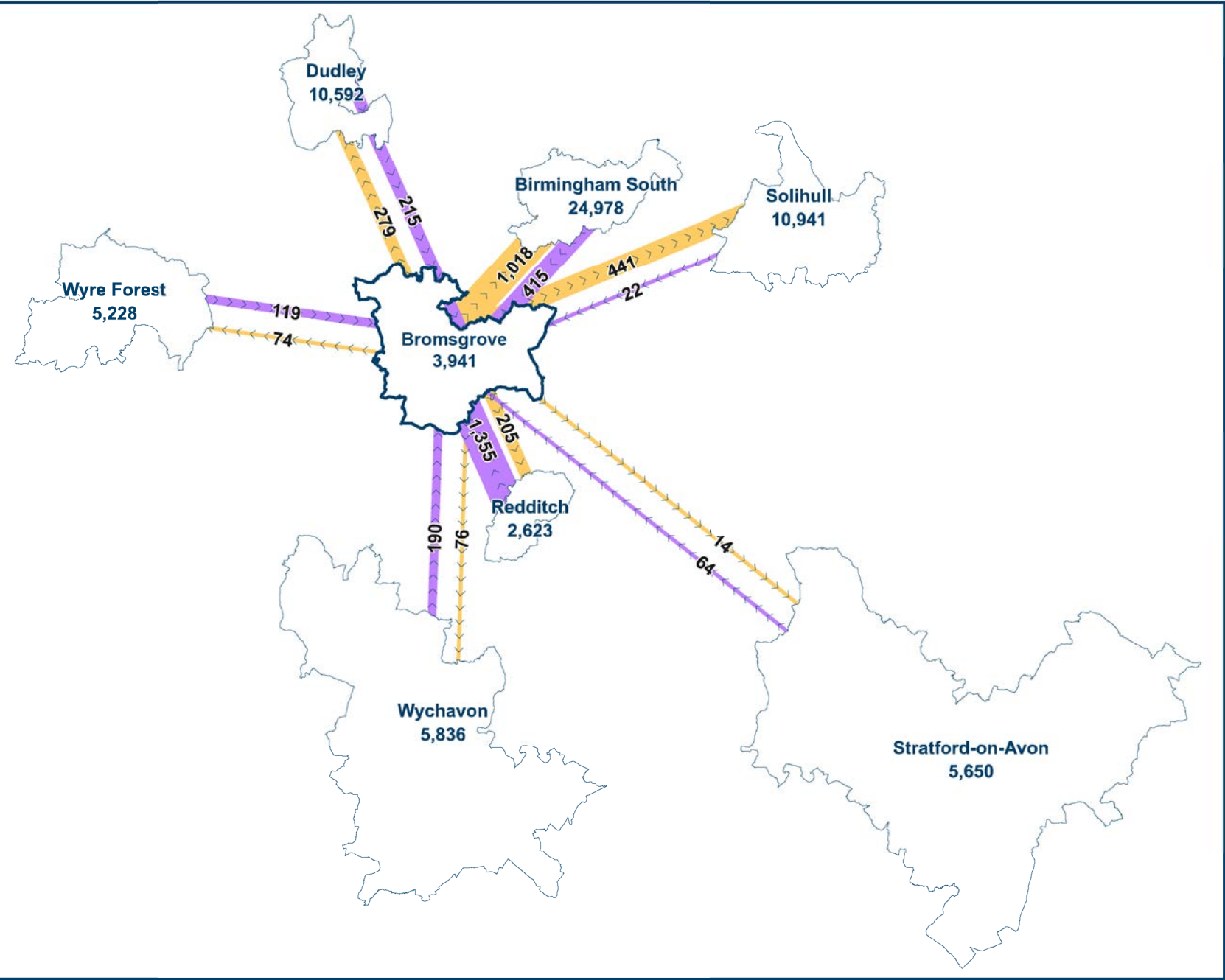
Imported and exported demand between study area and surrounding local authorities shown thematically (size of lines) as visits per week in the peak period.

