Facilities Planning Model Assessment of Sports Hall Provision for Bromsgrove District Council

Bespoke Report

29 July 2022

This document has been produced by ORH on behalf of Sport England for Bromsgrove District Council on 29 July 2022. This document can be reproduced by Bromsgrove District Council, subject to it being used accurately and not in a misleading context. When the document is reproduced in whole or in part within another publication or service, the full title, date, and accreditation to Sport England must be included.

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.

The Facilities Planning Model

It is most important to set out that the Sport England Facilities Planning Model (FPM) study is a quantitative, accessibility and spatial assessment of the supply, demand and access to sports halls. The FPM study assesses how these factors change based on projected population growth and options to change the sports hall 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 sports halls.

Accreditations

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

EXECUTIVE SUMMARY

Introduction

0.1 Bromsgrove District Council (also referred to as Bromsgrove, or the District) is reviewing its current provision of sports halls and assessing the 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 sports halls 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 Sport England FPM study on supply, demand and accessibility.

Headline Strategic Overview

0.5 The headline strategic overview is that Bromsgrove has a good number of ageing halls on educational sites in good locations but with limited off-peak access. The reliance on educational owned provision for community use should be secured where possible.

0.6 There is plenty of potential spare capacity at peak times if sites were to open for longer, which could offset some over-utilisation at certain sites.

0.7 While there is a high level of satisfied demand from residents, there is a high level of imported and exported demand. Therefore, joint planning with neighbouring local authorities is an important consideration.

Key Findings

0.8 The key findings that underpin the headline strategic overview are as follows:

1. Only two hall sites are open for the majority of peak times, and these are also the only halls open to any large extent during the off-peak period.
2. Because of the limited opening times of many sites, there is an equivalent of 12 courts' spare capacity during the peak period.
3. Bromsgrove has an ageing supply of sports halls, primarily located on educational sites.
4. Demand in Bromsgrove increases by 10% between 2021 and 2040, with some of this increase located around the proposed housing developments to 2030 on the boundary with Redditch.

5. There is a very high level of car access in the District: around 85% of satisfied demand is from residents who travel by car.
6. Only around 15% of journeys made by Bromsgrove residents to sports halls are on foot or by public transport, despite 40% of the population living within a 20-minute walk of a sports hall.
7. Bromsgrove residents have a very high level of satisfied demand for halls in both years.
8. A third of this satisfied demand is met by suitably located halls outside the District. The majority are in Birmingham South and, increasingly, Redditch halls meeting the demand from Bromsgrove.
9. Unmet demand is very low, with no area of the District having higher levels of unmet demand than any other.
10. Most of the unmet demand is due to residents without access to a car living too far away from a sports hall.
11. Bromsgrove's halls are increasingly well utilised between the runs, although some are operating at an uncomfortably busy 100% used capacity.
12. A large proportion of used capacity comes from demand in neighbouring local authority areas, notably Birmingham South and Dudley, indicating the importance of sports hall planning across local authority boundaries.
13. Bromsgrove has a low local share of sports halls because their relative older age makes them less attractive and the halls have to cater for a net influx of users from outside the District.

Interventions and Next Steps

0.9 The key issues in terms of interventions and next steps are:

- The reliance on the educational sector to continue to provide community access.
- Offsetting the increasing over-utilisation of certain sites.
- The age and condition of the existing stock.
- The need for joint planning with neighbouring local authorities.

0.10 Suggested interventions are:

- Secure community-use agreements at educational sites. This would apply to all sites, but the most important sites are:
    - Bromsgrove School: the most modern facility, which has the only large, eight-court sports hall in the District. It also has two four-court halls, of which one meets the Sport England recommended size.
    - Woodrush Community Hub and Sports Centre: currently open for the maximum peak time hours and one of only two hall sites open during off-peak times.
    - Future sites including the proposed sports hall at Waseley Hills High School which is planned for redevelopment under the Department for Education's Schools Re-Building Programme.

- Encourage certain sites to open for longer. This would include:
    - Sites operating above comfortable capacity, such as North Bromsgrove High School, which operates at 100% used capacity and is open for only 20 hours in the peak period.
    - Sites located close to those that operate above the Sport England 80% comfort factor level, such as Bromsgrove School and South Bromsgrove High School.
- Support the modernisation of existing sites particularly those near to the proposed major housing developments where developer contributions could be secured to help improve sports hall provision.
- Work with neighbouring local authorities to achieve shared strategic objectives:
    - The FPM findings identify the high level of dependence on facilities in other local authority areas to meet demand from residents. Birmingham South and Dudley have a less favourable supply of halls compared to Bromsgrove and rely on Bromsgrove halls to meet some of their residents' demand. Similarly, Bromsgrove residents would benefit from improved provision in these neighbouring local authority areas. Therefore, collaboration to look at increasing capacity and/or investment into improving the existing supply would be a mutually beneficial strategic and longer-term intervention.
    - Working with Redditch Brough Council regarding the proposed housing developments to 2030 on the boundary with Bromsgrove would be beneficial for securing developer contributions towards improving nearby sports hall provision; for example, at Abbey Stadium.

0.11 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 sports halls up to 2040 and beyond.

Contents

1 INTRODUCTION

1.1 Bromsgrove District Council is reviewing the current provision of sports halls and assessing the future provision required up to 2040.

1.2 The key drivers for the work are to:

- Provide a 2021 evidence base for sports halls in the District.
- Assess how the supply of sports halls is meeting demand in the District in 2021.
- Provide a forward assessment of need and an evidence base for sports halls 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:

1. The District's indoor sports facilities strategic planning work.
2. Development of planning policies for sports hall provision.

1.4 The sequence of work is based on assessments known as runs, and these are set out in the Executive Summary.

The Study Area

1.5 The assessments include the sports halls and population in the District and its neighbouring local authorities, which comprise the study area (see Map **1.1**).

1.6 A customer's choice of sports halls does not reflect local authority boundaries. There may be management, and possibly pricing, incentives for customers to use sports facilities located in their local authority area. Other factors that influence choice of sports hall include:

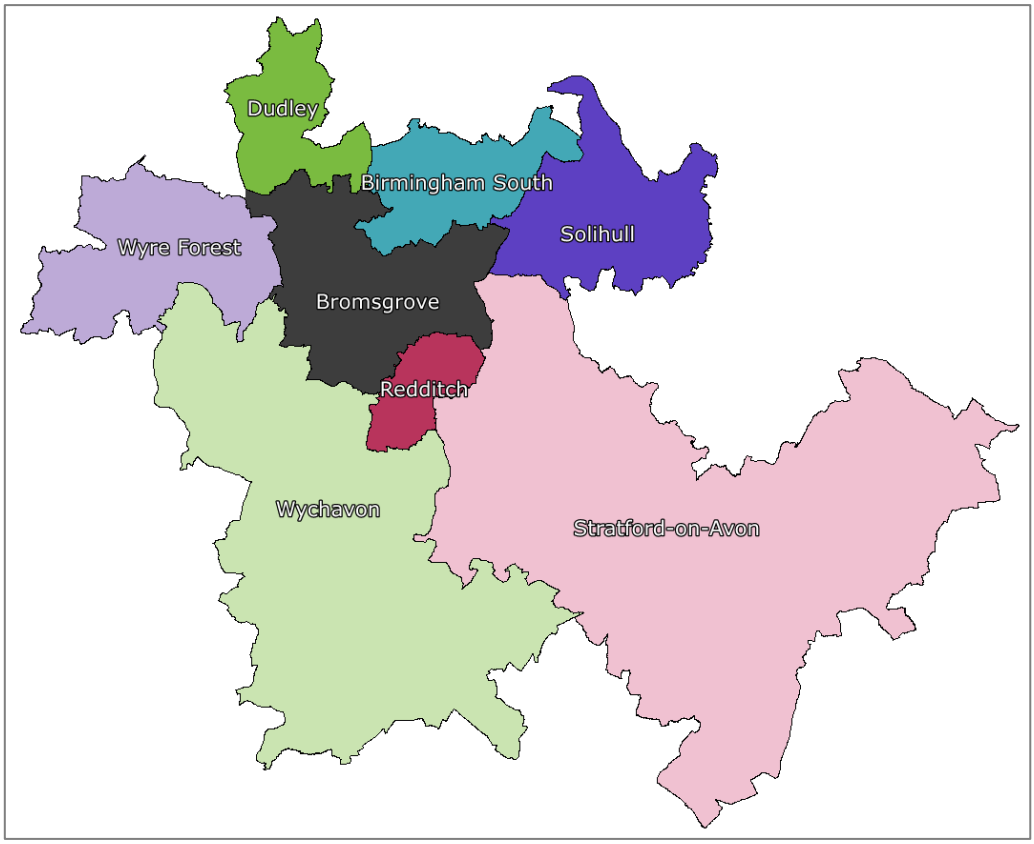
- How close the venue is to where residents live or work.
- Other facilities on the same site, such as a gym or studio.
- The programming of the sports halls, particularly that hall sports are available for club sport and community group use at times that fit with the lifestyle of residents.
- The age and condition of the facility and, inherently, its attractiveness.

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

1.8 In determining the position across the District, it is important to take full account of the sports halls and population in neighbouring local authority areas. 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 sports hall may be inside Bromsgrove (known as imported demand).

1.9 To take account of these factors, the study area places Bromsgrove District Council area at its centre and includes neighbouring local authorities.

Map 1.1: Study Area for the Bromsgrove Sports Halls Assessment



Report Structure, Content and Sequence

1.10 The findings for the Bromsgrove District Council assessment are set out in a series of tables for the runs, as follows:

- Total Supply
- Total Demand
- Accessibility
- Satisfied Demand
- Unmet Demand
- Used Capacity
- Local Share

1.11 The terms listed above are defined beneath the tables.

1.12 To support the findings, this report also includes maps that show sports hall locations, demand, deprivation, driving and walking coverage, public transport access, unmet demand and local share.

1.13 Where valid, the findings for neighbouring local authorities are set out. A commentary is provided on these comparable findings because some local authorities like to know how

their findings on badminton courts per 10,000 population compare with those for neighbouring local authorities.

1.14 The key findings in each of the sections are numbered and highlighted in bold typeface.

1.15 Details of the sports halls in the neighbouring local authority areas for the assessment are set out in Appendix **1**. All maps for the study are provided in Appendix **2**. For a description of Sport England's FPM and its parameters, see Appendix **3**.

2 SPORTS HALL SUPPLY

Key finding 1 is that only two hall sites are open for the majority of peak times and these are also the only halls open to any large extent during the off-peak period.

Key finding 2 is that, because of the limited opening times of many sites, there is an equivalent of 12 courts' spare capacity during the peak period.

Key finding 3 is that Bromsgrove has an ageing supply of sports halls, primarily located on educational sites.

Table 2.1: Supply of Sports Halls in Bromsgrove by Run

Total Supply	RUN 1	RUN 2
Bromsgrove	2021	2040
Number of halls	15	15
Number of hall sites	8	8
Supply in badminton court equivalents	57.1	57.1
Supply in courts scaled with hours available in peak period	35.0	35.0
Supply in visits per week in peak period	12,880	12,880
Average year built of sites	1986	1986
Average age of sites	35	54

Definition of supply – This is the supply or capacity of the sports halls available for community and club use in the weekly peak period. The supply is expressed in number of visits that a sports hall can accommodate in the weekly peak period and in the number of badminton courts.

Weekly peak period – This is when the majority of visits take place and when users have most flexibility to visit. The peak period for sports halls is one hour on weekday mornings, five hours on weekday evenings and eight hours on weekend days. This gives a total of 46 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 In both runs there are 15 individual sports halls, located at eight sports hall sites. Ryland Centre is the only local authority site run by a trust. The other sites are educational but two are managed by a private contractor.

2.2 In 2021 and 2040, the total supply of sports halls in badminton-court equivalents is 57 courts.

2.3 Key finding 1 is that only two sites are open for the majority of peak times (Woodrush Community Hub and Sports Centre and Ryland Centre). These are also the only halls open to any large extent during the off-peak period.

2.4 Key finding 2 is that, because of the limited opening times of many sites, only 35 courts are available for community use in the weekly peak period. The equivalent of 12 courts (21% of the total supply) are unavailable for community use, which is potential spare capacity during the peak period.

2.5 The educational provider determines the policy towards community use of its educational site, together with the programme and hours of use. Should schools or colleges reduce access for community use, this will create a significant change in the overall balance between supply and demand in terms of the following:

- Whether there is enough supply to meet demand.
- How supply differs by area.
- The type of access for sports clubs, community groups and pay and play.

Table 2.2: Details of Sports Halls in Bromsgrove Included in the Runs

Site	Operation	Facility Type	Dimensions (m)	Area (sqm)	Year Built	Year Refurb	Peak Hours	Total Hours	Capacity (visits in weekly peak period)
Bromsgrove School	Educational	8-court 4-court 4-court	37 x 33 33 x 20 35 x 20	1,221 660 690	2012		23 23 23	35 35 35	2,944
Hagley Catholic High School	Educational	4-court Activity	33 x 18 20 x 14	594 280	2008		15 15	15 15	918
Haybridge Sports Centre	Educational	4-court Activity	34 x 18 18 x 12	612 216	1999		34 34	34 34	1,853
North Bromsgrove High School	Private Contractor	4-court	33 x 18	594	2007		20	20	640
Ryland Centre	LA Trust	4-court	35 x 20	690	1967	2010	45.5	90.5	1,456
South Bromsgrove High School	Private Contractor	4-court Activity	33 x 18 17 x 9	594 153	1950	2007	20 20	20 20	959
Waseley Hills High School	Educational	4-court Activity	34 x 19 18 x 10	646 180	1950	2010	35 35	39 39	1,776
Woodrush Community Hub and Sports Centre	Educational	4-court Activity	33 x 18 18 x 10	594 180	1996	2008	46 46	94.5 94.5	2,335

2.6 Bromsgrove School, the most modern site, has three main halls offering 2,571 sqm of hall space. This represents 33% of the total hall space in the District. Bromsgrove School has a large, eight-court hall, which offers additional scope for more activities to take place consecutively, higher levels of competition and events hosting, and greater flexibility for teaching and coaching.

2.7 The Sport England/National Governing Bodies recommended size for a four-court sports hall is 35m x 20m (690 sqm). This size of hall allows sufficient space between and behind the courts to provide for all indoor hall sports (except handball) at the community level of sports participation. This size of sports hall meets the needs for club sport development

programmes. Only the main halls at Bromsgrove School and Ryland Centre meet this recommended size.

2.8 Key finding 3 is that Bromsgrove has an ageing supply of sports halls, primarily located on educational sites. The average year built is 1986, making the hall sites 35 years old on average in 2021 and 54 years old on average in 2040. Bromsgrove School, built in 2012, is the most recently built facility. South Bromsgrove High School and Waseley Hills High School, built in 1950, are the oldest hall sites.

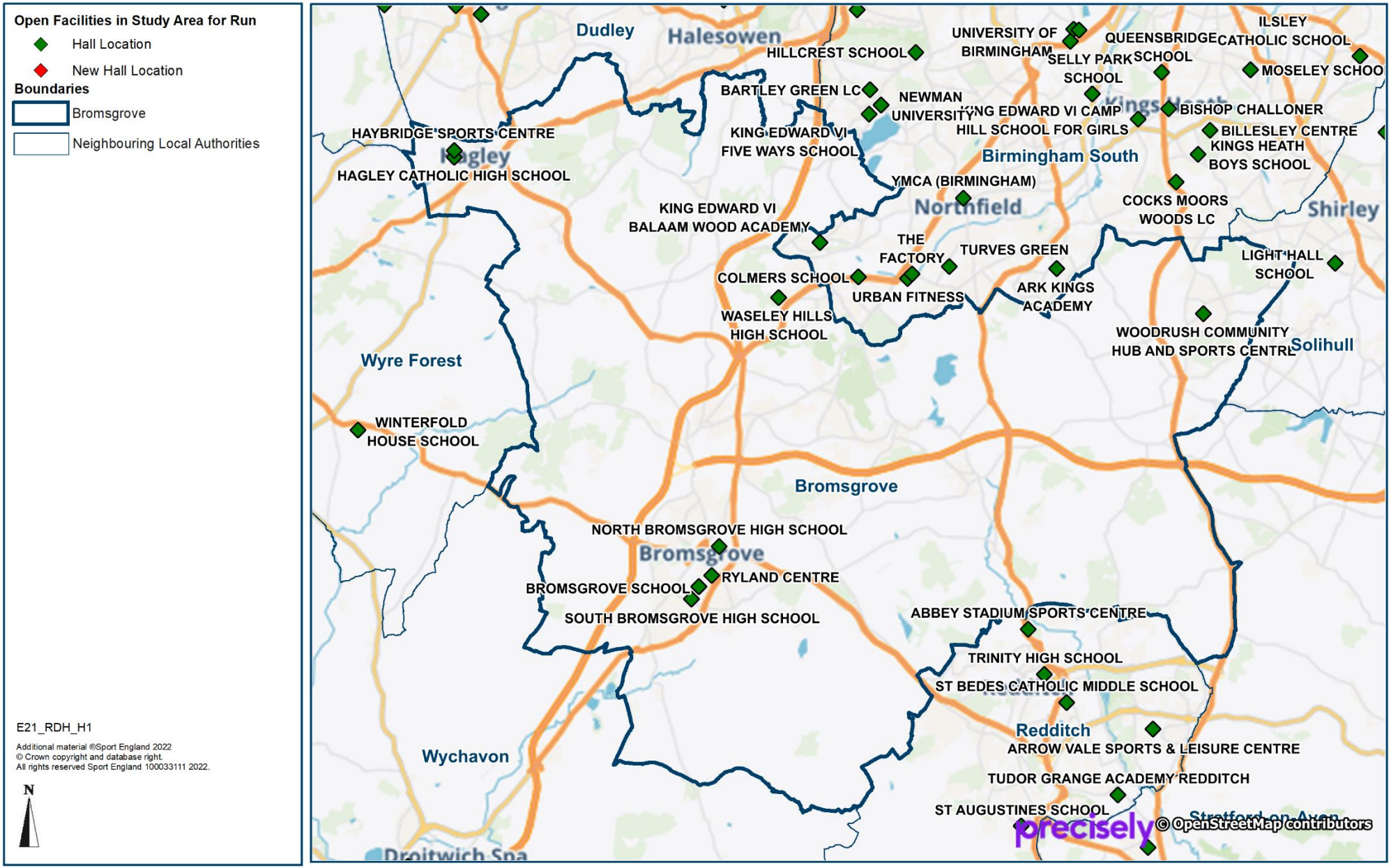
2.9 The oldest four-hall sites have had some refurbishment within the last 15 years, but the most recent refurbishments were in 2010.

Sports Hall Locations

2.10 The locations of sports halls across the District are shown in Map 2.1, with green diamonds indicating sites open in both runs.

2.11 Half the sports hall sites (four) are in Bromsgrove town, two are in Hagley, one is in Rubery and the other is in Wythall. The southeast of the District has no sports halls; however, there are halls located near the boundary in neighbouring Redditch.

Map 2.1: Location of Sports Hall Sites in Bromsgrove



3 DEMAND FOR SPORTS HALLS

Key finding 4 is that demand in Bromsgrove increases by 10% between 2021 and 2040 with some of this increase located around the proposed housing development on the boundary with Redditch.

Table 3.1: Demand for Sports Halls in Bromsgrove by Run

Total Demand	RUN 1	RUN 2
Bromsgrove	2021	2040
Population	101,447	115,103
Visits demanded per week in peak period	8,211	9,047
Demand in courts with comfort factor included	27.9	30.7

Definition of total demand – This represents the total demand for sports halls by gender and for six age bands from 0 to 79 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 number of badminton courts. The FPM parameters for the percentage and frequency of participation, for gender and age, are calculated from Sport England's Active Lives survey up to November 2019 and set out in Appendix 3.

