Runnymede Infrastructure Needs Assessment

Stage 1A and 1B Report

Runnymede Borough Council

Quality information

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Revision History

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Abbreviations

A&E	Accident and Emergency
ALC	Active Leakage Control
AMR	Automated Water Reading
AQMA	Air Quality Management Area
BDUK	Broadband Delivery UK
CCG	Clinical Commissioning Groups
CCL	Climate Change Levy
CCTV	Closed Circuit Television
CFMP	Catchment Flood Management Plan
CIL	Community Infrastructure Levy
CMHRS	Community Mental Health Recovery Service
CRC	Community Recycling Centre
DfE	Department for Education
DI	Distribution Input
DO	Deployable Output
DtC	Duty to Cooperate
EA	Environment Agency
EM3	Enterprise M3
FCERM	Flood and Coastal Erosion Risk Management
FiT	Fields in Trust
FoE	Forms of Entry
FTE	Full Time Equivalent
GBR	Green Belt Review
GiA	Grant in Aid
GP	General Practitioner
GSP	Grid Supply Points
HUDU	Healthy Urban Development Unit
IDP	Infrastructure Delivery Plan
INA	Infrastructure Needs Assessment
IOPA	Issues, Options and Preferred Approaches
JSNA	Joint Strategic Needs Assessment
JSPB	Joint Strategic Partnership Board
LA	Local Authority
LDZ	Local Distribution Zones
LEP	Local Enterprise Partnership
LGF	Local Growth Fund
LLFA	Lead Local Flood Authortiy
LNRs	Local Nature Reserves
LPA	Local Planning Authority
LTDS	Long Term Development Statement
LTP	Local Transport Plan
M	million
m2	Square metres
Mb	Megabytes
Mbps	Megabytes per second
Ml/d	Millilitres per day
MSOA	Middle Super Output Areas
MUGA	Multi Use Games Areas
NGA	Next Generation Access
NGET	National Grid Electricity Plc
NHS	National Health Service
NPPF	National Planning Policy Framework
NSALG	National Society of Allotment and Leisure Gardeners
NTS	National Transmission System

OAN	Objectively Assessed Needs
OMR	Open Market Review
OSS	Open Space Study
PAN	Published Admission Number
PCC	Police and Crime Commissioner
PPG	Planning Policy Guidance
PRVs	Pressure Reducing Valves
PVRL	Public Value Review of Libraries
RBC	Runnymede Borough Council
RLPs	Residual Land Parcels
SAC	Special Area of Conservation
SAC	Special Area of Conservation
SAMs	Scheduled Ancient Monuments
SANG	Suitable Alternative Natural Greenspaces
SCC	Surrey County Council
SECAmb	South East Coast Ambulance Service
SEN	Special Educational Needs
SEPD	Southern Electric Power Distribution Plc
SFRA	Strategic Flood Risk Assessment
SFRS	Surrey Fire and Rescue Service
SGN	Southern Gas Networks
SHMA	Strategic Housing Market Assessment
SLAA	Strategic Land Availability Assessment
SNCI	Site of Nature Conservation Interest
SO	System Operator
SPA	Special Protection Area
SPN	South Eastern Power Networks
SR	Sustainability Reductions
SRN	Strategic Road Network
SS	Spatial Strategy
SSE	Scottish and Southern Electricity
SSSI	Special Site of Scientific Interest
SuDS	Sustainable Urban Drainage System
SWML	South West Main Line
SWTL	South West Train Line
TBHSPA	Thames Basin Heaths Special Protection Area
THR	Target Headroom
UKPN	UK Power Networks
USO	Universal Service Obligation
WAFU	Water Available For Use
WPA	Waste Planning Authority
WRMP	Water Resource Management Plan
WRZ	Water Resource Zone
WwTW	Waste water Treatment Works

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1. Non-Technical Executive Summary

1.1 Aims and Context

1.1.1 Runnymede Borough Council (RBC) is formulating an Infrastructure Delivery Plan (IDP) as part of its evidence base to support its Local Plan 2035. AECOM has been commissioned to produce an Infrastructure Needs Assessment (INA) as the first stage in production of the IDP. Part A of the INA (Chapters 3 to 13) examines the existing infrastructure baseline in Runnymede and whether any current deficits or surpluses in provision are evident, including any existing or planned projects. Part B (Chapters 14 to 25) involves the assessment of future infrastructure needs based on the plans for growth set out in the Local Plan, both for the Borough as a whole and for individually allocated sites.

1.1.2 The approach and scope of the INA reflects guidance on infrastructure planning set out in the NPPF and responds to relevant sub-regional and local policy frameworks and strategies[1]. As with the Council's wider Local Plan evidence base, the Council is engaging with partner organisations on the INA, and in particular will be engaging with its Local Authority (LA) Duty to Co-operate Partners.

1.1.3 Runnymede is located in north-west Surrey, approximately twenty miles south-west of Central London in the South East Region. Some key characteristics of the Borough are as follows:

- The 2011 Census recorded that the Borough contained 80,510 people. Over the period 2001-13 the population grew by approximately 6.8%, and the population is projected to continue to rise. The Borough is within the top 10 per cent of least deprived areas nationally, based on the Index of Multiple Deprivation; however there are 'pockets' of socio-economic need in the Borough.
- Runnymede benefits from its strategic location at the junction of the M25 and M3 motorways and its accessibility to London and to Heathrow and Gatwick airports. The Borough has a strong local economic base and its recent compound annual growth rate in Gross Value Added terms has been higher than other LAs in the sub-region, Surrey and the South East. The local economy is dominated by the service sector, with tourism and leisure playing an important part.
- The Borough contains a number of nationally and internationally important nature conservation sites and its environment and location within the Green Belt makes it an attractive location to live, work and visit. However environmental issues in Runnymede include air quality and ambient noise associated with the Borough's proximity to the motorway network and high car dependency, and flood risk.

[1] For example, the Surrey Local Strategic Statement, the Surrey Local Transport Plan (2011-16), the Enterprise M3 Local Enterprise Partnership's Growth Strategy and Strategic Economic Plan, the Runnymede Corporate Business Plan and the emerging Runnymede 2035 Local Plan.

1.2 Key Findings of the Infrastructure Baseline

Education

1.2.1 There are 22 early years providers within the Borough: 13 nursery schools, four pre-schools, and five children's centres. There are a number of early years providers in the north and south of the Borough, and lower levels of provision in the east and west. Surrey County Council (SCC) data indicates that the Chertsey Meads and Chertsey St Ann's Wards in Runnymede (both in the east of the Borough) will not be able to meet the future demand for early years education over the Plan period. No plans for early years expansion or additional provision over the Plan period have been identified, though provision is likely to be led by the private sector and may come forward as part of major developments such as Longcross Garden Village at the former DERA site.

1.2.2 There are 24 primary education facilities within the Borough. SCC data indicates that there is currently a reasonable surplus of primary education places within Runnymede. There is planned expansion across seven primary schools over the Plan period. A new primary school is also planned at the former DERA site.

