

Strategic Assessment for Provision of Swimming Pools

Derby City Council

**Sport England Facilities Planning
Model Report**

06 September 2021

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EXECUTIVE SUMMARY

Introduction

- i. Derby City Council is reviewing the current provision of swimming pools and assessing future demand and level of provision required up to 2028 and beyond. The Council has commissioned a Sport England Facility Planning Model (FPM) local assessment to develop an evidence base and support this strategic planning.
- ii. The overall aims of the FPM work are to:
 - Assess the extent to which the existing supply of swimming pools meets current levels of demand in 2021 across the Derby City Council area and a wider study area.
 - Assess the impact of changes in population to 2028 and changes in the supply of swimming pools, notably the opening of Moorways Sports Village in 2022, on the demand for swimming pools and its distribution across Derby.
 - Assess the impact of options to close Queens Leisure Centre and Lonsdale Swimming Pool on the demand and access to swimming pools by Derby residents.
- iii. The FPM study builds up a picture of change and includes assessments based on different runs. This includes the swimming pools provision and population in the neighbouring authorities to Derby, as the assessments are based on the catchment area of swimming pools, and these extend across local authority boundaries.
- iv. The FPM modelling runs are:
 - **Run 1** – Supply, demand, and access to swimming pools, in 2021. This run provides a baseline assessment of current provision and can be used to compare the findings on changes in subsequent runs.
 - **Run 2** – Supply, demand, and access to swimming pools in 2028, based on the impact of the projected population change to 2028 and the opening of Moorways Sports Village in 2022. This will assess the findings based on these changes and whether the demand for swimming across Derby can be met by this supply.
 - **Run 3** – This is based on Run 2, and also includes the option to model the closure of Queens Leisure Centre in 2022 and Lonsdale Swimming Pool in 2025. Run 3 can be compared with Run 2 to assess the impact of these options on the demand for swimming and its distribution across Derby.
- v. The main report sets out the full set of findings under each of the seven assessment headings.
- vi. This section of the report:
 - Sets out the headline strategic overview with the key findings.
 - Includes two tables summarising the swimming pool changes and findings for each run.

Headline Strategic Overview

Which of the Options Modelled Best Meets the Derby Demand for Swimming Pools?

- vii. Based on the FPM findings, Run 3, with Moorways Sports Village open and Queens Leisure Centre and Lonsdale Swimming Pool closed, best meets the demand for swimming pools in Derby. The location and scale of Moorways Sports Village, with its very extensive swimming activities offer, can meet the projected demand for swimming by Derby residents.
- viii. Moorways Sports Village will accommodate the demand for swimming if Queens Leisure Centre and Lonsdale Swimming Pool are closed, but the Moorways Sports Village site is then estimated to be very full in the weekly peak period. The challenge then will be to manage the swimming pool programme, to provide all swimming activities that residents want to undertake and at the times they want to do them. This will ensure the pool site is meeting demand and it is also an effective swimming pool site in providing for all Derby residents.
- ix. The scale of Moorways Sports Village, and the extensive swimming offer increases the amount of demand for swimming pools from Derby residents that is retained within the city. There is an uplift/increase of 17% in the Derby demand for swimming pools met when Moorways Sports Village is included in the assessment.
- x. There is also an increase in the use of Moorways Sports Village from residents in the neighbouring authorities. There is an increase/uplift of 7% in the imported demand from neighbouring local authorities when Moorways Sports Village is included in the assessment. The findings on retained and imported demand reflect the draw of the very extensive Moorways Sports Village site.
- xi. The Moorways location does improve accessibility for residents in the south of Derby, where accessibility to swimming pools is currently the lowest. Closure of Queens Leisure Centre, and especially Lonsdale Swimming Pool, reduces accessibility for residents where these sites are nearest to where residents live. This reduced accessibility may discourage participation by some residents.
- xii. These are the FPM assessment and findings and have to be set in the context of the Derby City Council objectives and policy for providing swimming pools which are independent of the FPM findings.

Key Findings

- xiii. The summary of key findings in the full assessment are set out below. These provide context to the finding that Run 3 provides the best option for meeting the future demand for swimming pools in Derby to 2028 and beyond. There are twelve key findings in the main report, but the summary report only includes seven which are the most important findings for the strategic overview.

Supply

- The **first key finding** is that Moorways Sports Village will open in 2022 and provide 1,682 square metres of water across three individual pools. This represents an increase of 89% of water space available for community use in 2021 (with all existing pools open) (see Table 2.1 in Supply section).

Demand

- The **second key finding** is that total demand for swimming by Derby residents is projected to be almost unchanged between 2021 and 2028. The demand is for 2,880 square metres of water in 2021 and 2,665 square metres of water by 2028. The most likely reason for the very slight decrease is because total demand for swimming in 2028 is made up of (1) the resident population and (2) the growth in population between 2021 and 2028.
- The ageing of the resident population between 2021 and 2028 will influence the demand for swimming. It can mean that there are fewer people in the main age bands for swimming (14-54 and for both genders) in the second modelled year than the first run year. Therefore, the increase in demand for swimming from population growth is offset by the ageing of the much larger resident population (see Table 3.1 in Demand section).

Satisfied Demand

- The **third key finding** is that over 83% of the Derby total demand for swimming is satisfied/met in Runs 1 and 3. This increases to 90% in Run 2 with Moorways Sports Village included, but this does assume that Queens Leisure Centre and Lonsdale Swimming Pool are also open. In all runs, a very high level of the Derby demand for swimming pools can be met (see Table 4.1 in Satisfied Demand section).
- The **fourth key finding** is that there is a very high correlation between the location and catchment area of the Derby swimming pool sites and the location of the Derby residents' demand for swimming. Based on residents using the nearest pool to where they live, over seven out of ten visits to a swimming pool are retained within the city in Run 1, and with Moorways Sports Village open this increases to 90%. This suggests that pools are very much located in the right places to meet the Derby demand for swimming pools (see Table 4.1 in Satisfied Demand section).

Location and Accessibility

- The **fifth key finding** is that Moorways Sports Village provides a different location to the current swimming pool sites, which are clustered in the centre of Derby with the exception of Woodlands School in the north and Lonsdale Swimming Pool in the west.
- The south of the city has the least access to swimming pools for residents who do not have access to a car and either walk or use public transport to access a swimming pool. The Moorways Sports Village location does improve accessibility for these residents (see Maps **6.7-6.9** in Unmet Demand section).

Unmet Demand

- The **sixth key finding** is that the Derby total unmet demand is within a narrow range of between 467 and 479 square metres of water. It is demand located outside the swimming pool catchments, which is the major source of unmet demand, and not a lack of swimming pool capacity.
- Depending on the run, between 88% and 97% of the total unmet demand is demand located outside a catchment and it is distributed in very low values across the city. There is one area of the city centre where there is an aggregated unmet demand of 161 sq metres of water in Run 3, this equates to a 20m x 4 lane single pool. However, there are three established commercial swimming pool sites in the same locality. The aggregated unmet demand findings do not necessarily mean that a new pool of this scale in the city centre would be viable in operational terms, in competing with the three established, albeit commercial, 4-lane pools (see Maps **6.1-6.3** in Unmet Demand section).

Used Capacity

- The **seventh key finding** is that swimming pools, as an authority-wide average, are estimated to be 83% full at peak times in 2021. Used capacity is 64% in Run 2 because of (1) the very slight decrease in demand for swimming by Derby residents created by population age changes, and (2) more significantly, the increase in swimming pool capacity from Moorways Sports Village. The findings for the public leisure centres are much higher than the Derby average (see Table **7.2** in Used Capacity section).

Is There a Need for Further Swimming Pool Provision in Derby?

- xiv. The principal findings are that:
- Moorways Sports Village is estimated to be full and there is between 3% and 4% of demand which cannot be accommodated when Queens Leisure Centre and Lonsdale Swimming Pool are excluded.
 - There is some loss of access for residents who use Queens Leisure Centre or Lonsdale Swimming Pool if these sites are excluded, because they have further to travel to swim at Moorways Sports Village.
- xv. It is suggested Derby City Council undertakes a strategic review in 3 years' time to consider the two bullet points above. If Moorways Sports Village is consistently operating at maximum capacity and there are sustained issues of lack of access to swimming pools for residents who use the Queens Leisure Centre and Lonsdale Swimming Pool, then a more detailed assessment could be undertaken at that time to assess these implications.
- xvi. This could include (1) scope to increase access for residents who are displaced by the pool changes so as to provide more access to existing pool sites, and (2) changes in the Moorways Sports Village programming to accommodate more demand (although this will most likely form a regular part of the centre operation and reviews already). This review could also conclude that there is a sustained case for a study into the need for further swimming pool provision within Derby.

Comparison of Findings for Each Run

- xvii. Tables 1 and 2 provide a comparison of the findings across all three runs and provides the data to support the recommendation that Run 3 is the best option.

Table 1: Runs 1-3 Summary of Public Swimming Pool and Lonsdale Swimming Pool Changes

Swimming Pool Site	Run 1	Run 2	Run 3
Queens Leisure Centre	open	open	closed
Moorways Sports Village	-	open	open
Lonsdale Swimming Pool	open	open	closed

(Note: In total there are 6 swimming pool sites in Derby in 2021, Queens Leisure Centre, Lonsdale Swimming Pool, Woodlands School and 3 commercial swimming pool sites)

Table 2: Runs 1-3 Summary of Findings

Heading	Run 1	Run 2	Run 3	Comments
Derby Supply of water space for community use (sqm of water)	1,883	3,565	2,589	<p>Moorways Sports Village adds 1,682 sqm of water to the Derby supply, with Queens Leisure Centre, Lonsdale Swimming Pool and the other pool sites open.</p> <p>Excluding Queens and Lonsdale and with Moorways open, there is still an increase of 706 sqm of water over the current supply in 2021.</p>
Derby Demand for swimming (Sqm of water)	2,880	2,865	2,865	<p>Total demand decreases very slightly between 2021 and 2028. This is caused by the ageing of the resident population between 2021 and 2028 with fewer residents in the main age band for swimming in 2028 than in 2021, creating a very slightly lower demand for swimming.</p> <p>This ageing of the resident population is offsetting the increase in demand for swimming from population growth. The net impact is a reduction in demand of 15 sqm of water between the two years.</p>
Derby Satisfied Demand for swimming (% of total demand met)	83.8%	90%	83.8%	<p>Satisfied demand is very high in all runs but increases by 6% in Run 2 with Moorways and the other sites open. It reverts to 83.8% in Run 3, on the face of it numerically the same, as Run 1.</p> <p>The difference between Runs 1 and 3 is that Moorways is a very extensive modern fit for purpose pool site. So while the percentages are almost the same, the offer between Runs 1 and 3 cannot be compared.</p>
Derby Unmet Demand (% of total demand)	16.2%	10%	16.7%	<p>Unmet demand has two sources (1) demand located outside the catchment of a pool (2) unmet demand from lack of pool capacity. The vast majority of unmet demand in all runs is demand located outside catchment – over 80%, <u>not lack of pool capacity</u>.</p>
Derby Unmet Demand (Sqm of water)	467	285	479	<p>Unmet demand is low in all three runs. For context, the <u>available supply of water space</u> in Derby in Run 1 is 1,883 sqm of water, 3,565 sqm of water in in Run 2 and 2,589 sqm of water in Run 3.</p>

Heading	Run 1	Run 2	Run 3	Comments
Derby Used Capacity (how full are the pools) <u>average</u> for all pools %	82.6%	63.8%	76.8%	Derby pools (all sites) as a <u>city-wide average</u> are busy pools. Used capacity as a <u>city-wide average</u> decreases when Moorways opens and increases when Queens and Lonsdale are excluded. However, the estimated used capacity of these three sites is much higher than the city-wide average because they have the most extensive access for all residents – see next set of findings.
Projected Usage of pool sites weekly peak period (%)				
Queens Leisure Centre:	100%	45%	Excluded	The impact of opening Moorways is to reduce the estimated used capacity at Queens to 45% and to 40% at Lonsdale in the weekly peak period. A large part of their usage is transferred to Moorways, which can be accommodated but the pool site is estimated to be full.
Moorways Sports Village:	Not open	100%	100%	There is some loss of access for residents whose nearest pool is either Queens or Lonsdale because of the location of the Moorways site and the need to travel further to swim.
Lonsdale Swimming Pool:	100%	40%	Excluded	Despite this, the Moorways site is located in an area of the city where there is least access to swimming pools and the site does improve accessibility for residents in the south of the city.

The Facilities Planning Model

- xviii. It is most important to set out that the FPM study is a quantitative, accessibility and spatial assessment of the supply, demand, and access to swimming pools. It assesses how these factors change based on projected population growth and options to change the swimming pool supply.
- xix. The FPM study provides a hard evidence base that can inform consultations, to then provide a rounded evidence base. This can then be applied in the development of the Council's strategic planning for the provision of swimming pools.

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1. INTRODUCTION

- 1.1 Derby City Council is reviewing the current provision of swimming pools and assessing the future need up to 2028. The Council commissioned a Sport England Facility Planning Model (FPM) local assessment to develop a swimming pools evidence base.
- 1.2 The evidence base will be applied in updating the Council's Built Indoor Sports Facilities Strategy for provision of swimming pools.
- 1.3 Key drivers for the work are:
 - To understand the impact the projected increase in population across the Derby City Council area and the neighbouring local authorities has on the future demand for swimming pools and its distribution across Derby.
 - To assess the impact of changes in the supply of swimming pools, notably with the opening of the Moorways Sports Village, on the distribution of demand and access to swimming pools across the city. This also includes assessing the impact of modelled options to close Queens Leisure Centre and Lonsdale Swimming Pool.
- 1.4 The study builds up a picture of change and includes assessments based on different runs. These runs include the swimming pools provision and population in the neighbouring authorities to Derby City Council. This is because assessments are based on the catchment areas of the swimming pool locations, which extend across local authority boundaries.
- 1.5 The FPM separate modelling runs are:
 - **Run 1** – Supply, demand, and access to swimming pools in 2021. This run provides a baseline assessment of current provision and can be used to compare the findings with changes in demand and supply of swimming pools in future years. Does the 2021 supply meet the demand for swimming pools, or is there unmet demand and, if so, at what scale and where is it located?
 - **Run 2** – Supply, demand, and access to swimming pools in 2028, based on the impact the projected growth in population from 2020 to 2028 across Derby and the neighbouring authorities has on the future demand for swimming and its distribution. This run also includes the opening of Moorways Sports Village in 2022. This run provides the overall picture on the future demand for swimming pools with the Moorways project included and with the other current supply of swimming pools. How does the increase in demand for swimming pools from the projected changes in population and inclusion of Moorways Sports Village change the supply, demand, and access to swimming pools?
 - **Run 3** – Based on Run 2, and also includes the option to model the closure of Queens Leisure Centre in 2022 and Lonsdale Swimming Pool in 2025. Run 3 can be compared with Run 2 to assess how these changes in supply impact on the demand for swimming and its distribution across Derby.
 - Run 2 is the strategic assessment with committed changes and Run 3 concerns further possible site changes arising from the strategic assessment.

The Study Area

- 1.6 Customers of swimming pools do not reflect local authority boundaries. While there are management, and possibly pricing, incentives for customers to use sports facilities located in the same local authority area, there are influences on which swimming pools people will choose to use.
- 1.7 These are based on: how close the venue is to where residents live; other facilities on the same site, such as a gym or studio; the programming of the pool with swimming activities that appeal and are available at times which fit with the lifestyle of residents; and the age and condition of the facility and inherently its attractiveness.
- 1.8 Increasingly, the quality of the swimming pools and the swimming offer are of more importance to residents in their choice of swimming pools to use. Moorways Sports Village will have a significant draw because of the quality of the venue and the very extensive offer it provides for all swimming activities.
- 1.9 In determining the position across the Derby City Council area it is important to take full account of the swimming pools and population in the neighbouring local authorities and in particular, to assess the impact of overlapping catchment areas from swimming pools located outside Derby but where the catchment area extends into the city and vice versa.
- 1.10 The nearest facility for some Derby residents may be outside the authority (known as exported demand), while for residents of neighbouring authorities, their nearest swimming pool maybe inside the city (known as imported demand).
- 1.11 To take account of these impacts, a study area is established which places Derby at the centre of the study area and includes the neighbouring local authorities. A map of the study area is set out below in Map 1.1.

Map 1.1: Study Area for Derby City Council Swimming Pools Assessment



Report Structure, Content and Sequence

- 1.12 The findings for the Derby City Council assessment are set out in a series of tables for each of the three runs. This allows a 'read across' to see the specific impact of changes between Runs 1-3 and builds up the picture of change.
- 1.13 The headings for each table are total supply, total demand, supply and demand balance, satisfied demand, unmet demand, used capacity (how full the facilities are), and local share. The definition of each heading is set out at the start of the report of findings.
- 1.14 Maps to support the findings, on swimming pool locations, total demand, unmet demand, the driving and walking catchment area of the swimming pools, public transport access to swimming pools and local share of access to swimming pools are also included.
- 1.15 Where valid to do so, the findings for the neighbouring authorities to Derby are also set out. A commentary is provided on these comparable findings. For example, some local authorities like to know how their findings on water space per 1,000 population compares with neighbouring authorities.
- 1.16 The key findings in each of the sections are numbered and highlighted in bold typeface.
- 1.17 Appendix 1 includes the swimming pools in the assessment, and Appendix 2 is a description of the FPM and its parameters.

2. SWIMMING POOL SUPPLY

Table 2.1: Supply of Swimming Pools Derby 2020-2028

Total Supply	RUN 1	RUN 2	RUN 3
Derby	2021	2028	2028
Number of pools	9	12	8
Number of pool sites	6	7	5
Supply of total water space in sqm of water	1,883	3,565	2,589
Supply of water space in sqm, scaled by hours available in the pp	1,778	3,382	2,520
Supply of total water space in visits per week peak period	15,412	29,326	21,850
Water space per 1,000 population	7	14	10

- 2.1 **Definition of supply** – this is the supply or capacity of the swimming pools which are available for community and swimming club use in the weekly peak period. The supply is expressed in number of visits that a pool can accommodate in the weekly peak period and in square metres of water.
- 2.2 In Run 1 there are six swimming pool sites and nine individual swimming pools located in the Derby City Council area. This increases to seven sites and twelve individual swimming pools in Run 2 with the opening of the Moorways Sports Village in 2022. In Run 3 there are five sites and eight individual swimming pools, when the modelled options to close Queens Leisure Centre in 2022 and Lonsdale Swimming Pool in 2025 are included.
- 2.3 A description of the swimming pool sites in Derby, including the supply changes is set out in Table 2.2.

Table 2.2: Swimming Pool Supply Derby Runs 1–3

Name of Site	Type	Dimensions	Area	Site Year Built	Site Year Refurb	Car % Demand	Public Transport % Demand	Walk % Demand
DERBY						79%	13%	8%
DAVID LLOYD CLUB (DERBY)	Main/General	25 x 13	325	1998		93%	7%	0%
EVERLAST FITNESS CLUB (DERBY)	Main/General	18 x 9	162	2001		92%	7%	2%
LONSDALE SWIMMING POOL (Close Run 3)	Main/General	25 x 9	225	1968		71%	11%	17%
MOORWAYS SPORTS VILLAGE (Open Runs 2 and 3)	Main/General Leisure Pool Learner Pool	50 x 25 17 x 8	1250 296 136	2022				
NUFFIELD HEALTH DERBY FITNESS & WELLBEING GYM	Main/General Leisure Pool	25 x 8 10 x 5	210 50	2001		92%	7%	1%
QUEENS LEISURE CENTRE (Close Run 3)	Main/General Learner Pool Learner Pool	30 x 10 25 x 13 18 x 7	300 325 126	1932	1992	73%	17%	10%
WOODLANDS SCHOOL	Main/General	20 x 8	160	1970	2006	77%	12%	11%

- 2.4 In Run 1 in 2021 there is one public leisure centre swimming pool site, which is the Queens Leisure Centre (opened in 1932 and modernised in 1992). It is a very extensive

swimming pool site with a 30m x 10m main pool, a separate teaching/learner pool of 18m x 7m, and a further teaching/learner pool of 25m x 13m.