**Boundaries**  
Values in areas show retained vpwpp

-  Bromsgrove
-  Surrounding LAs

**Import/Export**  
Values on arrows show flow vpwpp

- >>>>>> Direction of flow
-  Import
-  Export





# Facility Planning Model - Pools Import/Export for Bromsgrove



## Run 2: Existing Provision - Year 2040

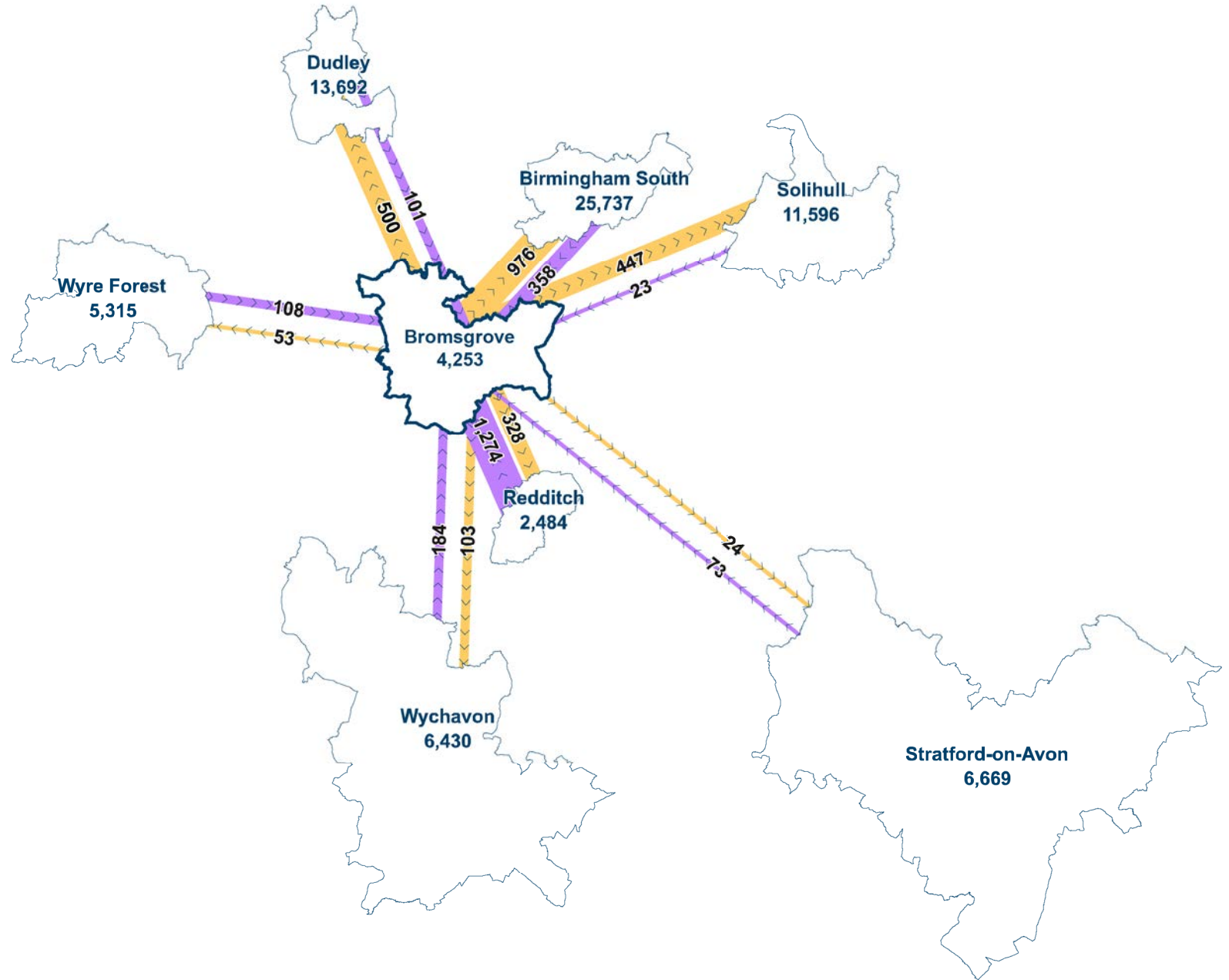
Imported and exported demand between study area and surrounding local authorities shown thematically (size of lines) as visits per week in the peak period.

**Boundaries**  
Values in areas show retained vpwpp

-  Bromsgrove
-  Surrounding LAs

**Import/Export**  
Values on arrows show flow vpwpp

- >>>>>> Direction of flow
-  Import
-  Export



## APPENDIX 3: 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 **sportscotland** 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 swimming pools, sports halls, 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 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, i.e., 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 conducted 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 about 175,000 people and covers the full age/gender range. Detailed questions are asked about over 200 separate sports categories 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. 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<sup>1</sup>. 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)<sup>2</sup>.
- 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.

#### **5. Calculating Supply Capacity**

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

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<sup>1</sup> 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.

<sup>2</sup> 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.