1.2.3 There are two secondary academies, one maintained, and one state run secondary school within the Borough, and there is currently an overall surplus of secondary education places. There is currently planned expansion across one secondary school over the plan period, and the proposed establishment of a new Runnymede Free School.

1.2.4 There is one SEN school within the Borough. In line with projections for increases in primary and secondary pupils within the Borough, it is likely that there will be a steady and increasing demand for SEN places as a result of population growth over the Plan period. There is currently no new dedicated SEN provision planned within the Borough.

1.2.5 Further education in the Borough is provided within two sixth forms and one dedicated further education facility, Strodes College. Students attend the College from across Surrey and there are an estimated 1,330 currently enrolled. Strodes College is currently undertaking expansions to its campus. There are no other expansions to further education facilities currently planned in the Borough.

1.2.6 There is one university in Runnymede, Royal Holloway University in Egham. There are estimated to be 9,000 students enrolled from across the UK and abroad. Student numbers are projected to increase by 25% over the Plan period and Royal Holloway has a masterplan in place to guide future development of the campus.

1.2.7 There is one adult education centre in the Borough, Runnymede Adult Learning Centre in Chertsey, and a community learning centre in Egham operated by Strodes College. There is understood to be a low uptake of adult education courses within the Borough currently.

Health

1.2.8 There are nine GP surgeries within Runnymede with a total of 37.7 Full Time Equivalent (FTE) GPs. The average patient list per GP within the Borough is 2,124, somewhat higher (i.e. worse) than the England average ratio of 1,800. Only one of the nine GP surgeries within the Borough (Packers Surgery in Virginia Water) has a lower than average ratio of patients per GP, and may have some 'spare' capacity.

1.2.9 There are nine dental surgeries within Runnymede (that offer NHS treatment) with a total of 27 dentists. All surgeries are accepting new patients currently. There are currently no known plans to expand dental surgeries over the Plan period.

1.2.10 Hospital care in Runnymede is provided by the Ashford and St Peter's Hospital NHS Foundation Trust. St Peter's Hospital (near Chertsey) is situated in the Borough. A masterplan for the redevelopment of parts of the St Peter's hospital is currently in place and works will be undertaken over the Plan period.

1.2.11 Mental healthcare in the Borough is provided by the Surrey and Borders Partnership NHS Foundation Trust. The Surrey Joint Strategic Needs Assessment (JSNA) 2015 identifies that the Borough has relatively low rates of mental health need compared with other areas in Surrey. There are currently no known plans for additional delivery or expansion of mental health services in the Borough over the plan period.

1.2.12 There are 15 residential homes in the Borough which provide care for elderly people, as well as 35 sheltered housing schemes. A new private care home is due to open in Chertsey in winter 2017, providing 93 new bed spaces at Parklands Manor. There are currently no known plans for additional delivery or expansion of sheltered housing managed by the Borough.

Community Facilities

1.2.13 There are five libraries located throughout the Borough, which offer a range of facilities. All libraries within Runnymede have been retained following a Surrey-wide review of facilities in 2011.

1.2.14 The Borough is well served by a number of community centres, halls, youth centres and drop in day centres, providing a range of classes, groups, and services for people of all ages (including children, elderly people, and disabled people). These centres are predominantly run by volunteers and rely heavily on fundraising and donations to operate, as well as membership fees for classes and groups.

1.2.15 The illustrative masterplan for Longcross Garden Village Centre (2013) includes 300m^2 D1 space. Otherwise there is no planned expansion of community infrastructure or services in Runnymede at this time.

Recreation

1.2.16 There are 16 publically accessible outdoor sports facilities within the Borough which provide a range of pitches and courts for sport. Provision in the Borough currently falls short of the Fields in Trust (FiT) benchmark, with Addlestone identified as having the most severe deficit in outdoor sports provision, although accessibility across the Borough is good. There are no known plans to provide new outdoor leisure facilities in the Borough, however there are a number of improvements planned to existing spaces and the Borough is committed to producing a Playing Pitch Strategy by the end of 2017.

1.2.17 There has been recent investment at the Borough's two leisure centres to provide additional services and improve the quality of facilities, and there are currently proposals for further improvements over the Plan period including the redevelopment of Egham Leisure Centre.

1.2.18 There are 41 play facilities in the Borough. Provision in the Borough equates to only 0.06ha per 1,000 population, less than the FiT benchmark for provision of play facilities. There are plans for provision of a new play facility in one location in the Borough at the DERA site north, which is now under construction. There are also a number of improvements planned to existing play facilities.

Green Infrastructure

1.2.19 Based on the FiT quantity standard, there is sufficient provision of natural and semi-natural greenspace in Runnymede. Current provision in Runnymede is higher than this standard. While quality and accessibility is fairly good on average, the baseline implies that there are accessibility issues around Foxhills and Woodham. SANGs should be provided as an avoidance measure for residential development within 5km of the TBHSPA at a rate of 8ha per 1,000 people.

1.2.20 Based on the FiT recommended quantity standard, there is sufficient provision of parks and gardens in Runnymede. The baseline indicates that new parks and gardens should be situated around Woodham and Virginia Water.

1.2.21 Based on the FiT recommended quantity standard, there is sufficient provision of amenity greenspace. The baseline information indicates a requirement for amenity greenspace situated in Virginia Water.

1.2.22 Based on the quantity standard of 20 allotment plots per 1,000 households, there is insufficient allotment provision currently, as well as deficiency of accessibility across much of the Borough. New provision could be required across the areas of Addlestone, Egham, Ottershaw and Virginia Water.

1.2.23 Based on capacity for burial space across the council there is currently insufficient provision of cemeteries and churchyards, particularly in Addlestone and Thorpe.

Transport

1.2.24 Runnymede is characterised by a higher level of car based commuting trips than both Surrey or England. Only a third of Runnymede's active population lives and works in Runnymede; however, work related movements outside the Borough's boundaries are relatively local.

1.2.25 Runnymede is well connected to the strategic road network with the M25 London Orbital Route and the M3, and the wider network and other modes also display a number of strengths. However there are several challenges to be overcome by additional infrastructure and policy provision. Key strategic road corridors are often congested, resulting in increased pressure on the surrounding network. The speed and volume of traffic on the road network in key town centres like Egham, Chertsey or Addlestone affects cyclists and pedestrians, notably in terms of safety. The strategic road and rail network across Runnymede is equally a constraint for walking and cycling movements, creating physical severances and necessitating additional crossing points for more direct journeys.

1.2.26 To address current and projected capacity issues on the road network, major planned road improvement schemes identified to date include the following:

- M25 J11 widening at Chertsey
- M25 J10 to J16 widening to four lanes
- M3 J2 to J4a upgrades (under construction)
- Runnymede Roundabout layout enhancement including road realignment, additional lanes and signalling improvements
- A320 corridor improvements
- Staines upon Thames Bridge widening
- Addlestone town centre improvements including High Street/Brighton Road and Station Road/Church Road junctions widening

- Package of improvement schemes in relation to the redevelopment of the north of the former DERA site at Longcross.

1.2.27 Runnymede has three rail lines and six stations. These lines are operated by South West Trains and Great Western Railway, and serve the main town centres within the Borough to major destinations such as London Waterloo, Reading, Woking or Basingstoke. However, this mode of transport only represents 8% of work based trips in Runnymede.