3.1 The District's population in 2021 is 101,447 and is projected to be 115,103 in 2040, an increase of 13%.

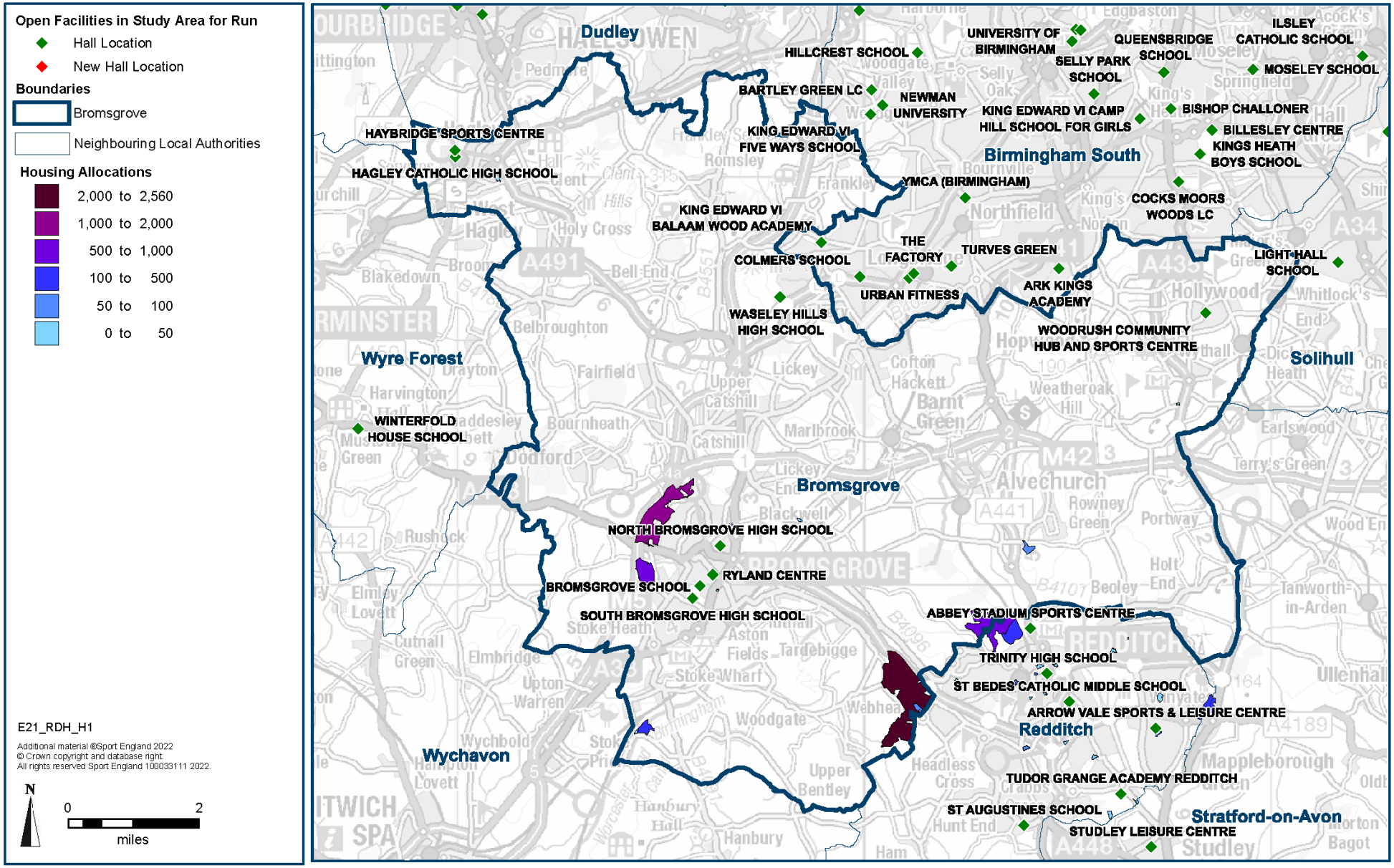
3.2 The District's population forecast is taken from the ONS 2018-based sub national projections. The geographical distribution of the population in the FPM for 2040 includes housing growth sites to 2030 provided by the Council, which are shown on Map 3.1.

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

Sites and allocations supplied by Bromsgrove District Council.



Change in Demand

3.5 In 2021, demand for sports halls is 8,211 visits per week in the weekly peak period, which equates to 28 courts, considering an 80% comfort factor. It is projected to increase to 9,047 visits in the weekly peak period in 2040, which equates to 31 courts.

3.6 **Key finding 4** is that demand in Bromsgrove increases by 10% between 2021 and 2040, with some of this increase located around the proposed housing development to 2030 on the boundary with Redditch.

3.7 Demand in both years is highest in Bromsgrove town and Rubery (see Map **3.2** for 2021). The increase in demand, particularly from the housing development proposals around Webheath in 2040, can be seen in Map **3.3**.

3.8 The most likely reason for the smaller increase in demand for sports halls than population is the change in demographics in the District between 2021 and 2040.

3.9 The ageing of the resident population between 2021 and 2040 will influence the demand for sports halls. It can mean that there are fewer people in the main age bands for sports halls participation in 2040 than in 2021. (The sports hall participation and frequency rates by age and gender are set out in Appendix **3**.)

3.10 Therefore, the increase in demand for sports halls from population growth is offset by the ageing of the much larger resident population. The modelling assumes the frequency of sports hall participation remains constant.

Demand for Sports Halls Across the Study Area

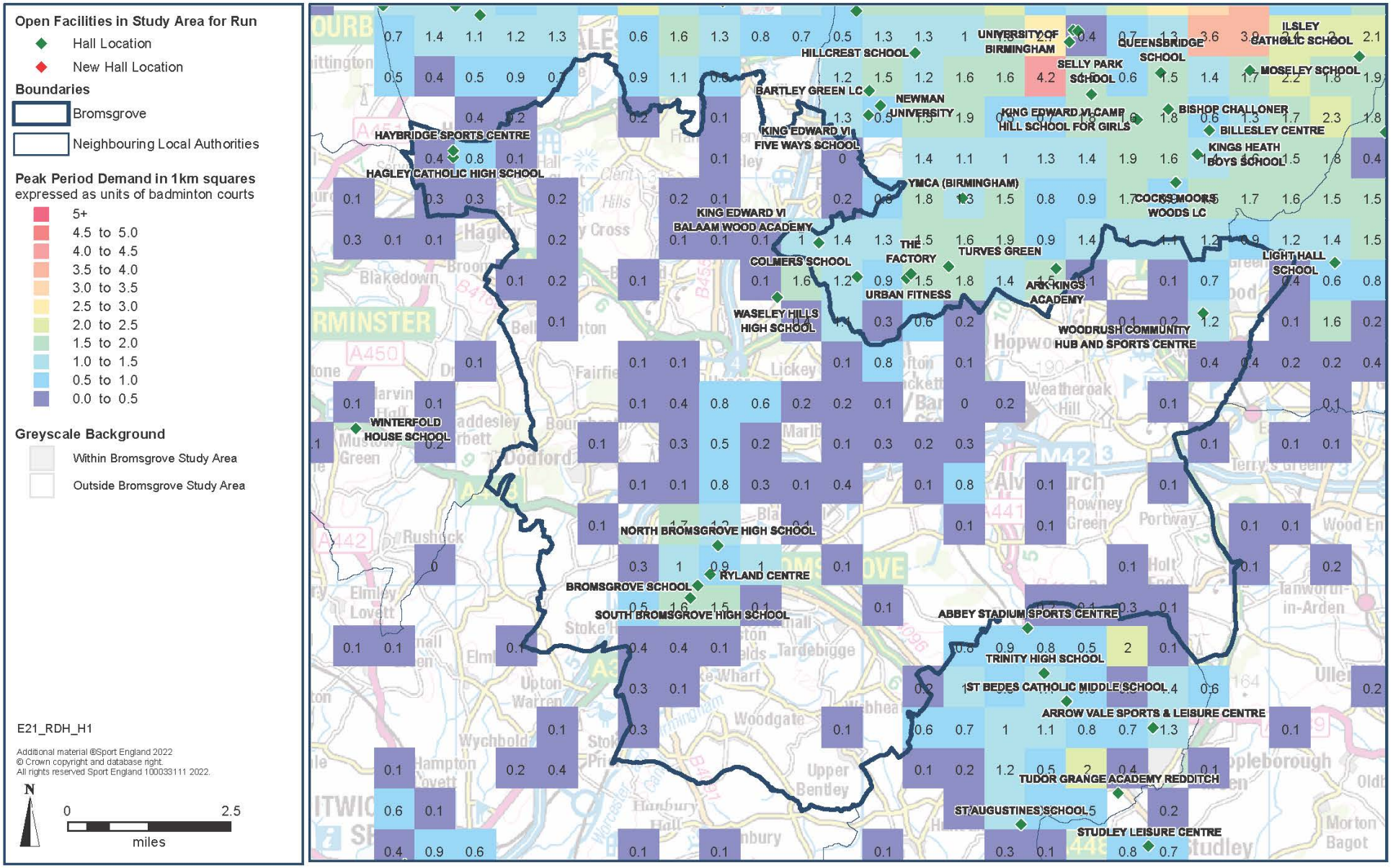
3.11 Bromsgrove has the third-highest increase in demand among the local authorities in the study area, with only Redditch experiencing a decrease in demand between 2021 and 2040.

Table 3.2: Demand for Sports Halls by Local Authority by Run

Demand in equivalent courts considering a 'comfort' factor	RUN 1	RUN 2	% Change
Local Authority	2021	2040	2021-2040
Bromsgrove	**27.9**	**30.7**	**10.2%**
Birmingham South	170.3	179.4	5.3%
Dudley	92.4	97.8	5.8%
Solihull	61.8	66.8	8.2%
Stratford-on-Avon	36.4	42.4	16.5%
Redditch	24.4	23.8	-2.6%
Wychavon	36.4	41.7	14.6%
Wyre Forest	28.3	29.4	4.0%

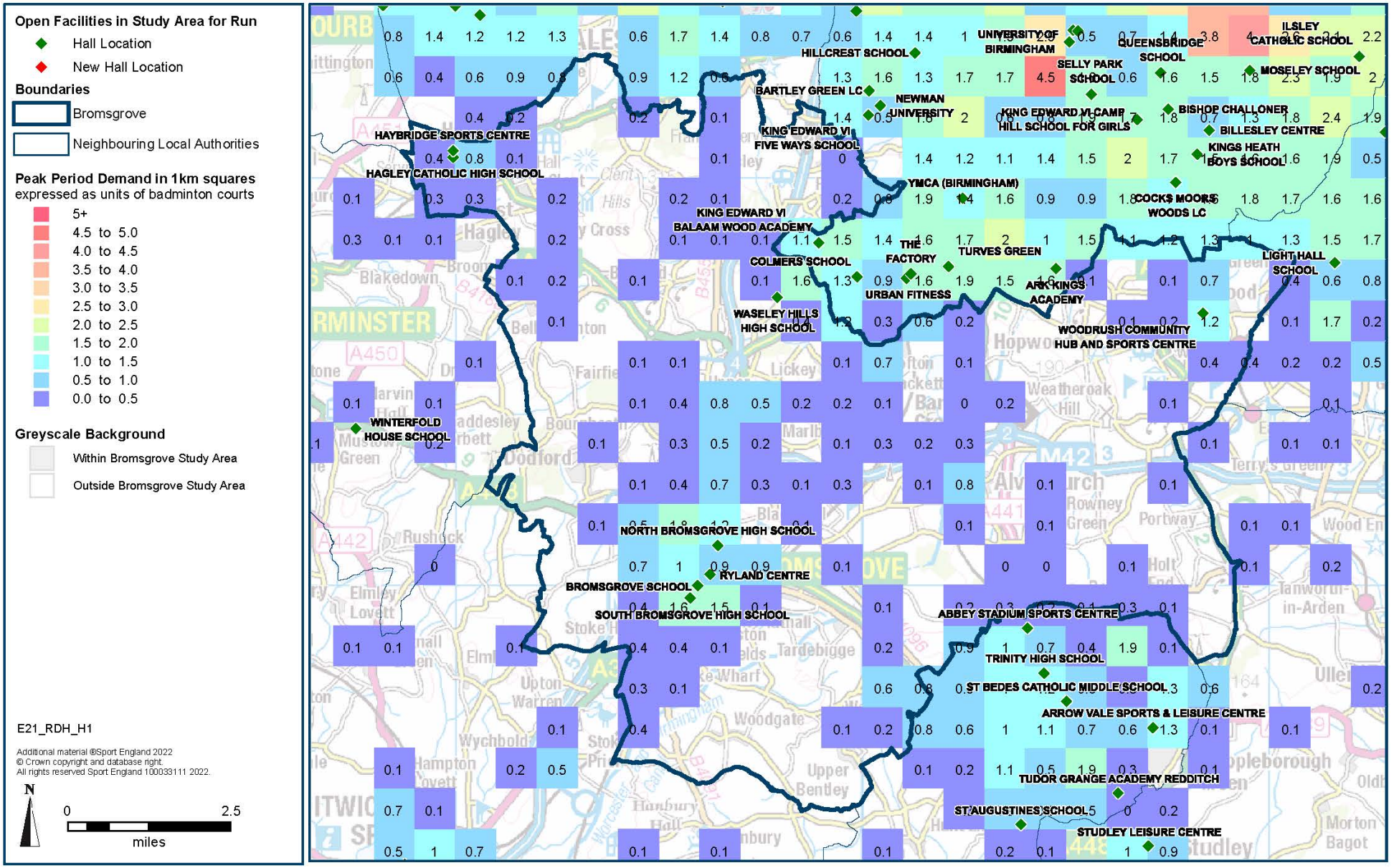
Map 3.2: Demand for Sports Halls in Bromsgrove in 2021 (Run 1)

FPM peak period demand aggregated at 1km square grid level expressed as number of badminton courts and shown thematically (colours).



Map 3.3: Demand for Sports Halls in Bromsgrove in 2040 (Run 2)

FPM peak period demand aggregated at 1km square grid level expressed as number of badminton courts and shown thematically (colours).



Deprivation

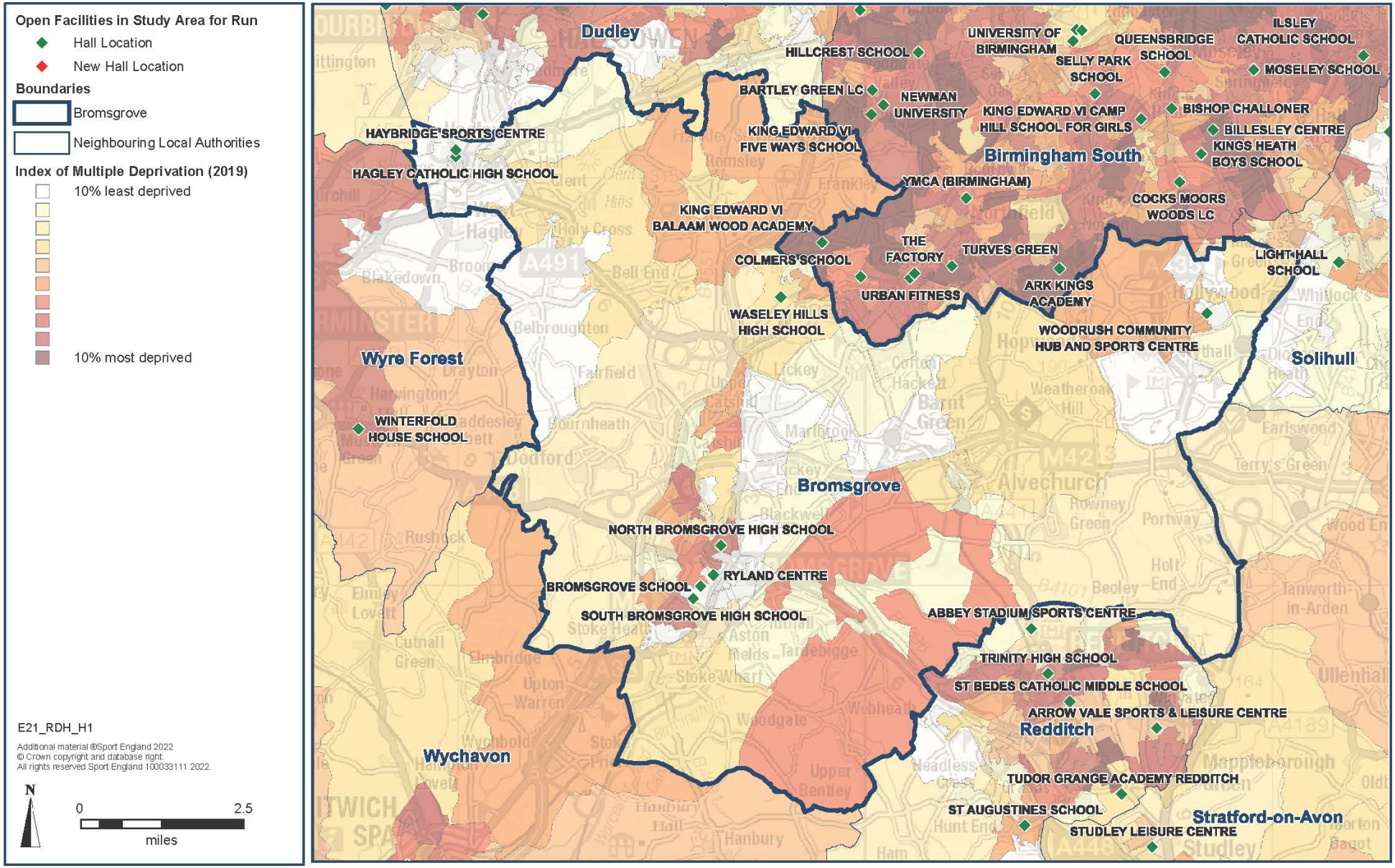
3.12 None of the District's lower super output areas (LSOAs) are in the most deprived 10% nationally. Overall, Bromsgrove ranks in the top 15% of least-deprived local authorities.

3.13 However, deprivation varies across the District, as shown in Map 3.4. Bromsgrove School and North Bromsgrove High School are in areas of relative higher deprivation. Most other hall sites are in areas of low deprivation but at least close to areas with higher deprivation.

3.14 The Index of Multiple Deprivation (IMD) score is used in the FPM to limit whether people will use commercial facilities (see Appendix 3 for a 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. In Bromsgrove's case, there are no commercial sports halls and deprivation is generally low for this to be a factor.

Map 3.3: Deprivation in Bromsgrove, 2019

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



4 ACCESSIBILITY

Key finding 5 is that there is a very high level of car access in the District: around 85% of satisfied demand is from residents who travel by car.

Key finding 6 is that only around 15% of journeys made by Bromsgrove residents to sports halls are on foot or by public transport, despite 40% of the population living within a 20-minute walk of a sports hall.

Table 4.1: Travel Mode of Bromsgrove Demand to Sports Halls 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 sports hall	43.8	39.6
% of demand satisfied when travelled by car	84.4	85.3
% of demand satisfied when travelled on foot	10.8	9.9
% of demand satisfied when travelled by public transport	4.8	4.9

Definition of accessibility – For residents without access to a car, travel to sports halls 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 hall.

4.1 Key finding 5 is that less than 12% of the population do not have access to a car (the national average of 25% and the West Midlands Region average is 24%), meaning the vast majority of residents have the option to travel by car. More than 84% of satisfied demand involves travel to sports hall by car.

4.2 Key finding 6 is that only around 15% of journeys made by Bromsgrove residents to sports halls are on foot or by public transport, despite 40% of the population living within a 20-minute walk of a sports hall.

Walking Access

4.3 An illustration of how many sports halls can be accessed by District residents, based on where they live and a 20-minute walk time (one mile) from the sports hall locations, is set out in Map 4.1 for the existing provision.

4.4 By definition, this is a small coverage area. Residents in the area shaded yellow are within walking distance of one sports hall site, and residents in the small pink area are within walking distance of four sites. However, not all residents in these areas will walk to a sports hall and some will travel further.

