



**Facilities Planning Model Assessment of  
Sports Hall Provision for  
Colchester Borough Council**

**Standard Report**

**11 November 2022**

This document has been produced by Sport England for Colchester Borough Council on 11 November 2022. This document can be reproduced by Colchester Borough 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.

### **Disclaimer**

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

### **Accreditations**

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

Ordnance Survey data © Crown copyright and database right. All rights reserved Sport England 100033111 2022.

National Statistics data © Crown copyright and database right 2022.

Population based on 2011 Census data and modified by 2018-based Subnational Population Projections for Local Authorities. Adapted from data from the Office for National Statistics licensed under the Open Government Licence v.3.0.

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

## EXECUTIVE SUMMARY

- 0.1 This report for Colchester Borough Council (also referred to as Colchester, or the Borough) provides an initial assessment of the current supply and demand for provision of sports halls in the Borough for 2022.
- 0.2 This report has been prepared based on an assessment using the Sport England Facilities Planning Model (FPM) spatial modelling tool.
- 0.3 The key element to be taken from this report is that Colchester residents' demand for sports halls is broadly met apart from in the east of the Colchester urban area, the location of the highest levels of unmet and reachable unmet demand.
- 0.4 However, based on this 2022 assessment, a new sports hall is not justified because the unmet demand that can be reached from a single location is less than three badminton courts.
- 0.5 The level of unmet demand is in part because Leisure World Colchester operates at an uncomfortably busy 100% used capacity during peak time and some of the demand that could reach this facility is displaced. However, the main reason for the unmet demand is because residents without access to a car live too far away from an available sports hall.

### ***Key Findings***

- 0.6 The key findings from the supply, demand and access assessment are:
  1. The total supply of sports halls is the equivalent of 86 badminton courts, of which 65 are available for community use in the weekly peak period. The 21 unavailable courts equate to 24% of the total supply.
  2. The three sites that open fully during peak time periods (Colchester Sports Park, Leisure World Colchester and University of Essex Sports Centre) are also the only sites that offer extensive opening hours at off-peak times.
  3. The average age of the sports hall sites is 30 years. The public-owned centres are a lot younger than the average, at 16 years. Three of the older sites have been refurbished in the last 15 years, but there is an increasing need for modernisation of the educational supply.
  4. The Borough's demand for sports halls in the weekly peak period, including a comfort factor, is the equivalent of 59 badminton courts (six fewer than the available supply).
  5. Several sports hall sites are in or on the edge of the areas of higher deprivation. Therefore, these sites are well located to offer access to residents of these areas.
  6. In 2022, 90% of the total demand for sports halls by Colchester residents is met.
  7. Of all journeys to sports halls by Colchester residents, 20% are predicted to be on foot or by public transport (10% each) with the rest by car (80%).
  8. Unmet demand is the equivalent of six courts. Of unmet demand:
    - 97% is because sports halls are too far away from where residents live.

- 3% is due to lack of facility capacity.
  - 85% is from residents who do not have access to a car.
9. Unmet demand is highest in the east of the Colchester urban area, at up to 0.5 of a court per square kilometre. This is also in an area of the Borough with the most deprivation.
  10. The best location to meet the most unmet demand is in the east of the Colchester urban area. At just over two badminton courts, this may be insufficient to consider building a new sports hall to improve access for residents.
  11. The overall estimated used capacity of sports halls in Colchester is 74% in the weekly peak period. This is higher than in neighbouring local authority areas, apart from Tendring, and also higher than the regional and England-wide levels.
  12. Five sports hall sites operate at or above the 80% comfortable capacity level, with the two public sites (Colchester Sports Park and Leisure World Colchester) having an estimated 100% fully utilised capacity in the weekly peak period.
  13. Local share is poorest in and around West Mersea, with local share as low as 0.3. Throughout most of the Borough, local share is consistently between 0.6 and 0.8, with no part of the Borough at 1 or above. The highest level of local share is in the far northeast of the Borough, where residents can access nearby halls in adjoining local authority areas as well as in Colchester.

### ***Strategic Overview***

- 0.7 Colchester has a good supply of relatively modern sports halls, which can cater for regional and community-level indoor sports. However, several educational sites require replacement or modernisation.
- 0.8 There is plenty of spare capacity within the existing supply of sports halls in Colchester. There is also a new sports hall opening at the new Trinity School in the Chesterwell development which will offer community use. Currently, a potential 21 courts could be added to the available supply if weekly opening hours during peak time were extended to the full 46. One priority is to offset the uncomfortably high utilisation of some sites by extending their opening hours and/or the opening hours of other less utilised facilities nearby.
- 0.9 The main area of unmet demand is in the east of the Colchester urban area. This currently has reachable unmet demand of two badminton courts. While this level does not currently justify building a new sports hall, it is important to try and address this demand as it comes from residents living in the areas with the highest deprivation in the Borough.
- 0.10 The assessment excludes a relatively modern full-size four-court hall at Colchester Academy. This site is well located to be accessible to those residents currently unable to reach an available sports hall. Could this be offered as a community facility during some of the peak period?
- 0.11 The scale of the proposed Garden Community to the east of the town of Colchester will fundamentally change the demand for sports halls and other facilities and thus presents

an opportunity to plan for additional sports halls and other sports facility provision to meet current and future needs. Therefore, it will be important to understand and potentially jointly plan with neighbouring local authorities, particularly Tendring, on future sports hall provision.

### ***Next Steps***

- 0.12 Colchester Borough Council, in reviewing the findings of this report, may wish to consider applying the evidence base to ensure that the benefits from the strategic direction being set by Sport England are realised.
- 0.13 It is important to reiterate that this is a one-year assessment and provides the evidence base as of now. The findings should be consulted on to provide a rounded evidence base and address the findings set out.
- 0.14 Given the strategic overview, the following will be significant:
- Projected population growth in Colchester and across the study area.
  - Known committed changes in the current available supply of sports hall sites (including the new hall at The Trinity School due to open in 2023).
  - The impact of the proposed 8,500 home Garden Community on the Colchester/Tendring boundary, the location of the highest levels of reachable unmet demand.
  - Growth elsewhere in the Borough, particularly in locations where current capacity is unable to meet demand.
- 0.15 The current levels of unmet demand together with the proposed major housing developments in and around Colchester should be assessed using longer-term local bespoke assessments through Sport England's FPM. These assessments should include population projections covering the proposed housing growth areas, with options for changing the sports hall supply and assessing the collective impact this has on the future demand for sports halls and their distribution.
- 0.16 Such an evidence base can be applied in strategic planning and the Local Plan policy and can be used for securing inward investment.