1.2.28 To address current and projected capacity issues on the rail network, the following schemes have been identified:

- Platform lengthening at Egham, Chertsey and Virginia Water station to allow 10-car trains and improve capacity on the Reading to London Waterloo line
- Additional frequency of 3tph on the Reading to London Waterloo line (1tph via Richmond, 2tph via Hounslow)
- Improvements at Longcross Rail station in relation to the development of Longcross Garden Village north of the ex-DERA site
- Other wider projects positively impacting Runnymede but not currently committed include Crossrail 2, Southern Rail Access to Heathrow and Airtrack Lite.

1.2.29 The local bus network in Runnymede is predominantly operated by Abellio Surrey. A total of eight bus routes connect key town centres in Runnymede with destinations such as Slough, Windsor, Staines, Woking and Heathrow Airport. However frequencies are currently low (only 1 to 2 buses per hour) and journey time reliability is highly affected by the road network's capacity issues. A 'Campus link' bus links Royal Holloway University to Egham station, and Yellow buses provide a bespoke pick up/drop off service for four secondary schools in Runnymede (Fullbrook, Magna Carta, Salesian, Jubilee High).

1.2.30 In addition to all road improvement schemes likely to improve bus journey time reliability and reduce delays, the following schemes have been identified to address the current reliability and delays issues on the existing bus network:

- Bus infrastructure provision on the A308 – The Causeway
- Wider Staines Quality Bus Corridor Improvements – used by several bus routes linking Staines to Runnymede
- Longcross Garden Village Development shuttle bus service to Longcross station
- Egham sustainable transport package including priority measures and bus corridors improvements

1.2.31 Four National Cycle Network routes connect Runnymede to long distance cycle routes. Other local cycle routes connect settlements and communities across the Borough though there are some gaps in the network. Other cycling facilities include cycle parking located at all stations. Walking infrastructure in Runnymede is mixed due to its dual urban and rural nature. Main town centres are well served by footways and rural areas by an extensive network of rural lanes and bridleways.

1.2.32 Walking and cycling improvements schemes aim to improve the quality of the existing infrastructure and fill in gaps in the network. Major schemes identified are the following:

- Runnymede Roundabout layout enhancement with improved pedestrian and cyclists accessibility
- Royal Holloway Masterplan including removal of two existing pedestrian bridges and replacement three new pedestrian bridges
- Scotland Bridge road pedestrian improvements

- Multiple junction signalling improvements and pedestrian crossings
- Egham sustainable transport package including footway widening and off road cycle routes along the Causeway and improved walking and cycling connectivity between rail station and town centre and cycle hire scheme.

Utilities

1.2.33 Electricity in the UK is transmitted by the National Grid, which connects power stations and major substations. Runnymede is served by two Regional Energy Distributors which are responsible for the network of power lines, underground cables, and substations: UK Power Networks (UKPN) and Scottish and Southern Electricity Networks (SSE). To allow for the increasing power demand due to population growth, a series of reinforcement and demand side response measures are planned.

1.2.34 Gas is transmitted by the National Transmission System managed by National Grid. The Gas Distribution Network Operator for Surrey is Southern Gas Networks. A number of companies supply gas to Runnymede; with the gas network in the Borough supported by a range of local and regional infrastructure. There is an expected UK supply capacity surplus that is forecast to be sustained over the period of the LTDS. Nonetheless, SGN is required to invest in major projects to meet the demand of existing and new customers to ensure safe and high quality supply to new developments. SGN is also looking for alternative ways to improve energy supply and reduce the cost of gas for customers to promote environmentally friendly measures, such as the full roll-out of smart meters.

1.2.35 Affinity Water is responsible for potable water in Runnymede Borough. Its Water Resource Management Plan (WRMP) for 2015 to 2040 identifies that there are supply / demand deficits in five of the eight water resource zones at the beginning of the planning period, including WRZ 6 (Wey) in which Runnymede in located, and describes the EA's planned 'sustainability reductions' (abstraction limitations). Affinity Water's preferred plan, which calls for measures to aid the demand / supply deficits in the immediate 5 years 2015-2020 for their whole supply area, includes measures planned for the Wey WRZ relating to leakage reduction, water efficiency and metering.

1.2.36 Thames Water is the statutory undertaker for wastewater drainage in Runnymede. There are two Wastewater Treatment Works within the Borough, which currently have sufficient capacity to treat the entering load. Thames Water has a five-year plan 2015-20 and a Sustainable Future Plan for the next 25 years outlining how they intend to maintain and improve wastewater services and achieve the targets agreed with Ofwat, in the context of population growth and climate change. Measures that Thames Water intend to implement include a wastewater re-use scheme, improvements to the sewer system to prevent sewage flooding and upgrades to 18 sewage treatment works are planned, including six in Surrey.

1.2.37 Renewable energy facilities in and around Runnymede Borough include an anaerobic digestion plant and three landfill gas sites.

1.2.38 Surrey County Council (SCC) has signed a contract with BT to deliver fibre broadband infrastructure to those homes and business in Surrey that were determined not to be benefitting from commercial rollouts, known as the Superfast Surrey Programme. The programme alongside commercial rollouts has enabled 96% of all Surrey residents to access fibre download speeds of 15mbps or above. The percentage of Surrey residents that have access to superfast broadband is anticipated to increase to 97% due to additional commercial deployment plans. Additionally, SCC is working with BT to determine which premises will benefit from publicly funded deployment by the end of this year, and on alternative options for future improvement such as Community Funded Initiatives, the Better Broadband Scheme, and the USO. Looking forward, options for ultrafast technology are being explored.

Waste

1.2.39 SCC is the Waste Planning Authority (WPA) for Runnymede and is responsible for the removal and treatment of domestic and commercial waste. Landfill and recyclables are transported to sites outside of Runnymede for disposal and there is only one Community Recycling Centre within the Borough, in Chertsey. There is currently no known planned provision of new waste facilities within the Borough (or Surrey as a whole); however a new Surrey Waste Plan is due to be published in 2017 which may introduce new planned provision.

Emergency Services

1.2.40 There is currently no evidence of a current recognised shortfall in the provision of physical infrastructure for the emergency services (ambulance, police and fire) within Runnymede. However police and fire services both identify projected population growth within Surrey as a potential risk to the continued quality and efficiency of supply of services over the short to medium term.

Flood Defences and Sustainable Drainage

1.2.41 Runnymede Borough is at risk of flooding primarily from fluvial sources, as it sits within the Lower Thames catchment, one of the most urbanised yet unprotected areas in the country. Surface water flooding due to overland runoff and lack of drainage network capacity is the second largest source of flooding within Runnymede.

1.2.42 The Lead Local Flood Authority (SCC) is responsible for the management of flood risk from ordinary watercourses, surface water flooding and groundwater flooding, whilst flood risk from main rivers is managed by the EA. There are no major formalised flood defences within the Borough. The M25 and M3 motorways, as well as major railway lines serve as an informal barrier to flooding.