- 2.5 The Queens Leisure Centre can accommodate all swimming activities in dedicated pools, the activities being learn to swim, public recreational swimming, lane and fitness swimming activities, and swimming development through clubs. The leisure pool provides space for developing confidence in water and fun/family-based activities.
- 2.6 The Lonsdale Swimming Pool (opened in 1968) has a 25m x 9m four-lane pool and is a public community-based swimming site, located in Mickleover. The centre provides for children and adult swimming lessons, local clubs, and schools, as well as being open for public swimming sessions.
- 2.7 There are three commercial swimming pool sites: David Lloyd Derby (opened in 1998) has a 25m x 13m six-lane main pool; Everlast Fitness Swimming (opened in 2001) has an 18m x 9m four-lane pool; and Nuffield Health Derby Fitness and Wellbeing Centre (opened in 2001) has a 25m x 8m four-lane main pool and a leisure pool of 10m x 5m.
- 2.8 The commercial pool sites will provide recreational swimming by centre membership and may also operate a learn to swim school.
- 2.9 Finally, in Run 1 there is one educational pool site. Woodlands School (opened in 1970 and modernised in 2006) has a 20m x 8m four-lane pool and is available for hire outside of education use and hours.
- 2.10 In Run 2 the **first key finding** is the addition of Moorways Sports Village which opens in 2022. This is a very extensive swimming pool site and will provide all swimming activities in three dedicated pools. The 50m x 25m ten-lane main pool means there is an extensive and flexible space in which to provide a wide range of swimming activities at the same time. Also, there is more scope for swimming development, as swimmers and clubs can be coached in the main pool in 50m mode.
- 2.11 In Run 3 the modelled option is to close Queens Leisure Centre and Lonsdale Swimming Pool. The purpose of Run 3 is to assess the impact these changes have in meeting the demand for swimming pools and its distribution, with Moorways Sports Village open.
- 2.12 The average age of all the swimming pool sites in 2021 is 42 years, and the average age excluding Queens Leisure Centre, which opened in 1932, is 33 years.

Comparative Measure of Provision

- 2.13 A comparative measure of swimming pool provision is water space per 1,000 population, and the findings for Derby and the neighbouring local authorities are set out in Table 2.3.

Table 2.3: Water Space per 1,000 Population for Derby and Surrounding Authorities 2021-2028

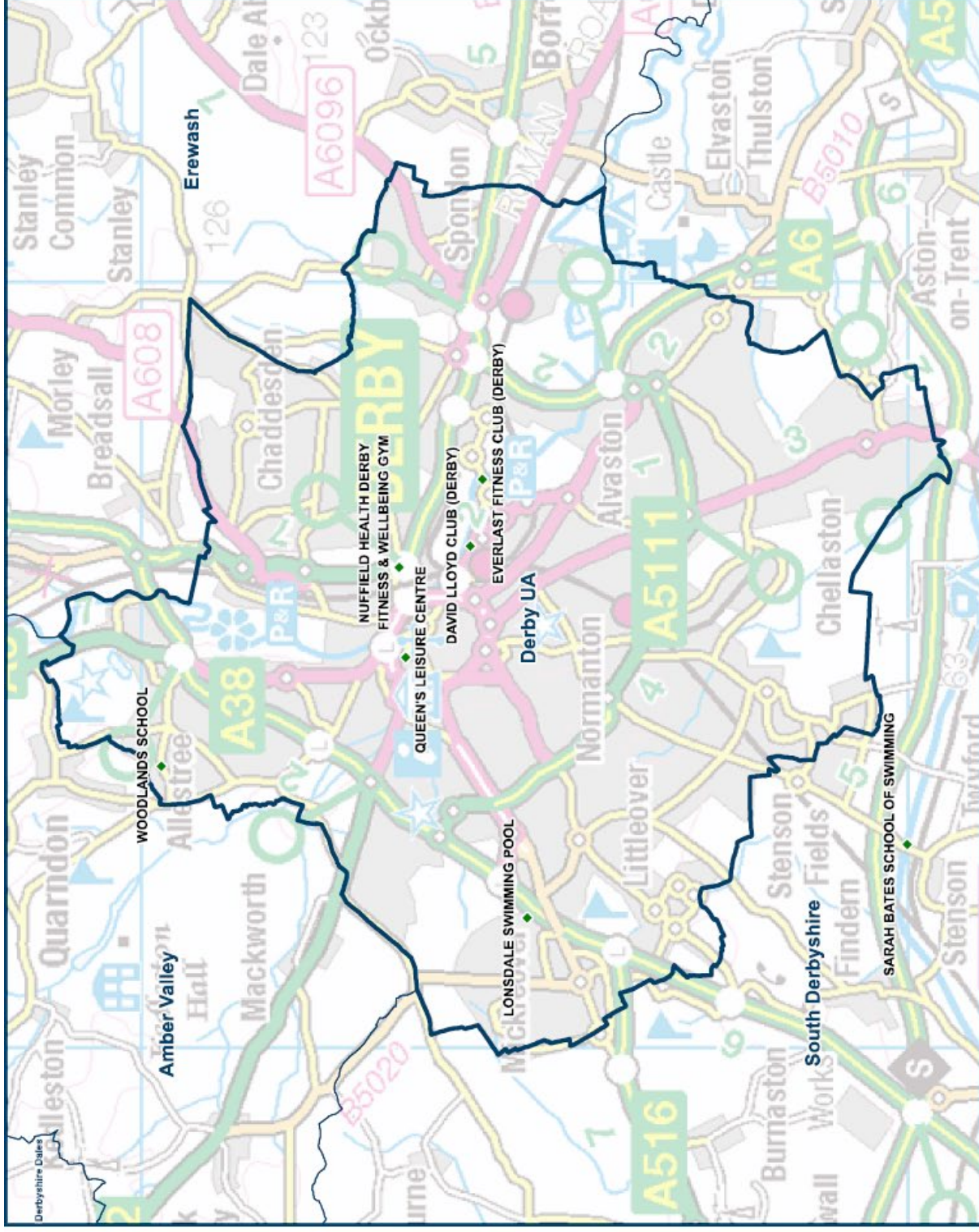
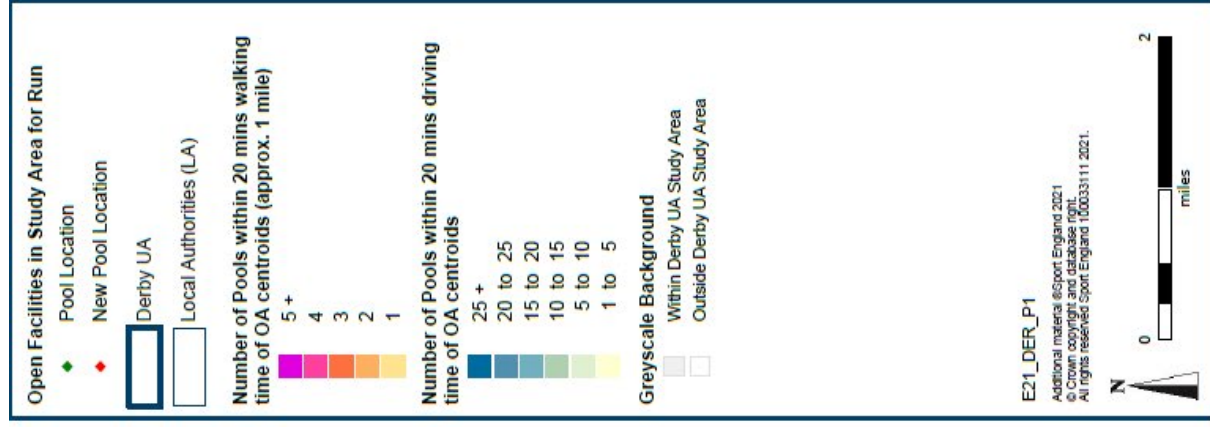
Water space per 1,000 population	RUN 1	RUN 2	RUN 3
Local Authority	2021	2028	2028
Derby UA	7.3	13.5	9.8
Amber Valley	11.3	10.8	10.8
Erewash	11.4	11.2	11.2
South Derbyshire	11.3	10.4	10.4

- 2.14 Derby has the lowest supply based on this measure in 2021, with 7.3 square metres of water per 1,000 population. All three other local authorities have a supply over 11 square metres of water per 1,000 population.
- 2.15 The inclusion in Run 2 of the very extensive Moorways Sports Village results in Derby having the highest supply. Then in Run 3, with the two pool site closures, Derby reverts to the lowest supply.
- 2.16 The implications of Derby having the highest supply in Run 2 could result in more demand being attracted into Derby from neighbouring local authorities to access Moorways Sports Village. These findings will be set out under the Satisfied Demand heading.
- 2.17 The findings for East Midlands Region and England-wide in 2021 are both 12 square metres of water per 1,000 population. The Derby supply is lower than the neighbouring local authorities and for the East Midlands Region and England-wide in 2021.
- 2.18 The findings on water space per 1,000 population are set out because some local authorities like to compare their quantitative provision with elsewhere and is not setting a standard of provision. The supply and demand for swimming pools in Derby is based on the findings from all seven headings analysed in the report.

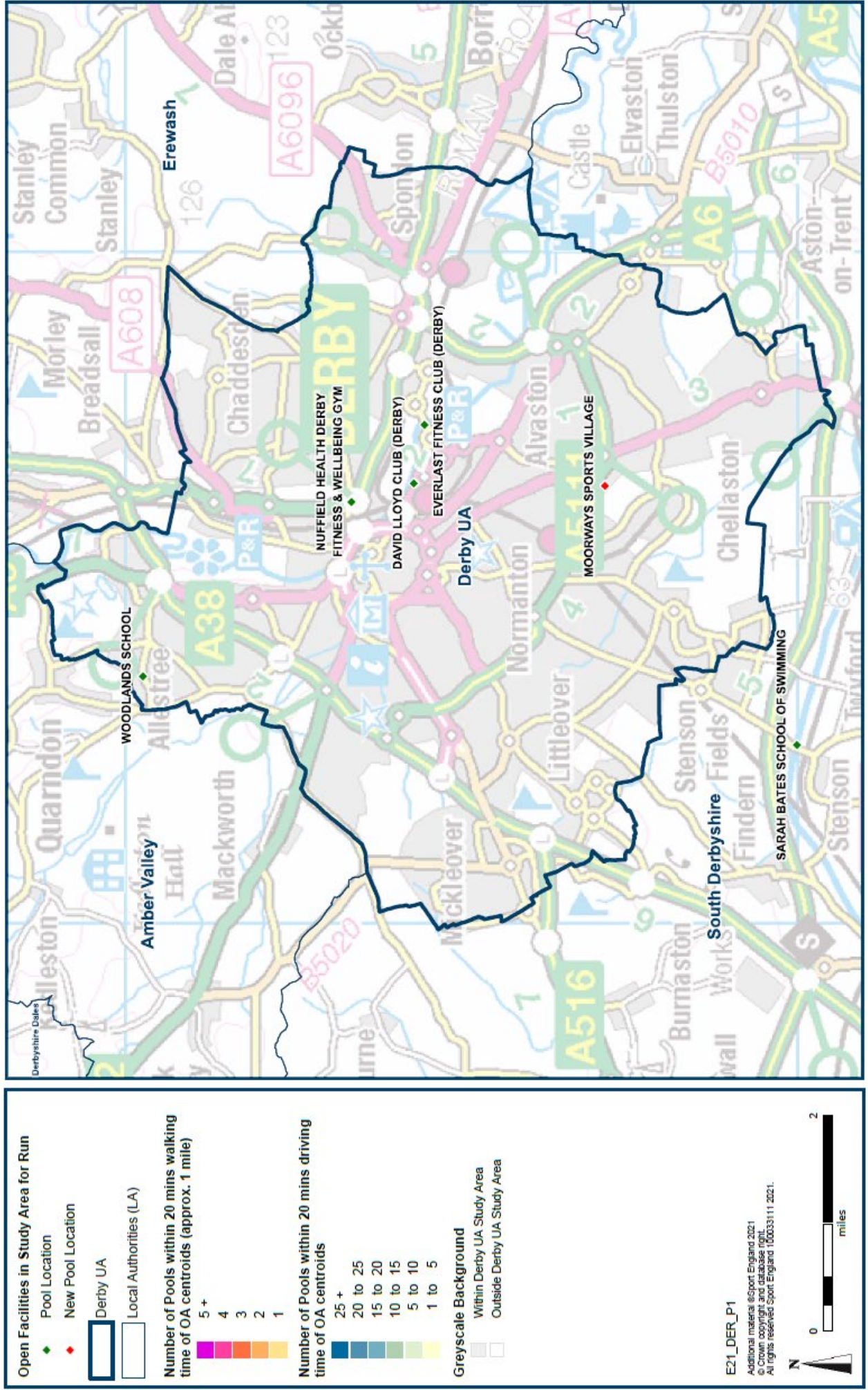
Swimming Pool Locations

- 2.19 Maps **2.1** and **2.2** show the location of swimming pools across Derby in Run 1 in 2021, and then in Run 3 with Moorways Sports Village site included and Queens Leisure Centre and Lonsdale Swimming Pool excluded.
- 2.20 As the Run 1 map shows, the swimming pool sites are clustered in and around the centre of the authority, with only Lonsdale Swimming Pool outside this cluster. In Run 3 Moorways Sports Village does provide a new site outside the cluster and the Lonsdale Swimming Pool and Queens Leisure Centre sites are excluded. These changes in locations and scale of swimming pools will impact on accessibility to swimming pools for residents, and this will be set out under the Total Demand, Satisfied and Unmet Demand headings.

Map 2.1: Run 1 Location of Swimming Pool Sites Derby 2021



Map 2.2: Run 3 Location of Swimming Pool Sites Derby 2028



3. DEMAND FOR SWIMMING POOLS

Table 3.1: Demand for Swimming Pools Derby 2021-2028

Total Demand	RUN 1	RUN 2	RUN 3
Derby	2021	2028	2028
Population	259,308	263,418	263,418
Swims demanded – visits per week peak period	17,355	17,265	17,265
Equivalent in water space – with comfort factor included	2,880	2,865	2,865
% of population without access to a car	28.0	28.0	28.0

- 3.1 **Definition of total demand** – This represents the total demand for swimming by both genders and for 14 five-year age bands from 0 to 65+ and is calculated as the percentage of each age band/gender that participates. This is added to the frequency of participation in each age band/gender to arrive at a total demand figure, which is expressed in visits in the weekly peak period and square metres of water. The FPM parameters for the percentage of participation and frequency of participation, for both genders and for different age bands, are set out in Appendix 2.
- 3.2 The Derby population in 2021 is 259,308 people and is projected to increase to 263,418 people by 2028: an increase of 1.6%.
- 3.3 The Derby total demand for swimming in 2021 is 17,355 visits per week in the weekly peak period, and this equates to a total demand for 2,880 square metres of water (for context, a 25m x four-lane pool is 250 square metres of water).
- 3.4 The **second key finding** is that total demand for swimming is projected to be almost unchanged between 2021 and 2028, from 17,355 visits in 2021 to 17,265 visits in 2028. In terms of water space, there is a very slight decrease in demand of 15 square metres of water between 2021 and 2028.
- 3.5 The **third key finding** is that the projected increase in population across Derby between 2021 and 2028 of 1.6% is not a driver of increased demand for swimming pools.
- 3.6 The most likely reason for the almost unchanged total demand for swimming is because the total demand for swimming in 2028 is made of (1) the resident population and (2) the growth in population between 2021 and 2028.
- 3.7 The ageing of the resident population between 2021 and 2028 will influence the demand for swimming. It can mean that there are fewer people in the main age bands for swimming (14-54 and for both genders) in the second run year than the first run year.
- 3.8 Therefore, the increase in demand for swimming from population growth is offset by the ageing of the much larger resident population. The modelling is based on the frequency of swimming participation being unchanged between both years.

Total Demand for Swimming Across the Study Area

- 3.9 The changes in total demand for swimming for all the authorities, expressed in square metres of water, is set out in Table 3.2. Of note, is that the scale of change is not significantly different to Derby; for example, there is a very small decrease in swimming demand in Erewash between 2021 and 2028, as in Derby, while in Amber Valley and South Derbyshire the increase in demand between 2021 and 2028 is very small.

Table 3.2: Total Demand for Swimming Square Metres of Water All Authorities 2021 and 2028

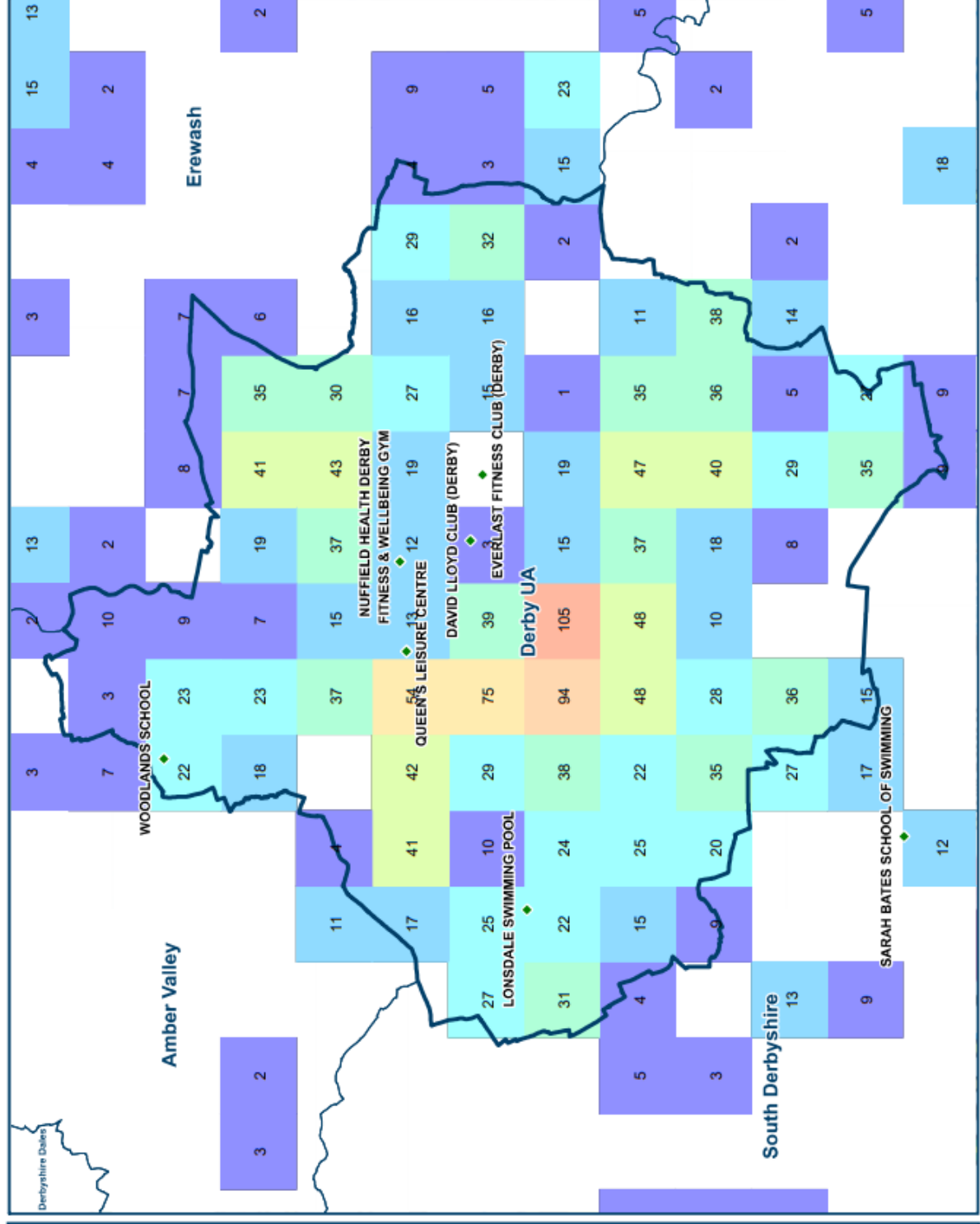
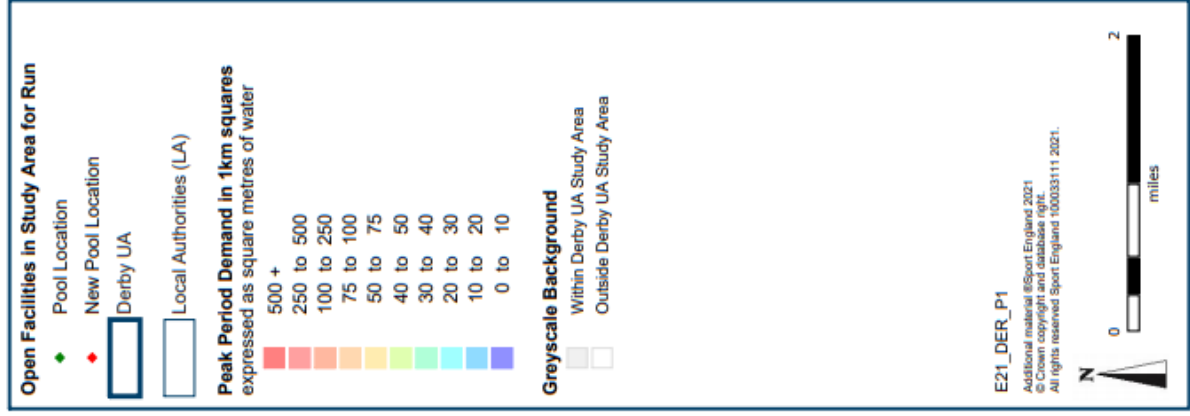
Swimming pool provision (sqm) considering a 'comfort' factor	RUN 1	RUN 2	RUN 3
Local Authority	2021	2028	2028
Derby UA	2,880	2,865	2,865
Amber Valley	1,385	1,418	1,418
Erewash	1,260	1,255	1,255
South Derbyshire	1,204	1,290	1,290

Location of Demand for Swimming Within Derby 2021-2028

- 3.10 The location of the total demand for swimming across Derby is set out in Maps 3.1-3.3 and for each of the three runs. The demand values are expressed in square metres of water in 1km grid squares. The lowest values are in the blue squares, starting at 1 square metre of water of demand; the mid-range values in the green squares; and the highest values are pale red with a maximum of 105 square metres of demand in Derby.
- 3.11 The **fourth key finding** is that the distribution of demand for swimming is virtually unchanged between 2021 and 2028.
- 3.12 Demand is distributed quite evenly across the city; it is highest in the city centre area and lowest in the periphery of the city on all sides. It is possibly lowest in the far north of the city to the Amber Valley boundary, then in the west of the city to the boundary with South Derbyshire.