## Contents

1.	Introduction .....	1
2.	Sports Halls Supply.....	3
3.	Demand for Sports Halls.....	8
4.	Satisfied Demand.....	10
5.	Unmet Demand.....	14
6.	Used Capacity.....	18
7.	Local Share of Facilities.....	22
	Appendix 1: Facilities Excluded .....	25
	Appendix 2: Model Description, Inclusion Criteria and Model Parameters .....	26

## 1. Introduction

- 1.1 This assessment uses Sport England's Facilities Planning Model (FPM) and the outputs from the National Run using Active Places data as of March 2022.
- 1.2 The supply assessment is based on sports halls being open and accessible for community use. If sports halls are closed temporarily because of Covid-19 or for any other reason, the local authority should inform Sport England Active Places Power via the contact us link at <https://www.activeplacespower.com>.
- 1.3 This standard run provides an initial assessment of the current supply and demand for provision of sports halls in the Borough of Colchester. The assessment does not include future population growth projections but is a baseline evidence base for sports hall provision.
- 1.4 To help with comparative analysis, the data outputs for the neighbouring local authorities, together with regional and national findings, are included in the data tables.

### ***Context***

- 1.5 This report should form part of a wider assessment of provision at local level, which then provides a rounded assessment and evidence base report. This should include other available information and knowledge from:
  - A sports perspective, such as national sports governing bodies and other sports organisations.
  - A local perspective from the local authority, the facility operator and local sports clubs.
- 1.6 The findings from this FPM standard report should be reviewed and applied with reference to the strategic direction being set by Sport England on:
  - The policies, programmes and interventions proposed to increase sports participation and physical activity.
  - The application of the research applied by Sport England in determining the strategy and the evidence base.
  - The role sports facilities can play in increasing sports participation and physical activity.
- 1.7 The strategy can be accessed at [Uniting the Movement | Sport England](#).

### ***Future Assessment***

- 1.8 Longer-term bespoke FPM local assessments for future provision can be undertaken based on:
  - Review of these findings.
  - Projected population growth and inclusion of residential sites identified in the Local Plan.

- Options for changes in supply – closure/new openings at the same or different locations and on different scales.
- 1.9 The purpose is to identify the impact of these changes on access to sports halls for residents in future years and whether changes in supply meet future demand.
- 1.10 These future assessments can support the development of an evidence base in Local Plan policy, and, in combination with locally derived information and knowledge, can build the picture of provision within an area to inform a long-term evidence base for securing inward investment – grant aid applications, and prototype developments, for example, Sport England Leisure Local.

### ***Report Structure, Content and Sequence***

- 1.11 This report sets out the full findings under six assessment headings as follows:
- Supply – How many facilities are there and what is their capacity?
  - Demand – Who wants to use the facilities?
  - Satisfied Demand – How many people use the facilities? Where do people use facilities (inside and outside the authority) and how do they travel there?
  - Unmet Demand – Who is unable to use the facilities and why? Is there insufficient capacity or are people too far away from facilities?
  - Used Capacity – How full are the facilities and where are people coming from (inside and outside the local authority area)?
  - Local Share – Which areas have better or worse provision, considering the number of people who want to use them?
- 1.12 Each assessment heading has a table of main findings, followed by a full definition of these. Each key finding is numbered and in bold typeface. All tables include the findings for the neighbouring local authorities, together with regional and England-wide findings. This is because the assessments are based on catchment areas, and catchments extend across local authority boundaries.
- 1.13 Where valid to do so, the findings for the neighbouring local authorities are compared with the findings for Colchester; for example, badminton courts per 10,000 population.
- 1.14 Maps to support the findings on facility locations, deprivation, public transport access, unmet demand and local share are also included.
- 1.15 The facilities excluded from the study, with explanations, are listed in Appendix 1. The facility planning inclusion criteria and model parameters are described in Appendix 2.

## 2. Sports Hall Supply

Supply	Colchester	Babergh	Braintree	Maldon	Tendring	East Region	England
Number of halls	21	11	14	8	10	664	6,004
Number of hall sites	12	7	9	4	6	439	4,120
Supply in badminton court equivalents	85.9	44.9	50.8	27.7	36.7	2,531.4	23,134.4
Supply in courts scaled with hours available in peak period	64.5	32.9	37.0	23.5	28.9	1,886.6	16,832.1
Supply in visits per week in peak period	23,754	12,112	13,623	8,663	10,650	694,257	6,194,224
Average year built of all sites	1994	1973	1983	1988	1988	1990	1993
Average year built of public sites	2006	-	-	1994	1984	1988	1991

**Definition of supply** – This is the supply or capacity of the sports halls available for community and club use in the weekly peak period. Supply is expressed in the 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 There are 21 sports halls across 12 sites in Colchester.
- 2.2 **Key finding 1** is that the total supply of sports halls is the equivalent of 86 badminton courts, of which 65 are available for community use in the weekly peak period. The 21 unavailable courts equate to 24% of the total supply.
- 2.3 The sports halls excluded from the study are listed in Appendix 1.

### *Facilities Included in Colchester*

Site	Operation	Facility Type	Dimensions (m)	Area (sqm)	Year Built	Year Refurb	Peak Hours	Total Hours	Site Capacity (visits per week in peak period)
Colchester County High School for Girls	Edu.	4-court	35 x 20	690	2018		29	29	1,472
		Activity	18 x 10	180			29	29	
Colchester Sports Park	Public	5-court	40 x 20	800	2020		46	111	1,840
Corporal Budd VC Gymnasium	Other	4-court	35 x 20	690	2008		12	12	672
		3-court	27 x 18	486			12	12	
Holmwood House Prep. School	Edu.	4-court	35 x 20	690	2010		20	22.5	640
Leisure World Colchester	Public	6-court	35 x 27	932	1991		46	103	4,048
		5-court	41 x 21	867			46	103	
Leisure World Highwoods	Edu. (3rd party)	4-court	33 x 18	594	1985		36.5	41	1,168
Leisure World Tiptree	Edu. (3rd party)	4-court	33 x 18	594	2005		39	48.5	2,560
		Activity	19 x 17	323			39	48.5	
St Benedict's Catholic College	Edu.	4-court	33 x 18	594	1997		20	20	1,015
		Activity	18 x 10	180			20	20	
St Helena School	Edu.	4-court	35 x 20	690	1938	2005	35	35	2,433
		Activity	18 x 10	180			35	35	
		Activity	18 x 10	180			35	35	
Stanway School	Edu.	4-court	33 x 18	594	1987	2018	30	32.5	1,523
		Activity	18 x 10	180			30	32.5	
The Thomas Lord Audley School	Edu.	5-court	41 x 21	867	1975	2008	34	36	1,360
University of Essex Sports Centre	Edu.	8-court	60 x 35	2070	2018		44	92	5,024
		6-court	35 x 25	875			46	103	

2.4 Four sites are operated by Leisure World, the leisure management arm of Colchester Borough Council:

- Colchester Sports Park at the new Northern Gateway Sports Park.
- Leisure World Colchester.
- Leisure World Highwoods at The Gilbert School.
- Leisure World Tiptree at Thurstable School.