1.2.43 The River Thames scheme is the largest flood defence project identified to facilitate growth until 2035, and is due for completion in 2024/25. It is estimated that up to 15,000 properties will be better protected from flooding as a direct result of this scheme.

1.2.44 The existing surface water flood risk is adjacent to smaller watercourses and ordinary watercourses, and is prevalent in the major urban centres of Egham, Addlestone and Chertsey. Currently, large areas in the north of the Borough utilise infiltration methods to provide surface water drainage, as a form of natural catchment drainage. Open water attenuation features have also been used to mitigate surface water flood risk.

1.2.45 As large areas of the Borough are classified as functional or open floodplain, future development is likely to require a well-planned approach to provide sustainable surface water drainage measures to mitigate for the increase in impermeable areas. The Runnymede 2035 Strategic Flood Risk Assessment (SFRA) (April 2016) also highlights that in parts of Runnymede there is potential for both minor development as well as schemes constructed under permitted development to have a cumulative impact on flood risk in the local area as a result of impacts on flood storage capacity and flood flows.

1.3 Key Findings of the Future Needs Analysis

Education

Early Years

- The majority of early years education provision in the Borough is provided by the

private sector, and the SCC Childcare Sufficiency Assessment projects that several locations will not be able to meet future demand or are at risk of not being able to meet demand. The locations and methods of provision of new early years places are yet to be determined, however it is envisaged that the majority of these places will be delivered by the private sector.

- Modelling to determine the future requirement for early years education in Runnymede indicates that gross demand for nursery places over the Local Plan period is 330 to 462 places, depending on the growth option, with associated costs of £5.3M to £7.4M.
- A private nursery will be provided as part of the development at the former DERA site, with the construction costs of the facility to be funded by the developer. It is assumed that the nursery at the former DERA site will provide 50 places in line with standard models. Net demand is therefore estimated at 280 to 412 places (£4.5M to £6.6M). There are no other planned projects which would assist in meeting forecast demand.
- Models for the delivery of this identified future requirement could include expansion or provision of nurseries linked to primary schools and free-standing children's centres and encouragement of the delivery of privately operated nurseries across the Borough.

Primary

- Additional primary places are planned at a number of locations across the Borough over the Plan period, however the number of places and planned investment associated with these projects is not yet confirmed.
- Modelling to determine the future requirement for primary education in Runnymede indicates that gross demand for primary places over the Local Plan period is 919 to 1,290 places, depending on the growth option.
- A new primary school would need to be provided at Longcross Garden Village on the former DERA site; this will be developer funded. It is assumed for the purposes of modelling that this will provide 2FE, in line with the Department for Education (DfE)'s preferred model of provision. Net demand across the Borough is therefore estimated at 709 to 1,080 places (£9.9M to £15M).

Secondary

- Additional secondary places will potentially come forward over the Plan period at Salesian School (number of places / Forms of Entry [FoE] unknown), the expansion of an existing school in the Chertsey area to accommodate demand arising from the former DERA site (number of places / FoE unknown), and the establishment of a new Runnymede Free School (6 FoE).
- Modelling to determine the future requirement for secondary education in Runnymede indicates that gross demand for secondary places over the Local Plan period is 845 to 1,195 places, depending on the growth option, with associated costs of £17.8M to £25.2M. Net demand over the Local Plan period is assumed to be the same as gross demand given that there are no confirmed planned projects.
- There is one SEN school within Runnymede, the Philip Southcote School, which provides secondary education facilities for pupils aged 11-16 years old. There is currently no information on the existing capacity and roll within the Philip Southcote School and there is currently no new dedicated SEN provision planned within the Borough.

Higher Education

- There is a weak relationship between future population growth in Runnymede and demand for higher education places in the Borough, as catchments to access higher education facilities are not restricted to the Borough or County. Royal Holloway is the only Higher Education facility within the Borough and has plans to expand and accommodate growth over the Local Plan period (approved under RU.14/0099). The university is in the process of producing a masterplan which will guide its future development. The development will be funded by Royal Holloway.

Adult Education

- There is one adult education centre in the Borough - Runnymede Adult Learning Centre, and Strodes College operates a Community Learning Centre which offers courses at a number of community venues within the Borough. Catchments to access adult education facilities are not restricted to the Borough or County, and there is understood to be a low and falling level of uptake for adult education places in recent years.
- There are no known plans for expansion of adult education facilities within the Borough. Additional demand associated with growth over the Local Plan period is estimated at 292 to 411 new adult education places, depending on the growth option, with associated costs of £5.9M to £8.3M.

Healthcare

GPs

- Available evidence indicates there is little or no spare capacity in primary healthcare services in Runnymede at present and there are no firm planned or committed projects. Modelling to determine the future requirement for General Practitioner (GP) provision in Runnymede indicates that demand for GPs over the Local Plan period is estimated as 8.1 to 11.4 FTE GPs, depending on the growth option, with associated costs of £3.3M to £4.7M.
- Potential locations for new primary healthcare provision are the former DERA site at Longcross (an alternative would be for the expansion of practices within the local town centres of Chertsey, Virginia Water or Sunningdale). There is also an existing healthcare facility which could be improved and expanded as part of the forth-coming Addlestone 2 development.
- However, plans cannot be confirmed until local NHS providers produce their spatial infrastructure plan for healthcare services which is due in April / May 2017. This document will consider the scale and location of growth in Runnymede and propose locations for new or expanded provision. The plan will identify costs and funding relating to primary healthcare provision in Runnymede.

Dentists

- There are no known plans for new dental surgeries over the plan period, however there is a possibility that dental services could be provided in conjunction with the delivery of new GP services likely to come forward at the former DERA site.
- Modelling to determine the future requirement for dental provision in Runnymede indicates that demand for dentists over the Local Plan period is estimated as 7.3 to 10.3 FTE dentists, depending on the growth option, with associated costs of £0.6M to £0.8M.

Hospitals

- In 2010, RBC approved a masterplan for the redevelopment of parts of the St Peter's hospital campus. The cost of the works at St Peter's Hospital are unknown, however it is understood that funding would be by the Hospital Trust. There are no other projects for new or expanded acute physical healthcare provision or acute mental healthcare in the current pipeline.
- Modelling to determine the future requirement for hospital provision in Runnymede indicates that demand for hospital floorspace over the Local Plan period is estimated as 4,576 m^2 to 6,442 m^2 (£22.4M to £31.6M) depending on the growth option. Demand for hospital facilities for mental healthcare is estimated to be 2,431 m^2 to 3,422 m^2 (£7.8M to £11.0M) depending on the growth option.
- The infrastructure plan for healthcare services which will be produced by the local NHS in April 2017 will set out the location, timing and cost of any required acute provision to meet needs arising from growth in Runnymede.

Services for Older People

- There are currently no known plans for additional delivery or expansion of sheltered housing managed by RBC. A number of planned private projects will deliver a total of 216 care beds and 167 assisted living units and assist in meeting new demand arising over the Local Plan period. However, these private facilities are not affordable to all older people, and meeting their needs will therefore require public sector provision.
- Modelling to determine the future requirement for older age provision in Runnymede indicates that demand for beds over the Local Plan period is estimated as 60 to 86 nursing care beds, 86 to 124 residential care beds, and 33 to 48 Extra Care Housing units, depending on the growth option. Associated costs are £3.4M to £4.9M.