Public Transport Access

4.5 To provide some guidance on how accessible sports hall sites are by public transport, the areas of the District within a five-minute walk of a bus stop (shown in pink) and a 15-minute walk of a railway station (shown in purple) are shown in Map 4.2.

4.6 All of the sports halls in the District are within a five-minute walk of a bus stop.

4.7 Haybridge Sports Centre and Hagley Catholic High School are the only public sports halls within a 15-minute walk of a railway station.

4.8 It should be noted that while most Borough residents can get to a sports hall from a public transport stop, it may not mean they can get to a sports hall 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

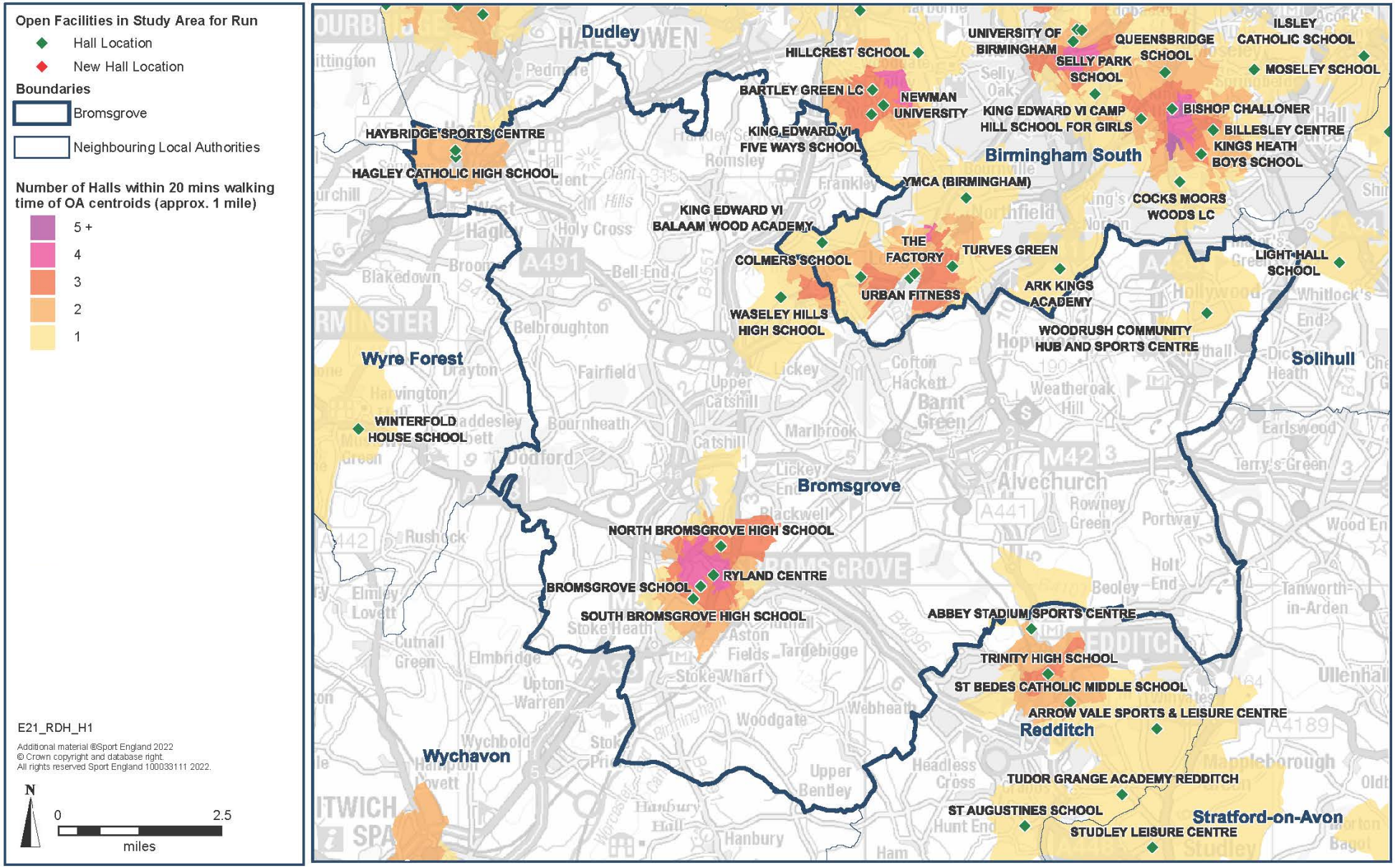
4.9 Mapping for a 20-minute drive time from sports halls is set out in Map 4.3 for the existing provision.

4.10 There are no areas of the District where one or more halls cannot be reached within a 20-minute drive.

4.11 Residents in the north of the District can access the most sports halls by car. This is because of the higher number of halls located in the more heavily populated Birmingham neighbouring local authority area.

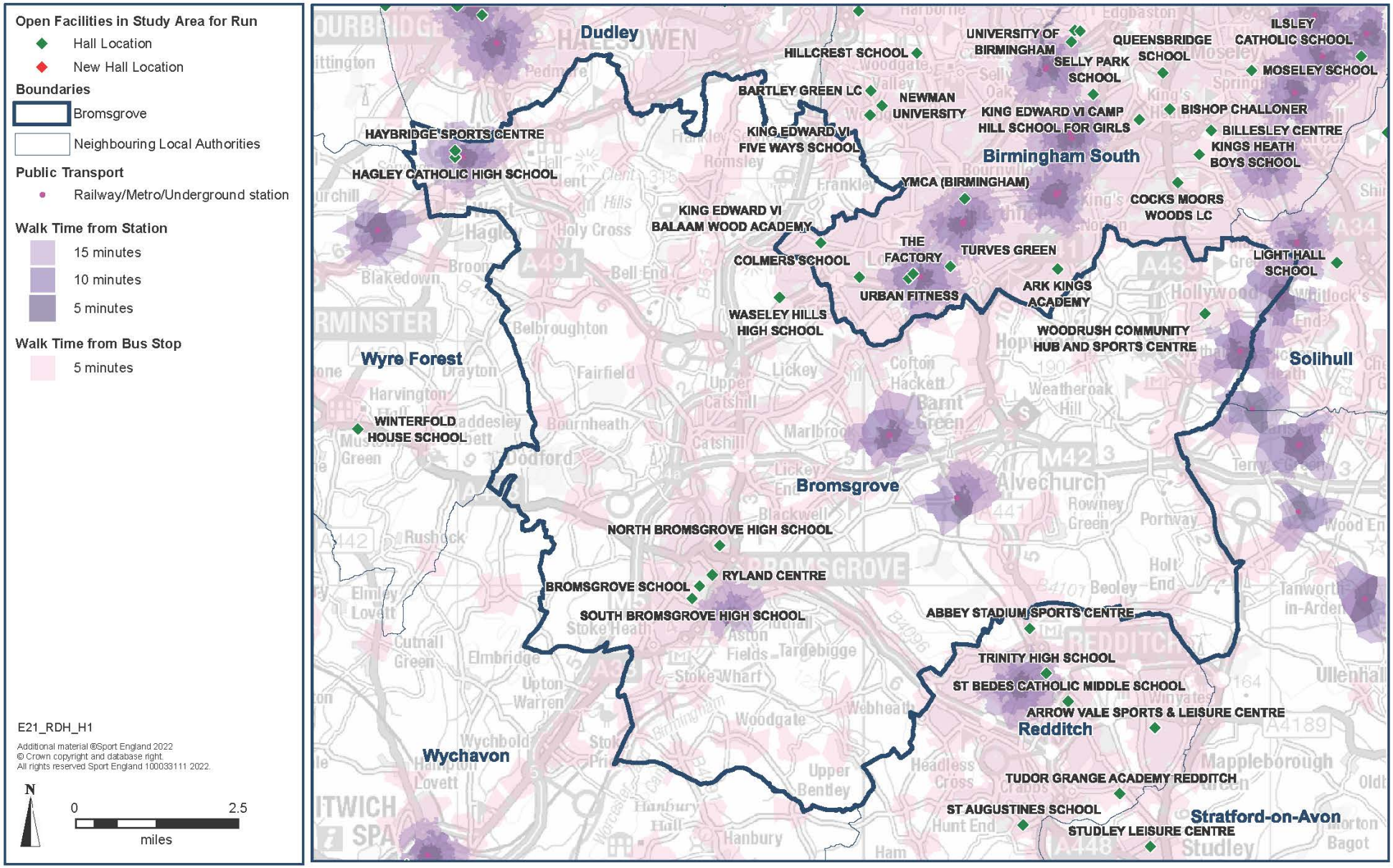
Map 4.1: Walking Access to Sports Halls in Bromsgrove

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



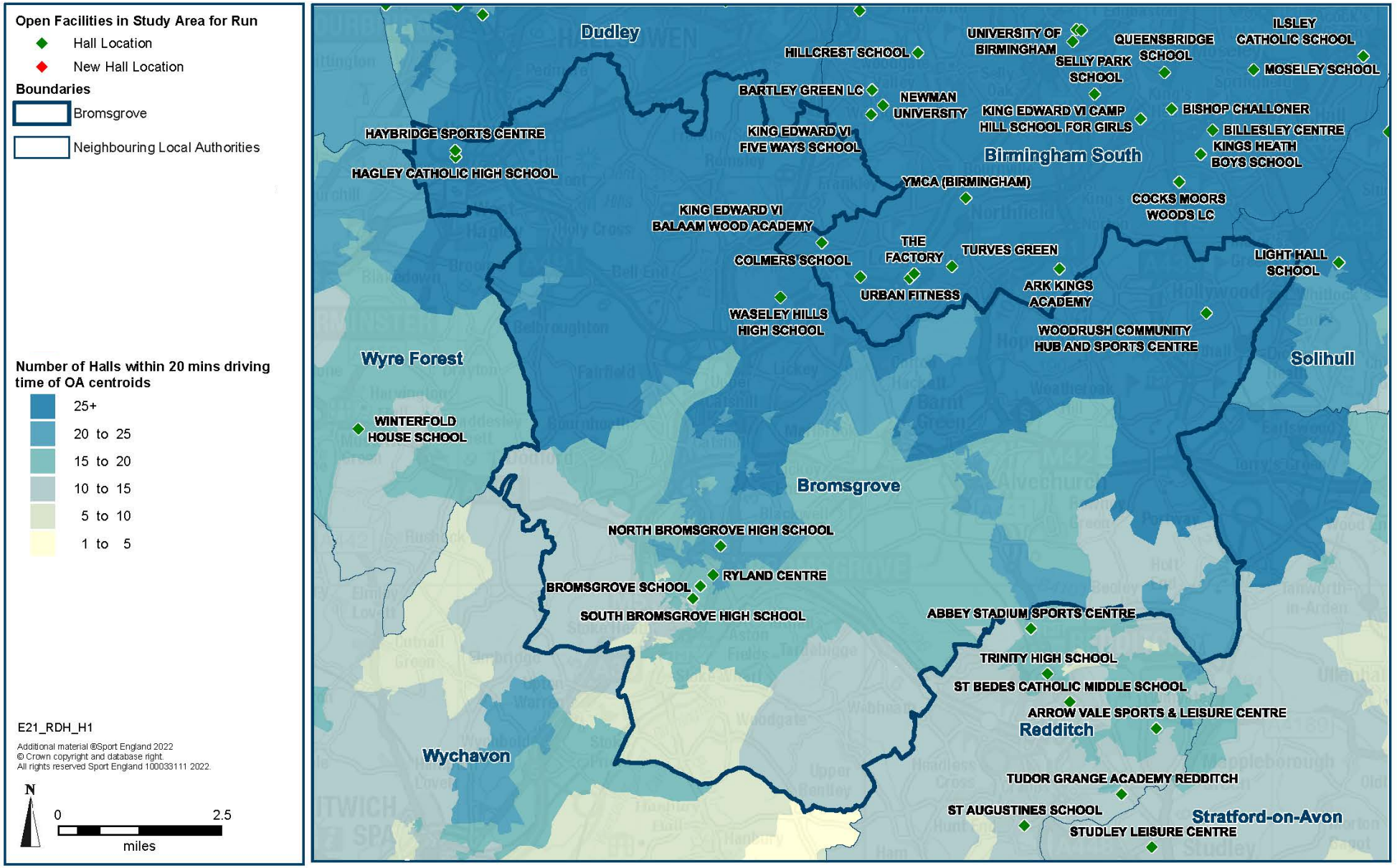
Map 4.2: Walking Access to Public Transport in Bromsgrove

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 Sports Halls in Bromsgrove

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



5 SATISFIED DEMAND FOR SPORTS HALLS

Key finding 7 is that, in both years, Bromsgrove residents have a very high level of satisfied demand for halls.

Key finding 8 is that a third of this satisfied demand is met by suitably located halls outside the District. The majority are in Birmingham South and, increasingly, Redditch halls meeting the demand from Bromsgrove.

Table 5.1: Satisfied Demand for Sports Halls in Bromsgrove by Run

Satisfied Demand	RUN 1	RUN 2
Bromsgrove	2021	2040
Number of visits met per week in peak period	7,903	8,666
% of total demand satisfied	96.2	95.8
Number of visits retained per week in peak period	5,306	5,770
Demand retained as a % of satisfied demand	67.1	66.6
Number of visits exported per week in peak period	2,597	2,896
Demand exported as a % of satisfied demand	32.9	33.4

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

5.1 Key finding 7 is that, in both years, there is a very high level of demand from Bromsgrove residents being met, with 96% of demand being satisfied.

5.2 Bromsgrove has the highest levels of satisfied demand amongst the local authority areas in the study area. Satisfied demand in all authorities is more than 90% of total demand in both years, apart from Birmingham South, where it is 89% in 2021 and 88% in 2040. (The sports halls included in the study area are listed in Appendix 1.)

Table 5.2: Percentage of Satisfied Demand for Sports Halls in Study Area by Run

% of Total Demand Satisfied	RUN 1	RUN 2
Local Authority	2021	2040
Bromsgrove	**96.3**	**95.8**
Birmingham South	89.4	88.0
Dudley	92.3	91.3
Solihull	94.5	93.7
Stratford-on-Avon	93.4	93.3
Redditch	95.0	94.9
Wychavon	94.0	93.3
Wyre Forest	93.5	93.4

Retained Demand

5.3 A subset of the satisfied demand findings shows that much of Bromsgrove residents' demand for sports halls is retained at sports halls within the District. This is known as retained demand. This assessment is based on the catchment area of Bromsgrove's sports halls and residents in the District choosing to participate at these halls.

5.4 Satisfied demand retained within the District is around 67% in both years, indicating that a significant amount of residents' demand is met by halls located outside the District.

Exported Demand

5.5 The residue of satisfied demand, after retained demand, is exported demand. This is based on District residents who live within the travel time of a sports hall outside the District and use that sports hall.

5.6 **Key finding 8** is that a third of the satisfied demand of Bromsgrove residents is met by sports halls outside the District. The majority of exported satisfied demand goes to halls in Birmingham South in both years. The halls in Redditch become increasingly important for Bromsgrove residents between 2021 and 2040.

5.7 The destination and scale of the District's exported demand is shown spatially in Map **5.1** for Run 1 and Map **5.2** for Run 2.

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
Bromsgrove	**5,306**	**5,770**
Birmingham South	1,534	1,401
Dudley	192	172
Solihull	114	111
Stratford-on-Avon	37	63
Redditch	423	840
Wychavon	50	63
Wyre Forest	121	135

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

Map 5.1: Export of Bromsgrove Satisfied Demand for Sports Halls Run 1 (2021)

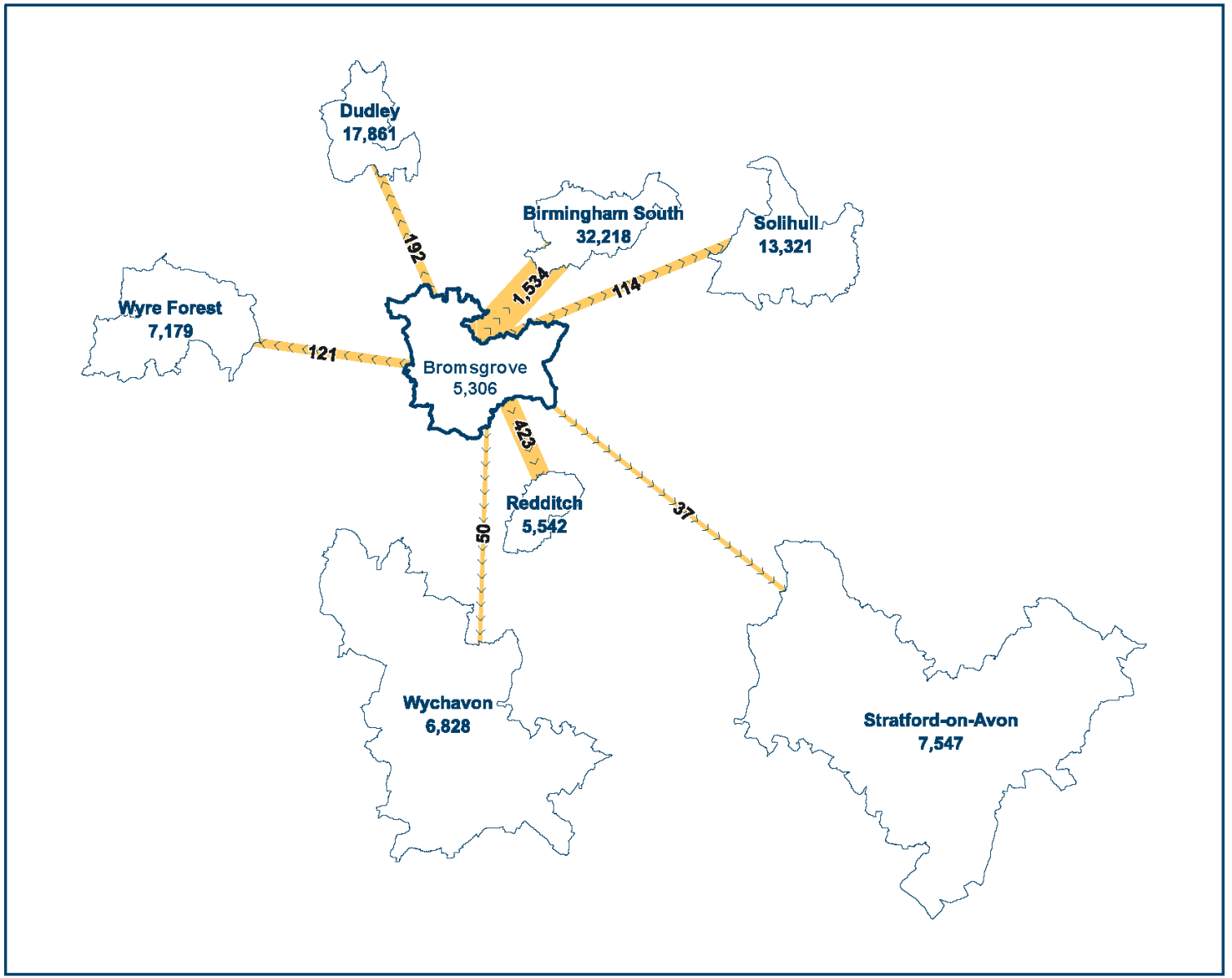
FPM exported demand between study area and surrounding local authorities shown thematically (size of lines) as visits per week in the peak period (vpwpp).