2.5 The remaining eight sites comprise seven educational sites (managed in-house) and Corporal Budd VC Gymnasium owned by the Ministry of Defence and operated by private contractor Sodexo.

2.6 There are two large sports hall sites in the Borough:

- The largest is at the University of Essex, which has an eight-court hall plus a six-court hall, providing a total of 2,945 sqm of sports hall space.
- Leisure World Colchester has a six-court hall plus a five-court hall, which together provide 1,799 sqm of sports hall space.

2.7 Larger sports halls can offer:

- Additional scope for more activities to take place consecutively.
- Higher levels of competition and events hosting.
- Greater flexibility for teaching and coaching.

2.8 Leisure World Colchester and University of Essex Sports Centre are also open for most of the peak period as well as for extensive off-peak opening times. Their combined site capacity is 9,072 visits per week in the peak period, which is 38% of the Borough's total capacity.

2.9 Colchester Sports Park and The Thomas Lord Audley School each have a five-court hall.

2.10 The remaining eight sites have four-court halls. Six of these eight sites have an additional hall:

- Four sites have one activity hall.
- Corporal Budd VC Gymnasium's second hall is a three-court hall.
- St Helena School has two 180 sqm activity halls.

2.11 Four of the four-court halls are 690 sqm; this is the size that Sport England and the National Governing Bodies for hall sports recommend for a four-court hall that can cater for all hall sports at the community level of participation. The smaller four-court halls can also accommodate most indoor hall sports at the community level of participation but have less space behind the courts.

2.12 While not part of the assessment, a new four-court (33m x 18m) sports hall will be available for community use at a new secondary school (The Trinity School) in the Chesterwell residential development in northwest Colchester (<https://www.thetrinityschool.co.uk/>). While the hours of use will be restricted to evenings and weekends during term time, this will provide some additional peak time community use. This is scheduled to open in September 2023.

### **Capacity**

2.13 The at-one-time capacity of a main hall with marked courts is eight people per badminton court. For an activity hall, this increases to 15 people per 144 sqm (the equivalent area of a badminton court). Therefore, an activity hall has almost double the capacity of a main hall with the same dimensions.

2.14 Where a sports hall site has a main hall and an activity hall, the activities for the two halls are programmed together. The main hall can accommodate big/high space activities,

such as basketball and badminton, which have low participant numbers. The activity hall can accommodate smaller space activities such as martial arts, which have higher participant numbers.

### ***Availability***

- 2.15 A few sites are fully open throughout the 46-hour weekly peak period, including the two public-operated sports hall sites: Colchester Sports Park and Leisure World Colchester. University of Essex Sports Centre is open for almost all the full peak-time period.
- 2.16 Several education sites are open for less than half the peak period, including:
- Holmwood House Prep School and St Benedict's Catholic College, available for 20 hours per week.
  - Corporal Budd VC Gymnasium, available for only 12 hours per week, all during the weekly peak period.
- 2.17 **Key finding 2** is that the three sites that open fully during peak time periods (Colchester Sports Park, Leisure World Colchester and University of Essex Sports Centre) are also the only sites that offer extensive opening hours at off-peak times.

### ***Age***

- 2.18 **Key finding 3** is that, in 2022, the average age of the sports hall sites is 30 years. The public-owned centres are a lot younger than the average, at 16 years. Three of the older sites have been refurbished in the last 15 years, but there is an increasing need for modernisation of the educational supply.
- 2.19 St Helena School is the oldest sports hall site in the Borough, at 84 years old (refurbished in 2005), followed by The Thomas Lord Audley School, which is 47 years old (refurbished in 2008).
- 2.20 Modernisation is defined as one or more of the following:
- Upgrade of the sports hall floor to a sprung timber floor.
  - Upgrade of the lighting in the sports hall.
  - Modernisation of the changing accommodation.

### ***Location***

- 2.21 Except for Leisure World Tiptree (in the southwest corner of the Borough), all the sports hall sites are in and around the main population centre of the Colchester urban area, with no sites in the more rural and less populated areas of the Borough (see Map **2.1**).



### 3. Demand for Sports Halls

Demand	Colchester	Babergh	Braintree	Maldon	Tendring	East Region	England
Population	201,148	93,627	153,266	66,219	151,370	6,346,769	57,145,158
Visits demanded in weekly peak period	17,338	7,431	12,703	5,296	11,891	528,035	4,817,053
Demand in courts with comfort factor included	58.9	25.2	43.1	18.0	40.4	1,793.6	16,362.3
% of demand in the 10% most deprived LSOAs nationally	0.9%	0.0%	0.0%	0.0%	20.0%	3.8%	10.4%

**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 badminton court equivalents. 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 2.

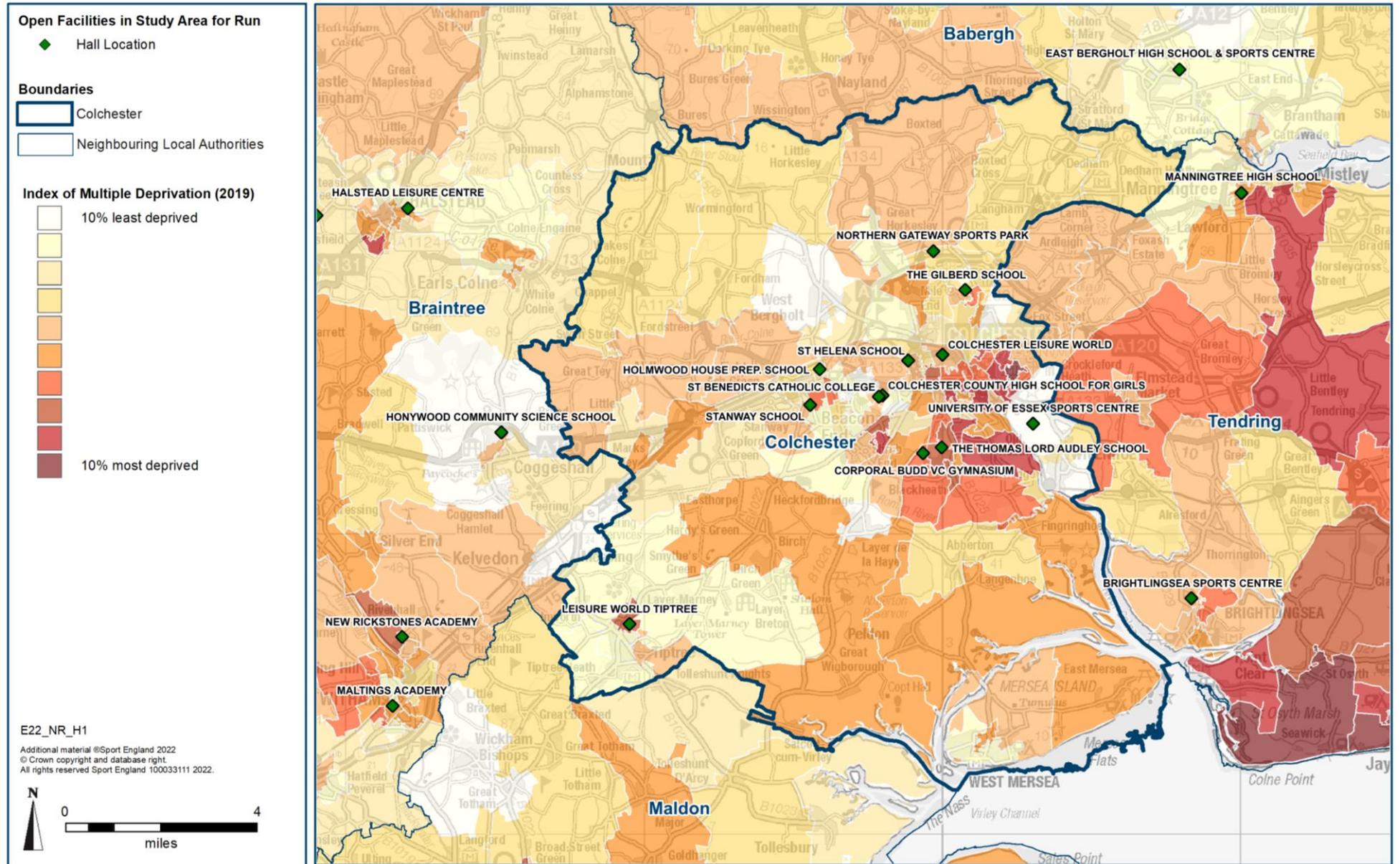
- 3.1 The population of Colchester in 2022 is 201,148. This produces a demand for sports halls of 17,338 visits per week in the peak period.
- 3.2 **Key finding 4** is that the Borough’s demand for sports halls in the weekly peak period, including a comfort factor, is the equivalent of 59 badminton courts, six fewer than the available supply (see Sports Hall Supply Section).