Community Infrastructure

- The illustrative masterplan for Longcross Garden Village Centre (2013) includes 300sqm D1 space, although it is unsecured at this stage. Otherwise, there is no planned expansion of community infrastructure in terms of either physical infrastructure or services at this time.
- Modelling to determine the future requirement for flexible use community space in Runnymede indicates that net demand over the Local Plan period is estimated as 648 m^2 to 1,035 m^2, depending on the growth option. Associated costs are £0.9M to £1.5M.
- A review of libraries in Surrey in 2011 has confirmed that all libraries in Runnymede will be retained, with a focus on maximising capacity within existing infrastructure rather than the addition of new physical infrastructure going forward.
- Any future provision of new library facilities is anticipated to be delivered as part of a hub or shared facility in line with the RBC's desire to incorporate community services in easily accessible, shared locations.

Recreation

Outdoor Sports

- The Runnymede Open Space Study 2016 identified that across the Borough there is a deficiency of outdoor sports facilities across the majority of Runnymede. At the current time there are no known plans to provide new outdoor leisure facilities in the Borough, however there are a number of improvements planned to existing spaces.

The costs of these projects total £370,000, with funding anticipated to come from RBC and Achieve Lifestyle (however no funding is currently committed or available from RBC). The former DERA site will provide 3.13ha sports pitches including 2.46ha off-site at Trumps Farm and dual use with a new primary school on-site. These facilities will be provided and funded by the developer.

- Modelling to determine the future requirement for outdoor sports space in Runnymede indicates that net demand over the Local Plan period is estimated as 20.2ha to 29.7ha of additional outdoor sports space, depending on the growth option. Associated costs are £6.4M to £9.4M.

Indoor Sports

- There is little information currently available regarding existing levels of use and capacity within Runnymede's indoor sports facilities.
- There are plans for a number of improvements at the Borough's leisure centres, including the redevelopment of Egham Leisure Centre (estimated to cost between £15M and £18M) and replacement of fitness equipment at Addlestone Leisure Centre (estimated to cost £135,000). These projects have been identified by providers (and it is assumed they will contribute to meeting needs arising from forecast growth over the Local Plan period) however there is no committed funding from the Borough currently available for these improvements.
- A new gym at the Addlestone One development is currently under construction, and will be operated and fully funded by Achieve Lifestyle. Additionally, a gym will be provided at the former DERA site to serve the new population residing there and will be funded by the developer.

Play Space

- The Runnymede Open Space Study 2016 identified that there is a considerable deficiency of play facilities across the majority of Runnymede. There are a number of improvements planned to existing play facilities, and the delivery of two new play areas. Their costs total £986,000 with funding anticipated to come from RBC and s106 / grants, however there is no committed funding currently identified by RBC.
- As part of the development of the former DERA site, play facilities to support the population of the new settlement will be provided and funded by the developer.
- Net demand across Runnymede over the Local Plan period is estimated to be 7.5ha to 12.2ha of play space, depending on the growth option. Associated costs are £11.2M to £17.1M.

Green Infrastructure

- There is a significant amount of natural and semi-natural greenspace in Runnymede which far exceeds FiT standards. The future requirement for this typology is to maintain the current quantity, quality, and accessibility of natural and semi-natural greenspace assets.
- Six projects are planned and underway over the Local Plan period to provide natural and semi-natural green space across Runnymede. There is a current outstanding funding gap of £0.07M.
- There are 14 SANGs projects planned and underway across Runnymede over the Plan period with a total funding gap of approximately £1.3M. These include the SANG planned at the former DERA site (31.9ha, 6ha on site and 25.9ha at Trumps Farm) and the additional SANG provision at Chertsey Meads. SANGs are provided through financial contributions from any development which is within 5km of the

TBHSPA and are managed by the Borough Council.

- Current provision of amenity greenspace within Runnymede is higher than the FiT recommended standards. No planned provision has been identified over the Local Plan period; however provision is likely to be made at the former DERA site. Modelling to determine the future requirement for amenity greenspace in Runnymede indicates that there is an estimated demand of 8.8ha to 12.3ha, depending on the growth option. Associated costs are £1.0M to £1.4M.
- Green corridors are important for their connectivity role in the environment, however they are not planned on a per dwelling basis. The current provision within Runnymede should be maintained and further provision determined on a case by case basis, relative to the location of residential development.
- Current allotment provision level across Runnymede is lower than the recommended NSALG standard. There is planned provision of 0.67ha of allotments at the former DERA site (26 plots, with 0.43ha off-site at Trumps Farm). No other planned projects have been identified which would offset the gross requirement.
- Modelling to determine the future requirement for allotments in Runnymede indicates that there is an estimated gross demand of 3.1ha to 4.7ha, depending on the growth option, with associated costs of £0.7M to £0.9M.
- Current provision of cemeteries within Runnymede is constrained, with Addlestone Cemetery at capacity and Thorpe Cemetery with only two to three years' capacity remaining. While churchyards can be used as areas for passive recreation, their primary purpose is for burial and this is dependent on projected future demand. As such, from a green infrastructure perspective, the current quantity of cemeteries and churchyards should be maintained across the Borough.

Transport

- Increased development in the area will lead to increased stress on the rail network. Increased 10 car services will be facilitated by some stations including Longcross Station, however congestion is still likely. Housing and employment schemes are evident in the vicinity of the Longcross Station, therefore further improvements will be needed to accommodate this. The lack of a direct link from Runnymede towards Heathrow will continue to cause pressure on the M3 and M25.
- Improvements surrounding the former DERA site will be subject to developer contributions, however the scale of investment required and the status of funding has not been confirmed. Larger projects including the Southern Access scheme to Heathrow and Crossrail 2 would rely on funding from Network rail and Government.
- Additional services serving Longcross Station are seen as vital in order to deliver the level of development proposed in the surrounding area.
- Increased development will continue to cause congestion along the key bus corridors including the A30, A317 and B3121 leading to delays to services. In order to encourage bus as a realistic mode of transport instead of private car, bus priority measures will need to be introduced to alleviate congestion and increase reliability. In tandem with this, bus services are sparse in the rural and interurban areas in particular to the west of Runnymede where large scale development is proposed.
- Shuttle buses serving the DERA site in the west of Runnymede will be funded by the developer, however future maintenance has not been agreed. Funding from British Gas has been confirmed to improve congestion along the Causeway and towards the Egham Transport Strategy, both of which should in turn improve the reliability of services. Bus corridor improvement schemes across wider Staines will be funded by the LGF.
- No improvements are proposed in the areas surrounding Chertsey and Addlestone

which are identified as areas of major growth. High car ownership across the Borough will influence mode share choices for road users.