Boundaries
Values in areas show retained vpwpp

- Bromsgrove
- Surrounding LAs

Import/Export
Values on arrows show flow vpwpp

- Direction of flow
- Import
- Export



E21_RDH_H1

Map 5.2: Export of Bromsgrove Satisfied Demand for Sports Halls Run 2 (2040)

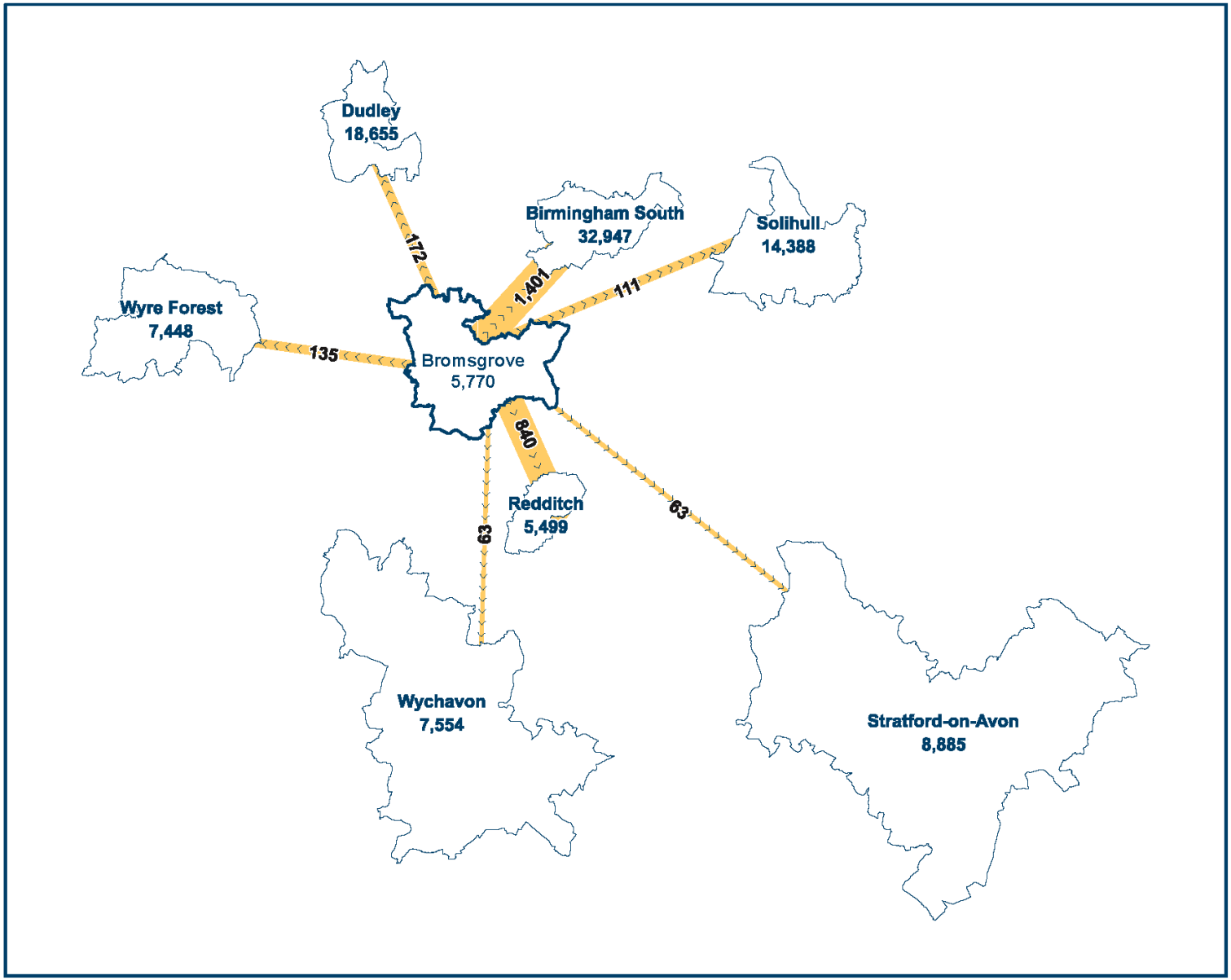
FPM exported demand between study area and surrounding local authorities shown thematically (size of lines) as visits per week in the peak period (vpwpp).

Boundaries
Values in areas show retained vpwpp

- Bromsgrove
- Surrounding LAs

Import/Export
Values on arrows show flow vpwpp

- Direction of flow
- Import
- Export



E21_RDH_H1

6 UNMET DEMAND FOR SPORTS HALLS

Key finding 9 is that unmet demand is very low, with no area of the District having higher levels of unmet demand than any other.

Key finding 10 is that most of the unmet demand is due to residents without access to a car living too far away from a sports hall.

Table 6.1: Unmet Demand for Sports Halls in Bromsgrove by Run

Unmet Demand	RUN 1	RUN 2
Bromsgrove	2021	2040
Number of visits unmet per week in peak period	308	380
Unmet demand as a % of total demand	3.8	4.2
Equivalent in courts with comfort factor	1.1	1.3
% of unmet demand due to:		
Facility too far away:	89.0	87.0
Without access to a car	80.9	79.3
With access to a car	8.1	7.7
Lack of facility capacity:	11.0	13.1
Without access to a car	8.6	10.2
With access to a car	2.4	3.0

Definition of unmet demand – This has two parts: demand for sports halls that cannot be met because:

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

6.1 Unmet demand is very low in both years, at around 4%. This equates to just over one badminton court.

For context, 35 courts are available within the District for community use in the weekly peak period in both years.

6.2 Key finding 9 is that the District has very low levels of unmet demand. Nowhere in the District has a level of unmet demand greater than 0.1 of a badminton court (see Map 6.1 for Run 2).

6.3 Key finding 10 is that most unmet demand is due to residents without access to a car living too far away from a sports hall.

6.4 Unmet demand due to residents living too far away from a sports hall represents 89% of unmet demand in 2021 and 87% in 2040.

6.5 Demand located too far from a sports hall 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 sports hall and not everyone will want to drive the full distance.

6.6 There is a small but increasing proportion of unmet demand due to lack of capacity at the existing facilities. Unmet demand increases from 11% in 2021 to 13% in 2040.

The findings on used capacity are reviewed in the Used Capacity section.

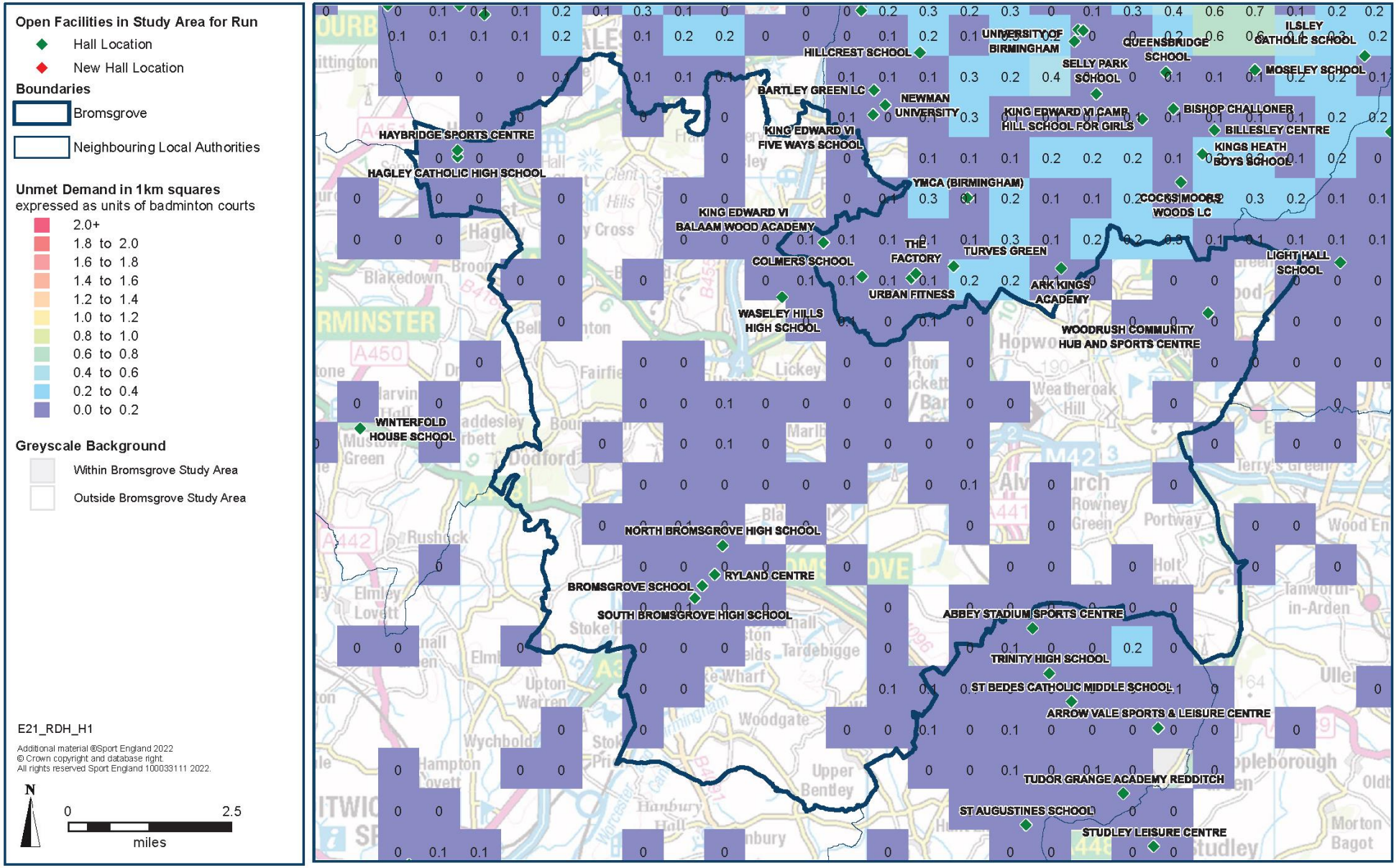
Meeting Unmet Demand

6.7 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 (shown thematically in Map 6.2 for 2040).

6.8 In 2040, the reachable unmet demand is highest in the north of the District. This is because of the area's proximity to unmet demand in neighbouring authorities. However, the maximum level of reachable unmet demand in any one-kilometre square is low, with a maximum value of 1.6 of a court.

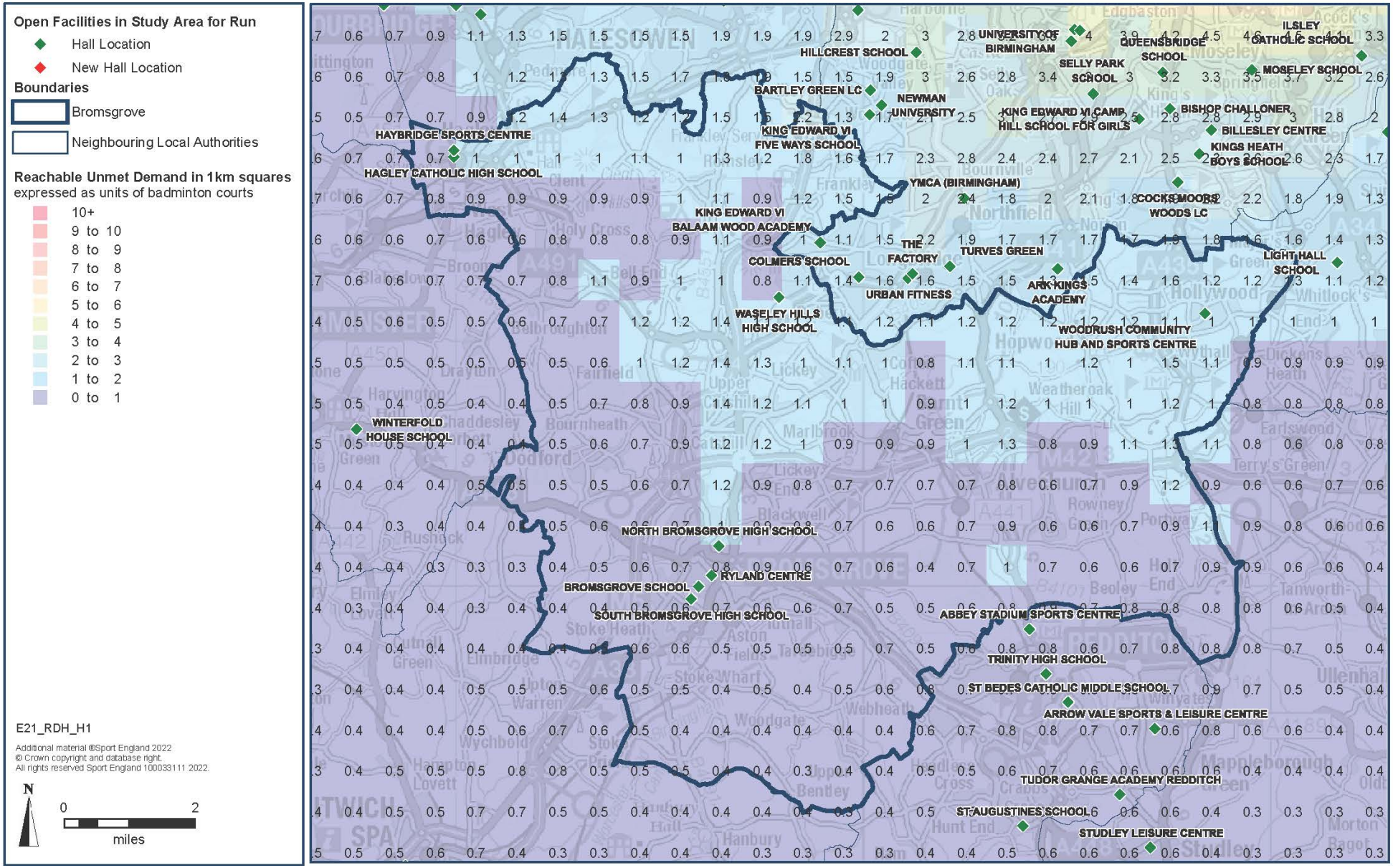
Map 6.1: Unmet Demand for Sports Halls in Bromsgrove Run 2 (2040)

FPM unmet demand aggregated at 1km square grid level expressed in units of badminton courts and shown thematically (colours).



Map 6.2: Reachable Unmet Demand for Sports Halls in Bromsgrove Run 2 (2040)

FPM reachable unmet demand aggregated at 1km square grid, shown thematically (colours) and expressed in units of badminton courts.



7 USED CAPACITY OF FACILITIES

Key finding 11 is that Bromsgrove's halls are increasingly well utilised between the runs, but some are operating at an uncomfortably busy 100% used capacity.

Key finding 12 is that a large proportion of this used capacity comes from demand in neighbouring local authority areas, notably Birmingham South and Dudley, indicating the importance of sports hall planning across local authority boundaries.

Table 7.1: Used Capacity of Sports Halls in Bromsgrove by Run

Used Capacity	RUN 1	RUN 2
Bromsgrove	2021	2040
Number of visits used of capacity per week in peak period	8,884	10,016
% of overall capacity of halls used	69.0	77.8
Number of visits imported per week in peak period	3,577	4,246
As a % of used capacity	40.3	42.4
Difference between visits imported and exported	980	1,350

Definition of used capacity – This is a measure of usage at sports halls 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. When the venues are too full, the time taken to change the sports hall programme and equipment starts to impinge on the activity time itself and the changing and circulation areas become congested. In the model, Sport England assumes that usage above 80% of capacity is busy and the sports hall is operating at an uncomfortable level.

7.1 The estimated used capacity of the Bromsgrove sports halls is 69% in the weekly peak period in 2021 rising to 78% in 2040.

7.2 In 2021, there are two sites operating above the 80% comfort factor level, these are North Bromsgrove High School and Ryland Centre, which both operate at the maximum 100% used capacity. Ryland Centre is already open for the maximum peak time hours, whereas North Bromsgrove High School is only open for 20 hours a week, therefore, potentially could increase its capacity. By 2040, Woodrush Community Hub and Sports Centre becomes more utilised, meaning three sites will operate well above the 80% comfort factor level.

7.3 All the hall sites operate above 50% used capacity in 2021 and the used capacity increases at all the sports halls in 2040, with a minimum of 66% utilisation.

7.4 Key finding 11 is that Bromsgrove's halls are increasingly well utilised between the runs, but some are operating at an uncomfortably busy 100% used capacity.

Table 7.2: Used Capacity of Bromsgrove Sports Halls by Run

% Used Capacity	RUN 1	RUN 2
Individual Sites	2021	2040
Bromsgrove School	54	66
Hagley Catholic High School	62	73
Haybridge Sports Centre	50	59
North Bromsgrove High School	100	100
Ryland Centre	100	100
South Bromsgrove High School	76	79
Waseley Hills High School	65	76
Woodrush Community Hub and Sports Centre	78	91

Factors Contributing to Used Capacity

7.5 There are several ways to account for the variation in estimated used capacity for sports halls. 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 the subsequent paragraphs):

- Type of site operator (public/educational/commercial/community).
- Sports hall opening hours and offer.
- Level of demand within the travel-time limit from the site and reachable from other halls.
- Age of the hall and its 'attractiveness' weighting.
- Imported demand.

7.6 Public leisure centres have higher used capacity because of their 'draw effect' for the following reasons:

- They have the highest accessibility for both sports club and public use because they are available for daytime use, which is not possible at educational venues during term time.
- The operators actively promote hall sports and physical activity participation, with a programme of use that reflects the activities customers wish to participate in and when they wish to participate.

7.7 Access to sports halls for community use will be determined by the policy of each educational provider. Some schools and colleges actively promote community use. At some venues there is little differentiation between educational and wider community use, with community access based on a membership system (classed as commercial). Other educational venues let their sports halls to sports clubs or community groups on a termly basis, or for shorter periods.

7.8 Where sports halls are close together, the demand for these sites is shared between the venues, which contributes to the level of used capacity at each.

7.9 The quality and range of the offer (together with the age and condition of a sports hall) are considered. These features are of increasing importance to customers and affect participation levels. Desirable features include a modern sports hall with a sprung timber floor, good quality lighting, modern changing rooms, and other on-site facilities such as a studio and/or a gym. Residents may travel further to use a sports hall with this all-round offer rather than participate at the sports hall closest to where they live.

7.10 All the sports halls 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.

7.11 The findings on the impact of imported demand on used capacity are set out under Imported Demand.

Imported Demand

7.12 Imported demand is set out under Used Capacity. If residents in neighbouring local authority areas participate at a site in the District, their usage becomes part of the used capacity of the District's sports halls.

7.13 Key finding 12 is that a large proportion of Bromsgrove halls' used capacity comes from demand outside Bromsgrove. In 2021, 40% of utilisation is from residents outside the District having their demand met by halls in Bromsgrove, rising to 42% in 2040.

7.14 The highest imported demand is from Birmingham South, with 1,323 visits in the weekly peak period in 2021 (37% of all imported demand) and 1,650 visits in 2040 (39% of all imported demand). This is closely followed by Dudley. By 2040, imported demand from all neighbouring local authority areas increases, apart from demand imported from Redditch.

7.15 The increase in 2040 is most likely because of demand rising in the neighbouring local authority areas as a result of population increases and ageing facilities in these areas.

7.16 The reduction in imported demand from Redditch is likely due to the reduced demand for sports halls in the Borough. Also, the proposed major housing developments on the border of Bromsgrove and Redditch are closer to halls in Redditch.

7.17 The levels of imported demand from each neighbouring local authority are shown spatially in Map 7.1 for Run 1 and Map 7.2 for Run 2.

Table 7.3: Import Origin of Visits to Sports Halls in Bromsgrove by Run

Import (visits per week peak period)	RUN 1	RUN 2
Local Authority	2021	2040
Bromsgrove	**5,306**	**5,770**
Birmingham South	1,323	1,650
Dudley	821	1,035
Solihull	400	474
Stratford-on-Avon	57	68
Redditch	462	424
Wychavon	204	224
Wyre Forest	161	173

The figure for Bromsgrove is the used capacity of the District's sports halls by its residents.

Import/Export Balance

7.18 In 2021, Bromsgrove is a net importer of demand for sports halls, with 980 more visits imported in the weekly peak period than exported. This rises to 1,350 visits per weekly peak period in 2040.

For context, the capacity of a four-court hall is 1,472 visits in the weekly peak period.