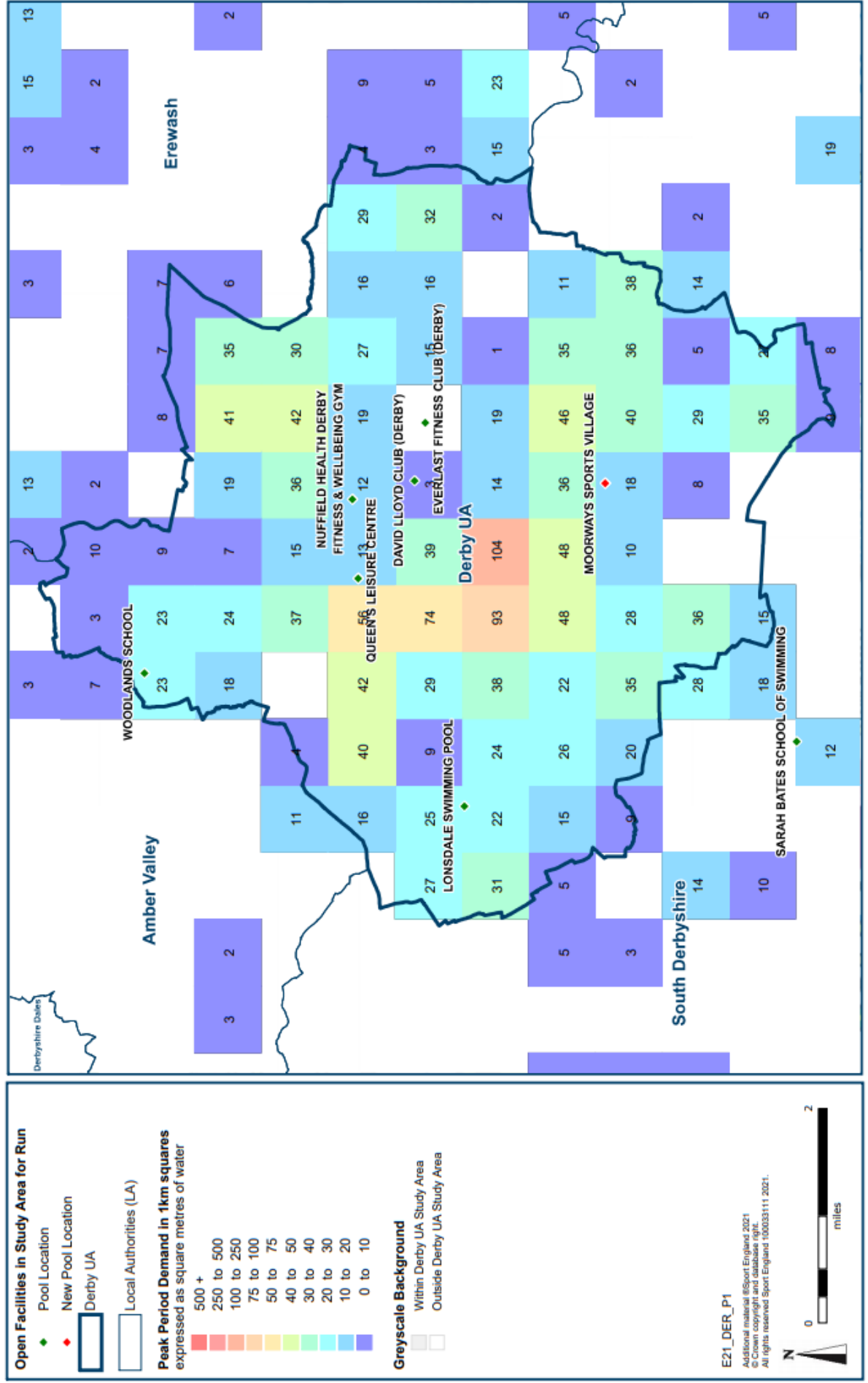
Map 3.1: Run 1 Total Demand for Swimming Pools Derby 2021

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



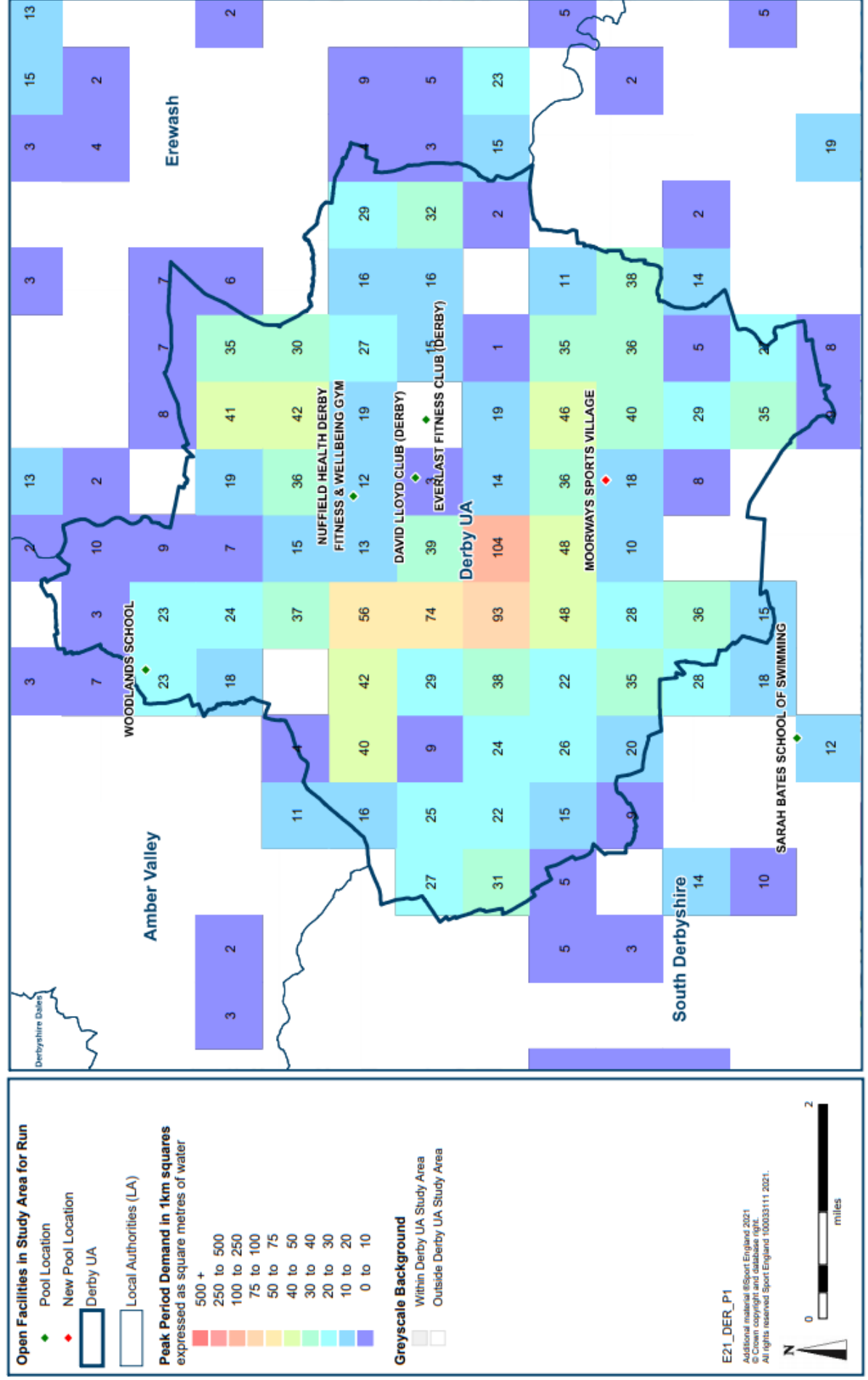
Map 3.2: Run 2 Total Demand for Swimming Pools Derby City 2028

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



Map 3-3: Run 3 Total Demand for Swimming Pools Derby City 2028

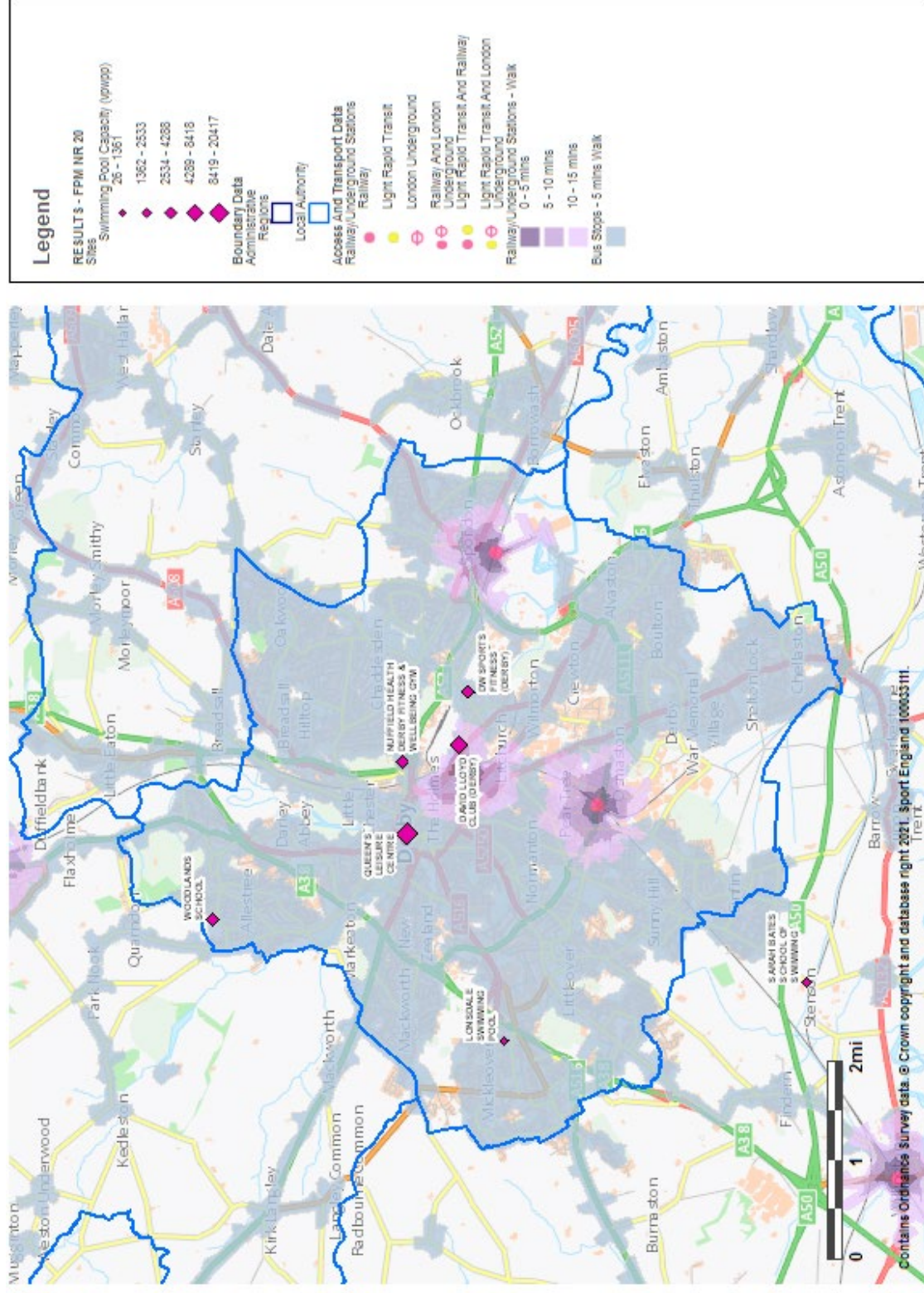
Facility Planning Model peak period demand aggregated at 1km square grid (figure labels) and shown thematically (colours). Peak period demand at 1km square grid level expressed as square meters of water.



- 3.13 The findings on the percentage of the population who do not have access to a car is set out under the total demand heading. In Derby, 28.0% of the resident population do not have access to a car based on the 2011 Census findings. The East Midlands Region average is 21.3%, and England-wide 24.9% of the population do not have access to a car.
- 3.14 For residents without access to a car, travel to swimming pools by public transport and walking becomes the choice of travel. For these residents, a network of local accessible swimming pools is important to encourage swimming participation.
- 3.15 The FPM findings for 2021 are that 79% of all visits to pools by Derby residents are by car (up to 30 minutes' drive time), while travel to pools by walkers (up to 40 minutes' walk or 2 miles) is 7% of all visits, and travel to pools by public transport (30 minutes travel at half speed of car) is 14% of all visits.
- 3.16 Therefore 21% of all visits, or just over one in five visits to pools, are by walkers or people who use public transport.
- 3.17 The **fifth key finding** is that the location and catchment area of Moorways Sports Village increases accessibility to swimming pools for Derby residents who do not have access to a car and either use public transport or walk to access a swimming pool.
- 3.18 Travel patterns by walkers is 11% of all visits in Run 2 when Moorways Sports Village is open (7% in Run 1), and travel by public transport is 16% (14% in Run 1). This means that 27% of all visits with Moorways Sports Village open are by walkers or public transport (21% in Run 1).
- 3.19 Outside of the FPM data, Sport England through its Active Places Power website produces mapping of access to swimming pools based on public transport. This is set out in Map **3.4** for Derby in 2020 (note: as this data is from a different source to the FPM data and is only updated annually, it is not possible to map the impact of the swimming pool changes).
- 3.20 To provide spatial guidance on the relationship between the swimming pools sites and the areas of the city within public transport catchments, Map **3.4** shows the areas of Derby that are within a range of 0-5 minutes' walk of a bus stop (areas in grey) and 0-15 minutes' walk of a railway station (purple areas). This is a spatial assessment and the travel times to swimming pools is dependent on the bus network, timetables, and routes.
- 3.21 As the map shows, there are extensive areas of Derby that are within 0-5 minutes' walk of a bus stop. However, in the south of the city, and where Moorways Sports Village is located, there is a large area outside a 5-minute walk to a bus stop. The location of Moorways Sports Village is improving access to a swimming pool site by bus and where there is no access at present.

Map 3.4: Areas of Derby within 0-15 Minutes' Walk of a Railway Station (purple areas) and 0-5 Minutes' Walk of a Bus Stop (grey areas) 2020

Sport England assumes no responsibility for the completeness, accuracy and currency of the information contained on this map. This information is taken from the Active Places Power website and its terms and conditions apply – 14/06/2021 12:04



4. SUPPLY AND DEMAND BALANCE

Table 4.1: Supply and Demand Balance Derby 2021 – 2028

Supply/Demand Balance	RUN 1	RUN 2	RUN 3
Derby	2021	2028	2028
Supply - Swimming pool provision sqm scaled to take account of hours available for community use	1,778	3,382	2,520
Demand - Swimming pool provision (sqm) considering a 'comfort' factor	2,880	2,865	2,865
Supply / Demand balance - Variation in sqm of provision available compared to the minimum required to meet demand	-1,102	517	-345

- 4.1 **Definition of supply and demand balance** – This compares the total demand generated for swimming within Derby with the total supply of swimming pools within Derby. It therefore represents an assumption that all the demand for swimming is met by all the supply of swimming pools within Derby (note: it does the same for the other local authorities in the study area).
- 4.2 In short, supply and demand balance is not based on where the pools are located and their catchment area extending into other authorities, nor on the catchment areas of pools in neighbouring authorities extending into Derby. More detailed modelling based on the catchment areas of pools is set out under Satisfied Demand, Unmet Demand and Used Capacity.
- 4.3 The reason for presenting the supply and demand balance is that some local authorities like to understand how their total supply of pools compares with their total demand for pools.
- 4.4 When looking at this assessment, Run 1 shows that Derby demand for swimming pools in 2021 is for 2,880 square metres of water, and this decreases very slightly to 2,865 square metres of water in Runs 2 and 3.
- 4.5 The Derby supply of swimming pools available for community use equates to 1,778 square metres of water in Run 1, then 3,382 square metres of water in Run 2 when Moorways Sports Village is included and decreases to 2,520 square metres of water in Run 3 when Queens Leisure Centre and Lonsdale Swimming Pool are excluded.
- 4.6 In Run 1 there is a negative supply and demand balance, with the Derby demand exceeding supply by 1,102 square metres of water. In Run 2, with the slight decrease in total demand and Moorways Sports Village included, supply exceeds demand by 517 square metres of water.
- 4.7 In Run 3 the findings revert to demand exceeding supply by 345 square metres of water because both Queens Leisure Centre and Lonsdale Swimming Pool are excluded.

- 4.8 When Moorways Sports Village is included, there is a supply surplus of water space distributed across Derby which equates to a 25m x 13m six-lane pool.
- 4.9 With the closure of Queens Leisure Centre (which has three pools and 751 square metres of water and provides 40% of the total water space available for community use in 2021), together with the closure of Lonsdale Swimming Pool, there is a negative balance of 345 square metres of water distributed across the city.
- 4.10 To reiterate, this is a closed assessment and simply compares the Derby demand for swimming with the Derby supply – it is not catchment area based across local authority boundaries.