- Congestion is evident across the Borough, in particular sections of the M3 to the west of the M25 which runs through Longcross, at rural junctions in the Longcross and Virginia Water Area and at Junction 11 of the M25. Modelling undertaken by SCC has also highlighted the need for mitigation measures in the Addlestone area.
- Highways England are currently upgrading the M3 between junctions 2 and 4a and the M25 between junctions 10 and 6 to a smart motorway to ease congestion, as well as widening junction 11 to provide four lanes. Capacity improvements are proposed by SCC across the Borough to ease congestion, whilst funding from developers at the former DERA site will provide junction improvements in the Longcross area.
- Improvement to level crossings will be important in easing congestion in town centres such as Egham. Further junction improvements may need to be brought forward with additional developer contributions in the vicinity of the former DERA site, whilst roundabout improvements will be required in Chertsey.
- A range in provision for cyclists and pedestrians is evident across Runnymede, with some bridleways in the west of the Borough providing good connectivity whilst in some towns there is a lack of facilities available due to high speed connector roads. Heavy congestion and narrow roads often leads to a conflict between road users.
- A network of cycle infrastructure is proposed through the former DERA site to accommodate the development. Egham Sustainable Transport Package will provide a number of walking and cycling focused schemes to improve user safety and improve provision, making active modes more accessible and attractive. British Gas have agreed to contribute £300,000 towards the delivery of this scheme.
- However, pedestrian and cycle improvements in Chertsey, the west of Runnymede and at rail and motorway crossings are still needed.

Utilities

- The National Grid has planned five projects at the National Grid Connection points relevant to Surrey / Runnymede area which will provide an increase in electricity network capacity. Apart from these projects, National Grid undertake regular reviews and maintenance to ensure sufficient supply within the network.
- To deal with growing demand for electricity, SEPD is also undertaking or planning network developments, with 12 projects currently planned or underway over the Local Plan period.
- Regardless of the forecast reduction in demand for gas nation-wide, a number of the proposed key development schemes in Runnymede will cause a deficit in available supply and require reinforcement.
- National Grid has provided a high-level capacity check for the proposed development schemes in Runnymede and found that reinforcement of the gas network would be required in eight out of the 20 proposed development sites.
- Affinity Water is anticipating population growth of 15% within the Wey WRZ to 2040, Its WRMP sets out a series of measures which are being implemented or planned to ensure growing demand for potable water can be met and to fulfil the required sustainability reductions over the planning period.
- Affinity Water has provided a high-level capacity check for key proposed developments to identify whether reinforcement works will be required to ensure supply of potable water. . Proposed reinforcements will aim to recover the current level of service and the loss of capacity in the network due to the additional load.

Each developer will contribute to the required reinforcements depending on the relative impact on the network.

- In order to respond to population growth and increased demand as a result of development, Thames Water is undertaking upgrades to six sewage treatment works in Surrey, and providing increases in sewer capacity to serve new developments coming forward over the Local Plan period. Their current five year planning cycle lasts until 2020, at which time capacity and requirement for new services and upgrades will be reviewed.
- SCC has requested BT to model possible options within the programme's cost constraints and available funding. This will determine which premises will benefit from publicly funded deployment by the end of 2017. Options for ultrafast technology are being explored.

Waste

- Demographic change and residential growth are anticipated to place additional pressure on waste services over the Local Plan period. A new Surrey waste-specific plan is currently being developed to respond to these challenges.
- There is likely to be little spare capacity in waste services in Runnymede at present and there are no planned or committed projects publically available, and no associated costs.

Emergency Services

- SECAmb project that at present, ambulance provision and physical infrastructure within Runnymede is suitable to accommodate ambulance needs over the Local Plan period. There is no planned provision within Runnymede for additional physical infrastructure.
- There is limited information within the baseline analysis relating to existing levels of service and capacity within Surrey Police and the SFRS, and it is therefore unclear whether there is spare capacity or a shortage of personnel and physical infrastructure within Runnymede at present. There is no planned provision within Runnymede for additional physical infrastructure to support these services.

Flood Defences and Sustainable Drainage

- The housing trajectory sites provided by RBC have been mapped against flood zones, indicating that a number of sites to the north-east of the Borough are partially located within flood zone 2 or 3, adjacent to the River Thames and within the functional floodplain. A number of the sites to the south-east of the Borough are also located within flood zones 2/3. Sites to the west of the Borough, surrounding Addlestone, Ottershaw and Longcross are located in flood zone 1, but are susceptible to localised flood events. It must be noted that the majority of sites allocated for development are located within flood zone 1.
- From correspondence with RBC, it was also noted that a number of housing within flood zones 2/3 have been granted planning permission. Commercial development sites are also located within Flood Zones 2/3 but given the reduced vulnerability, these are generally considered acceptable.
- From the EA's Flood and Coastal Erosion Management Programme (FCERM) programme and the SCC's drainage programme, it has been identified that a total of £18.9M of flood defence infrastructure relevant to Runnymede has been planned for delivery, of which £14.9M has been funded for through grant in aid funding, private partnerships and other sources. A funding gap of £4M has been identified.

- The River Thames Scheme (not included in the analysis above) has an estimated project cost of £476M, of which £228M was yet to be sourced. This is likely to change as the scheme and phases progress. Initial estimates show a return of investment of £5 for every £1 of investment into the scheme.
- With regard to sustainable drainage, the housing trajectory sites within the Borough have been reviewed against the wet-spots database. The database identifies locations where flood risk mitigation has already been put in place, as well as locations where the problem of flooding is yet to be addressed. A large proportion of proposed developments to the north-east of the Borough are located adjacent to areas at risk from surface water flooding.
- From the SCC's drainage programme, it has been identified that a total of £590,000 of drainage infrastructure has been planned for delivery within the Local Plan period. Further funding information is not yet available and so it has been assumed at the time of writing that no funds have been acquired towards meeting project costs.

1.4 Future Infrastructure Requirements of Allocated Sites

Introduction

1.4.1 Infrastructure requirements were considered for 20 key sites which will contribute towards Runnymede's planned development over the Local Plan period and which are now being progressed through the planning system.

1.4.2 For each site the infrastructure required to mitigate the impacts of development was assessed at a relatively high level, reflecting the level of detail appropriate for a plan-level assessment of site-specific infrastructure requirements. The assessment covers social infrastructure, green infrastructure, flood risk and sustainable drainage and utilities.

Social and Green Infrastructure

1.4.3 The assessment of social and green infrastructure requirements for each site covers early years education, primary education, secondary education, primary healthcare (GPs and dentists), outdoor sports, play space and green infrastructure (allotments and SANGs).

1.4.4 As is to be expected, infrastructure requirements and costs are greater for those sites which have a larger housing capacity. Costs are greatest for the former DERA site at Longcross which will accommodate up to 1,700 homes (£16.4M). Costs are lowest for the Gorse Hill House site (£0.2M), part of the larger Virginia Water North site. The total cost per dwelling ranges from £11,683 to £7,903, with 50% of the sites incurring a cost of over £11,000 per dwelling for social and green infrastructure.

1.4.5 Social and green infrastructure will be funded through a combination of sources; with developers likely to make a considerable contribution towards on-site infrastructure, in combination with public sector funding from RBC and SCC in some instances. There is also the possibility that other funding sources (such as grants and central government schemes) may be applicable in some instances.