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

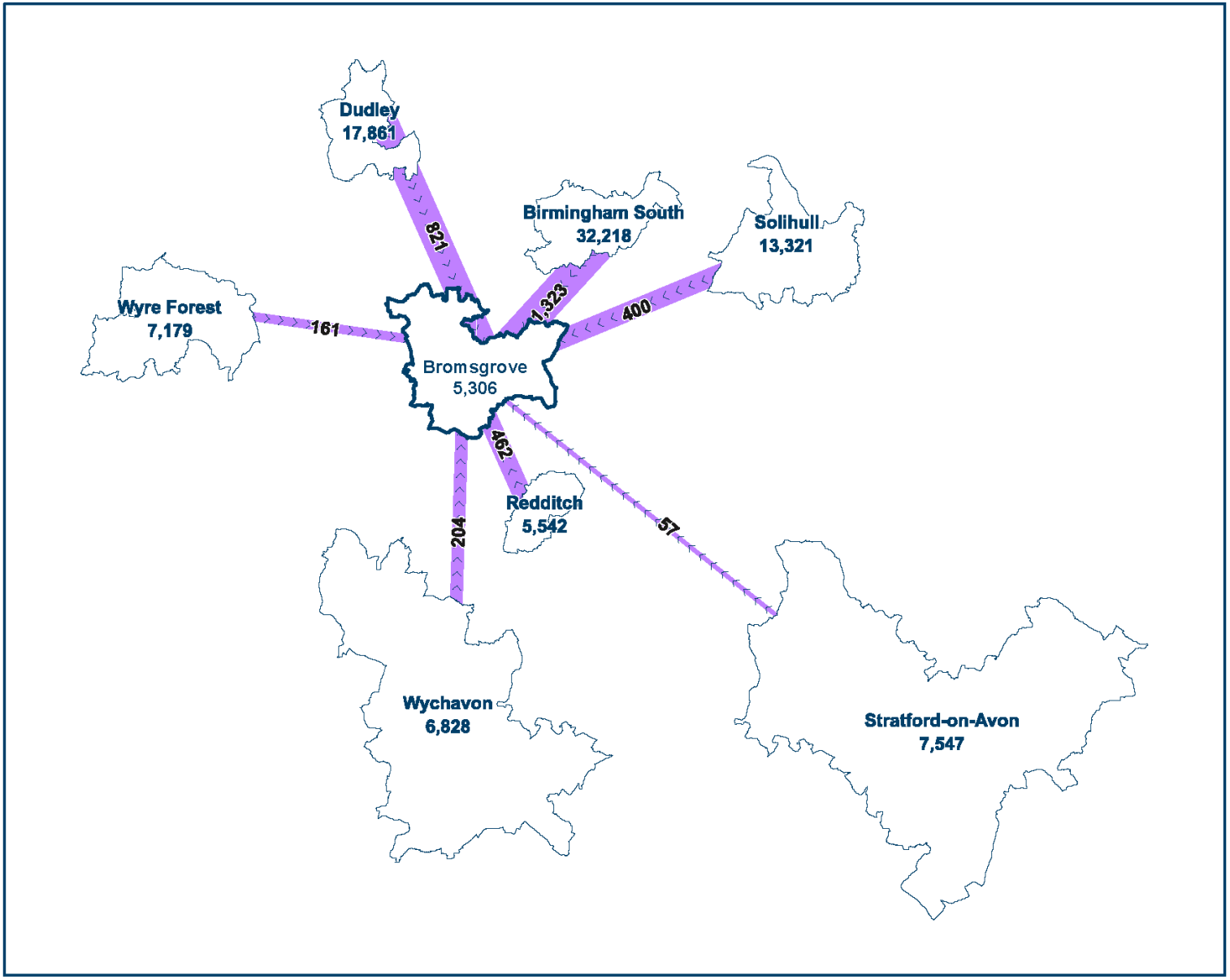
FPM imported demand between study area and surrounding local authorities shown thematically (size of lines) as visits per week in the peak period (vpwpp).

Boundaries
Values in areas show retained vpwpp

- Bromsgrove
- Surrounding LAs

Import/Export
Values on arrows show flow vpwpp

- Direction of flow
- Import
- Export



E21_RDH_H1

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

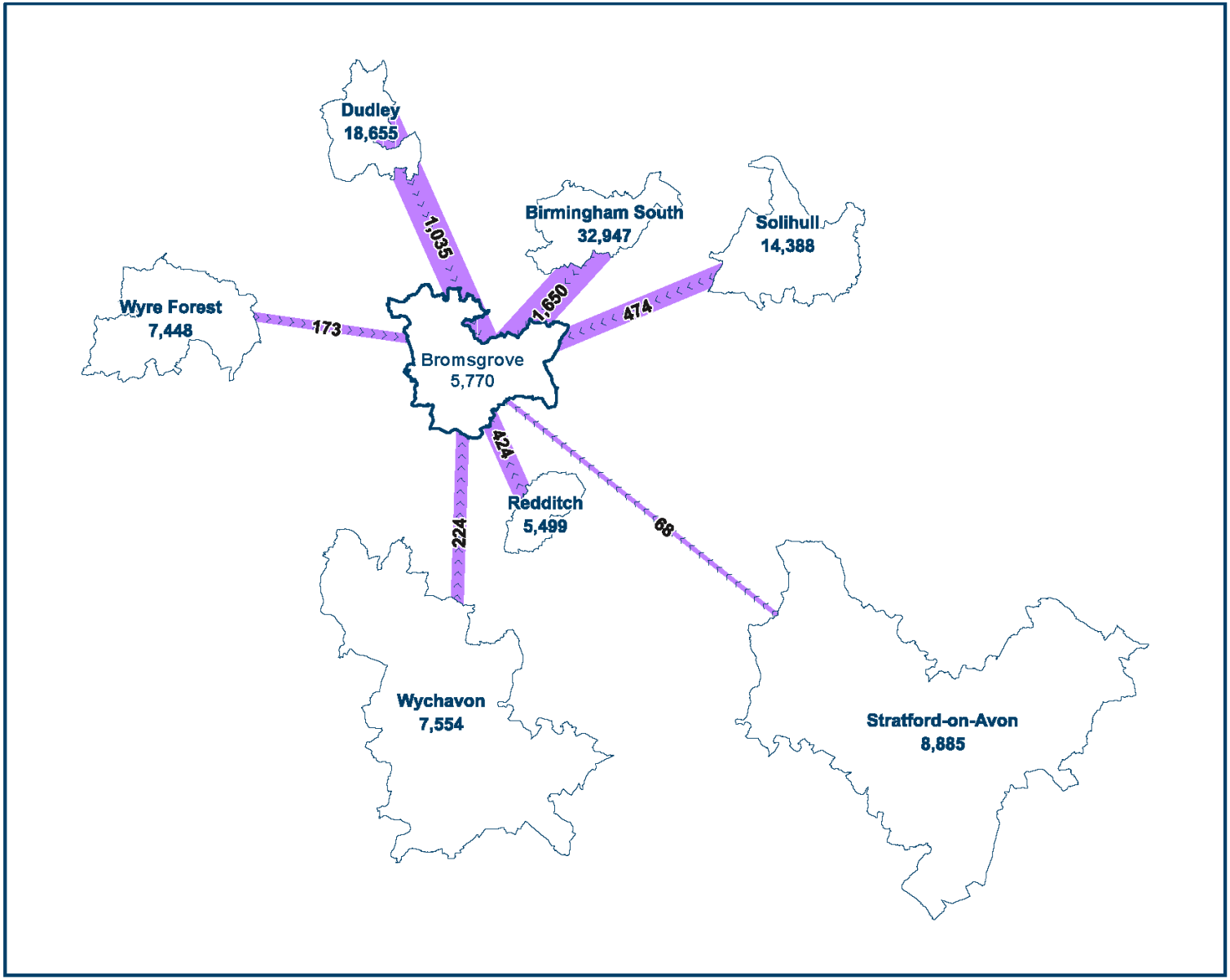
FPM imported demand between study area and surrounding local authorities shown thematically (size of lines) as visits per week in the peak period (vpwpp).

Boundaries
Values in areas show retained vpwpp

- Bromsgrove
- Surrounding LAs

Import/Export
Values on arrows show flow vpwpp

- Direction of flow
- Import
- Export



E21_RDH_H1

8 LOCAL SHARE OF FACILITIES

Key finding 13 is that Bromsgrove has a low local share of sports halls because their relative older age makes them less attractive and the halls have to cater for a net influx of users from outside the District.

Table 8.1: Local Share of Sports Halls 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	0.73	0.66

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 at the locations 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 sports halls 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 The intervention is to try and increase access to sports halls in areas where residents have the lowest share of sports halls.

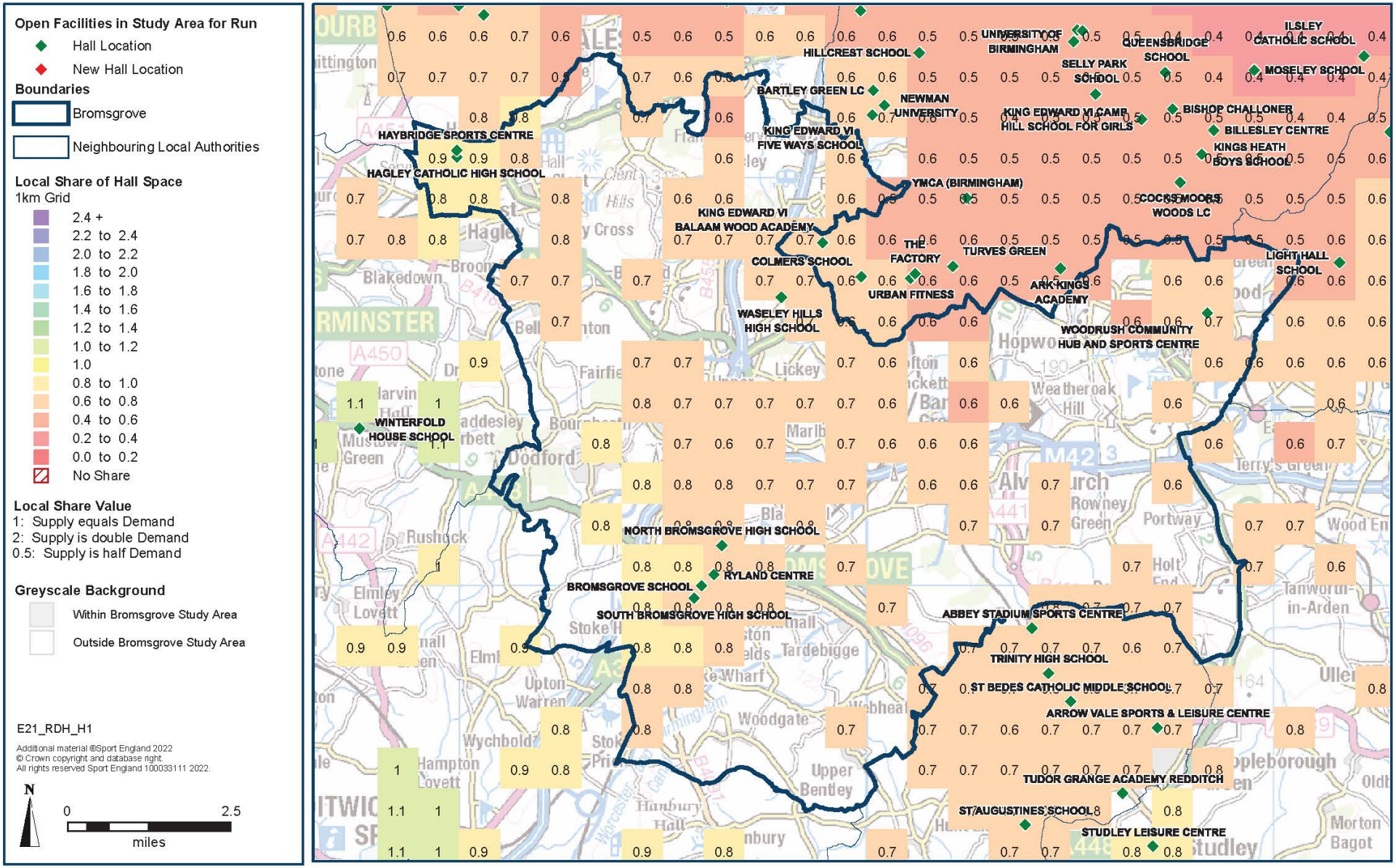
8.3 Despite there being a large supply of facilities in the District, relative to the demand from residents, Bromsgrove's local share is 0.73 in 2021 and decreases to 0.66 in 2040. This is due to already older facilities becoming older by 2040, together with increased demand from a growing population, including demand from neighbouring local authority areas (Bromsgrove being a net importer of demand).

8.4 Key finding 13 is that Bromsgrove has a low local share of sports halls because their relative older age makes them less attractive and the halls have to cater for a net influx of users from outside the District.

8.5 Local share is fairly consistently below 1.0 across the District in both runs, with Hagley having the highest local share at 0.9 in 2021 (see Map 8.1) and 0.8 in 2040 (see Map 8.2).

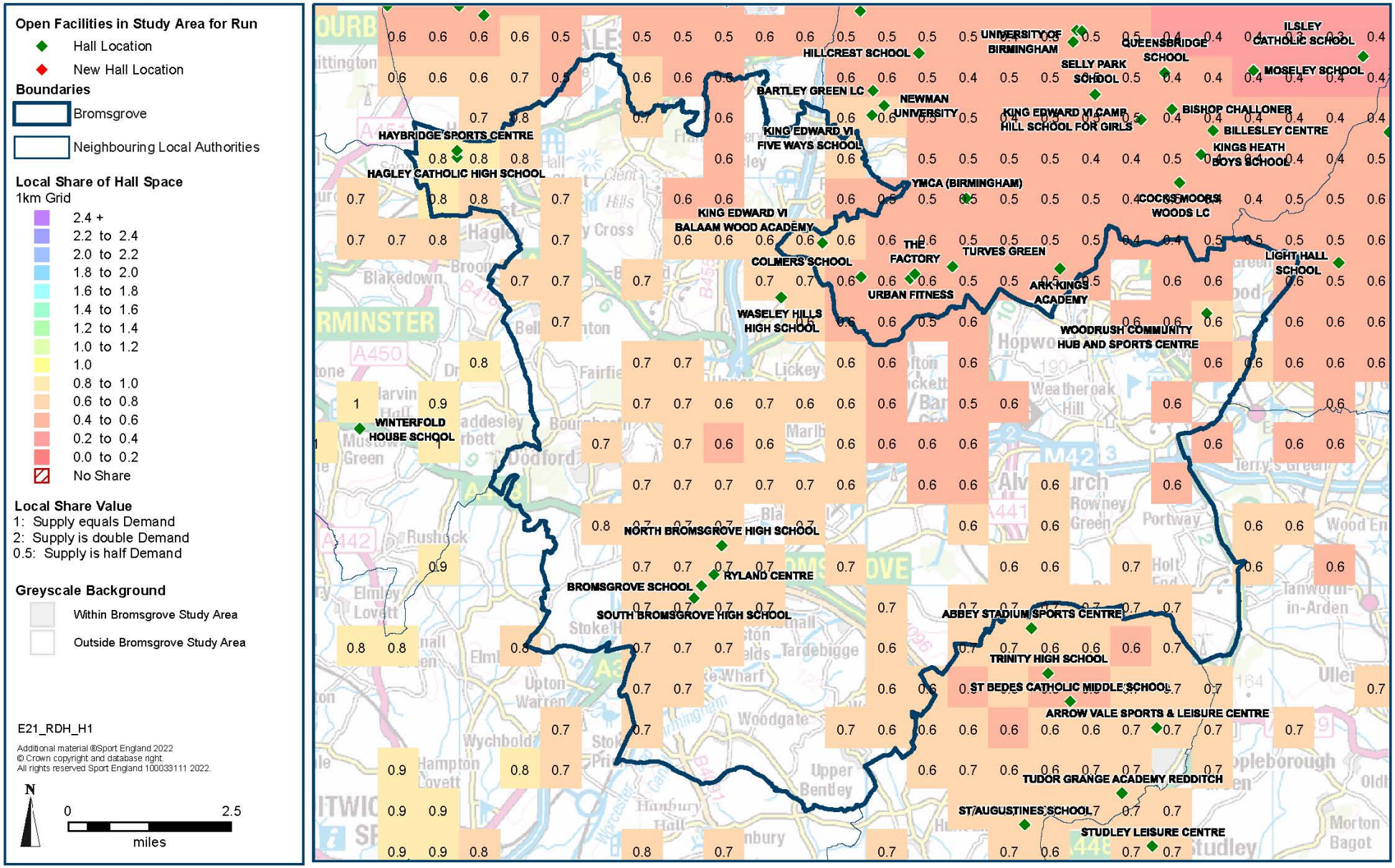
Map 8.1: Local Share of Sports Halls in Bromsgrove Run 1 (2021)

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



Map 8.2: Local Share of Sports Halls in Bromsgrove Run 2 (2040)

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



Comparative Measure of Provision

8.6 A comparative measure of sports hall provision is the number of badminton courts per 10,000 population. Bromsgrove has the highest number of courts per 10,000 population in both runs.

Table 8.2: Badminton Courts per 10,000 Population by Area by Run

Courts per 10,000 population	RUN 1	RUN 2
Local Authority	2021	2040
Bromsgrove	**5.6**	**5.0**
Birmingham South	2.9	2.7
Dudley	3.2	2.9
Solihull	5.0	4.5
Stratford-on-Avon	4.7	3.9
Redditch	4.4	4.4
Wychavon	2.6	2.2
Wyre Forest	4.0	3.7
WEST MIDLANDS TOTAL	3.9	3.6
ENGLAND TOTAL	4.0	3.7

8.7 The findings on badminton courts per 10,000 population are set out because some local authorities like to compare their quantitative provision with that elsewhere; however, this does not set a standard of provision and should not be used as such.

8.8 The supply demand assessment and evidence base for sports halls in the District is based on the findings from the previous seven headings analysed in this report.