Supply and Demand Balance Surrounding Authorities

- 4.11 The supply and demand balance for all the authorities in the study area is set out in Table 4.2.
- 4.12 In Run 1, in all the neighbouring local authorities demand exceeds supply in all three runs, with a total of 1,564 square metres of water. The findings for the neighbouring local authorities are much lower than for Derby, reflecting that they are much smaller authorities in population and supply of swimming pools.
- 4.13 In Run 2, demand exceeds supply by a much smaller 59 square metres of water across the surrounding local authorities, reflecting that in Derby Moorways Sports Village is included and all the other pools are open, leading to a surplus of supply over demand in Derby. In Run 3, with the option to close both Queens Leisure Centre and Lonsdale Swimming Pool, there is a deficit in Derby of 345 square metres of water and, overall across the surrounding local authorities, a deficit of 921 square metres of water.
- 4.14 Given the overall supply and demand balance findings across the study area, it indicates that the level of demand for swimming which can be met is likely to be reasonably high, unmet demand quite low, and the used capacity of the pools also quite high. These findings are examined under the next three headings.

Table 4.2: Supply and Demand Balance for Swimming Pools Across the Study Area 2021-2028

Variation in sqm of provision available compared to the minimum required to meet demand	RUN 1	RUN 2	RUN 3
Local Authority	2021	2028	2028
Derby UA	-1,103	517	-345
Amber Valley	-82	-115	-115
Erewash	-85	-80	-80
South Derbyshire	-294	-381	-381

5. SATISFIED DEMAND FOR SWIMMING

Table 5.1: Satisfied Demand for Swimming Derby 2021-2028

Satisfied Demand	RUN 1	RUN 2	RUN 3
Derby	2021	2028	2028
Total number of visits which are met visits per week peak period	14,541	15,547	14,376
% of total demand satisfied	83.8	90.0	83.3
% of demand satisfied who travelled by car	79.5	73.4	81.3
% of demand satisfied who travelled by foot	6.8	10.4	4.7
% of demand satisfied who travelled by public transport	13.7	16.2	14.0
Demand Retained visits per week peak period	10,963	14,778	13,331
Demand Retained - as a % of Satisfied Demand	75.4	95.1	92.7
Demand Exported visits per week peak period	3,578	768	1,046
Demand Exported - as a % of Satisfied Demand	24.6	4.9	7.3

- 5.1 **Definition of satisfied demand** – This represents the proportion of total demand that is met by the capacity at the swimming pools from Derby residents who live within the driving, walking or public transport catchment area of a pool. This includes pools located both inside and outside Derby.
- 5.2 The **sixth key finding** is that over 83% of the Derby total demand for swimming is satisfied/met in Runs 1 and 3, and this increases to 90% in Run 2 with Moorways Sports Village included. Moorways Sports Village enables 6% more of the Derby demand for swimming pools to be met; this is a significant difference and provides a very high level of satisfied demand.
- 5.3 The level of satisfied demand across the study area for Runs 1–3 is set out in Table 5.2. In all the other local authorities the percentage of total demand which is satisfied is high, at between 92.6% and 93.7% across the three runs, with little change in each authority.
- 5.4 The findings reflect that demand for swimming pools only increases very slightly and that in Erewash, as in Derby, there is a very small decrease (Table 3.2 Demand section).

Table 5.2: Percentage of Satisfied Demand for Swimming Across the Study Area 2021-2028

% of total demand satisfied	RUN 1	RUN 2	RUN 3
Local Authority	2021	2028	2028
Derby UA	83.8	90.1	83.3
Amber Valley	92.6	92.6	92.5
Erewash	92.8	92.9	92.8
South Derbyshire	93.1	93.7	93.6

Retained Demand

- 5.5 A subset of the satisfied demand findings show how much of the Derby demand for swimming is retained at the pools located within Derby. This assessment is based on the catchment area of pools and residents using the nearest pool to where they live at a pool located in Derby; this is called retained demand.
- 5.6 The findings in Table **5.1** show that Derby's retained demand is 75.4% of the total 83.8% satisfied demand. In Run 2, retained demand is very high at 95.1% of the total satisfied demand, and in Run 3 is 92.7% when the Queens Leisure Centre and Lonsdale Swimming Pool are closed, and the demand met at these pools is re-distributed.
- 5.7 The **seventh key finding** is the significant change in Runs 2 and 3; Moorways Sports Village results in a 20% increase in retained demand from Run 1 and an 17% increase in Run 3.
- 5.8 In Run 3, when Queens Leisure Centre and Lonsdale Swimming Pool are closed, the demand is re-distributed and can be met because the scale of Moorways Sports Village can accommodate this displaced demand.
- 5.9 The **eighth key finding** is that the findings show there is a very high correlation between the location and catchment area of the Derby swimming pool sites and the location of the Derby residents demand for swimming, with over seven out of ten visits to a swimming pool retained within Derby in Run 1, then over nine out of ten visits in Runs 2 and 3. This suggests that the pools are very much located in the right places to meet the Derby demand for swimming pools.

Exported Demand

- 5.10 The residue of satisfied demand, after retained demand, is exported demand. Again, this is based on residents travelling to and using the nearest pool to where they live but which is now a pool located outside Derby. In Run 1 the model's findings are that 24.6% of the Derby demand for swimming is exported and met at pools in neighbouring local authorities.
- 5.11 Exported demand decreases very significantly to 4.9% of Derby's satisfied demand in Run 2 and increases slightly to 7.3% in Run 3.
- 5.12 Again, the impact of Moorways Sports Village is evident in Runs 2 and 3, allowing much more of the Derby demand for swimming pools to be met within Derby.
- 5.13 The destination and scale of the Derby exported demand for Runs 1-3 is set out in Table **5.3**. The largest exported demand is to South Derbyshire in all three runs, ranging from 1,481 visits in Run 1, 449 visits in Run 2 and 616 visits in Run 3, per week in the weekly peak period. The figures for Derby represent the level of the Derby satisfied demand retained within Derby.

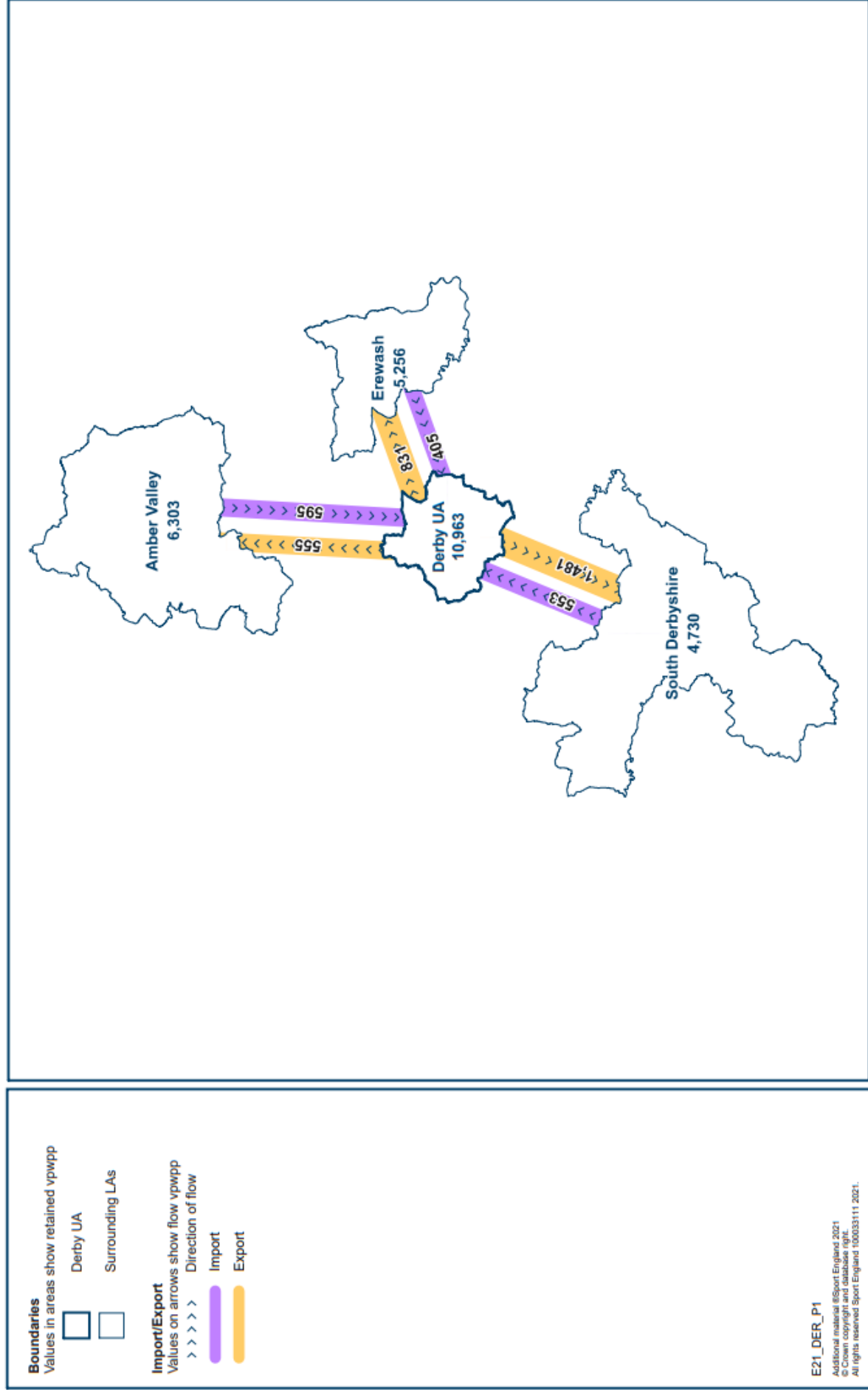
Table 5.3: Runs 1-3 Export of Derby City Satisfied Demand for Swimming 2021-2028

Export (visits per week peak period)	RUN 1	RUN 2	RUN 3
Local Authority	2021	2028	2028
Derby	10,963	14,778	13,331
Amber Valley	555	144	204
Erewash	831	87	112
South Derbyshire	1,481	449	616

- 5.14 The findings in Table 5.3 can also be presented in map form and are set out in Map 5.1 for Run 1 and Map 5.2 for Run 3. The yellow chevron represents the number of visits which are exported and met in each of the neighbouring authorities. The figure in the Derby map represents the number of visits retained within the city.

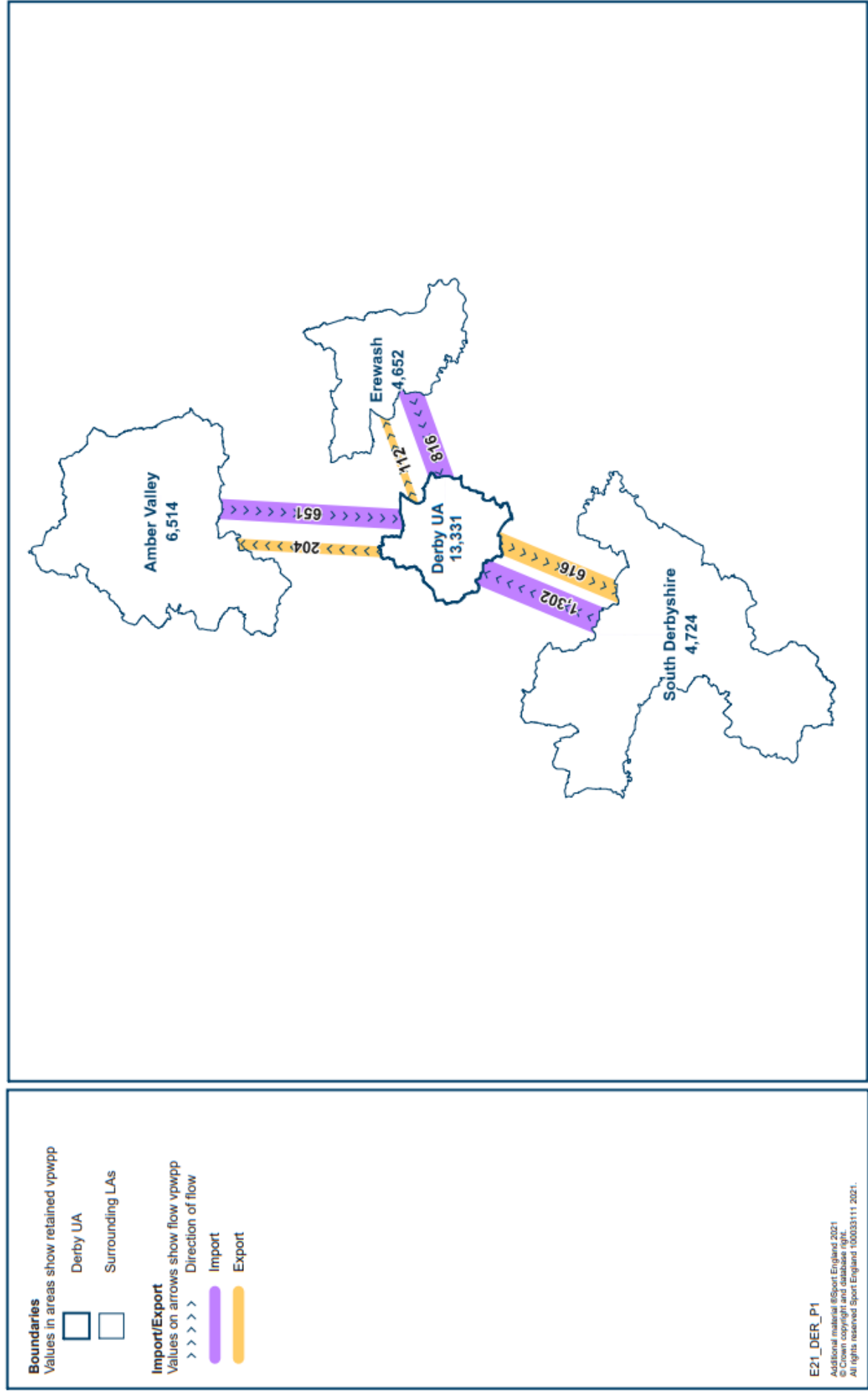
Map 5.1: Run 1 Export of Derby Satisfied Demand for Swimming 2021

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



Map 5.2: Run 3 Export of Derby Satisfied Demand for Swimming 2028

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



6. UNMET DEMAND FOR SWIMMING

Table 6.1: Unmet Demand for Swimming Derby 2021-2028

Unmet Demand	RUN 1	RUN 2	RUN 3
Derby	2021	2028	2028
Total number of visits in the peak, not currently being met visits per week peak period	2,814	1,718	2,888
Unmet demand as a % of total demand	16.2	10.0	16.7
Equivalent in Water space sqm - with comfort factor	467	285	479
% of Unmet Demand due to:			
Lack of Capacity -	11.8	0.0	2.9
Outside Catchment -	88.2	100.0	97.1
Outside Catchment:	88.2	100.0	97.1
% of Unmet demand who do not have access to a car	81.6	93.6	89.9
% of Unmet demand who have access to a car	6.6	6.4	7.2

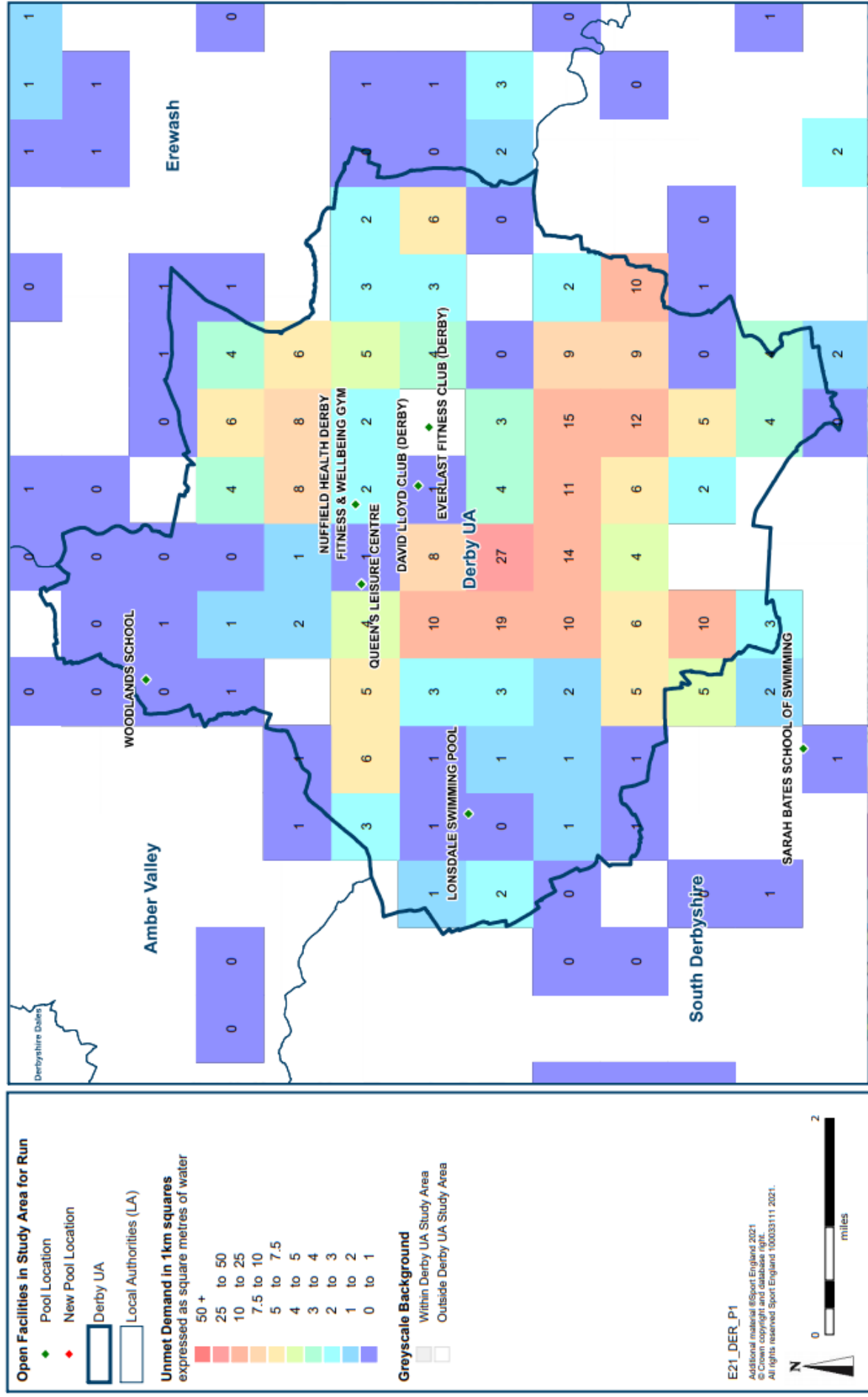
- 6.1 The **unmet demand definition** has two parts to it: demand for pools which cannot be met because (1) there is too much demand for any particular swimming pool within its catchment area and there is a lack of swimming pool capacity; or (2) the demand is located outside the catchment area of any pool and is then classified as unmet demand.
- 6.2 The Derby total unmet demand is within a narrow range of 467 square metres of water in Run 1, 285 square metres of water in Run 2 and 479 square metres of water in Run 3. Again, for context, a 25m x four-lane pool is 250 square metres of water.
- 6.3 The **ninth key finding** is that, in terms of the two different types of unmet demand, it is demand located outside a catchment which is the major source of unmet demand and not a lack swimming pool capacity.
- 6.4 In Run 1, 88% of the total unmet demand is demand located outside a catchment, with 100% in Run 2 and 97% in Run 3. The balance of 12% in Run 1, 0% in Run 2, and 3% in Run 3, comes from a lack of swimming pool capacity.
- 6.5 The **tenth key finding** is that the scale of Moorways Sports Village effectively eliminates unmet demand from lack of swimming pool capacity in Derby in Run 2. In Run 3, with Queens Leisure Centre and Lonsdale Swimming Pool closed, there is 3% of total unmet demand from lack of capacity, which equates to 14 square metres of water.
- 6.6 The **overall key findings** on unmet demand are that:
- In both years and all runs, unmet demand is low in both percentage and, more importantly, in square metres of water, and is within a range of 467 to 479 square metres of water. The Derby available supply of water space is within a range of 1,883-3,565 square metres of water.
 - Between 88% and 100% of the total unmet demand is demand located outside the catchment area of a pool, with 12% in Run 1, 0% in Run 2 and 3% in Run 3 resulting from a lack of swimming pool capacity.