Flood Risk and Sustainable Drainage

1.4.6 17 of the allocated development sites are located in flood zone 1, and therefore do not require large scale flood risk infrastructure to facilitate their development. The allocated sites to the north-east of the Borough, the area at highest risk of flooding, could potentially benefit from the River Thames Scheme once it is fully operational. Two sites are located within Flood Zone 2 and only one within Flood Zone 3. Three of the sites listed are adjacent to areas with recorded internal property flooding, and one site is adjacent to an area with recorded external property flooding. This covers flooding from all relevant sources. Four sites are adjacent to recorded wet-spots.

1.4.7 Costs will depend on the drainage strategy adopted to manage surface water runoff from each site. On-site provision of infrastructure will be required in each case; any contribution to off-site provision remains to be confirmed. On-site infrastructure will be funded by the developer. There may in some instances also be a role for public sector funding in the form of larger scale mitigation schemes located in the nearby area.

Utilities

1.4.8 National Grid Gas Distribution Limited indicated that for 11 of the allocation sites capacity is available and no reinforcements are therefore required. For 8 of the allocation sites no capacity is available and so reinforcements will be required. One of the allocated sites (site reference 60 in Chertsey, KT16 9ER) with a planned housing capacity of 175 was not included in National Grid's capacity analysis due to lack of data at the time the analysis was undertaken.

1.4.9 This high level analysis shows that regardless of the forecast reduction in demand nation-wide, a number of the proposed key development schemes in Runnymede cause a deficit in available supply and require reinforcement. It has been noted in correspondence with National Grid Gas Distribution that as "the gas networks are dynamic, the capacity stated is available today; may not be available when the official connections requests are received, meaning reinforcements may still be required".

1.4.10 Affinity Water divided the 20 allocation sites into four geographical areas and a water demand / supply simulation exercise was undertaken for each site. In each of these geographical areas major reinforcements to the network will be required, based on the increase in demand for potable water forecast for each site.

1.5 Key Findings: Runnymede Infrastructure Costs and Projects

1.5.1 The INA has identified infrastructure projects which will be required in Runnymede over the Local Plan period to meet the needs arising from planned growth. These projects are listed in Appendix A.

1.5.2 There are 131 line entries in the Project Schedule spanning the different categories of infrastructure (social infrastructure, green infrastructure, transport, flood risk and sustainable drainage, utilities). The greatest number of line entries (50) relate to the social infrastructure category.

1.5.3 Total costs identified are £540.0m. The greatest proportion of these costs (70%) relate to transport infrastructure. It should be noted that the total cost figure reflects the information available to date and there are various information gaps. Certain schemes listed in the Project Schedule are not included within Runnymede's infrastructure costs because they are strategic projects catering for demand arising from a much wider catchment than Runnymede.

1.5.4 Available information on funding indicates that Runnymede's infrastructure requirements are largely unfunded.

1.5.5 The next step will be to build on this INA to develop a full Runnymede IDP. The IDP will contain additional detail on the infrastructure projects including timelines, phasing, funding status, delivery arrangements and costs. It will confirm Runnymede's infrastructure funding gap and include a prioritisation exercise to identify the critical showstoppers to growth.

2. Introduction

2.1 Aims

2.1.1 Runnymede Borough Council (RBC) is formulating an Infrastructure Needs Assessment (INA) as part of its evidence base to support its Local Plan.

2.1.2 AECOM has been commissioned to produce an Infrastructure Needs Assessment (INA) as the first stage in production of the IDP. The INA is divided into two parts:

- Part A (Chapters 3 to 13) identifies the existing infrastructure baseline in Runnymede ('the Infrastructure Capacity Baseline') and whether any current deficits or surpluses in provision are evident, including any existing or planned projects to expand provision.
- Part B involves the assessment of future infrastructure needs ('the Infrastructure Needs Assessment') based on the plans for growth to 2035 set out in the Local Plan, both for the Borough as a whole and for individually allocated sites.

2.1.3 This report represents the outputs of Part A and Part B. The Council will then use this for consultation under the Duty to Cooperate (DtC). The finalised INA will then inform the preparation of an IDP (stage 2) at a later date.

2.1.4 This report outlines the baseline of existing capacity, expected demand over the plan period, the types of project required over the Plan period to meet demand, indicative costs and where and when these projects will be expected to come forward. It identifies possible sources and amounts of funding, any funding gaps, potential funding sources and a prioritisation of infrastructure over the plan period. Specifically, this report will:

- Form a robust part of the evidence base that supports the production of Runnymede's Local Plan. so that RBC can demonstrate at examination that the Local Plan is deliverable, especially within the first ten years;
- Promote the delivery of allocated sites in the Local Plan by identifying the infrastructure requirements associated with each;
- Inform the development of a Community Infrastructure Levy (CIL) charge, should RBC decide to introduce it, by identifying the funding gap and the infrastructure projects required to deliver sustainable growth; and
- Support the submission of future funding bids.

2.1.5 This report refreshes and builds on existing infrastructure evidence, including the Surrey Infrastructure Strategy (2016)[2], RBC's earlier IDP (2013)[3] and relevant Local Plan studies such as the Open Space Study (2016)[4]. It also reflects and facilitates ongoing collaboration between the eleven District and Borough Councils in Surrey, along with other infrastructure providers and stakeholders, on infrastructure planning and the delivery of growth in a holistic and sustainable way.

2.2 Project Scope and Approach

2.2.1 The scope and approach of the INA reflects national planning policy and guidance, best practice in infrastructure planning and discussion with RBC Officers. The infrastructure types addressed cover both local services and in some cases services which are more strategic in nature and are provided across administrative boundaries.

[2] Surrey Infrastructure Strategy, (2016); AECOM
[3] Infrastructure Delivery Plan, (2013); Runnymede Borough Council
[4] Open Space Study, (2016); Runnymede Borough Council

2.2.2 The National Planning Policy Framework (NPPF) highlights the need to work with other authorities and providers in connection with the provision of infrastructure. As part of the INA, AECOM is consulting with key infrastructure planners and service providers, including relevant parts of RBC and SCC, as well as external partners such as those responsible for utilities, flood risk and healthcare. Runnymede Borough Council has also consulted with local planning authorities and other providers under the Duty to Cooperate (DtC) to ensure that the INA takes account of all relevant infrastructure typologies for the purposes of the Local Plan. Further DtC consultation will also take place on this INA with any comments incorporated as appropriate. The final INA will then be used as the basis to carry forward any further discussions on cross boundary infrastructure issues/projects for any projects identified through the IDP.

2.2.3 For the INA and IDP, the Borough of Runnymede generally comprises the principle study area. However, infrastructure baseline and future requirements are also identified at a sub-borough level or a wider regional level where appropriate, depending on the 'catchment' or impact area of the infrastructure type in question and as reflected in the evidence base and strategy documents of the relevant infrastructure provider. Where relevant for the infrastructure type in question, analysis is presented for the ten Middle Super Output Areas (MSOA) with the RBC area, as shown in Figure 1below[5].