APPENDIX 1: SPORTS HALLS IN THE NEIGHBOURING AUTHORITIES INCLUDED IN THE ASSESSMENT

Site	Operation	Facility Type	Dimensions (m)	Area (sqm)	Year Built	Year Refurb
Birmingham South						
Archbishop Ilsley Catholic School	Edu.	4-court	35 x 20	690	1950	2005
Archbishop Ilsley Catholic School		Activity	17 x 9	153		
Ark Kings Academy	Edu.	4-court	33 x 18	594	1985	2003
Ark Kings Academy		Activity	22 x 12	258		
Bartley Green Community Leisure Centre	Public	4-court	35 x 20	690	1982	2003
Bartley Green Community Leisure Centre		Activity	17 x 9	153		
Billesley Indoor Tennis Centre	Public	4-court	35 x 20	690	2016	
Bishop Challoner Sports Centre	Edu.	4-court	35 x 20	690	2004	2013
Chamberlain Health And Fitness Centre	Edu.	6-court	34 x 27	918	2008	
Cocks Moors Woods Leisure Centre	Public	4-court	35 x 20	690	1987	2004
Colmers School	Public	4-court	33 x 18	594	1988	2007
Colmers School		Activity	18 x 10	180		
Colmers School		Activity	18 x 10	180		
Four Dwellings Academy	Public	4-court	33 x 18	594	1985	2012
Four Dwellings Academy		Activity	18 x 10	180		
Hillcrest School	Edu.	4-court	33 x 18	594	1979	2006
Kfit Gym & Fitness	Edu.	3-court	35 x 20	690	2001	
King Edward VI Balaam Wood Academy	Edu.	4-court	35 x 20	690	1981	2006
King Edward VI Balaam Wood Academy		Activity	18 x 10	180		
King Edward VI Camp Hill School for Girls	Edu.	6-court	35 x 27	932	2006	
King Edward VI Five Ways School	Edu.	4-court	35 x 20	690	1997	
King Edward VI High School For Girls	Edu.	4-court	35 x 20	690	1989	
King Edward VI Sheldon Heath Academy	Edu.	4-court	33 x 18	594	2013	
King Edward's School	Edu.	4-court	35 x 20	690	2019	
King Edward's School		-court	33 x 18	594		
Kings Heath Boys School	Edu.	4-court	35 x 20	690	2015	
Lordswood Boys School	Edu.	4-court	33 x 18	594	2019	
Moseley School Health And Fitness Centre	Edu.	4-court	33 x 18	594	2014	
Moseley School Health And Fitness Centre		-court	33 x 18	594		
Moseley School Health And Fitness Centre		Activity	18 x 10	180		
Newman University Sports Centre	Edu.	4-court	37 x 18	666	1970	2006
Newman University Sports Centre		Activity	18 x 10	180		
Queensbridge School	Edu.	3-court	27 x 18	486	1954	2013
Selly Park Girls School	Edu.	4-court	35 x 20	700	2006	
Selly Park Girls School		Activity	17 x 9	153		
Stechford Leisure Centre	Public	4-court	35 x 20	690	2018	
The Blue Coat School	Edu.	4-court	33 x 18	594	1997	
The Factory Young People's Centre	Public	4-court	33 x 18	594	2012	
Turves Green Boys School	Edu.	4-court	33 x 18	594	2006	
University Of Birmingham Sport and Fitness	Edu.	12-court	60 x 35	2,070	2017	
University Of Birmingham Sport and Fitness		Activity	18 x 17	306		
Urban Fitness (ECW) Bournville College	Public	4-court	35 x 20	690	2011	
YMCA (Birmingham)	Public	4-court	33 x 18	594	1964	2002

Dudley						
Bishop Milner Catholic College	Edu.	4-court	33 x 18	594	2015	
Coseley Leisure Centre	Edu.	4-court	35 x 20	690	1980	2009
Crystal Leisure Centre	Public	8-court	40 x 35	1,380	1990	2009
David Lloyd Club (Dudley)	Comm.	4-court	33 x 18	594	2001	
Dudley College (Tower Street)	Edu.	6-court	31 x 30	918	2012	
Dudley Leisure Centre	Public	4-court	33 x 18	594	1978	
Halesowen College School	Edu.	4-court	33 x 18	594	2003	
Hillcrest School And Community College	Public	4-court	33 x 18	594	1994	
Hillcrest School And Community College		Activity	17 x 9	153		
Leasowes Sport Centre	Edu.	6-court	35 x 27	932	1974	1994
Leasowes Sport Centre		Activity	18 x 10	180		
Redhill School	Public	4-court	35 x 20	690	1981	2017
Redhill School		Activity	18 x 10	180		
Ridgewood High School	Edu.	4-court	35 x 20	690	1952	2005
Ridgewood High School		Activity	18 x 10	180		
St James Academy	Edu.	4-court	33 x 18	594	2003	
St James Academy		Activity	21 x 13	273		
Summerhill School	Public	3-court	27 x 18	486	2003	
The Crestwood School	Edu.	4-court	35 x 20	690	2004	
The Crestwood School		Activity	18 x 10	180		
The Dormston Centre	Public	4-court	35 x 18	630	2000	2004
The Ellowes Hall Sports College	Edu.	8-court	37 x 34	1,258	2011	
The Ellowes Hall Sports College		Activity	22 x 11	242		
Thorns Leisure Centre/Collegiate Academy	Edu.	8-court	37 x 32	1,168	1983	
Thorns Leisure Centre/ Collegiate Academy		Activity	17 x 9	153		
Solihull						
Alderbrook School	Edu.	4-court	33 x 18	594	2006	
Alderbrook School		Activity	18 x 10	180		
Arden Academy	Edu.	4-court	35 x 20	690	1996	2004
Arden Academy		Activity	18 x 10	180		
Arden Academy		Activity	17 x 9	153		
Grace Academy Solihull	Edu.	4-court	35 x 20	690	2005	
Grace Academy Solihull		Activity	17 x 9	153		
Heart Of England School	Edu.	4-court	35 x 20	690	1977	1999
Heart Of England School		Activity	18 x 10	180		
John Henry Newman Catholic College	Edu.	4-court	35 x 20	690	1971	2010
John Henry Newman Catholic College		Activity	18 x 10	180		
Langley School	Edu.	4-court	33 x 18	594	1995	2007
Langley School		Activity	18 x 10	180		
Light Hall School	Edu.	4-court	35 x 20	690	1960	2019
Light Hall School		Activity	18 x 17	306		
Lode Heath School	Edu.	4-court	35 x 20	690	1980	
Lode Heath School		Activity	18 x 10	180		
Lyndon School	Edu.	4-court	33 x 18	594	1985	2007
Lyndon School		Activity	18 x 10	180		
North Solihull Sports Centre	Public	5-court	33 x 26	858	1998	
Park Hall Academy	Public	4-court	35 x 20	690	2008	
Smiths Wood Academy	Public	4-court	35 x 20	690	2008	
Solihull School	Edu.	4-court	35 x 20	690	1970	2008

Solihull Sixth Form College	Edu.	4-court	35 x 20	690	1974	2004
St Peters Catholic School	Edu.	4-court	35 x 20	690	1961	1994
St Peters Catholic School		Activity	18 x 10	180		
St Peters Catholic School		Activity	18 x 10	180		
Tudor Grange Academy Kingshurst	Edu.	4-court	33 x 18	594	1988	
Tudor Grange Academy Kingshurst		Activity	18 x 10	180		
Tudor Grange Academy Solihull	Edu.	4-court	33 x 18	594	1956	2003
Tudor Grange Academy Solihull		Activity	20 x 16	320		
Tudor Grange Leisure Centre	Public	4-court	35 x 20	690	2008	
Stratford-on-Avon						
Alcester Grammar School	Edu.	4-court	35 x 20	690	2005	
Kineton High School	Edu.	4-court	35 x 20	690	1980	
Kineton High School		-court	27 x 18	486		
King Edward VI School	Edu.	4-court	33 x 18	594	1997	
King Edward VI School		Activity	18 x 10	180		
Meon Vale Leisure Centre	Comm.	4-court	33 x 18	594	2014	
Southam College	Edu.	4-court	33 x 18	594	1960	2000
Southam College		-court	33 x 18	594		
Southam College		Activity	18 x 10	180		
Stratford Girls' Grammar School	Edu.	4-court	35 x 20	690	2015	
Stratford Leisure Centre	Public	8-court	40 x 35	1,380	1975	2015
Stratford Upon Avon School Community SC	Edu.	4-court	35 x 20	690	2002	
Stratford Upon Avon School Community SC		Activity	17 x 9	153		
Studley Leisure Centre	Public	4-court	35 x 20	690	2002	
The Greig	Public	3-court	30 x 18	540	1958	2020
Warwickshire College (Moreton Morrell)	Edu.	4-court	35 x 20	690	2017	
Wasps Training Ground	Edu.	4-court	33 x 18	594	2009	
Redditch						
Abbey Stadium Sports Centre	Public	4-court	35 x 21	737	1963	2016
Arrow Vale Sports & Leisure Centre	Public	4-court	35 x 20	690	1976	
Arrow Vale Sports & Leisure Centre		Activity	18 x 12	216		
St Augustines School	Edu.	4-court	35 x 20	690	1970	
St Augustines School		Activity	18 x 17	306		
St Bedes Catholic Middle School	Edu.	3-court	27 x 18	486	2017	
St Bedes Catholic Middle School		Activity	18 x 10	180		
Trinity High School	Edu.	4-court	52 x 24	1,248	1996	2006
Trinity High School		Activity	17 x 9	153		
Tudor Grange Academy Redditch	Edu.	5-court	41 x 21	867	1970	2006
Tudor Grange Academy Redditch		Activity	18 x 10	180		
Wychavon						
Droitwich Spa High School	Public	4-court	33 x 18	594	1975	2004
Droitwich Spa High School		Activity	18 x 10	180		
Droitwich Spa High School		Activity	18 x 10	180		
Droitwich Spa Leisure Centre	Public	4-court	32 x 18	576	1985	2005
Evesham Leisure Centre	Public	4-court	33 x 18	594	2009	
Pershore High School	Edu.	4-court	35 x 20	690	1960	1999
Pershore High School		Activity	18 x 10	180		
Pershore Leisure Centre	Public	3-court	27 x 18	486	2002	
Prince Henry's Sports Hall/Worcestershire Cricket Centre	Edu.	4-court	33 x 18	594	1997	
		Activity	17 x 9	153		

Wallace House Community Centre	Public	3-court	27 x 18	486	1969	
Wyre Forest						
Baxter Business and Enterprise College	Edu.	4-court	35 x 20	690	2007	
Baxter Business and Enterprise College		Activity	18 x 10	180		
Bewdley Leisure Centre	Edu.	3-court	27 x 18	486	1990	2003
Heathfield Knoll School	Edu.	3-court	27 x 18	486	1970	2005
Kidderminster And District Youth House	Public	4-court	33 x 18	594	1970	2015
King Charles I School	Edu.	4-court	33 x 18	594	1978	2006
King Charles I School		Activity	17 x 9	153		
King Charles I School		Activity	17 x 9	153		
Winterfold House School	Edu.	4-court	33 x 18	594	2000	2006
Wolverley CE Secondary School	Edu.	4-court	35 x 20	690	1960	
Wolverley CE Secondary School		Activity	18 x 10	180		
Wyre Forest Leisure Centre	Public	6-court	35 x 27	932	2016	

APPENDIX 2: MAPS

Sports Halls Coverage Run 1

Sports Halls 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

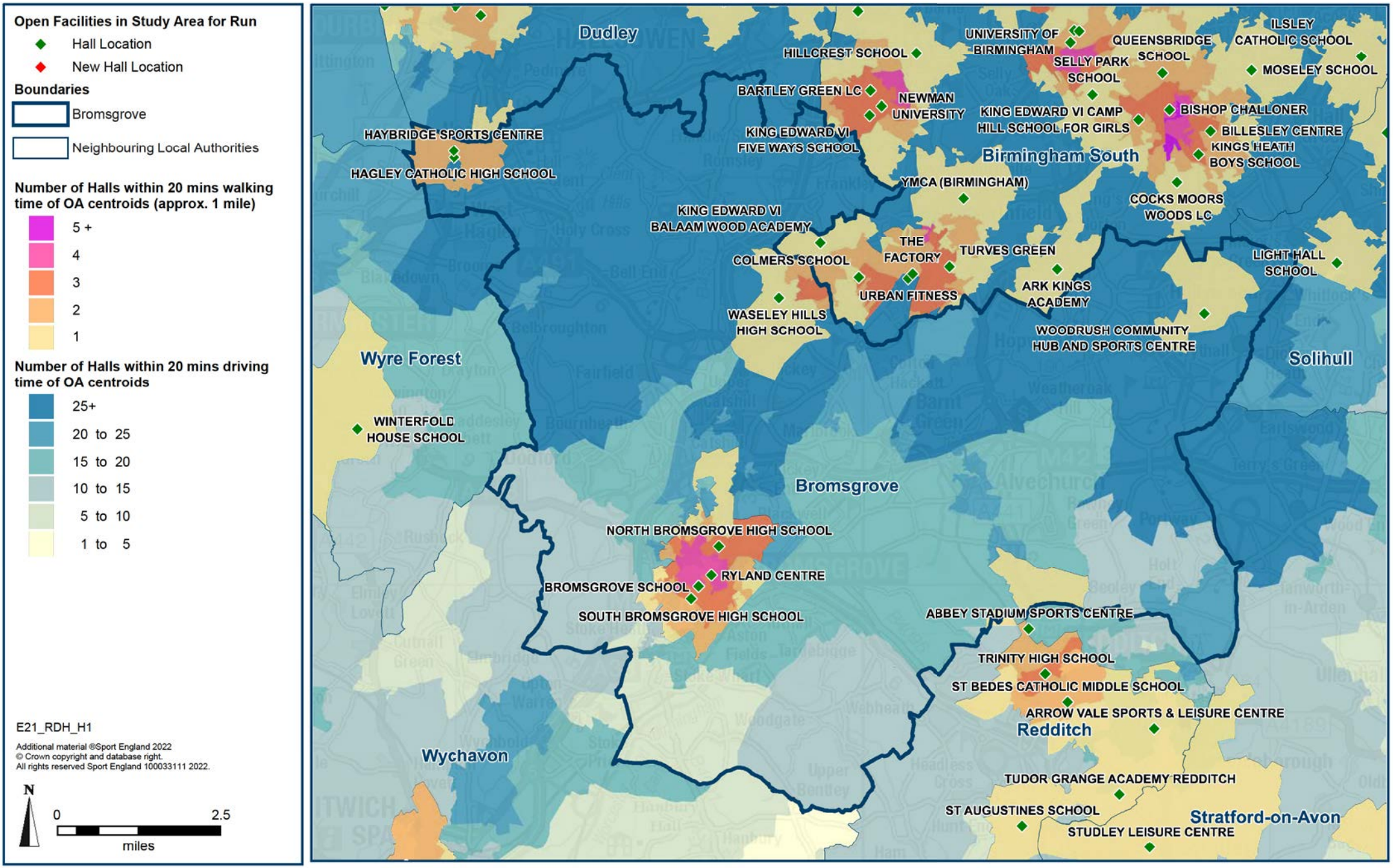
Import/Export Run 1

Import/Export Run 2

Facility Planning Model - Halls Coverage for Bromsgrove

Run 1: Existing Position - Year 2021

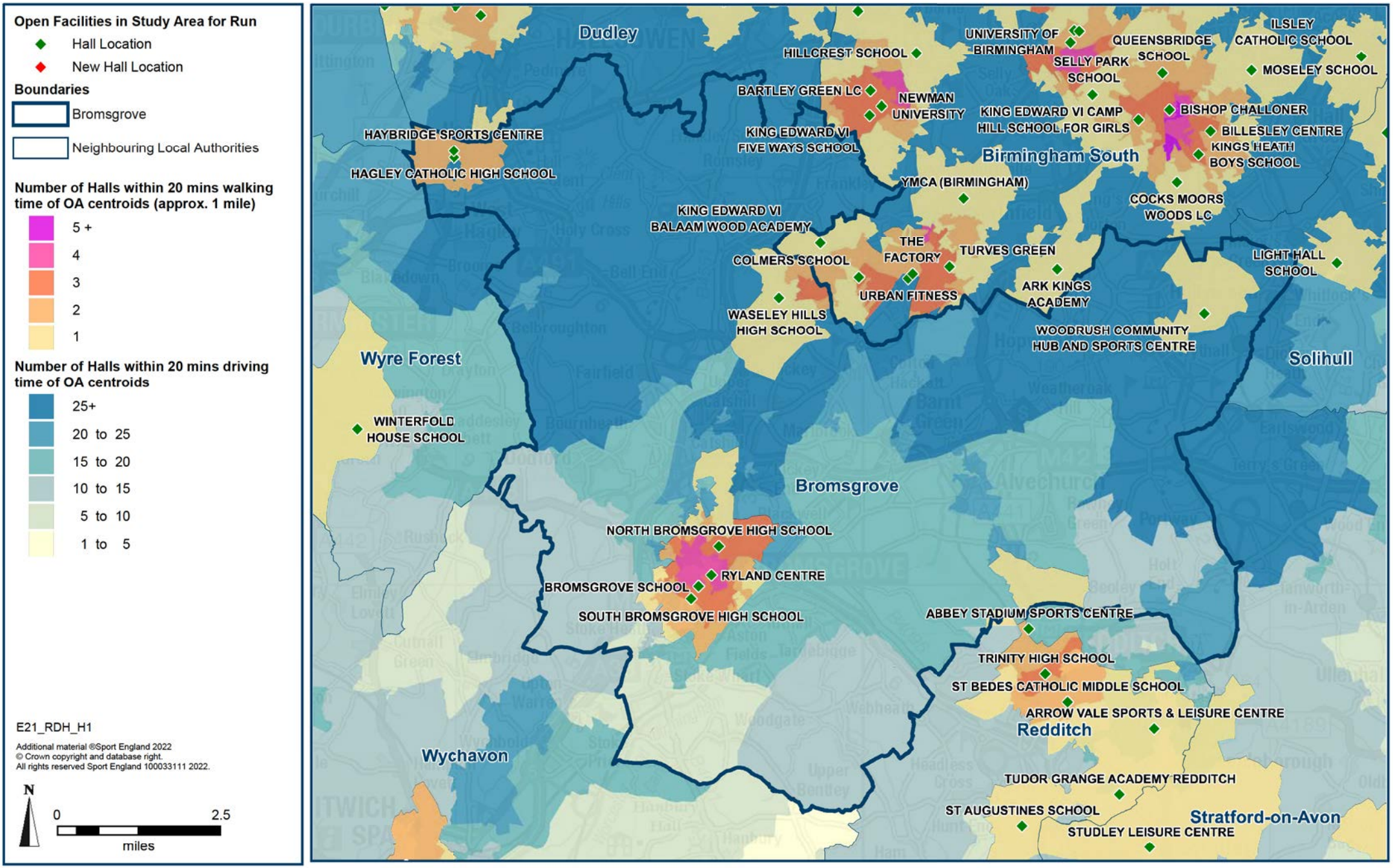
Catchments shown thematically (colours) at output area (OA) level expressed as the number of Halls within 20 minutes travel time of output area centroid.