- 6.7 Returning to the demand located outside the catchment area of a swimming pool, this will always exist because it is not possible to achieve complete spatial coverage whereby all areas of an authority are inside the catchment area of a swimming pool.
- 6.8 This is especially true for the 20-minute/1 mile walking catchment area, which, by definition, is quite a small catchment area. Also, as identified in the demand section (Table 3.1), some 28% of Derby residents do not have access to a car and either walk or use public transport to access a pool.
- 6.9 These residents account for between 81.6% and 93.6% of the total unmet demand (penultimate row of Table 6.1).
- 6.10 The important point here is not that unmet demand outside catchment exists but the scale of it, and, at a range of between 410 square metres of water in Run 1 and 464 square metres of water in Run 3, it is quite small. As reported, the total available supply of water space in Derby across the three runs is within a range of 1,883-3,565 square metres of water.
- 6.11 The location and scale of unmet demand in 2021 across Derby is set out in Map 6.1 for Run 1, and in 2028 for Run 2 in Map 6.2 and for Run 3 in Map 6.3.
- 6.12 The unmet demand (from both sources) is represented in colour-coded one-kilometre grid squares, with the square metres of water of unmet demand shown in each square. The values for Derby range from 0 square metres of water in the blue squares to 27 square metres of water of unmet demand in the light red squares.
- 6.13 The distribution of unmet demand in terms of the locations with the highest and lowest does not change over the three runs, but the scale changes slightly.
- 6.14 Unmet demand is highest in all three runs in an area north of Normanton, with 46 square metres of water in Runs 1 and 3, and 27 square metres of water in Run 2.
- 6.15 It is next highest in an area west and just south of Chaddesden, where it totals 36 square metres of water in Run 1, 29 square metres of water in Run 2, and 42 square metres of water in Run 3.
- 6.16 Unmet demand in all three runs is lowest on the periphery of the city on all sides, but especially in the west and north of the city, where a lot of areas have between 0 and 5 square metres of water in the one-kilometre grid squares.
- 6.17 The **eleventh key finding** is that there is one area of Derby in the city centre with an unmet demand equivalent to 161 square metres of water, which equates to a 20m x 4 lane pool. This is the aggregated unmet demand for Derby in Run 3. This level of unmet demand is not a sufficient total to increase swimming pool provision. It equates to a 20m x 4 lane pool and a pool of this size, would complete with the three commercial pool sites of similar size also located in the city centre and unlikely to be viable in operational terms. The provision of water space in the city centre should form part of the review in three years' time, based on the experience of operating Moorways Sports Village (Executive Summary paras xiv – xvi).

- 6.18 There are three commercial swimming pool sites in the same locality, David Lloyd 25m x 13m 4 lane single pool site, Everlast Fitness Derby an 18m x 9m 4 lane single pool site, and Nuffield Health, a 25m x 8m four lane single pool site. Therefore, to meet the aggregated unmet demand finding means a new pool site of very similar scale to three existing pools in the same locality, albeit they are commercial pools. It is unlikely that the new pool site would be viable in operational terms as it is competing with three established commercial pool sites.

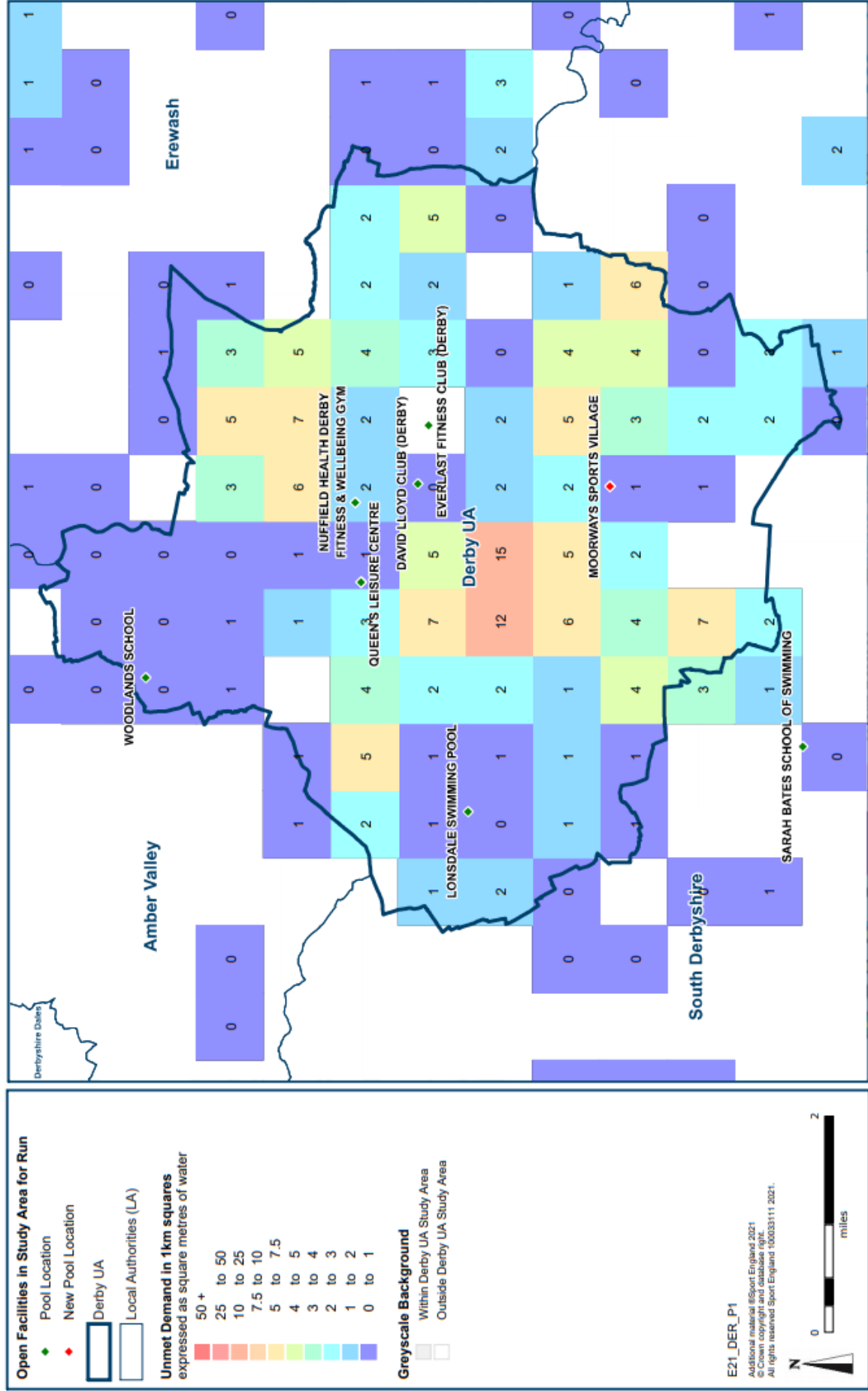
Map 6.1: Run 1 Unmet Demand for Swimming Pools Derby 2021

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



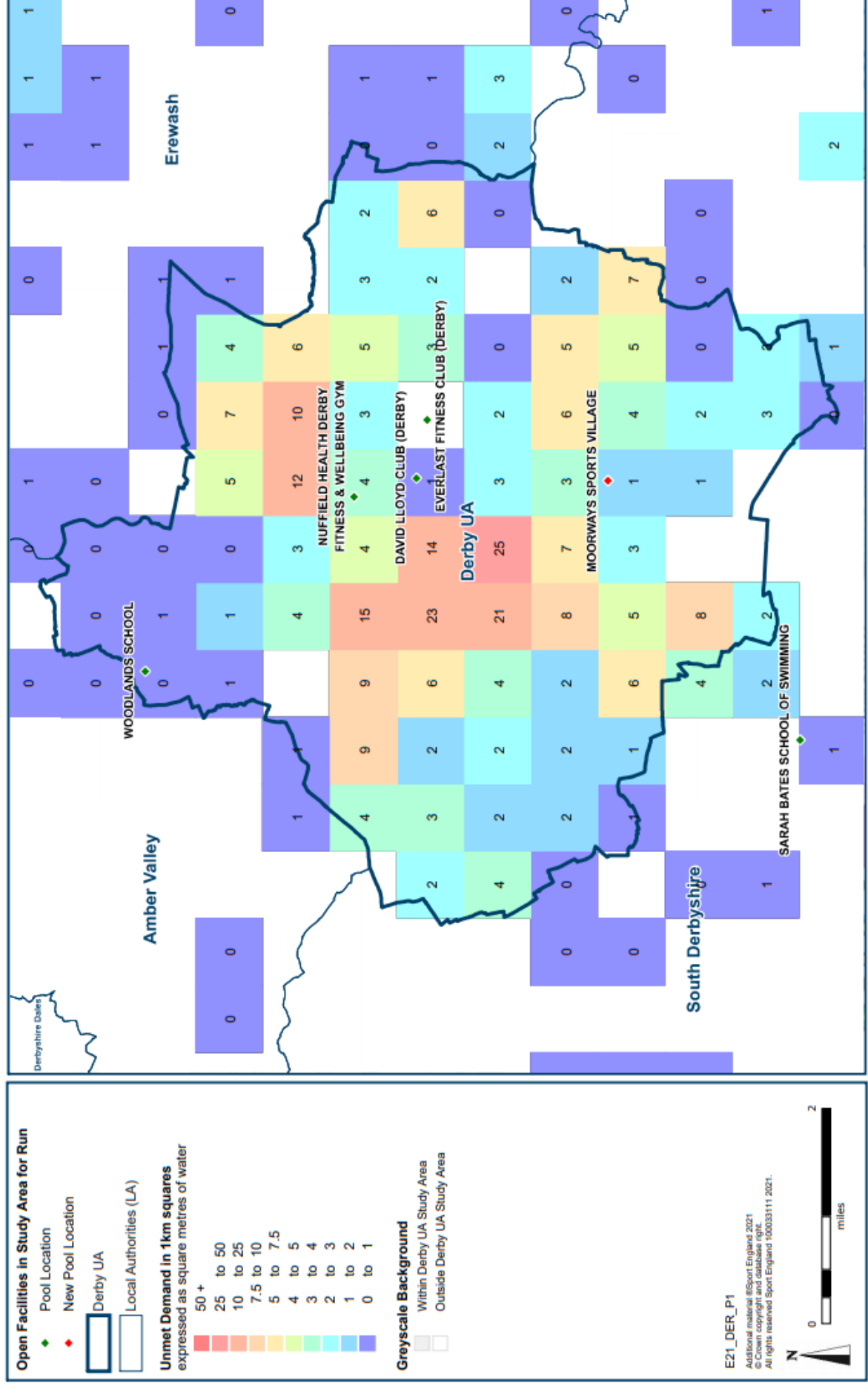
Map 6.2: Run 2 Unmet Demand for Swimming Pools Derby 2028

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



Map 6.3: Run 3 Unmet Demand for Swimming Pools Derby 2028

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

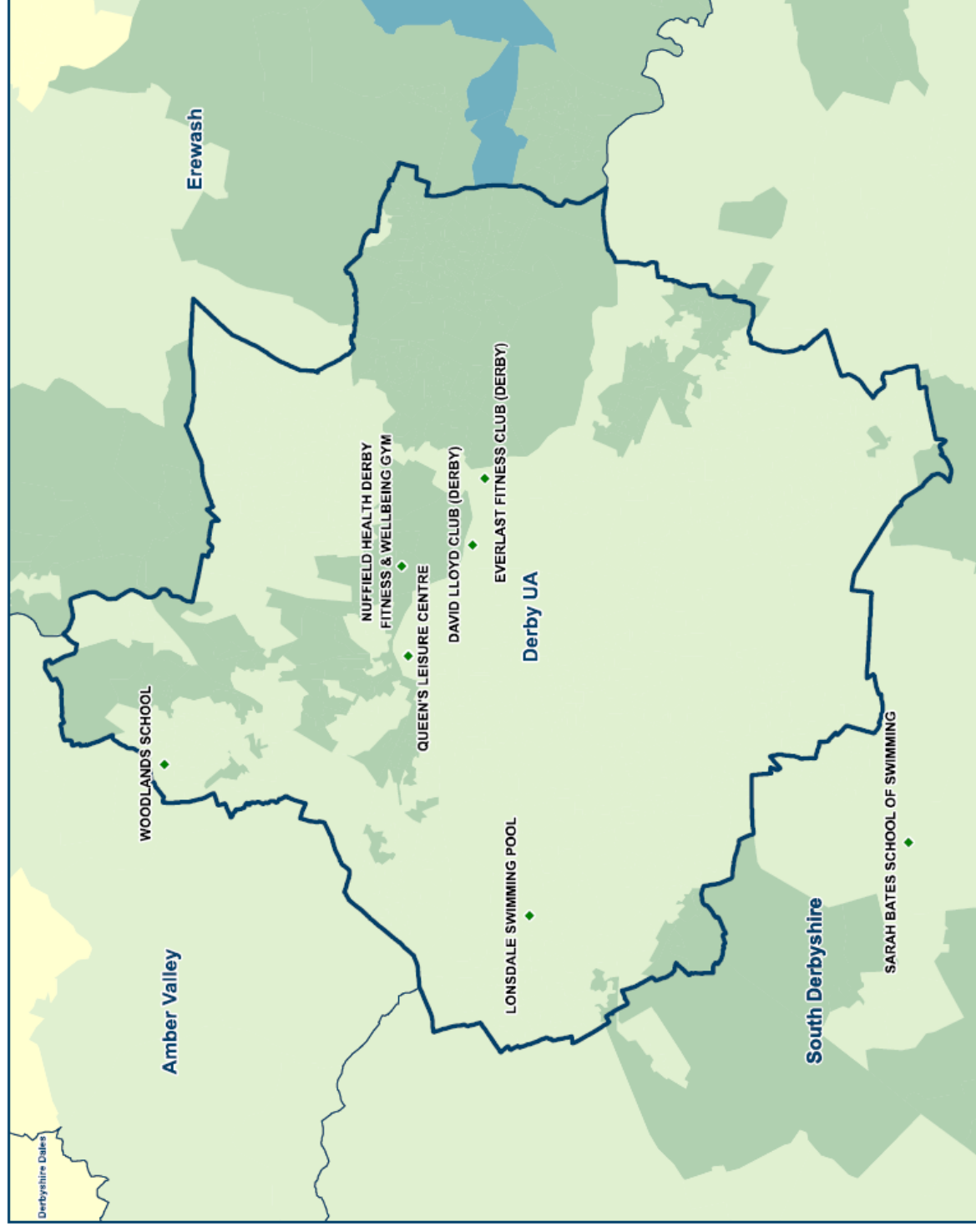
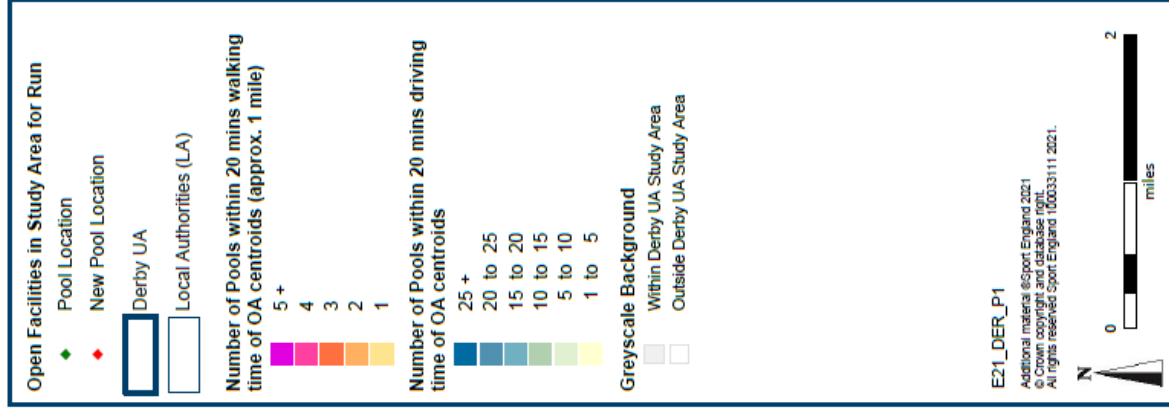


Car Catchment Area for Swimming Pools

- 6.19 An illustration of how many swimming pools can be accessed by Derby residents, based on where they live and the 20-minute drive time catchment area of the swimming pool locations, is set out in Maps **6.4-6.6** for each of the three runs.
- 6.20 The maps include pool sites located in neighbouring authorities and where the catchment area extends into Derby.
- 6.21 In the light green areas, residents have access to between 5 and 10 swimming pools based on where they live and the location/catchment area of the swimming pool locations. In the darker green areas, residents have access to between 10 and 15 swimming pools.
- 6.22 Run 2 has the highest accessibility to swimming pools for Derby residents, shown by the large darker green area. It also has a small area of blue where residents have access to between 20 and 25 swimming pools.
- 6.23 Not surprisingly, run 3 has the least accessibility to swimming pools for residents who travel by car when Queens Leisure Centre and Lonsdale Swimming Pool are excluded. There is a much larger light green area and a smaller dark green area.
- 6.24 The **overall finding** is that, in all runs, all of Derby is within the catchment area of between 5 and 10 swimming pool sites, which is quite a high level of accessibility. The FPM finding is that 79% of all visits to swimming pools are by car in 2021, and this is 73% in Run 2 and 81% in Run 3.