- 5.3. Based on travel time information<sup>3</sup> 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 authority, 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 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 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 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

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<sup>3</sup> 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.

of the actual main hall. For example, a hall may be marked out with 4 courts, when it has space for 3 courts. As the model uses the 'courts' as a unit of size, it is important that the hall's capacity is included as a 3 '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 weighting 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.
- 7.5. The English Indices of Deprivation 2019, produced by the Ministry of Housing, Communities and Local Government, measure relative levels of deprivation in 32,844 lower super output areas (LSOAs) in England. Deciles are calculated by ranking the LSOAs from most deprived to least deprived and dividing them into ten groups. IMD is an overall relative measure of deprivation constructed by combining seven domains of deprivation according to their relative weights.

## 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<sup>2</sup>, 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 not applied to AGPs due to the fact they are 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 swimming 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.

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

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

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 90% of all visits, both by car and on foot, are made within 20 minutes. Hence, 20 minutes is often used as a rule of thumb for the catchments for swimming pools 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*

#### Swimming Pools

The following inclusion criteria were used for this analysis:

- Include all operational indoor swimming pools available for community use, i.e., pay and play, membership, sports club/community association.
- Exclude all pools not available for community use, i.e., private use.
- Exclude all outdoor pools, i.e., lidos.
- Exclude all pools where the main pool is less than 20 metres in length, or the area is less than 160 square metres. If the principal pool is a leisure pool with an area less than 200 square metres, then all pools on the site should be excluded.
- Include all 'planned,' 'under construction, and 'temporarily closed' facilities only where all data is available for inclusion.
- Where opening times are missing, availability has been included based on similar facility types.
- Where the year built is missing assume date 1975<sup>4</sup>.

Facilities over the border in Wales and Scotland are included, as supplied by **sportscotland** and Sport Wales.

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<sup>4</sup> Choosing a date in the mid 1970s ensures that the facility is included, while not overestimating its impact within the run.

*Model Parameters*

**Pools Parameters**

At One Time Capacity	0.16667 per square metre = 1 person per 6 square meters																											
Catchment Maps	<p>Car: 20 minutes          Walking: 1.6 km          Public transport: 20 minutes at about half the speed of a car</p> <p>NOTE: Catchment times are indicative, within the context of a distance decay function of the model.</p>																											
Duration	60 minutes																											
Percentage Participation	<table border="1"> <thead> <tr> <th>Age</th> <th>0-15</th> <th>16-24</th> <th>25-34</th> <th>35-44</th> <th>45-59</th> <th>60-79</th> </tr> </thead> <tbody> <tr> <td>Male</td> <td>14.5</td> <td>6.9</td> <td>10.4</td> <td>8.6</td> <td>5.4</td> <td>1.6</td> </tr> <tr> <td>Female</td> <td>16.2</td> <td>10.2</td> <td>13.8</td> <td>11.8</td> <td>7.7</td> <td>1.5</td> </tr> </tbody> </table>							Age	0-15	16-24	25-34	35-44	45-59	60-79	Male	14.5	6.9	10.4	8.6	5.4	1.6	Female	16.2	10.2	13.8	11.8	7.7	1.5
Age	0-15	16-24	25-34	35-44	45-59	60-79																						
Male	14.5	6.9	10.4	8.6	5.4	1.6																						
Female	16.2	10.2	13.8	11.8	7.7	1.5																						
Frequency per Week	<table border="1"> <thead> <tr> <th>Age</th> <th>0-15</th> <th>16-24</th> <th>25-34</th> <th>35-44</th> <th>45-59</th> <th>60-79</th> </tr> </thead> <tbody> <tr> <td>Male</td> <td>1.09</td> <td>1.03</td> <td>0.86</td> <td>1.01</td> <td>1.30</td> <td>1.73</td> </tr> <tr> <td>Female</td> <td>1.10</td> <td>0.96</td> <td>0.82</td> <td>1.00</td> <td>1.17</td> <td>1.28</td> </tr> </tbody> </table>							Age	0-15	16-24	25-34	35-44	45-59	60-79	Male	1.09	1.03	0.86	1.01	1.30	1.73	Female	1.10	0.96	0.82	1.00	1.17	1.28
Age	0-15	16-24	25-34	35-44	45-59	60-79																						
Male	1.09	1.03	0.86	1.01	1.30	1.73																						
Female	1.10	0.96	0.82	1.00	1.17	1.28																						
Peak Period	<p>Weekday: 9:00 to 10:00, 12:00 to 13:00, 15:30 to 21:00          Weekend: 08:00 to 15:30          Total: 52.5 hours</p>																											
Proportion in Peak Period	63%																											