#### *Deprivation*

- 3.3 Less than 1% of demand in Colchester is in the 10% most-deprived lower super output areas (LSOAs) nationally. Overall, Colchester ranks in the 50% least deprived of all local authorities.
- 3.4 Deprivation is generally low within the Borough and is restricted to the eastern and southern sides of the Colchester urban area.
- 3.5 **Key finding 5** is that several sports hall sites are in or on the edge of the areas of higher deprivation. Therefore, these sites are well located to offer some access to residents of these areas (see Map 3.1).
- 3.6 The Index of Multiple Deprivation (IMD) score is used in the FPM to limit whether people will use commercial facilities (see Appendix 2 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. There are no commercial facilities in Colchester included in the modelling.

### Map 3.1: Deprivation in Colchester (2019)

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



## 4. Satisfied Demand

Demand from Colchester residents currently being met by supply

Satisfied Demand	Colchester	Babergh	Braintree	Maldon	Tendring	East Region	England
Number of visits met per week in peak period	15,655	6,580	11,596	4,760	9,546	480,513	4,365,502
% of total demand satisfied	90.3%	88.6%	91.3%	89.9%	80.3%	91.0%	90.6%
Number of visits retained per week in peak period	15,341	5,024	9,557	3,866	8,486	469,244	4,363,523
Demand retained as a % of satisfied demand	98.0%	76.3%	82.4%	81.2%	88.9%	97.7%	100.0%
Number of visits exported per week in peak period	314	1,557	2,039	893	1,060	11,269	1,979
Demand exported as a % of satisfied demand	2.0%	23.7%	17.6%	18.8%	11.1%	2.3%	0.0%

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

- 4.1 **Key finding 6** is that 90% of the total demand for sports halls by Colchester residents is met. This is the second-highest level in the study area, after Braintree, and only slightly below the regional and national average.

### ***Retained Demand***

- 4.2 A subset of the satisfied demand findings shows that much of Colchester residents' demand for sports halls is retained at sports halls located within the Borough. This assessment is based on the catchment area of Colchester sports halls and residents in the Borough choosing to participate at these halls and is known as retained demand. In Colchester, 98% of the met demand is retained within the Borough.
- 4.3 The model iteratively allocates demand to facilities using a set of distance decay functions and choice parameters. The model also considers the quality of a site based on its age and management, as supported by Sport England's research. Increasingly, there are other factors that influence which halls residents chose to use, such as other facilities being on the same site, for example, a gym or studio, ease of parking, or a sports hall programme that provides activities at times when residents wish to participate.

### ***Exported Demand***

- 4.4 The residue of satisfied demand, after retained demand, is exported demand. This is based on the catchment areas of sports halls outside the Borough and residents of Colchester using them.

- 4.5 In 2022, only 2% of Colchester’s satisfied demand for sports halls is met at a sports hall outside the Borough.
- 4.6 The data from the National FPM Run does not identify how much of Colchester’s demand goes to which other local authority area or sports hall, but only provides the total figure for exported demand. The destination of exported demand could be identified in a bespoke FPM run.

### Travel Patterns

Accessibility	Colchester	Babergh	Braintree	Maldon	Tendring	East Region	England
% of population without access to a car	19.5%	13.4%	15.2%	11.7%	22.4%	17.7%	24.9%
% of total population within a 20-minute walk of a hall	36.5%	33.3%	44.5%	31.8%	37.3%	47.6%	57.1%
% of 10% most deprived population within a 20-minute walk from a hall	0.0%	0.0%	0.0%	0.0%	10.7%	2.2%	7.1%
% of demand satisfied when travelled:							
by car	80.4%	89.6%	87.0%	89.9%	87.5%	82.2%	75.3%
on foot	9.8%	6.5%	7.7%	6.5%	6.9%	10.2%	13.5%
by public transport	9.8%	3.9%	5.4%	3.6%	5.7%	7.6%	11.3%

**Definition of accessibility** – 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 2. 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).