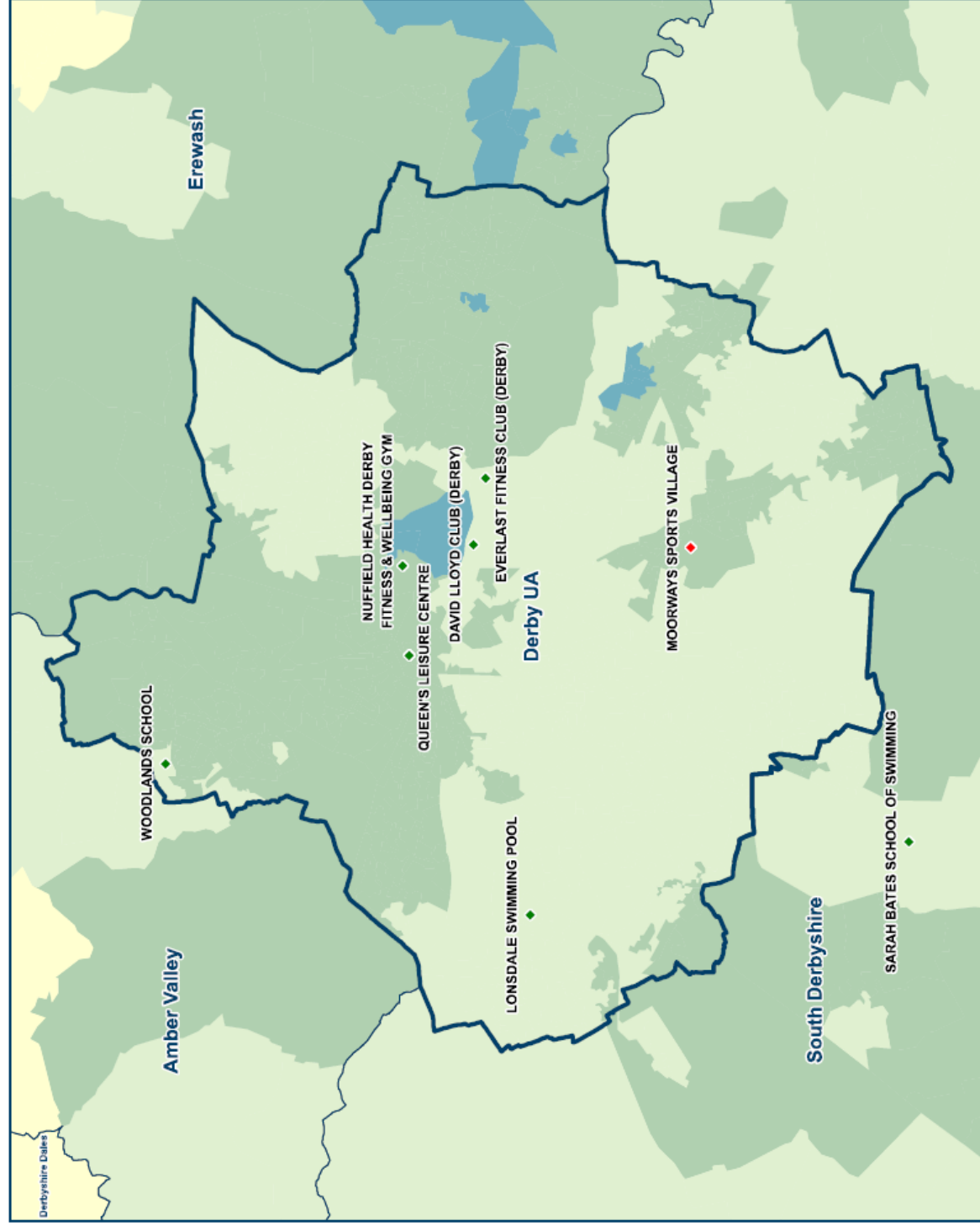
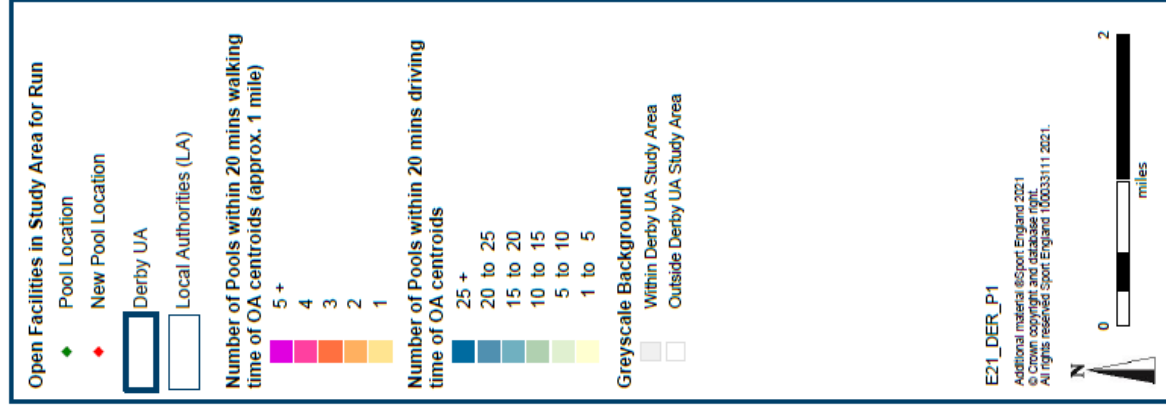
Map 6.4: Run 1 Access to Swimming Pools Based on the Car Travel Catchment Area of Pools Derby 2021

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



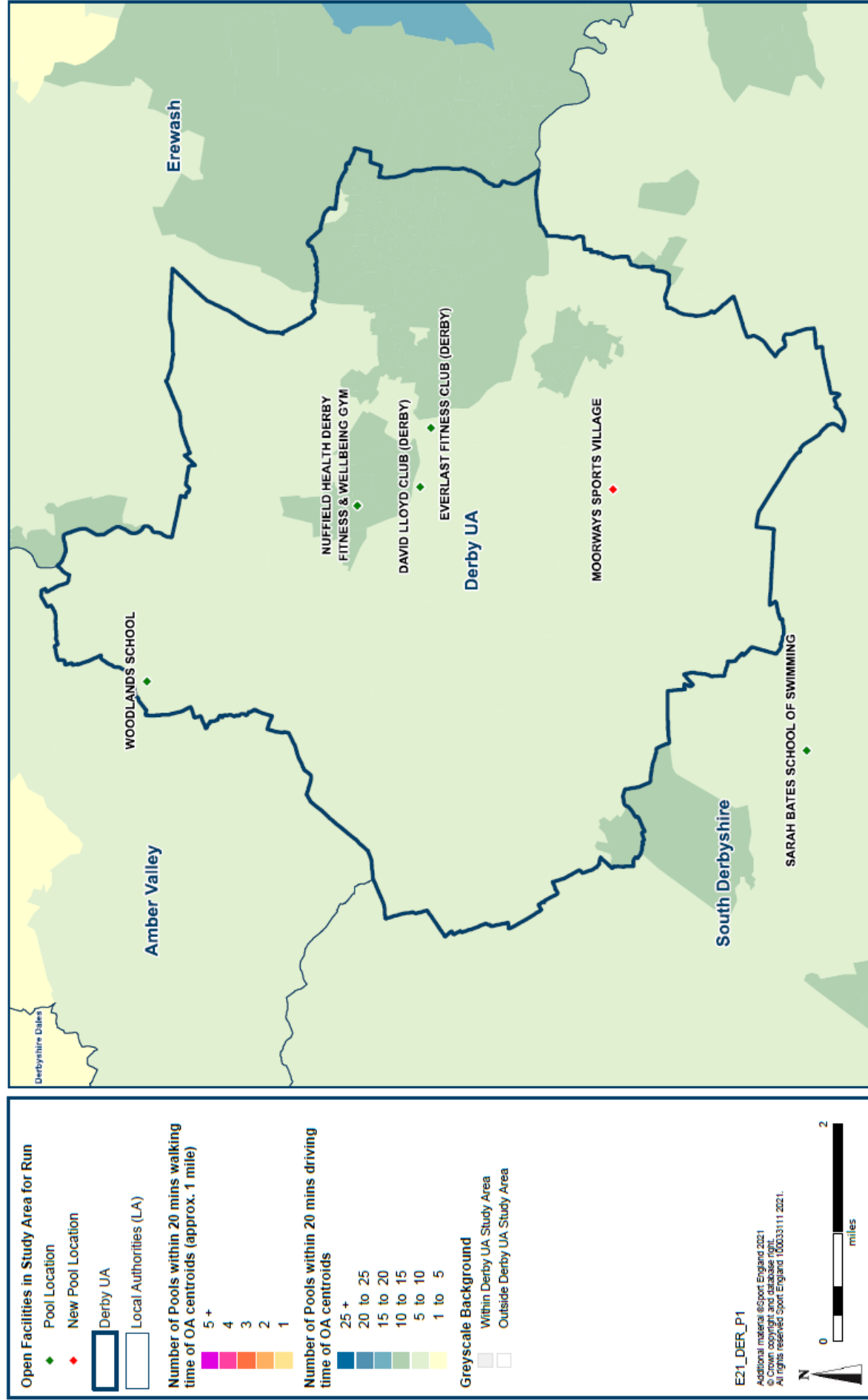
Map 6.5: Run 2 Access to Swimming Pools Based on the Car Travel Catchment Area of Pools Derby 2028

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



Map 6.6: Run 3 Access to Swimming Pools Based on the Car Travel Catchment Area of Pools Derby 2028

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

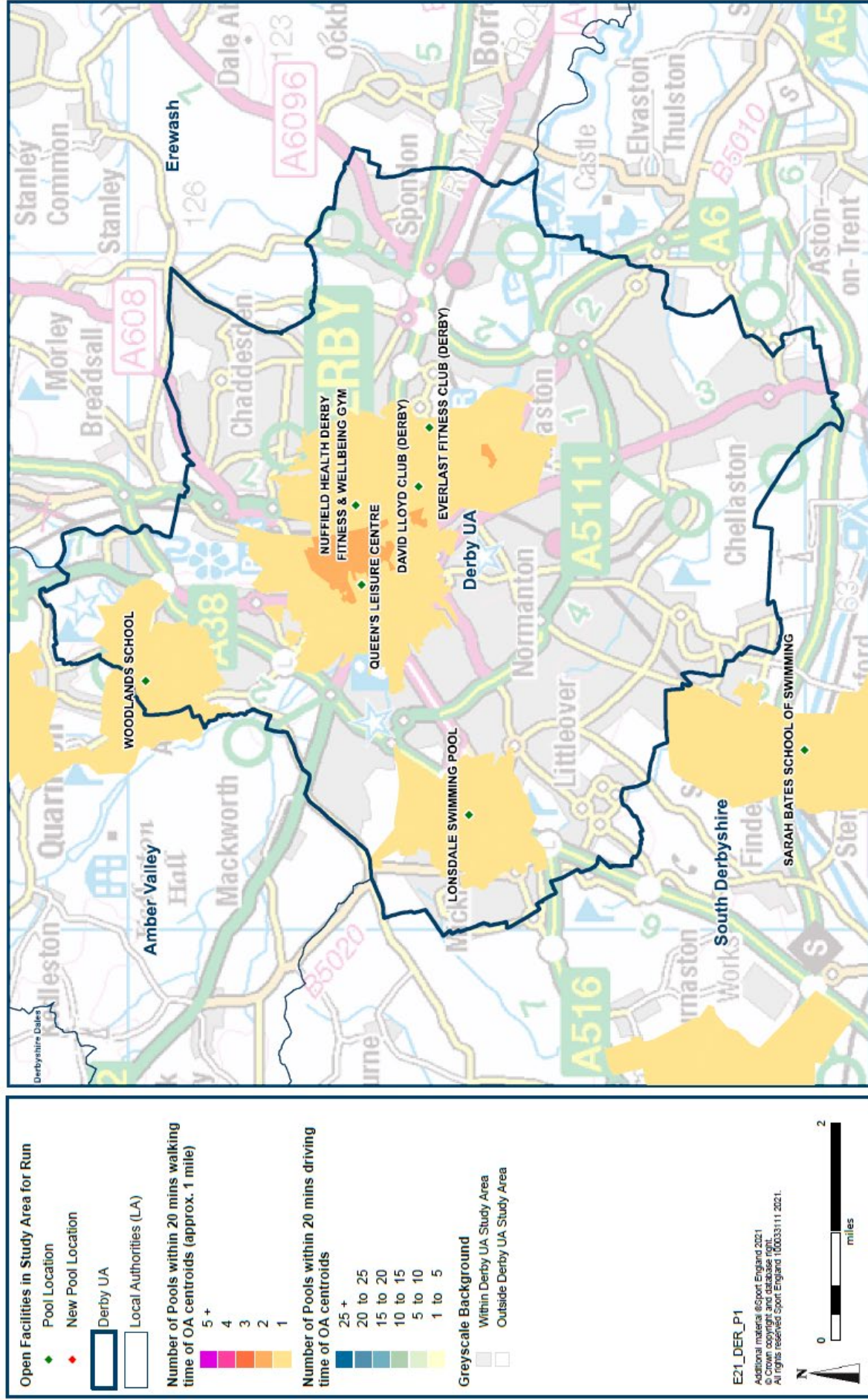


Walking Catchment Area for Swimming Pools

- 6.25 Mapping for a 20-minute/1 mile walking catchment area of swimming pools is also possible, and this is set out in Maps **6.7-6.9** for Runs 1-3. By definition, this is a small catchment area; residents in the area shaded pale amber are within the walking catchment area of one swimming pool site, and residents in the small orange area are within the walking catchment area of two sites.
- 6.26 Again, not surprisingly, access is highest in Run 2 when Moorways Sports Village is added to the existing supply, and lowest in Run 3 when Queens Leisure Centre and Lonsdale Swimming Pool are excluded. The FPM finding is that walking to swimming pools by Derby residents represents 7% of all visits in 2021 (Run 1), 10% in Run 2, and 5% in Run 3 (2028).
- 6.27 Given that pools are clustered in the centre of Derby, there are large areas of the authority outside the walking catchment area of swimming pools. As reported in this section, this is the major source of unmet demand for swimming in all three runs, and not a lack of swimming pool capacity.

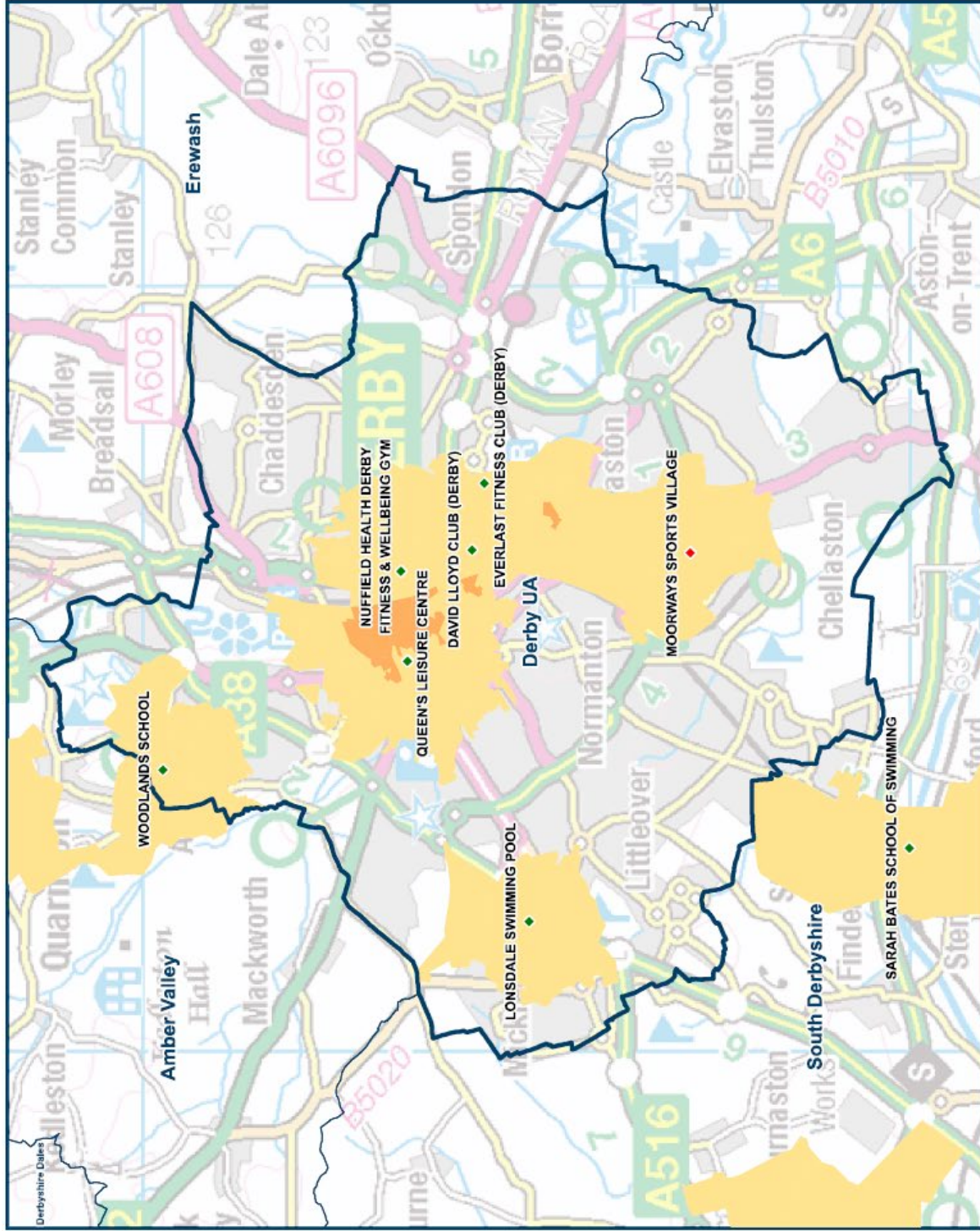
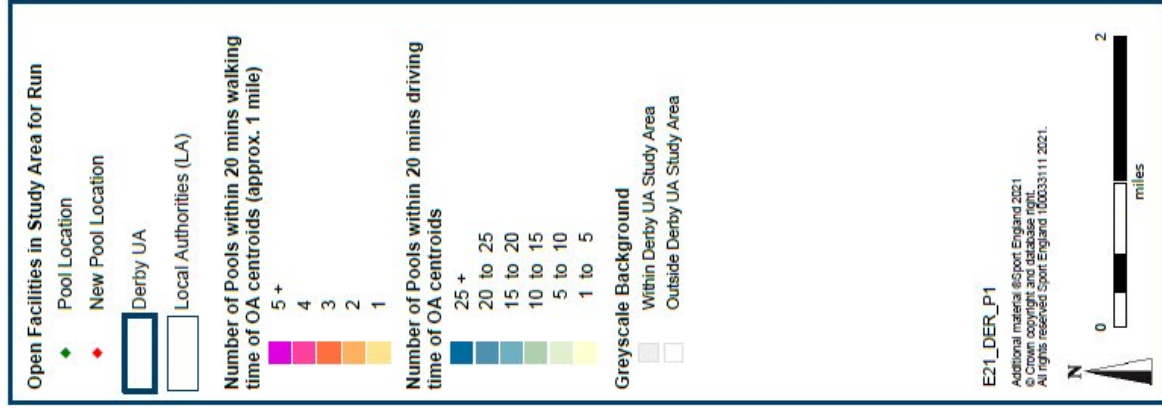
Map 6.7: Run 1 Access to Swimming Pools Based on the Walking Catchment Area of Pools in Derby 2021

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



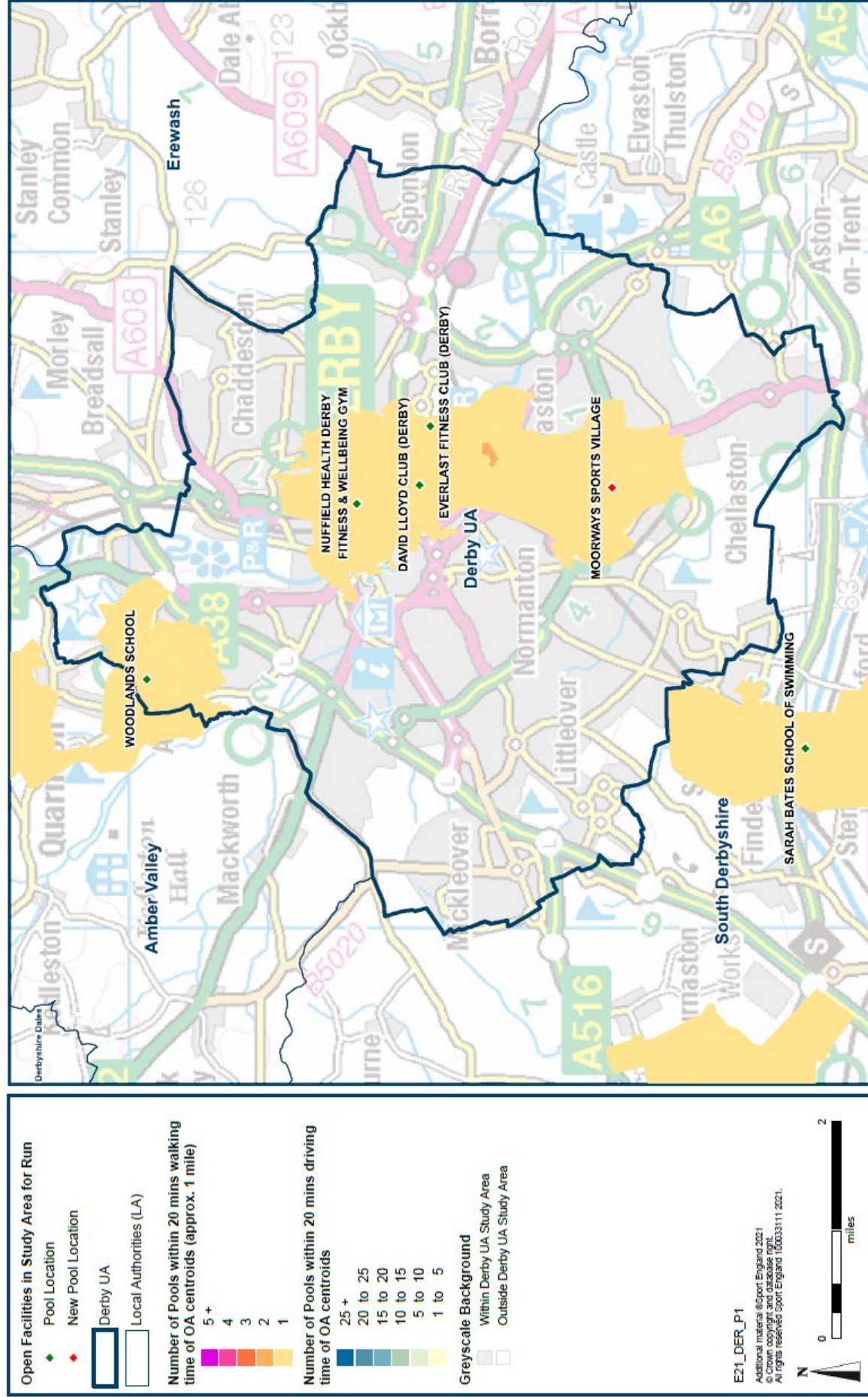
Map 6.8: Run 2 Access to Swimming Pools Based on the Walking Catchment Area of Pools in Derby in Derby 2028

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



Map 6.9 Run 3 Access to Swimming Pools Based on the Walking Catchment Area of Pools Derby 2028

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



7. USED CAPACITY OF FACILITIES

Table 7.1: Used Capacity of Swimming Pools Derby 2021-2028

Used Capacity	RUN 1	RUN 2	RUN 3
Derby	2021	2028	2028
Total number of visits used of current capacity visits per week peak period	12,726	18,711	16,788
% of overall capacity of pools used	82.6	63.8	76.8
Visits Imported;			
Number of visits imported visits per week peak period	1,763	3,933	3,457
As a % of used capacity	13.9	21.0	20.6

- 7.1 **Definition of used capacity** – This is a measure of usage at swimming pools 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. The pool itself becomes too crowded to swim comfortably, and the changing and circulation areas also become too crowded. In the model Sport England assumes that usage over 70% of capacity is busy and that the swimming pool is operating at an uncomfortable level above that percentage.
- 7.2 In Run 1 the swimming pools, as an authority-wide average, are estimated to be 82.6% full at peak times in 2021. Used capacity decreases to 63.8% in Run 2 due to (1) the very slight decrease in demand for swimming by Derby residents, created by population age changes, and (2) more significantly, the increase in swimming pool capacity from Moorways Sports Village.
- 7.3 The **twelfth key finding** is that in Run 2 including Moorways Sports Village provides 49% of the total water space capacity available for community use in Derby. In Run 3, when Queens Leisure Centre and Lonsdale Swimming Pool are excluded, this is 67% (at Moorways Sports Village).
- 7.4 In each run these are the city-wide average findings for pool capacity used. The estimated used capacities for each pool site are set out in Table 7.2.