Facility Planning Model - Halls Coverage for Bromsgrove

Run 2: Existing Provision - Year 2040

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

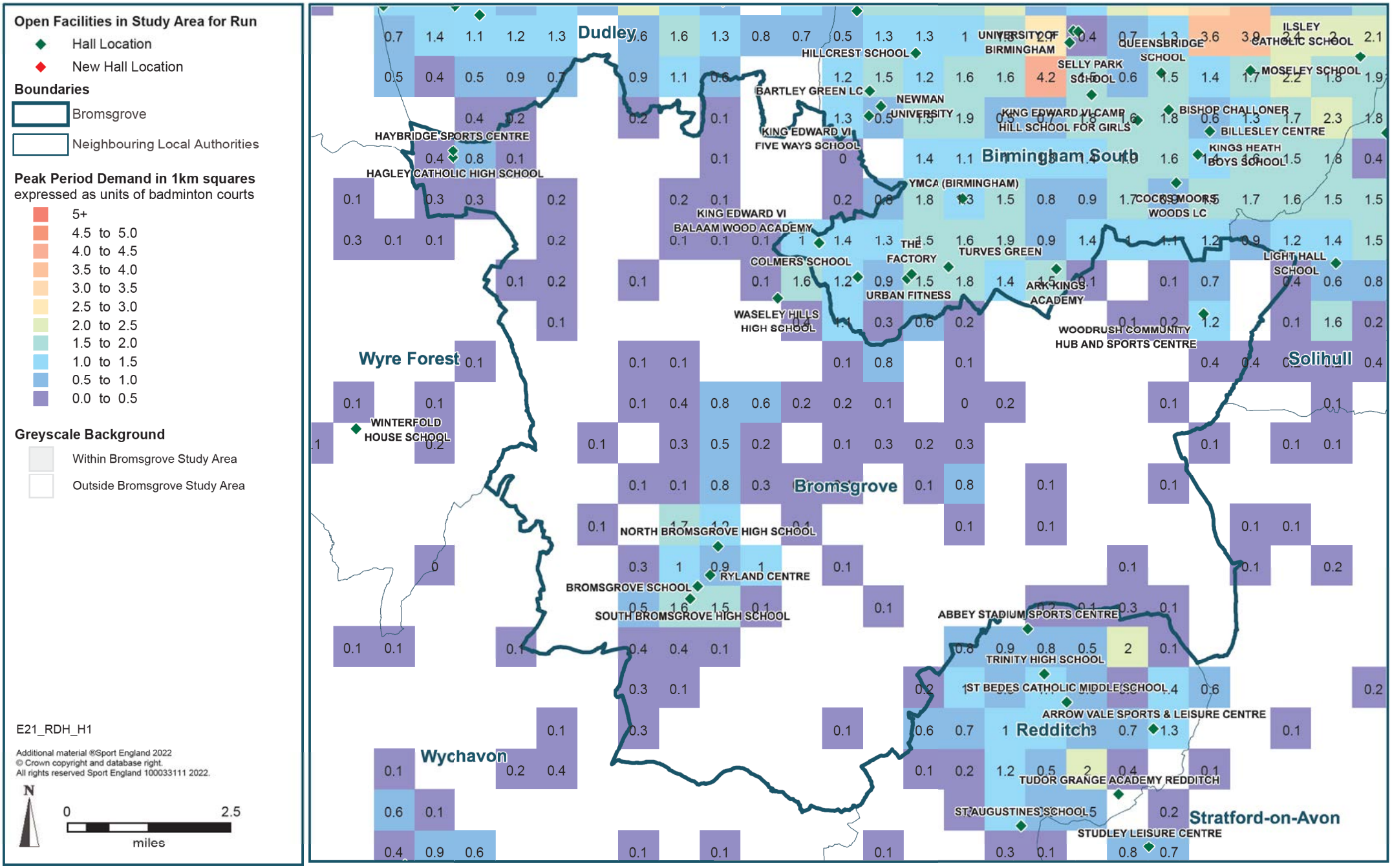


SPORT ENGLAND

Facility Planning Model - Halls Demand for Bromsgrove

Run 1: Existing Position - Year 2021

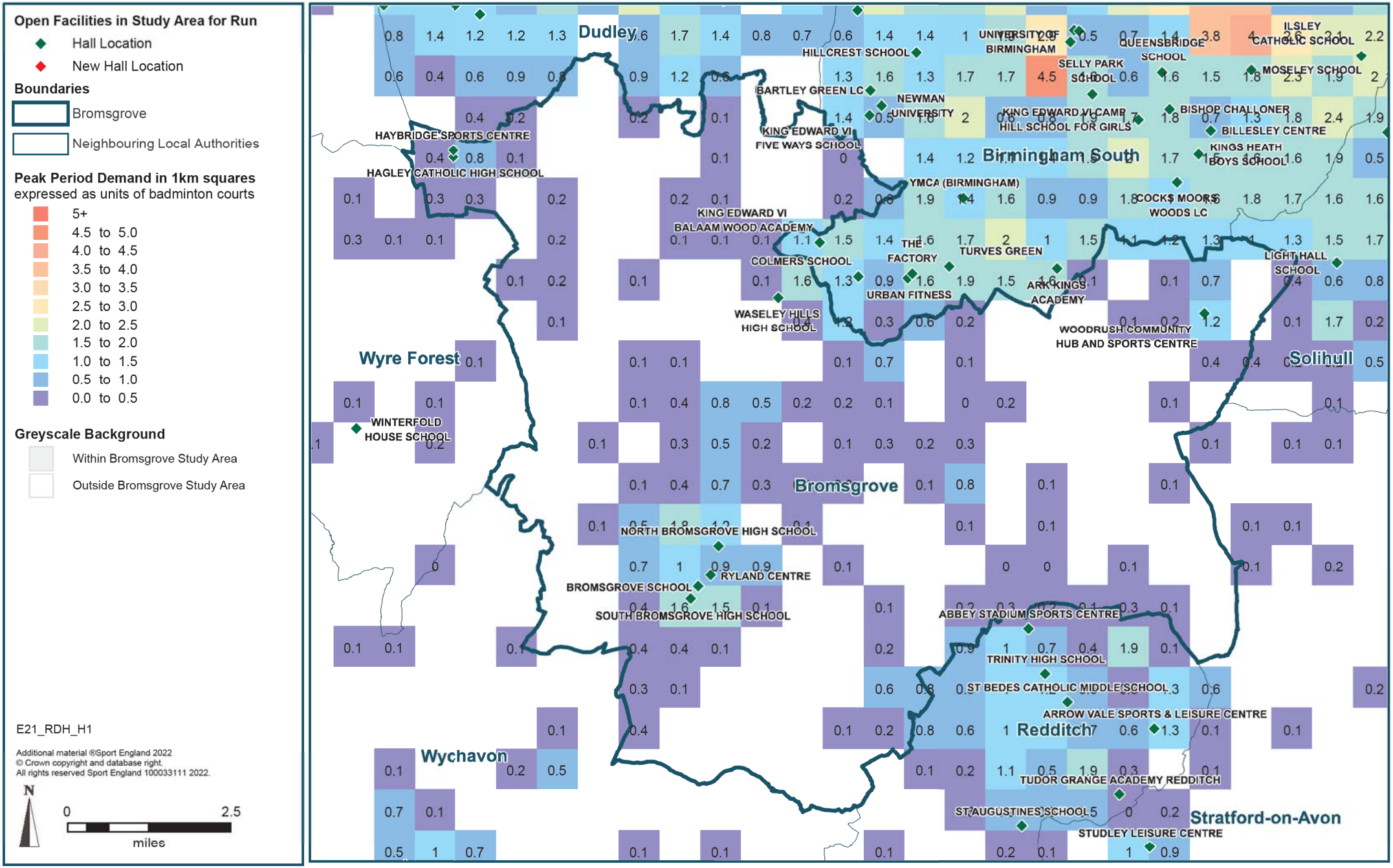
Peak period demand aggregated at 1km square grid level expressed as number of badminton courts (figure labels) and shown thematically (colours).



Facility Planning Model - Halls Demand for Bromsgrove

Run 2: Existing Provision - Year 2040

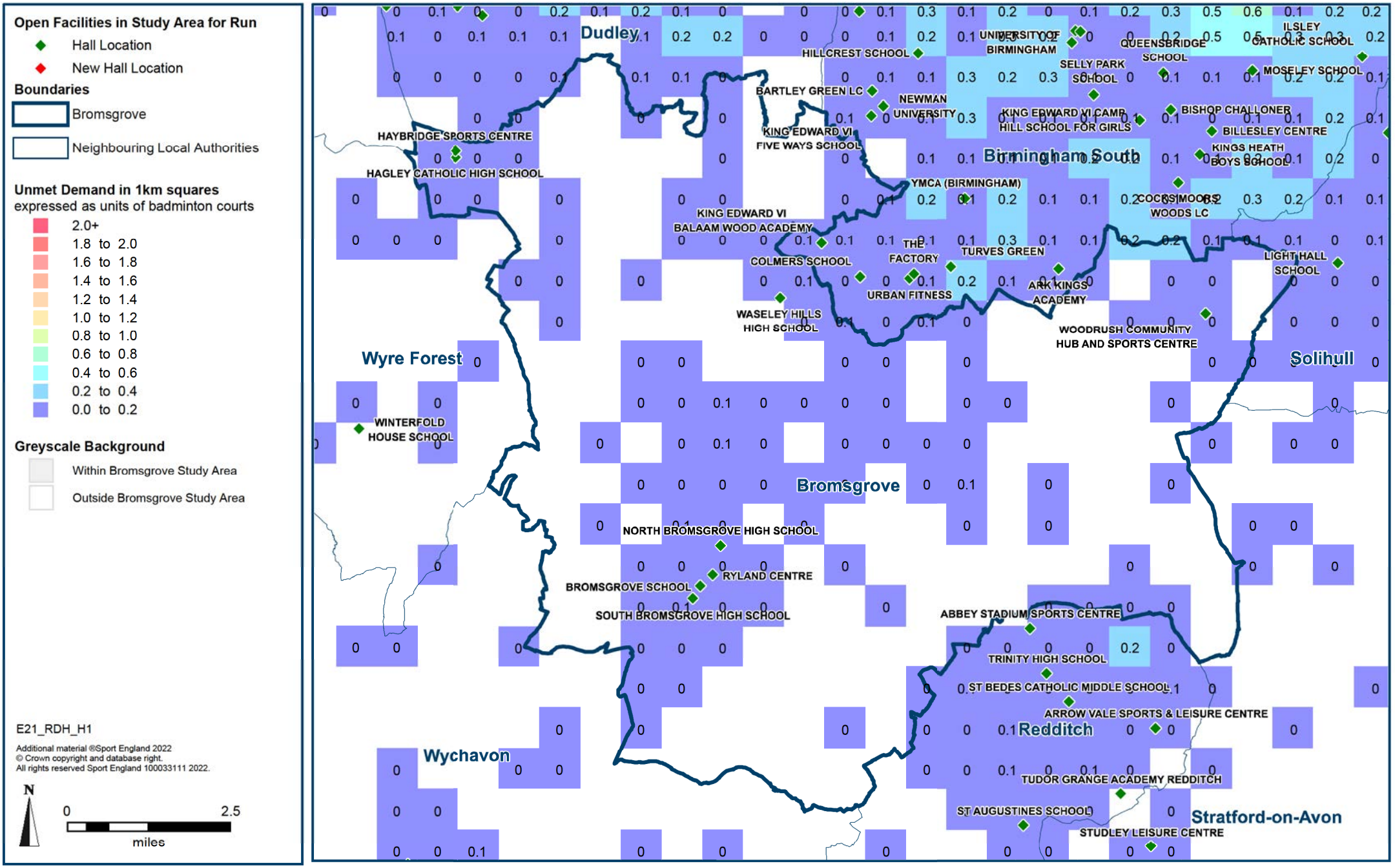
Peak period demand aggregated at 1km square grid level expressed as number of badminton courts (figure labels) and shown thematically (colours).



Facility Planning Model - Halls Unmet Demand for Bromsgrove

Run 1: Existing Position - Year 2021

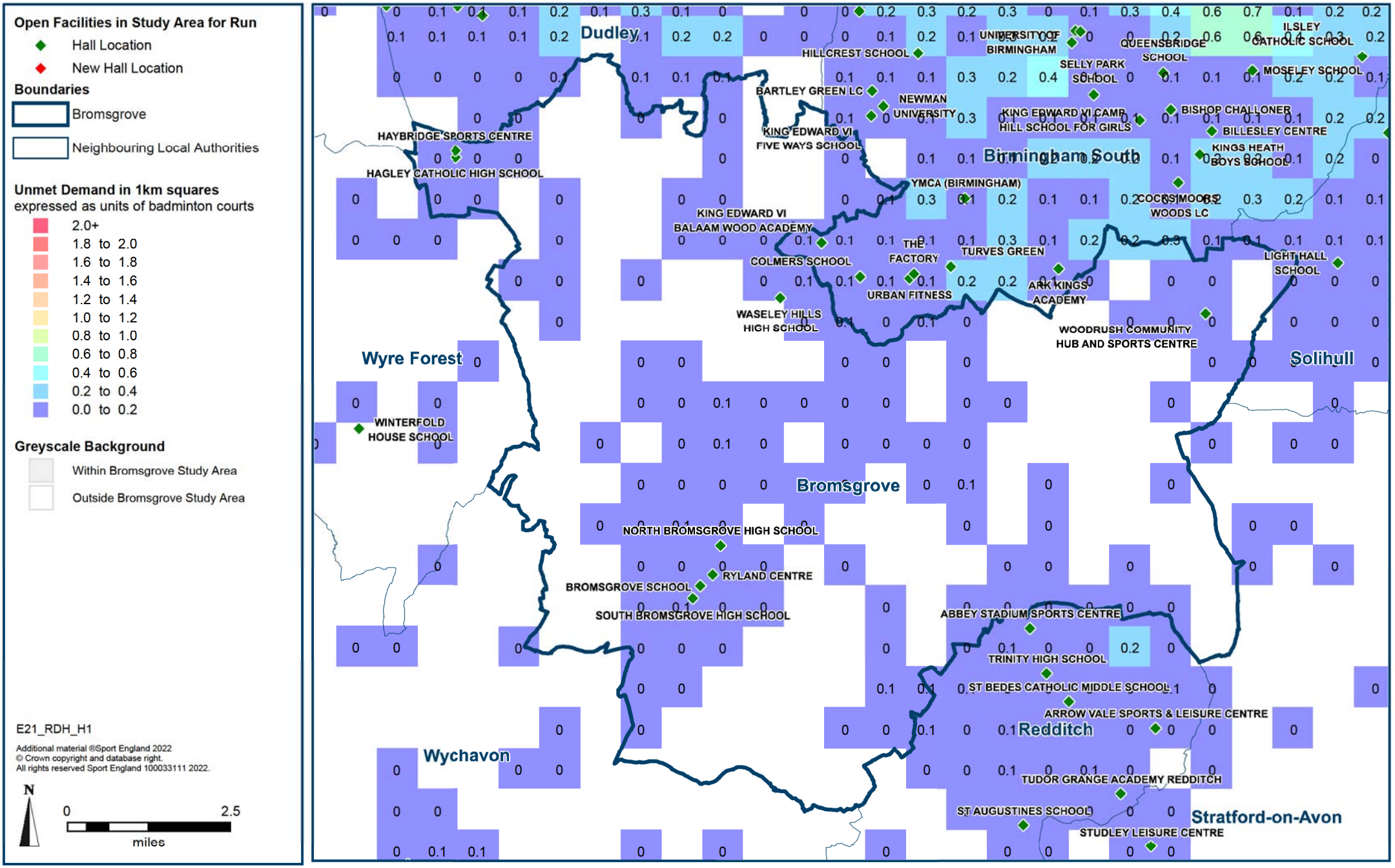
Unmet demand aggregated at 1km square grid level expressed in units of badminton courts (figure labels) and shown thematically (colours).



Facility Planning Model - Halls Unmet Demand for Bromsgrove

Run 2: Existing Provision - Year 2040

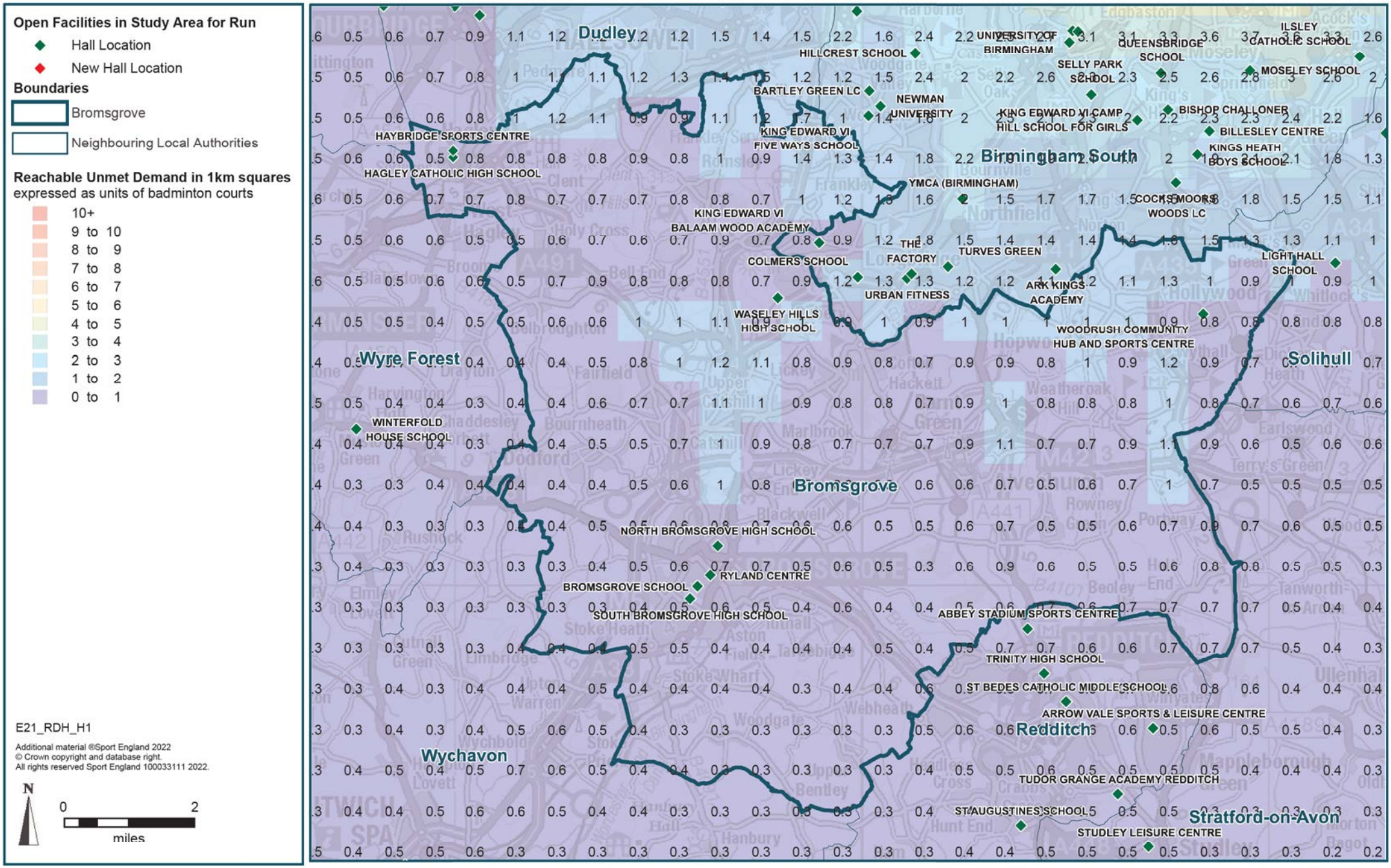
Unmet demand aggregated at 1km square grid level expressed in units of badminton courts (figure labels) and shown thematically (colours).



Facility Planning Model - Halls Reachable Unmet Demand for Bromsgrove

Run 1: Existing Position - Year 2021

Reachable unmet demand aggregated at 1km square grid, shown thematically (colours) and expressed in units of badminton courts (figure labels).