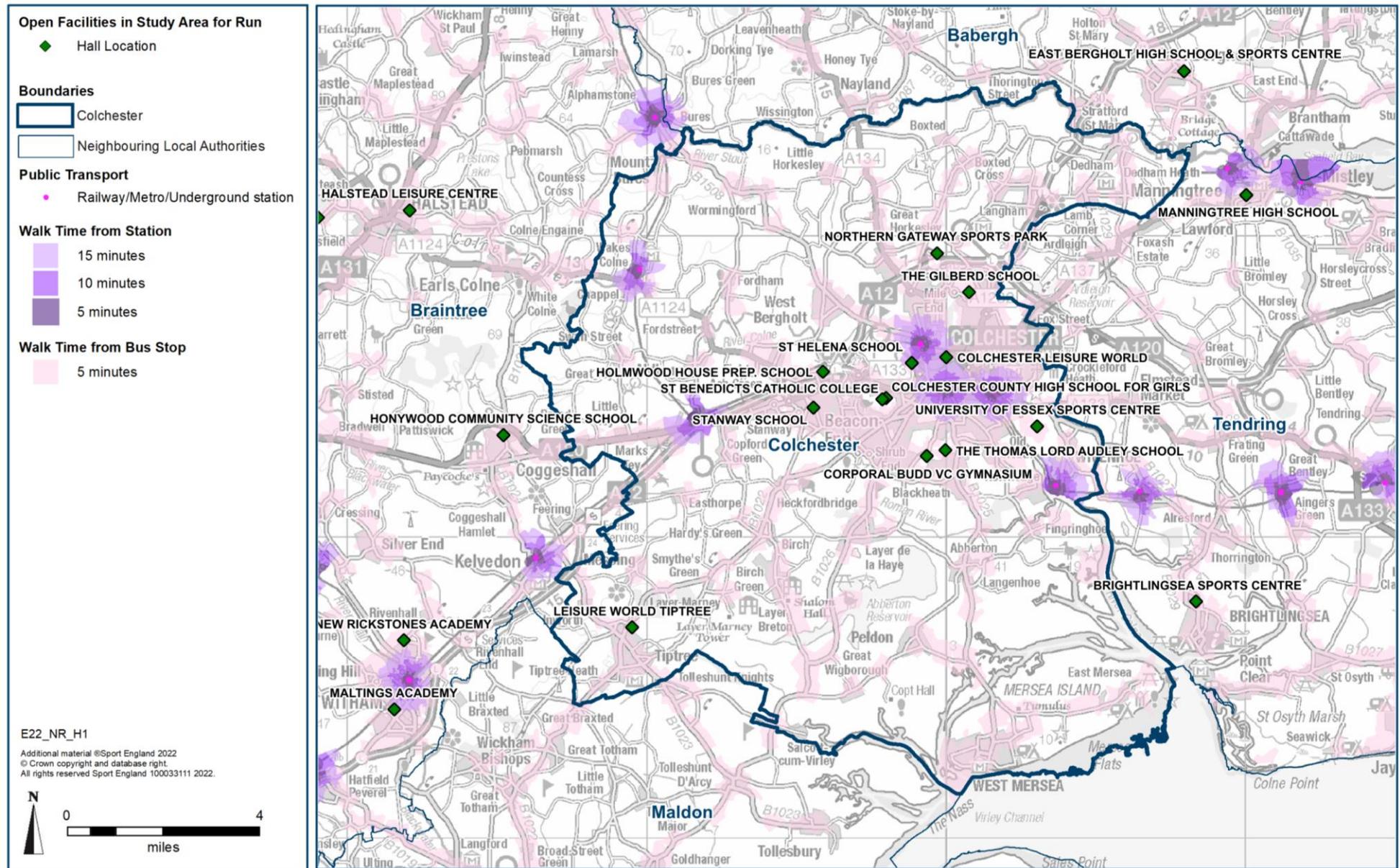
On average, a 20-minute travel time accounts for approximately 90% of journeys to a sports hall.

- 4.7 The percentage of the population without access to a car influences travel patterns to sports halls. A low percentage means that there is likely to be a larger number of journeys to sports halls by car.
- 4.8 In Colchester, 20% of the population does not have access to a car. This is a higher percentage than in the neighbouring authority areas, except for Tendring (22%). It is also higher than the East region average but lower than the England-wide average. A high percentage of residents without access to a car means travel to sports halls by public transport and on foot become the choices of travel mode.
- 4.9 **Key finding 7** is that, of all journeys to sports halls by Colchester residents, 20% are predicted to be on foot or by public transport (10% each) with the rest by car (80%).

- 4.10 Two sports hall sites are within a fifteen-minute walk of a train station (areas in purple on Map 4.1), namely Leisure World Colchester and St Helena School, and all 12 sites are within a five-minute walk of a bus stop (areas in pink in Map 4.1). Opportunities to travel to sports halls by bus are greater than opportunities to travel by rail.
- 4.11 It should be noted that, while residents in the pink and purple areas on the map can access public transport, it does not mean they can reach a sports hall within 20 minutes via a combination of walking and public transport. Also, in rural areas the service may not be regular.

### Map 4.1: Walking Access to Public Transport in Colchester (2022)

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



## 5. Unmet Demand

Demand from Colchester residents not currently being met

Unmet Demand	Colchester	Babergh	Braintree	Maldon	Tendring	East Region	England
Number of visits unmet per week in peak period	1,684	850	1,107	536	2,345	47,522	451,551
Unmet demand as a % of total demand	9.7%	11.4%	8.7%	10.1%	19.7%	9.0%	9.4%
Equivalent in courts with comfort factor included	5.7	2.9	3.8	1.8	8.0	161.4	1,533.8
% of unmet demand due to:							
Facility too far away:	96.7%	96.2%	84.3%	98.6%	65.9%	86.2%	77.3%
Without access to a car	85.4%	65.5%	72.2%	54.7%	58.9%	70.0%	69.5%
With access to a car	11.3%	30.7%	12.0%	43.9%	7.1%	16.3%	7.7%
Lack of facility capacity:	3.3%	3.8%	15.7%	1.4%	34.1%	13.8%	22.7%
Without access to a car	3.1%	0.1%	12.7%	0.5%	15.1%	6.3%	20.3%
With access to a car	0.2%	3.7%	3.0%	0.9%	19.0%	7.4%	2.5%
% of 10% most deprived demand unmet	0.2%	0.0%	0.0%	0.0%	6.0%	0.6%	1.4%

**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.

5.1 In 2022, 10% of the demand from Colchester residents is not met. This represents 1,684 visits in the weekly peak period. This is similar to the regional and national percentage levels.

5.2 **Key finding 8** is that unmet demand is the equivalent of six courts. Of unmet demand:

- 97% is because sports halls are too far away from where residents live.
- 3% is due to lack of facility capacity.
- 88% is from residents who do not have access to a car, who either cannot get to a facility or their nearest facility is full.

5.3 Demand located too far away 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, or is able to, drive the full distance.

- 5.4 The overall key point is not that unmet demand outside a catchment exists, but the scale of that unmet demand. Also, if this unmet demand is clustered in one location, further sports hall provision should be considered in order to improve accessibility for residents.

### ***Geographical Distribution***

- 5.5 **Key finding 9** is that unmet demand is highest in the east of the Colchester urban area, at up to 0.5 of a court per square kilometre (see Map 5.1). This is also in the area of the Borough with the most deprivation (see Map 3.1).