Table 7.2: Runs 1-3 Used Capacity of the Derby Swimming Pools 2021-2028

Utilised Capacity	RUN 1	RUN 2	RUN 3
Individual Sites	2021	2028	2028
Derby UA	83	64	77
DAVID LLOYD CLUB (DERBY)	57	24	30
EVERLAST FITNESS CLUB (DERBY)	39	17	21
LONSDALE SWIMMING POOL	100	44	-
MOORWAYS SPORTS VILLAGE	-	94	100
NUFFIELD HEALTH DERBY FITNESS & WELLBEING GYM	76	38	48
QUEEN'S LEISURE CENTRE	100	45	-
WOODLANDS SCHOOL	95	37	46

7.5 There are several inter-related reasons why the estimated used capacity of individual pool sites varies, and these are:

- **Firstly**, public leisure centres are (1) accessible for public use as well as for swimming club use, (2) the opening hours are extensive and the centres are proactively managed to encourage and support swimming participation and physical activity, and (3) as public leisure centres there is not the requirement to pay a monthly membership fee as with commercial swimming pools. All these factors contribute to there being a -draw effect- to public leisure centre swimming pools and the used capacity findings.
- The finding for **Queens Leisure Centre** is that 100% of the pool capacity is used at peak times in Run 1, and this decreases to 45% in Run 2 when Moorways Sports Village is included. **Moorways Sports Village**, because it is a modern and very extensive swimming pool site, will have a 100% weighting in the model to reflect its comparative attraction to other pools. In Run 2, Queens Leisure Centre has an attractiveness weighting of 20%, reflecting its age and condition.
- The outcome of the attractiveness weightings is that demand and usage is transferred from Queens Leisure Centre to Moorways Sports Village in Run 2, as illustrated by the percentages for used capacity.
- In Run 3 Queens Leisure Centre and Lonsdale Swimming Pool are excluded, and Moorways Sports Village estimated usage increases to 100% because of this.
- **Lonsdale Swimming Pool** is not a public leisure site owned and managed by Derby City Council but is a community based swimming pool providing the same accessibility as the public leisure centres. It has an estimated used capacity of 100% in Run 1 despite its age (opened in 1968) and has a weighting of 26%. It is also the only swimming pool site on the west side of the city and is therefore satisfying demand for swimming in that part of the city. The estimated used capacity is 44% at peak times in Run 2 as some of its demand is drawn to Moorways Sports Village and it is much more extensive offer.
- **Secondly**, the demand in the catchment area of a swimming pool will also impact on the used capacity. In Run 1, all the swimming pool sites except Lonsdale Swimming Pool are clustered in and around the centre of Derby. The sites have overlapping catchment areas and therefore demand will be shared between the venues, based on their programme of use and attractiveness.
- **Thirdly**, access for community use at the **Woodlands School** site will depend on the policy of the school towards community use, and also the hours and programme of swimming activity. The type of use is much narrower than the public leisure centre sites, usually for use by swimming clubs, community groups and possibly a learn to swim programme. The school's website does promote the hire of the pool by organised group and clubs.
- Also, the available hours may only be a few per week, so it is possible to reach a high percentage figure, if, for example, a pool is used for six of the eight hours it is available for community use. The used capacity of Woodlands School is estimated to be 95% in Run 1, only 37% in Run 2 with Moorways Sports Village open, and

46% in Run 3 when there is re-distribution of demand from the excluded Queens Leisure Centre and Lonsdale Swimming Pool sites.

- **Fourthly**, commercial pool sites have a more limited programme of swimming activities, mainly recreational swimming by the centre membership and possibly operation of a learn to swim programme. The estimated used capacity of the commercial pool sites in Run 1 ranges from 39% in the weekly peak period at Everlast Fitness Club, 57% at David Lloyd Club and 76% at Nuffield Health Derby. The projected used capacity at all three commercial sites decreases in Runs 2 and 3, again due to Moorways Sports Village providing a more extensive swimming offer.
- **Fifthly**, if the nearest pool for residents in neighbouring local authorities to swim is located in Derby, then their usage becomes part of the used capacity of the Derby pools. The finding is that imported demand represents 13.9% of the used capacity of the Derby pools in Run 1 and increases to 21% in Run 2 and 20.6% in Run 3. Therefore, over one in five visits to Derby's pools, most to Moorways Sports Village, are from outside the city.

7.6 The findings on the estimated used capacity for each swimming pool site can vary for all these inter-related reasons. They should be taken as a guide and investigated more fully with the individual pool sites.

Swimming Pools with 100% of Pool Capacity Used

7.7 When the finding is that a swimming pool is estimated to be full, the FPM tries to re-allocate demand to other swimming pools in the same catchment area. This is an iterative process and carries on until there is no more capacity at the other swimming pool sites to absorb demand. The demand that remains is known as 'demand re-distributed after initial allocation', and the findings for Run 3 are set out in Table 7.3 in the final column.

7.8 The centres with a minus sign show the demand which cannot be allocated (in visits). The centres without a minus sign show the number of visits which have been re-allocated to them. As the table shows, there are 452 visits in the weekly peak period which would like to access Moorways Sports Village but are unable to do so.

7.9 The capacity of Moorways Sports Village in Run 3 is 13,900 visits in the weekly peak period; the unallocated demand of 452 visits represents 3.2% of the Moorways Sports Village weekly capacity. Therefore, while the pool site is estimated to be full, there is a small level of demand which is not allocated, and the focus is on programming change to accommodate this small demand.

Table 7.3: Run 3 Demand Re-distributed After Initial Allocation 2028

Name of Site	Type	Dimensions	Area	Site Year Built	Site Year Refurb	% Of Capacity Used	% Of Capacity Not Used	Demand Redistributed after initial allocation
DERBY						77%	23%	
DAVID LLOYD CLUB	Main/General	25 x 13	325	1998		30%	70%	56
EVERLAST FITNESS CLUB	Main/General	18 x 9	162	2001		21%	79%	19
MOORWAYS SPORTS VILLAGE	Main/General Leisure Pool Learner Pool	50 x 25 17 x 8	1250 296 136	2022		100%	0%	-452
NUFFIELD HEALTH DERBY FITNESS & WELLBEING GYM	Main/General Leisure Pool	25 x 8 10 x 5	210 50	2001		48%	52%	66
WOODLANDS SCHOOL	Main/General	20 x 8	160	1970	2006	46%	54%	31

Used Capacity and Imported Demand

- 7.10 As reported, imported demand is set out under used capacity and ranges from 13.9% in Run 1 to 21.0% in Run 2 of the Derby pools used capacity.
- 7.11 The levels of imported demand from each authority are shown in Table 7.4. Imported demand is highest from South Derbyshire and increases considerably in Runs 2 and 3 when Moorways Sports Village is open.
- 7.12 Overall however, the imported demand is low in relation to the used capacity of the Derby pools by Derby residents, as set out in the first row of Table 7.4 below.

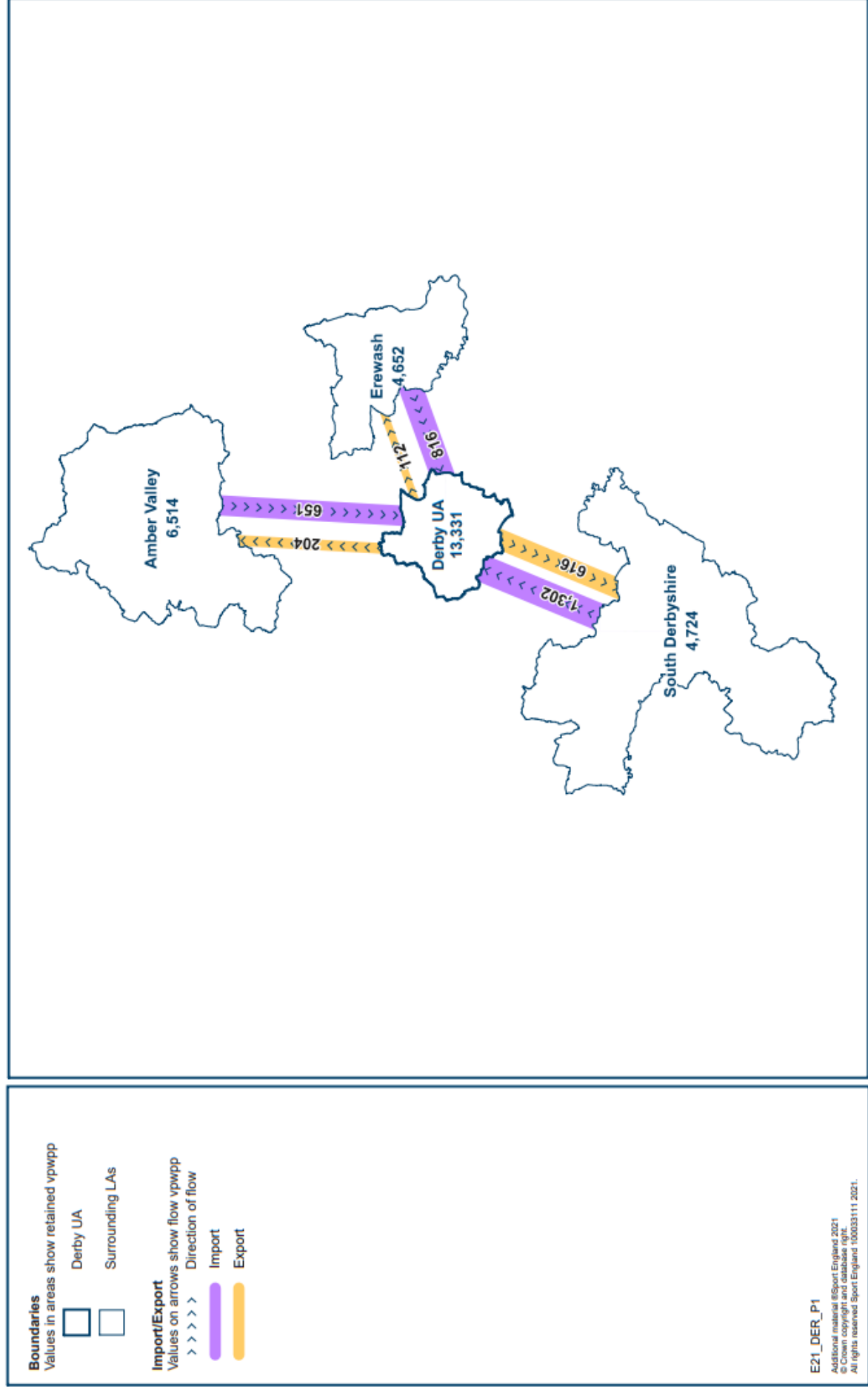
Table 7.4: Runs 1-3 Imported Demand for Swimming Pools in Derby 2021-2028

Import (visits per week peak period)	RUN 1	RUN 2	RUN 3
Local Authority	2021	2028	2028
Derby	10,963	14,778	13,331
Amber Valley	595	757	651
Erewash	405	915	816
South Derbyshire	553	1,428	1,302

- 7.13 The same findings can be shown in map form at Map 7.1, in this case for Run 3. The figure within the purple chevron shows the number of visits imported from each authority.

Map 7.1: Run 3 Imported Demand Visits per Week Peak Period 2028

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



8. LOCAL SHARE OF FACILITIES

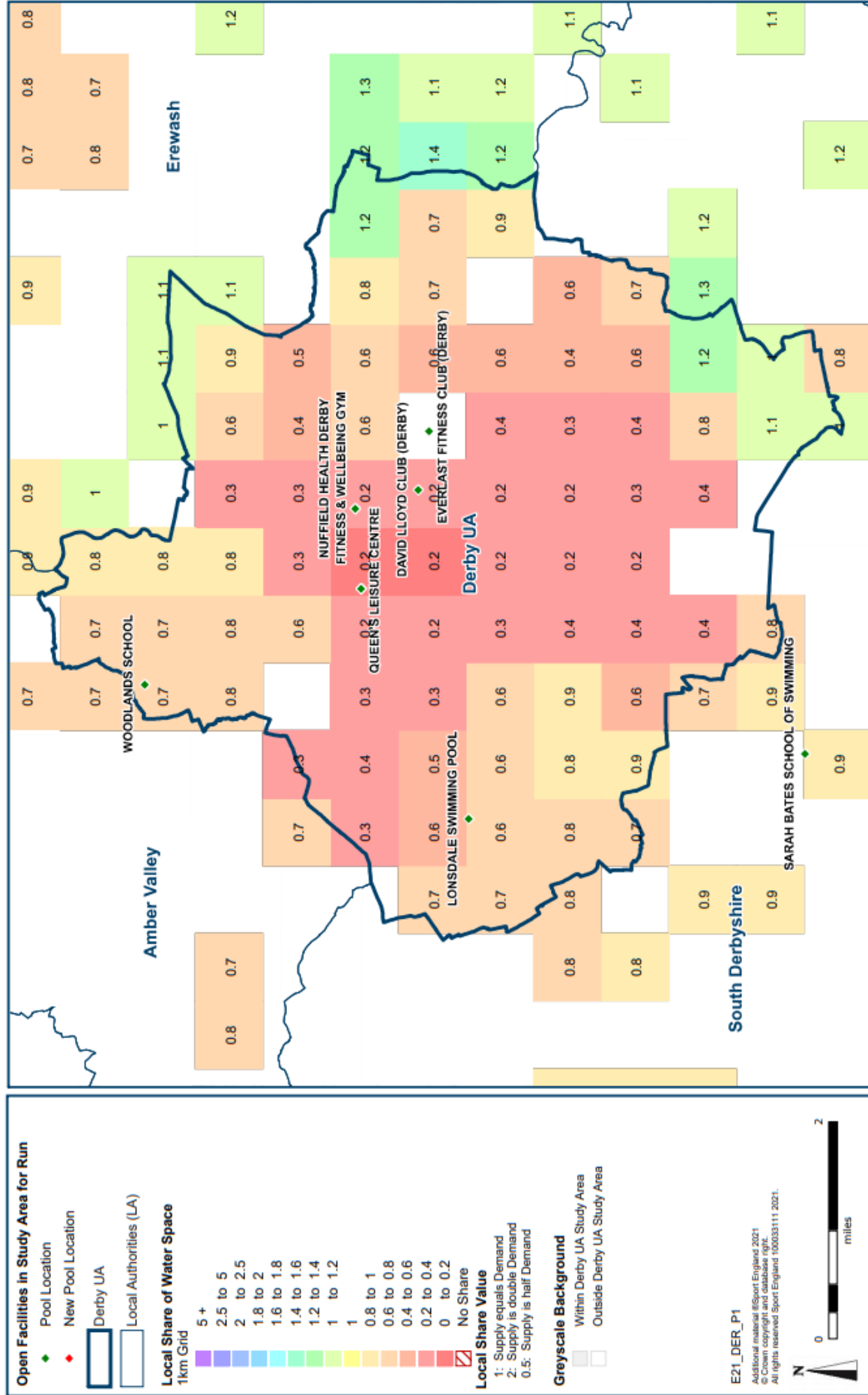
Table 8.1: Local Share of Swimming Pools Derby City 2021-2028

Local Share	RUN 1	RUN 2	RUN 3
Derby	2021	2028	2028
Local Share: <1 supply less than demand, >1 supply greater than demand	0.51	0.94	0.88

- 8.1 **Local share** has quite a complicated **definition** – it helps to show which areas have a better or worse share of facility provision. It considers the size, availability, and quality of facilities, as well as travel modes. Local share is useful for looking at ‘equity’ of provision. Local share is the available capacity that people want to go to in an area, divided by the demand for that capacity in the area. Local share decreases as facilities age.
- 8.2 A value of 1 means that the level of supply just matches demand, while a value of less than 1 indicates a shortage of adequate supply, and a value greater than 1 indicates a surplus.
- 8.3 In all three runs Derby has a local share below 1 (0.51 in Run 1, 0.94 in Run 2 and 0.88 in Run 3) as a city-wide average, therefore supply is less than demand in terms of local share of swimming pools.
- 8.4 The distribution of local share does vary across the city and the findings for each run are shown in Maps **8.1-8.3**. In Run 1, local share is highest in the light amber areas at between 0.8 and 1.0, and in the light orange areas it is between 0.6 and 0.8. Local share is lowest in the centre in the two light red squares, with values of 0 to 0.2, and the pink squares with values of 0.2 to 0.4.
- 8.5 Local share does increase in Runs 2 and 3 due to the opening of Moorways Sports Village, with a large increase in new supply and with demand for swimming up to 2028 projected to decrease very slightly. Therefore, there is much more supply to share and a slightly smaller demand for swimming pools.
- 8.6 In Runs 2 and 3 local share is above 1 in the light green areas, with values of between 1.0 and 1.2, meaning that there is more quality supply than demand. The area of lowest local share remains in the centre, but with higher values of between 0.8 and 1.0.
- 8.7 Overall, local share identifies the areas of the authority where the share of swimming pools is highest and lowest, and the interventions are concerned with trying to increase access for residents in the areas with least access to the existing supply of swimming pools.