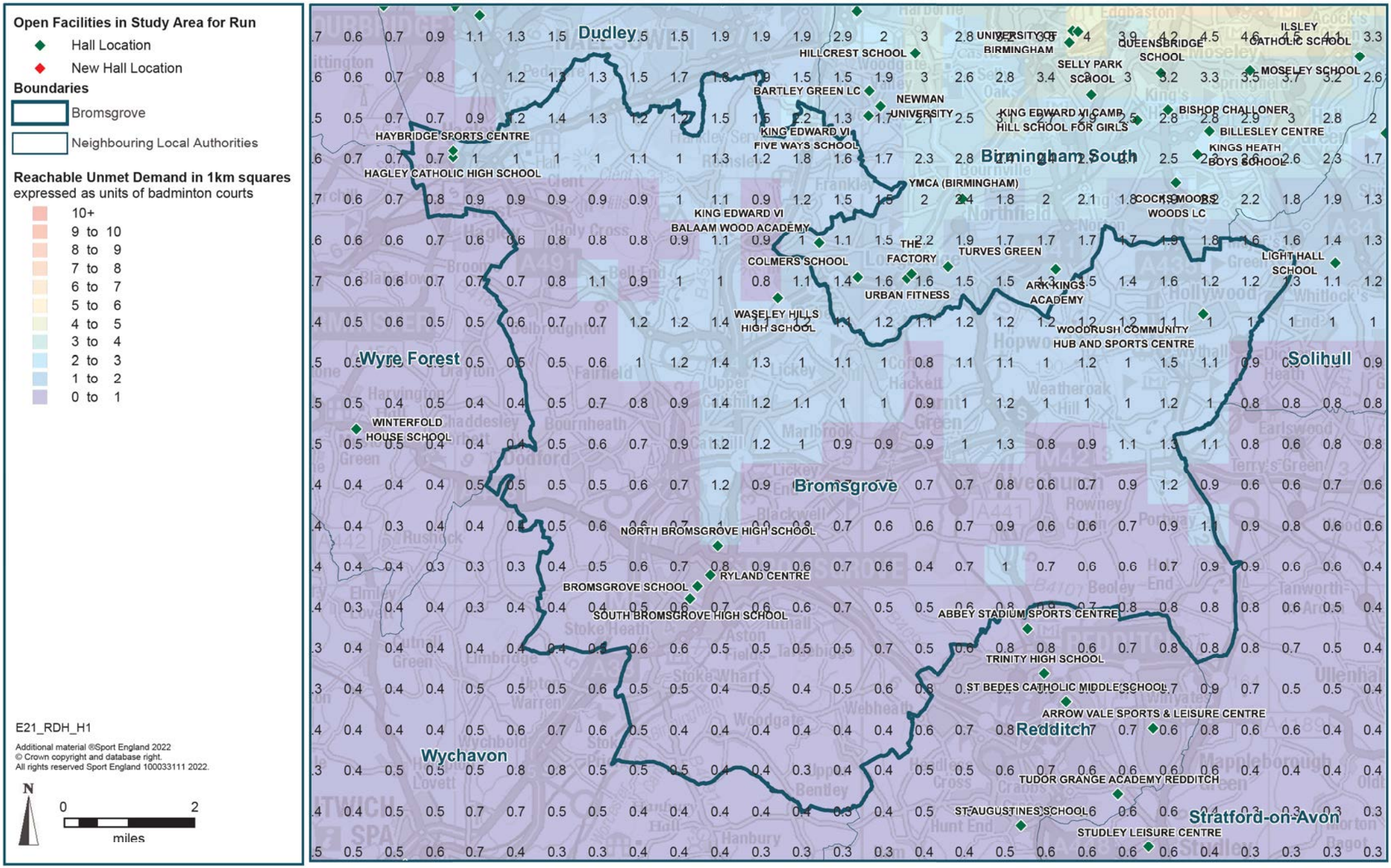


SPORT ENGLAND

Facility Planning Model - Halls Reachable Unmet Demand for Bromsgrove

Run 2: Existing Provision - Year 2040

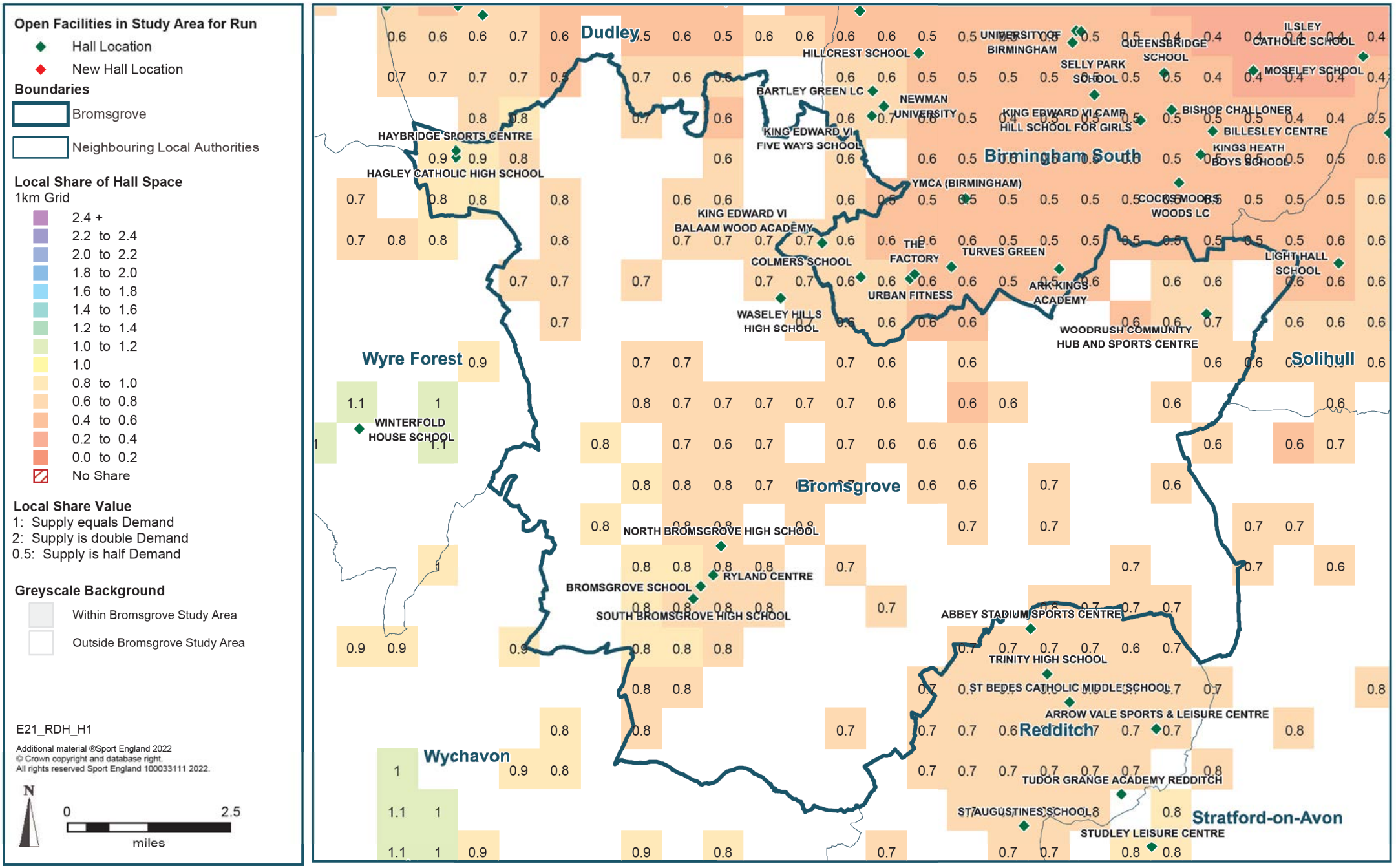
Reachable unmet demand aggregated at 1km square grid, shown thematically (colours) and expressed in units of badminton courts (figure labels).



Facility Planning Model - Halls Local Share for Bromsgrove

Run 1: Existing Position - Year 2021

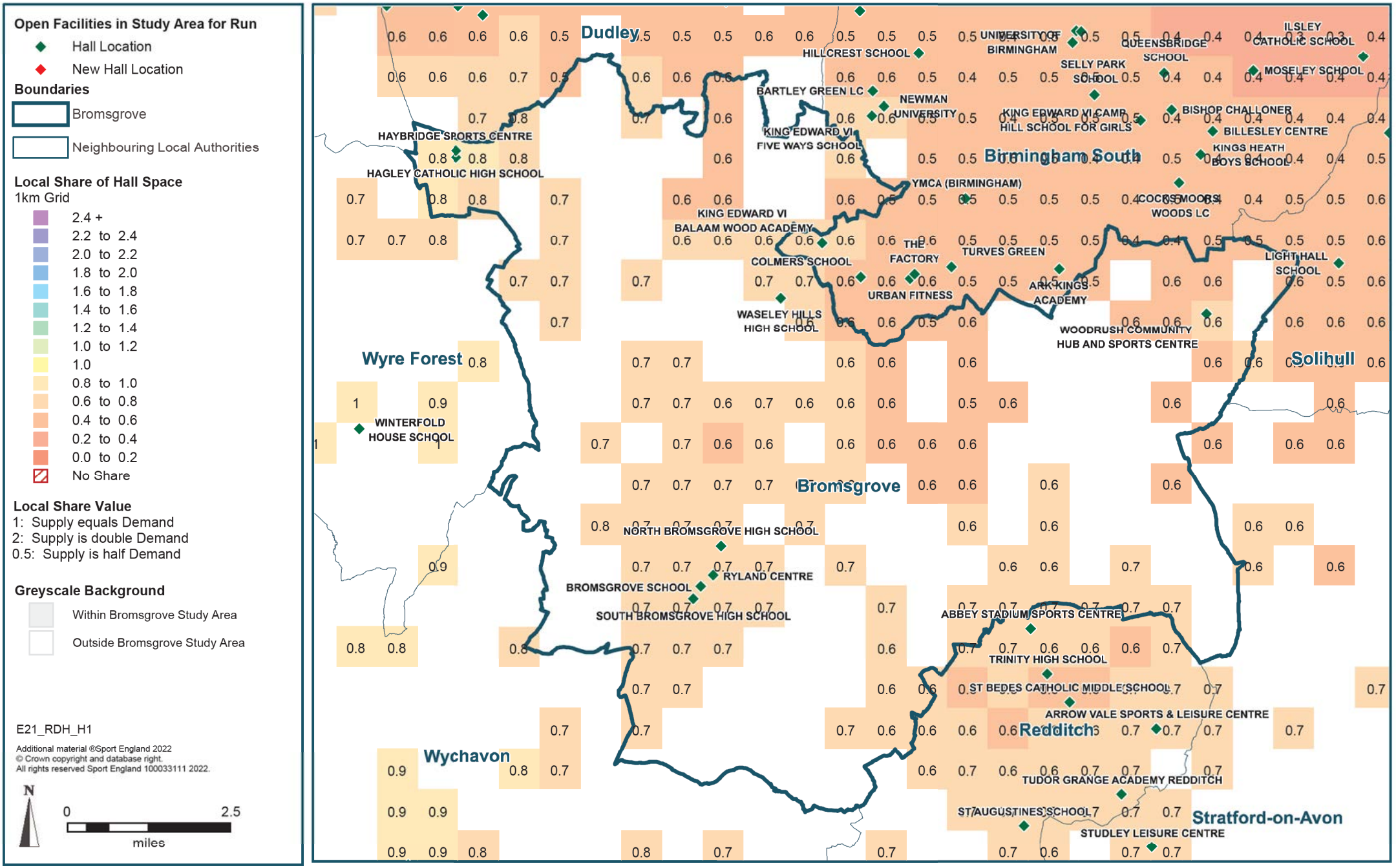
Share of badminton courts divided by demand aggregated at 1km square (figure labels) and shown thematically (colours).



Facility Planning Model - Halls Local Share for Bromsgrove

Run 2: Existing Provision - Year 2040

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



Facility Planning Model - Sports Halls Import/Export for Bromsgrove

Run 1: Existing Position - Year 2021

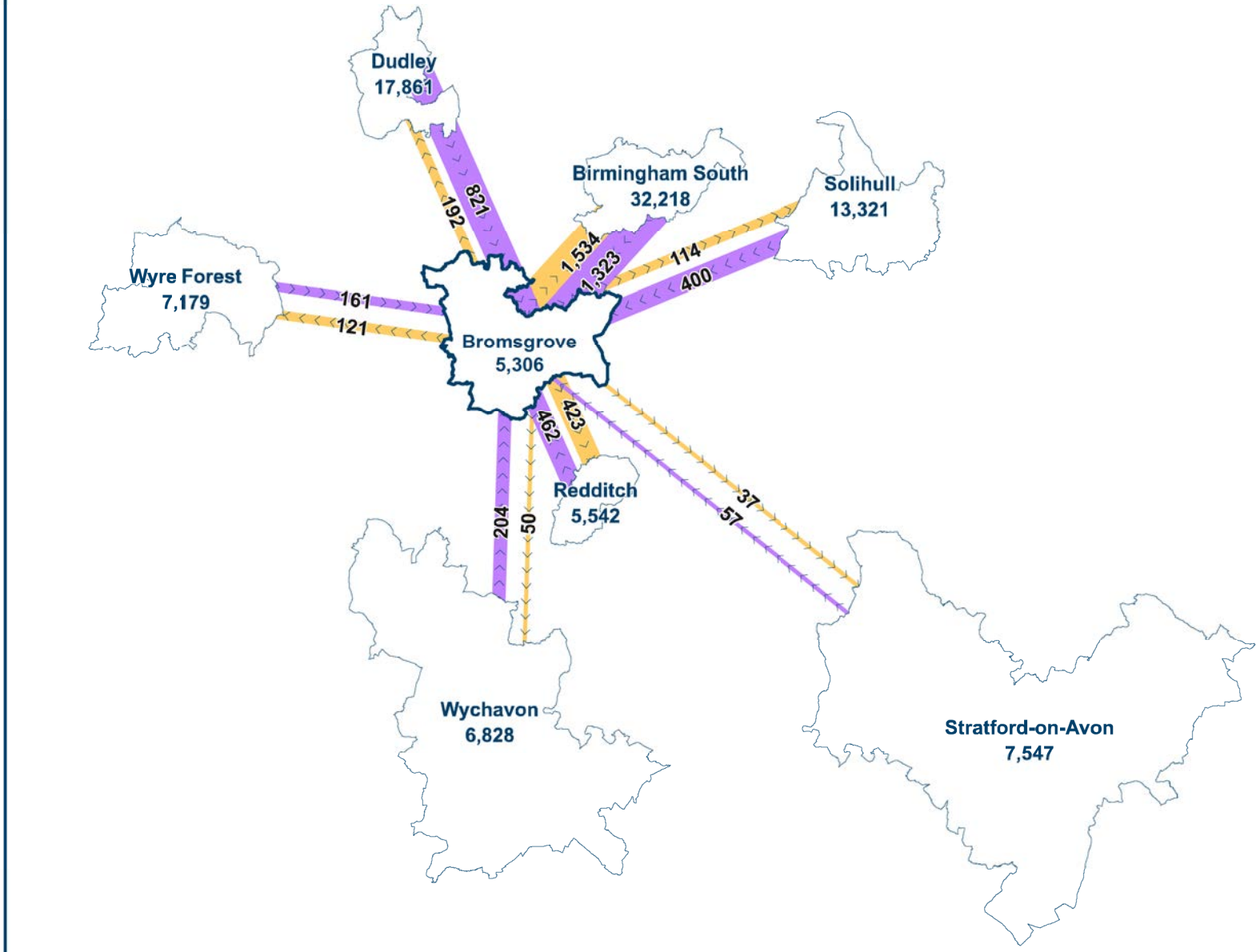
Imported and exported demand between study area and surrounding local authorities shown thematically (size of lines) as visits per week in the peak period.

Boundaries
Values in areas show retained vpwpp

- Bromsgrove
- Surrounding LAs

Import/Export
Values on arrows show flow vpwpp

- Direction of flow
- Import
- Export



E21_RDH_H1

Facility Planning Model - Sports Halls Import/Export for Bromsgrove

Run 2: Existing Provision - Year 2040

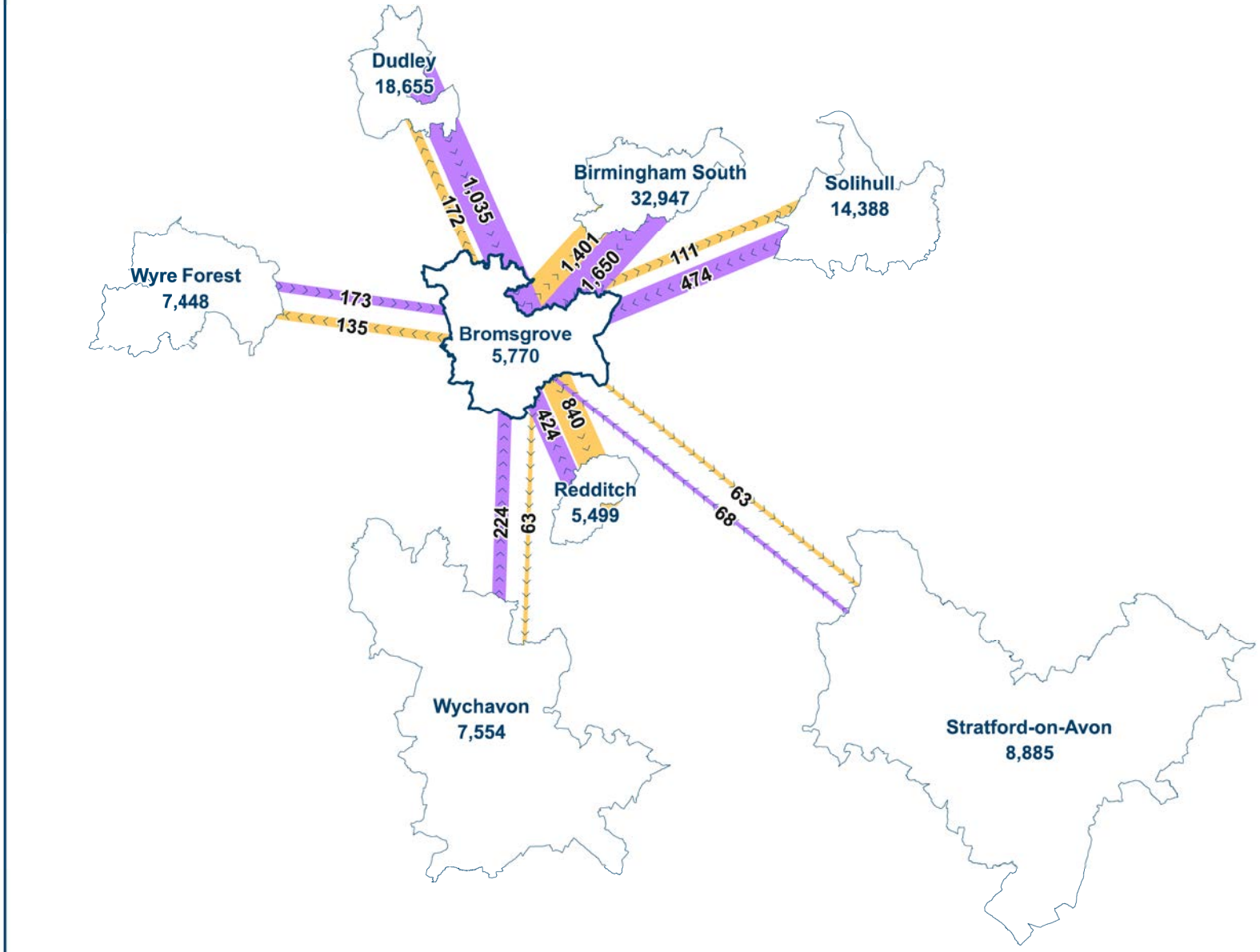
Imported and exported demand between study area and surrounding local authorities shown thematically (size of lines) as visits per week in the peak period.

Boundaries
Values in areas show retained vpwpp

- Bromsgrove
- Surrounding LAs

Import/Export
Values on arrows show flow vpwpp

- Direction of flow
- Import
- Export



E21_RDH_H1

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 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, 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 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 about 175,000 people and covers the full age/gender range. Detailed questions are asked about over 200 separate sport 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. 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.

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

[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.

accommodated by the particular facility at any one time. Each facility is then given a capacity figure in VPWPP.

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 District, 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 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:

[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 the majority of 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 taken into account when calculating how people will travel to facilities.

- 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 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 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.

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. 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^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 NOT 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, 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, sports halls and AGPs are made by car, with a significant minority of visits to pools and sports halls being 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%

10.6. 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 and 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%

Facility Inclusion Criteria

Sports Halls

The following inclusion criteria were used for this analysis.

- Include all operational sports halls available for community use i.e. pay and play, membership, sports club/community association.
- Exclude all halls not available for community use i.e. private use.
- Exclude all halls where the main hall is less than 3 Courts in size.
- 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[4].

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

[4] Choosing a date in the mid '70s ensures that the facility is included, whilst not overestimating its impact within the run.

Model Parameters

Halls Parameters

<table>
<tr><td>At One Time Capacity</td><td>32 users per 4-court hall
15 users per 144 square meters of activity hall</td></tr>
<tr><td>Catchment Maps</td><td>Car: 20 minutes
Walking: 1.6 km
Public transport: 20 minutes 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>60 minutes</td></tr>
<tr><td>Percentage Participation

Frequency per Week</td><td>
<table>
<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>
<tr><td>Male</td><td>20.4</td><td>16.7</td><td>13.9</td><td>11.6</td><td>10.2</td><td>7.3</td></tr>
<tr><td>Female</td><td>24.5</td><td>17.8</td><td>17.1</td><td>15.3</td><td>15.1</td><td>12.1</td></tr>
</table>
<table>
<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>
<tr><td>Male</td><td>0.65</td><td>0.95</td><td>0.93</td><td>0.84</td><td>1.00</td><td>1.14</td></tr>
<tr><td>Female</td><td>0.74</td><td>1.20</td><td>1.21</td><td>1.07</td><td>1.18</td><td>1.01</td></tr>
</table>
</td></tr>
<tr><td>Peak Period

Proportion in Peak Period</td><td>Weekday: 9:00 to 10:00, 17:00 to 22:00
Weekend: 08:00 to 16:00
Total: 46 hours

62%</td></tr>
</table>