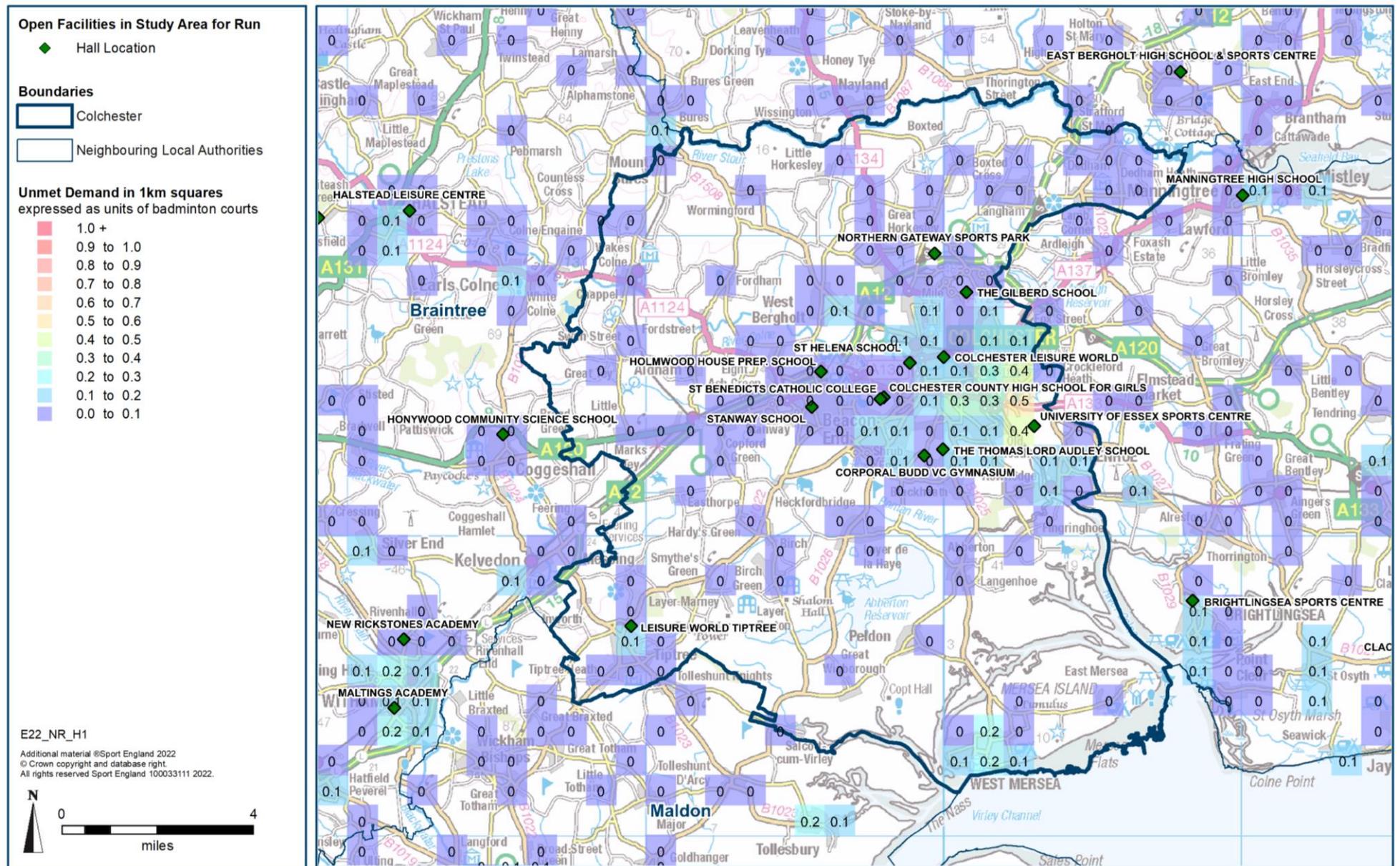
### ***Meeting Unmet Demand***

- 5.6 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.
- 5.7 **Key finding 10** is that the best location to meet the most unmet demand is in the east of the Colchester urban area (see Map 5.2). At just over two badminton courts, this may be insufficient to consider building a new sports hall to improve access for residents.
- 5.8 Justification for a new facility would therefore depend on:
- Increases in future demand.
  - Whether existing facilities are being utilised above their comfortable capacity (see Used Capacity section).
  - Whether nearby existing facilities could increase their capacity to meet the unmet demand.

*For context, the minimum amount of reachable unmet demand required to justify a new sports hall would be three courts.*

### Map 5.1: Unmet Demand for Sport Halls in Colchester (2022)

FPM unmet demand aggregated at 1km square grid expressed as badminton courts and shown thematically (colours).





## 6. Used Capacity

How well used are the facilities?

Used Capacity	Colchester	Babergh	Braintree	Maldon	Tendring	East Region	England
Total number of visits used of capacity	17,600	6,044	10,079	4,197	8,645	483,214	4,372,019
% of overall capacity of halls used	74.1%	49.9%	74.0%	48.4%	81.2%	69.6%	70.6%

**Definition of used capacity** – This is a measure of usage at sports halls and estimates how well used or 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 over 80% of capacity is busy and that the sports hall is operating at an uncomfortable level above that percentage.

- 6.1 **Key finding 11** is that the overall estimated used capacity of sports halls in Colchester is 74% in the weekly peak period. This is higher than in neighbouring local authority areas, apart from Tendring, and also the regional and England-wide levels.

### *Used Capacity of Individual Sites*

Site	Operation	Year Built	Year Refurb	Weight Factor	Peak Hours	Total Hours	Site Capacity (visits per week in peak period)	% of Capacity Used
Colchester County High School for Girls	Educational	2018		50%	29	29	1,472	83%
Colchester Sports Park	Public	2020		100%	46	111	1,840	100%
Corporal Budd VC Gymnasium	Other	2008		47%	12	12	672	80%
Holmwood House Preparatory School	Educational	2010		47%	20	22.5	640	69%
Leisure World Colchester	Public	1991		69%	46	103	4,048	100%
Leisure World Highwoods	Educational (3rd party)	1985		33%	36.5	41	1,168	65%
Leisure World Tiptree	Educational (3rd party)	2005		49%	39	48.5	2,560	70%
St Benedict’s Catholic College	Educational	1997		41%	20	20	1,015	63%
St Helena School	Educational	1938	2005	23%	35	35	2,433	54%
Stanway School	Educational	1987	2018	46%	30	32.5	1,523	85%
The Thomas Lord Audley School	Educational	1975	2008	33%	34	36	1,360	74%
University of Essex Sports Centre	Educational	2018		50%	44	92	5,024	54%

- 6.2 **Key finding 12** is that five sports hall sites operate at or above the comfortable capacity of 80%, with the two public sites (Colchester Sports Park and Leisure World Colchester) having an estimated 100% used capacity in the weekly peak period.
- 6.3 There is a large variation in the estimated used capacity of individual sites, and this is caused in part by the interaction of the following factors (more detail is provided in the subsequent paragraphs):
- Type of site operator (public/educational/community).
  - The capacity of the sports hall site.
  - The level of demand within the travel-time limit from the site and reachable from other halls.
  - The age of the sports hall and its 'attractiveness' weighting.
  - Imported demand.