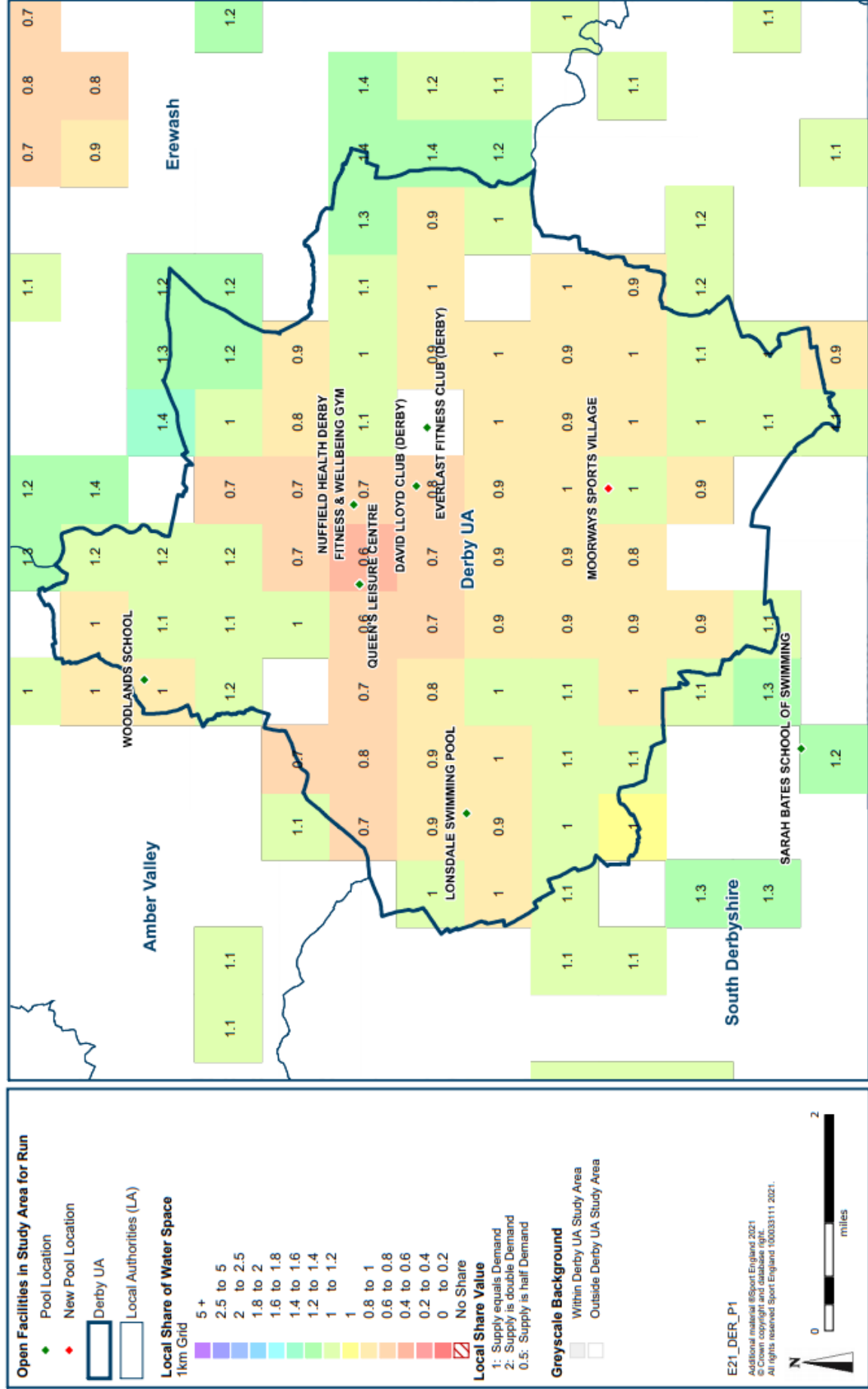
Map 8.1. Run 1 Local Share of Swimming Pools Derby City 2021

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



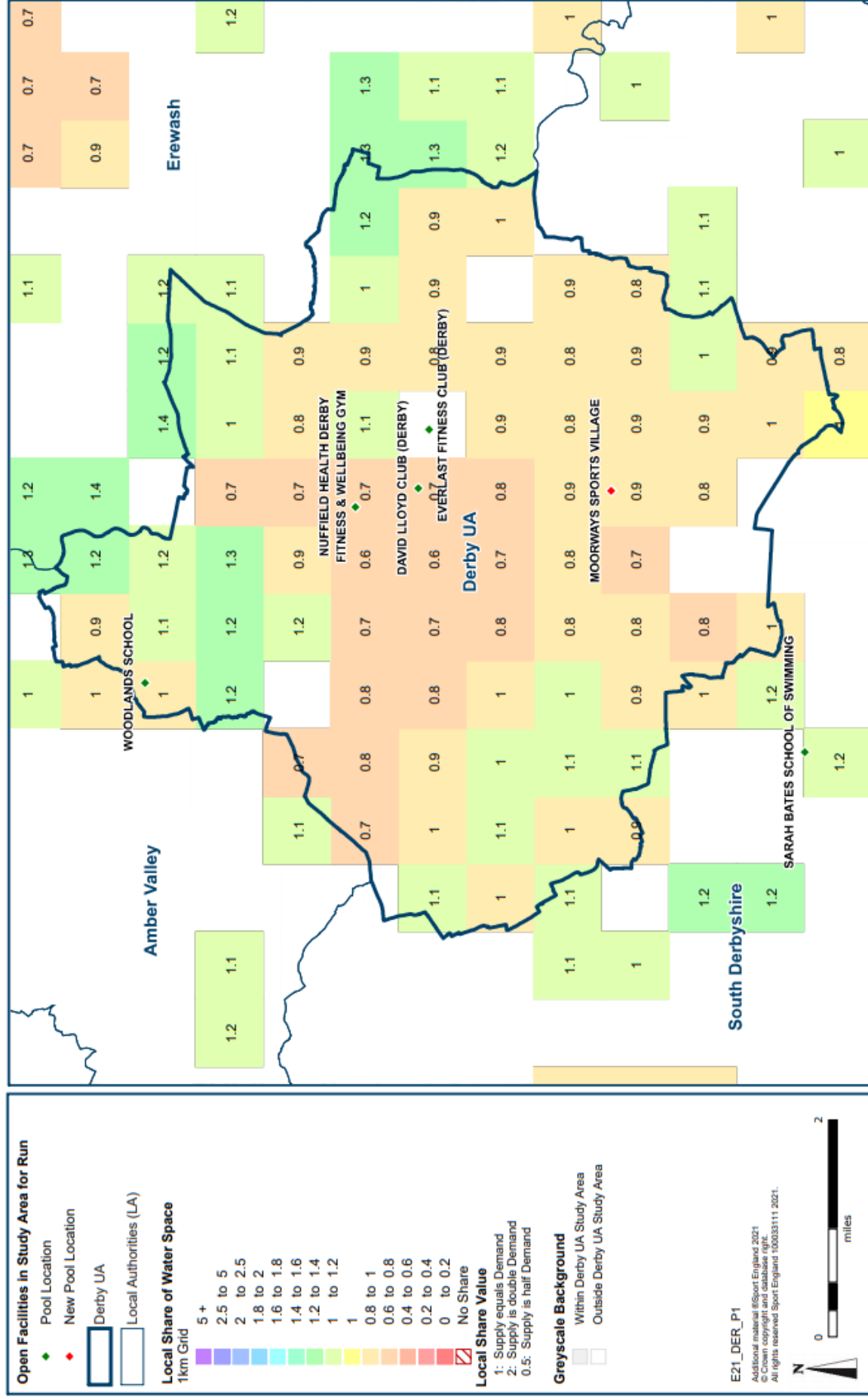
Map 8.2. Run 2 Local Share of Swimming Pools Derby City 2028

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



Map 8.3. Run 3 Local Share of Swimming Pools Derby City 2028

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



9. APPENDIX 1: SWIMMING POOLS IN THE STUDY AREA INCLUDED IN THE ASSESSMENT

Derby Swimming Pools (Runs 1-3)

Name of Site	Type	Dimensions	Area	Site Year Built	Site Year Refurb	Car % Demand	Public Transport % Demand	Walk % Demand
DERBY				1978		79%	13%	8%
DAVID LLOYD CLUB	Main/General	25 x 13	325	1998		93%	7%	0%
EVERLAST FITNESS CLUB	Main/General	18 x 9	162	2001		92%	7%	2%
LONSDALE SWIMMING POOL (Closed Run 3)	Main/General	25 x 9	225	1968		71%	11%	17%
MOORWAYS SPORTS VILLAGE (Open Runs 2 and 3)	Main/General Leisure Pool Learner Pool	50 x 25 17 x 8	1250 296 136	2022				
NUFFIELD HEALTH DERBY FITNESS & WELLBEING GYM	Main/General Leisure Pool	25 x 8 10 x 5	210 50	2001		92%	7%	1%
QUEEN'S LEISURE CENTRE (Closed Run 3)	Main/General Leisure Pool Learner Pool	30 x 10 25 x 13 18 x 7	300 325 126	1932	1992	73%	17%	10%
WOODLANDS SCHOOL	Main/General	20 x 8	160	1970	2006	77%	12%	11%

Swimming Pools in the Neighbouring Local Authorities (Runs 1-3)

Name of Site	Type	Dimensions	Area	Site Year Built	Site Year Refurb	Car % Demand	Public Transport % Demand	Walk % Demand
AMBER VALLEY						80%	9%	10%
ALFRETON LEISURE CENTRE	Main/General Learner Pool	25 x 13 12 x 8	325 96	2009	2014	85%	10%	5%
BELPER LEISURE CENTRE	Main/General	25 x 15	363	1974	2003	81%	8%	12%
RIPLEY LEISURE CENTRE	Main/General Learner Pool	25 x 11 11 x 8	263 84	2009		82%	9%	9%
WILLIAM GREGG VC LEISURE CENTRE	Main/General Learner Pool	20 x 13 10 x 9	250 85	1970		70%	10%	20%
EREWASH						78%	11%	11%
THE CLIFFORD HEALTH CLUB & SPA	Main/General	22 x 9	187	2016		78%	8%	14%
TRENT COLLEGE	Main/General	23 x 10	230	1940	2005	68%	11%	21%
VICTORIA PARK LEISURE CENTRE	Main/General Learner Pool Leisure Pool	25 x 13 13 x 8 10 x 8	313 93.7 80	1972	2011	78%	12%	10%
WEST PARK LEISURE CENTRE (LONG EATON)	Main/General Learner Pool	25 x 13 13 x 8	325 104	1975	2015	79%	11%	11%
SOUTH DERBYSHIRE						86%	7%	7%
ETWALL LEISURE CENTRE	Main/General	25 x 13	313	2009		91%	7%	2%
FOREMARKE HALL REPTON PREPARATORY SCHOOL	Main/General	25 x 13	325	1985		91%	7%	2%
GREEN BANK LEISURE CENTRE	Main/General Learner Pool	25 x 10 10 x 10	250 100	1978	2015	80%	8%	12%
PINGLE ACADEMY	Main/General	20 x 8	160	1970		69%	7%	24%
SARAH BATES SCHOOL OF SWIMMING	Main/General	20 x 5	100	2016		92%	5%	3%

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

Included within this Appendix are the following:

- Model Description
- Facility Inclusion Criteria
- Model Parameters

Model Description

1. Background

- 1.1. The Facilities Planning Model (FPM) is a computer-based supply/demand model, which has been developed by Edinburgh University in conjunction with **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, ie, swimming pools, sports halls, indoor bowls, and artificial grass pitches (AGPs).
- 2.3. The FPM has been used in the assessment of Lottery funding bids for community facilities, and as a principal planning tool to assist local authorities in planning for the provision of community sports facilities.

3. How the Model Works

- 3.1. In its simplest form, the model seeks to assess whether the capacity of existing facilities for a particular sport is capable of meeting local demand for that sport, considering how far people are prepared to travel to such a facility.
- 3.2. In order to do this, the model compares the number of facilities (supply) within an area against the demand for that facility (demand) that the local population will produce, similar to other social gravity models.
- 3.3. To do this, the FPM works by converting both demand (in terms of people) and supply (facilities) into a single comparable unit. This unit is 'visits per week in the peak period' (VPWPP). Once converted, demand and supply can be compared.
- 3.4. The FPM uses a set of parameters to define how facilities are used and by whom. These parameters are primarily derived from a combination of data including actual user surveys from a range of sites across the country in areas of good supply, together with participation survey data. These surveys provide core information on the profile of users, such as, the age and gender of users, how often they visit, the distance travelled, duration of stay, and on the facilities themselves, such as, programming, peak times of use, and capacity of facilities.
- 3.5. This survey information is combined with other sources of data to provide a set of model parameters for each facility type. The original core user data for halls and pools comes from the National Halls and Pools survey undertaken in 1996. This data formed the basis for the National Benchmarking Service (NBS). For AGPs, the core data used comes from the user survey of AGPs carried out in 2005/06 jointly with sportscotland.
- 3.6. User survey data from the NBS and other appropriate sources are used to update the model's parameters on a regular basis. The parameters are set out at the end of the document, and the main data sources analysed are:
 - Active Lives
 - For the adult survey, this data is collected by an online survey or paper questionnaire on behalf of Sport England. Each annual sample includes on the order of 175,000 people and covers the full age/gender range. Detailed questions are asked about 439 sports in terms of participation and frequency.
 - For the children and young people survey, this data is collected through schools with up to three mixed ability classes in up to three randomly chosen year groups completing an online survey.
 - National Benchmarking Service
 - This is a centre-based survey whose primary purpose is to enable centres to benchmark themselves against other centres. Sample interviews are conducted on site. The number of people surveyed varies by year depending on how many centres take part. Approximately 10,000 swimmers and 3,500 sports hall users are surveyed per year. This data is used for

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

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

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

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

4. Calculating Demand

- 4.1. Demand is calculated by applying the user information from the parameters, as referred to above, to the population¹. This produces the number of visits for that facility that will be demanded by the population.
- 4.2. Depending on the age and gender make-up of the population, this will affect the number of visits an area will generate. In order to reflect the different population make-up of the country, the FPM calculates demand based on the smallest census groupings. These are Output Areas (OAs)².
- 4.3. The use of OAs in the calculation of demand ensures that the FPM is able to reflect and portray differences in demand in areas at the most sensitive level based on available census information. Each OA used is given a demand value in VPWPP by the FPM.

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

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

5. Calculating Supply Capacity

- 5.1. A facility's capacity varies depending on its size (ie, size of pool, hall, pitch number), and how many hours the facility is available for use by the community.
- 5.2. The FPM calculates a facility's capacity by applying each of the capacity factors taken from the model parameters, such as the assumptions made as to how many 'visits' can be accommodated by the particular facility at any one time. Each facility is then given a capacity figure in VPWPP (see parameters in Section C).
- 5.3. Based on travel time information³ taken from the user survey, the FPM then calculates how much demand would be met by the particular facility, having regard to its capacity and how much demand is within the facility's catchment. The FPM includes an important feature of spatial interaction. This feature takes account of the location and capacity of all the facilities, having regard to their location and the size of demand, and assesses whether the facilities are in the right place to meet the demand.
- 5.4. It is important to note that the FPM does not simply add up the total demand within an area and compare that to the total supply within the same area. This approach would not take account of the spatial aspect of supply against demand in a particular area. For example, if an area had a total demand for 5 facilities, and there were currently 6 facilities within the area, it would be too simplistic to conclude that there was an oversupply of 1 facility as this approach would not take account of whether the 5 facilities are in the correct location for local people to use them within that area. It might be that all the facilities were in one part of the borough, leaving other areas under-provided. An assessment of this kind would not reflect the true picture of provision. The FPM is able to assess supply and demand within an area based on the needs of the population within that area.
- 5.5. In making calculations as to supply and demand, visits made to sports facilities are not artificially restricted or calculated by reference to administrative boundaries, such as local authority areas. Users are generally expected to use their closest facility. The FPM reflects this through analysing the location of demand against the location of facilities, allowing for cross-boundary movement of visits. For example, if a facility is on the boundary of a local authority, users will generally be expected to come from the population living close to the facility, but who may be in an adjoining authority.

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

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

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

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

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

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

7. Facility Attractiveness – for Halls and Pools Only

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

7.2. Attractiveness weightings are based on the following:

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

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

- 7.3. To reflect this, two weightings curves are used for education and non-education halls, a high weighted curve, and a lower weighted curve.
 - High weighted curve – includes non-education management and a better balanced programme, more attractive.
 - Lower weighted curve – includes educational owned and managed halls, less attractive.
- 7.4. Commercial facilities – halls and pools: Whilst there are relatively few sports halls provided by the commercial sector, an additional weighing factor is incorporated within the model to reflect the cost element often associated with commercial facilities. For each population output area the Indices of Multiple Deprivation (IMD) score is used to limit whether people will use commercial facilities. The assumption is that the higher the IMD score (less affluence), the less likely the population of the OA would choose to go to a commercial facility.

8. Comfort Factor – Halls and Pools

- 8.1. As part of the modelling process, each facility is given a maximum number of visits it can accommodate based on its size, the number of hours it is available for community use, and the 'at one time capacity' figure (pools = 1 user/6m², 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, where the model reduces the number of visits made by car and increases those made on foot.
- 10.5. Overall, surveys have shown that the majority of visits made to swimming pools, 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%

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

Facility Inclusion Criteria

Swimming Pools

The following inclusion criteria were used for this analysis:

- Include all operational indoor swimming pools available for community use, ie, pay and play, membership, sports club/community association.
- Exclude all pools not available for community use, ie, private use.
- Exclude all outdoor pools, ie, lidos.
- Exclude all pools where the main pool is less than 20 metres in length, or the area is less than 160 square metres. If the principal pool is a leisure pool with an area less than 200 square metres, then all pools on the site should be excluded.
- Include all 'planned', 'under construction, and 'temporarily closed' facilities only where all data is available for inclusion.
- Where opening times are missing, availability has been included based on similar facility types.
- Where the year built is missing assume date 1975⁴.

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

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

Model Parameters

Pools Parameters

At One Time Capacity	0.16667 per square metre = 1 person per 6 square meters																											
Catchment Maps	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.																											
Duration	60 minutes																											
Percentage Participation	<table><tr><td>Age</td><td>0-15</td><td>16-24</td><td>25-34</td><td>35-44</td><td>45-59</td><td>60-79</td></tr><tr><td>Male</td><td>14.5</td><td>6.9</td><td>10.4</td><td>8.6</td><td>5.4</td><td>1.6</td></tr><tr><td>Female</td><td>16.2</td><td>10.2</td><td>13.8</td><td>11.8</td><td>7.7</td><td>1.5</td></tr></table>							Age	0-15	16-24	25-34	35-44	45-59	60-79	Male	14.5	6.9	10.4	8.6	5.4	1.6	Female	16.2	10.2	13.8	11.8	7.7	1.5
Age	0-15	16-24	25-34	35-44	45-59	60-79																						
Male	14.5	6.9	10.4	8.6	5.4	1.6																						
Female	16.2	10.2	13.8	11.8	7.7	1.5																						
Frequency per Week	<table><tr><td>Age</td><td>0-15</td><td>16-24</td><td>25-34</td><td>35-44</td><td>45-59</td><td>60-79</td></tr><tr><td>Male</td><td>1.09</td><td>1.03</td><td>0.86</td><td>1.01</td><td>1.30</td><td>1.73</td></tr><tr><td>Female</td><td>1.10</td><td>0.96</td><td>0.82</td><td>1.00</td><td>1.17</td><td>1.28</td></tr></table>							Age	0-15	16-24	25-34	35-44	45-59	60-79	Male	1.09	1.03	0.86	1.01	1.30	1.73	Female	1.10	0.96	0.82	1.00	1.17	1.28
Age	0-15	16-24	25-34	35-44	45-59	60-79																						
Male	1.09	1.03	0.86	1.01	1.30	1.73																						
Female	1.10	0.96	0.82	1.00	1.17	1.28																						
Peak Period	Weekday: 9:00 to 10:00, 12:00 to 13:30, 15:30 to 21:00 Weekend: 08:00 to 15:30 Total: 52.5 hours																											
Proportion in Peak Period	63%																											