### *Operator*

- 6.4 Public leisure centres have higher used capacity because of their 'draw effect,' as follows. Public leisure centres:
- Are accessible for public use and sports club use.
  - Are typically available for daytime use, which is not possible at most educational venues during term time. (Two public sites in the Borough and the University of Essex Sports Centre are the only ones available for the majority of off-peak hours.)
  - Actively promote hall sports and physical activity participation, with a programme of use that reflects the activities and times when customers wish to participate.
- 6.5 Access to sports halls for community use at the educational sites will be determined by the policy of each educational provider.
- Some schools and colleges actively promote community use.
  - At some colleges and higher education venues there is little differentiation between student and wider community use, with community access based on a membership system.
  - Other educational venues, notably secondary schools, let out their sports halls to sports clubs or community groups on a termly basis, or for shorter periods.
- 6.6 A sports hall on an educational site that is only available for a few hours a week, and with an irregular pattern of use, is very different from a public leisure centre sports hall with a full programme of use. Also, educational venues will be available to sports clubs or community groups but not for recreational pay and play.

### *Capacity*

- 6.7 The capacity of the sports hall site needs to be considered when looking at the proportion of capacity used. For example, University of Essex Sports Centre only has an estimated

54% of capacity used at peak times, but its used capacity in visits per week in the peak period is more than twice that of Colchester Sports Park, despite its being 100% fully utilised.

### **Location**

- 6.8 For sports halls located close together the demand that can reach these sites is shared between the venues, and this contributes to the level of used capacity at each. Two such sites are The Thomas Lord Audley School and Corporal Budd VC Gymnasium. Both are weighted fairly low in terms of attractiveness, and the limited number of peak-time opening hours at the sites means their capacity is lower. Because of the lower demand relative to supply in this area of Colchester, neither site is utilised above the 80% comfort level used capacity.

### **Attractiveness**

- 6.9 All the sports hall sites in the model are weighted to reflect their age, operation type, condition and whether they have been modernised. This is to assess their comparative attractiveness to customers.
- 6.10 When choosing a venue, customers consider the quality and range of the offer. 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 facilities on site 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.

### **Site Variation**

- 6.11 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.

### **Imported Demand**

Imported Demand	Colchester	Babergh	Braintree	Maldon	Tendring	East Region	England
Number of visits imported per week in peak period	2,259	1,020	522	331	159	13,970	8,496
Demand imported as a % of used capacity	12.8%	16.9%	5.2%	7.9%	1.8%	2.9%	0.2%
Difference between visits imported and exported	1,945	-536	-1,517	-563	-901	2,701	6,517

- 6.12 Imported demand is set out under Used Capacity. If residents of neighbouring local authorities participate at a site in Colchester, their usage becomes part of the used capacity of Colchester’s sports halls.
- 6.13 Imported demand represents 2,259 visits in the weekly peak period, which is 13% of the used capacity of sports halls in the Borough.

### *Import/Export Balance*

- 6.14 Colchester is a net importer of demand for sports halls, with 1,945 more visits imported than exported in the weekly peak period.

## 7. Local Share of Facilities

### Equity share of facilities

Local Share	Colchester	Babergh	Braintree	Maldon	Tendring	East Region	England
Local share: <1 supply less than demand, 1> supply greater than demand	0.62	0.65	0.53	1.00	0.59	0.68	0.70
Courts per 10,000 population	4.3	4.8	3.3	4.2	2.4	4.0	4.0

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

- 7.1 Local share shows how access and share of sports halls differs across the local authority area, as follows:
- A value of 1 means that there is enough quality supply reachable by the demand.
  - A value of less than 1 indicates a shortage of quality supply that can be reached by the demand.
  - A value greater than 1 indicates a surplus of quality supply that can be reached by the demand.
- 7.2 Overall, local share identifies the areas of the local authority where the share of sports halls is better and worse. The intervention is to try and increase access for residents in the areas with the poorest access to sports halls.
- 7.3 Colchester has a Borough-wide local share of 0.62. Therefore, demand in the Borough cannot access sufficient quality supply.
- 7.4 Local share is also below 1 for all the other local authorities in the study area, with Braintree having the lowest (0.53).
- 7.5 **Key finding 13** is that local share is poorest in and around West Mersea, with local share as low as 0.3. Throughout most of the Borough, local share is consistently between 0.6 and 0.8 with no part of the Borough at 1 or above. The highest level of local share is in the far northeast of the Borough, where residents can access nearby halls in adjoining local authority areas as well as in Colchester (see Map 7.1).

### *Comparative Measure of Provision*

- 7.6 A comparative measure of sports hall provision is badminton court equivalents per 10,000 population.

7.7 In terms of court equivalents per 10,000 population:

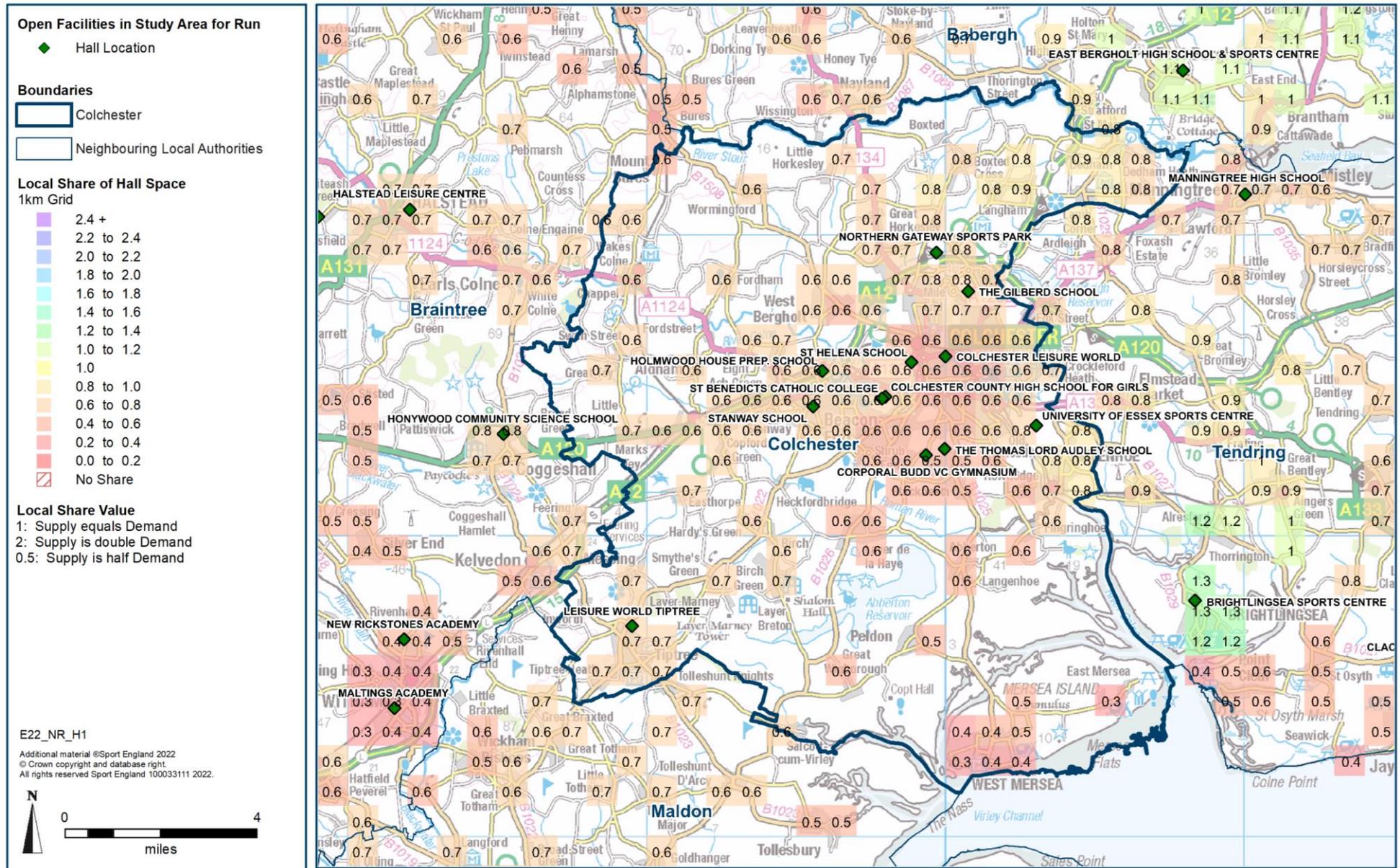
- Colchester has the second-highest number, at 4.3.
- Babergh has the most, at 4.8.
- Tendring has the fewest, at 2.4.
- The East region and England-wide averages are both 4.0.

7.8 The findings on badminton courts per 10,000 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.

7.9 The supply and demand assessment for sports halls in the Borough is based on the findings from the previous five headings analysed in this report.

### Map 7.1: Local Share of Sports Halls in Colchester (2022)

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



## Appendix 1: Facilities Excluded

The audit excludes facilities that are deemed to be either for private use, too small, closed or there is a lack of information, particularly relating to hours of use. The following facilities were deemed to fall under one or more of these categories and therefore excluded from the modelling:

Site	Facility Type	Comments
Arena Sports & Leisure Club (Closed)	Activity	Closed
Broomgrove County Infant & Junior School	Activity	Private Use
Colchester Academy	Main	Private Use
Colchester Institute	Activity	Too Small. No Main Hall on Site
Leisure World Colchester	Activity	Closed
Colchester Royal Grammar School	Activity	Private Use
Dedham Telephone Exchange	Activity	Status not known
Friars Grove Primary School	Activity	Private Use
Kingswode Hoe School	Activity	Private Use
Langham Oaks School	Activity	Private Use
Langham Oaks School	Activity	Private Use
Little Horkesley Village Hall	Activity	Too Small. No main hall on site
Mersea Centre	Activity	Too Small. No main hall on site
Military Corrective Training Centre	Main	Private Use
Paxman Academy	Main	Private Use
Philip Morant School	Main	Private Use
Philip Morant School	Activity	Private Use
Philip Morant School	Barns	Private Use
Rowhedge Village Hall	Activity	Too Small. No main hall on site
St. Andrews C of E Primary School	Activity	Private Use
The Duchy Field	Activity	Too Small. No main hall on site
Leisure World Highwoods	Main	Private Use
Leisure World Highwoods	Main	Private Use
The Sixth Form College Colchester	Main	Private Use
The Sixth Form College Colchester	Activity	Closed
The Stanway Federation Learning Centre (Closed)	Activity	Closed
The Stanway Federation Learning Centre (Closed)	Activity	Closed
The Thomas Lord Audley School	Activity	Private Use
The Thomas Lord Audley School	Activity	Private Use

## Appendix 2: Model Description, Inclusion Criteria and Model Parameters

Included within this Appendix are the following:

- Model Description
- Facility Inclusion Criteria
- Model Parameters

### *Model Description*

#### 1. Background

- 1.1. The Facilities Planning Model (FPM) is a computer-based supply/demand model, which has been developed by Edinburgh University in conjunction with **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.

---

<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 Borough, leaving other areas under-provided. An assessment of this kind would not reflect the true picture of provision. The FPM is able to assess supply and demand within an area based on the needs of the population within that area.
- 5.5. In making calculations as to supply and demand, visits made to sports facilities are not artificially restricted or calculated by reference to administrative boundaries, such as local authority areas. Users are 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

---

<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.

reflect the size of the actual main hall. For example, a hall may be marked out with 4 courts, when it has space for 5 courts. As the model uses the 'courts' as a unit of size, it is important that the hall's capacity is included as a 5 'court unit' rather than a 4 'court unit'.

- The model calculates the capacity of the sports hall as 'visits per week in the peak period', 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 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. 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. 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.
- 9.2. For example, a 25m, four-lane pool has a theoretical capacity of 2,260 per week, during a 52.5-hour peak period.
- 9.3. 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

- 9.4. 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.

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%

10.5. 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 halls being made on foot.

10.6. The model includes a distance decay function, where the further a user is from a facility, the less likely they will travel. Set out below is the survey data with the percentage of visits made within each of the travel times. This shows that 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 sports halls.

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*

#### **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<sup>4</sup>.

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

---

<sup>4</sup> 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

At One Time Capacity	32 users per 4-court hall 15 users per 144 square meters of activity hall																					
Coverage Maps	Car: 20 minutes Walking: 1.6 km Public transport: 20 minutes at about half the speed of a car  NOTE: Travel times are indicative, within the context of a distance decay function of the model.																					
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>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> </tbody> </table>	Age	0-15	16-24	25-34	35-44	45-59	60-79	Male	20.4	16.7	13.9	11.6	10.2	7.3	Female	24.5	17.8	17.1	15.3	15.1	12.1
Age	0-15	16-24	25-34	35-44	45-59	60-79																
Male	20.4	16.7	13.9	11.6	10.2	7.3																
Female	24.5	17.8	17.1	15.3	15.1	12.1																
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>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> </tbody> </table>	Age	0-15	16-24	25-34	35-44	45-59	60-79	Male	0.65	0.95	0.93	0.84	1.00	1.14	Female	0.74	1.20	1.21	1.07	1.18	1.01
Age	0-15	16-24	25-34	35-44	45-59	60-79																
Male	0.65	0.95	0.93	0.84	1.00	1.14																
Female	0.74	1.20	1.21	1.07	1.18	1.01																
Peak Period	Weekday: 9:00 to 10:00, 17:00 to 22:00 Weekend: 08:00 to 16:00 Total: 46 hours																					
Proportion in Peak Period	62%																					