2.2.4 For the purposes of infrastructure planning within the INA and IDP, Runnymede's development trajectory and Local Plan horizon have been simplified into phases. The phases are as follows:

- 2015/16-2019/20
- 2020/21-2024/25
- 2025/26-2029/30
- 2030/31-2034/35.

2.3 Document Structure

2.3.1 This reminder of this report, which represents the Stage A of the INA, is structured as follows:

- Chapter 3 describes the context for the INA, including the strategic and policy context for the INA and the current characteristics of Runnymede;
- Chapters 4 to 13 describe the infrastructure baseline for the infrastructures covered by the INA, namely: Education; Health; Community Infrastructure; Recreation; Green Infrastructure; Transport; Utilities; Waste; Emergency Services; and Flood Defences.

2.3.2 The second section of this report, which represents Stage B of the INA, is structured as follows:

- Chapter 14 sets out the aims and approach of the Needs Assessment, including the growth which is forecast for Runnymede over the Local Plan period which will drive infrastructure demand and costs;
- Chapters 15 to 24 assess future needs for each infrastructure topics identified above;
- Chapter 25 considers infrastructure requirements associated with 20 allocated sites which are identified for development and which are currently being progressed through the planning system; Chapter 26 summarises the findings of the INA, with reference to the Project Schedule which has been compiled identifying planned infrastructure projects over the Local Plan period.

[5] Super Output Areas are a geography for the collection and publication of small area statistics. MSOAs have a minimum size of 5,000 residents and 2,000 households with an average population size of 7,500.

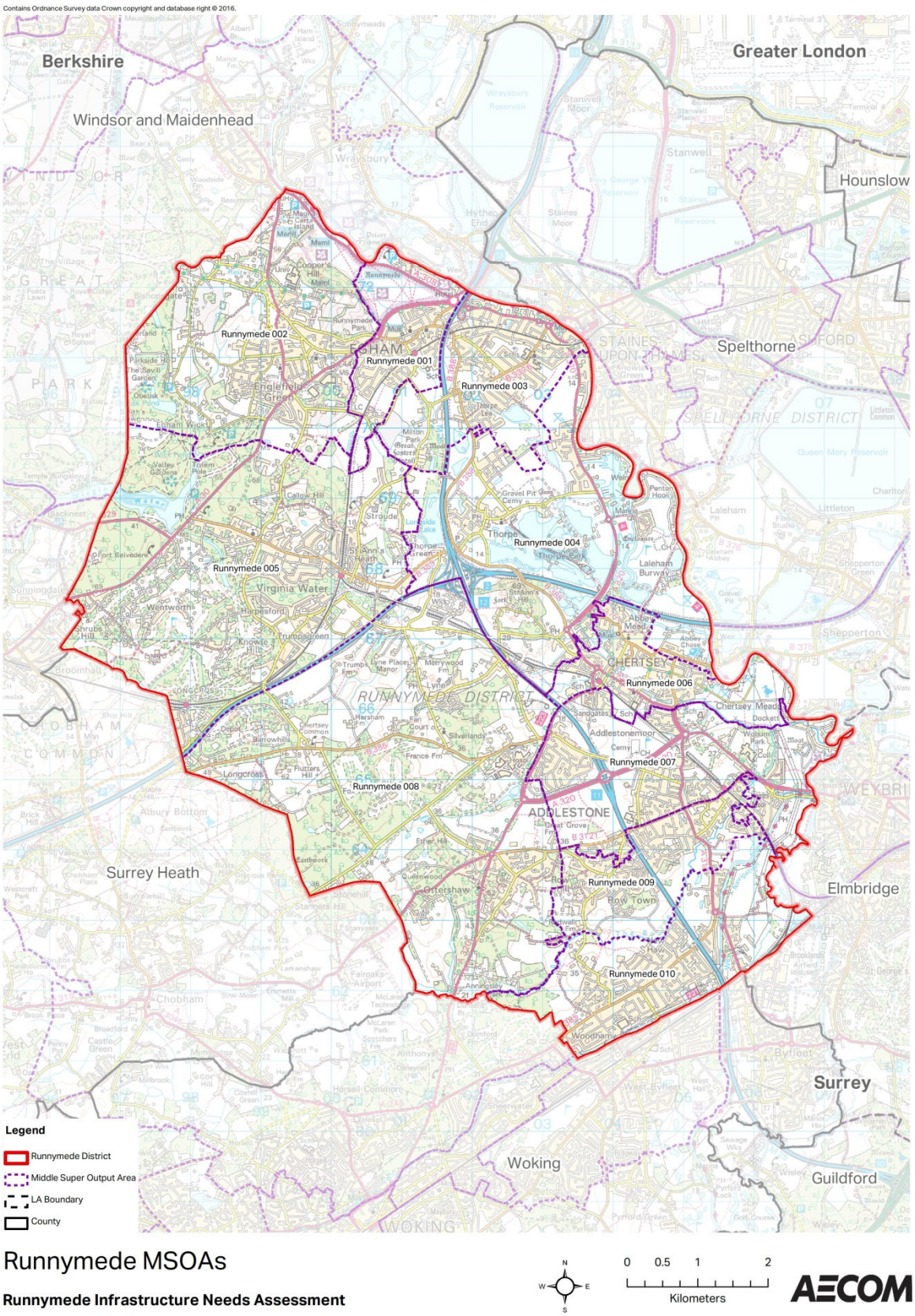

Figure 1. Middle Super Output Areas within Runnymede

3. Context

3.1 Policy Framework

3.1.1 The NPPF (2012) includes a set of national planning policies and is supplemented by the National Planning Practice Guidance (PPG) (2014). Paragraph 151 of the NPPF states that that Local Plans must be prepared with the objective of contributing to the achievement of sustainable development with infrastructure planning forming an important component of this. The three elements of sustainable development give rise to the need for the planning system to perform the following roles:

- Economic – contributing to building a strong, responsive and competitive economy, which includes coordinating development requirements and ensuring the provision of infrastructure.
- Social – by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being.
- Environmental – helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, mitigate and adapt to climate change including moving to a low carbon economy.

3.1.2 The NPPF sets out guidance on infrastructure planning in paragraph 162, highlighting the need for joint-working with infrastructure and service providers:

3.1.3 "Local planning authorities should work with other authorities and providers to: assess the quality and capacity of infrastructure for transport, water supply, wastewater and its treatment, energy (including heat), telecommunications, utilities, waste, health, social care, education, flood risk and coastal change management, and its ability to meet forecast demands; and take account of the need for strategic infrastructure including nationally significant infrastructure with their areas".

3.1.4 Relevant regional and sub-regional policy frameworks and strategies include the Surrey Local Strategic Statement, being produced by the Strategic Planning and Infrastructure Partnership; the Surrey County Council (SCC) waste and minerals plans; the Surrey Local Transport Plan (2011-2026) 3; and the Joint Strategic Needs Assessment for Surrey. Councils in Surrey are working together on the 3SC Devolution proposals and as part of the Enterprise M3 Local Enterprise Partnership (LEP), whose Business Plan (2012), Growth Strategy (2013) and Strategic Economic Plan (2014) are important elements of the strategic context for planning for growth in Runnymede.

3.1.5 RBC's current Local Plan – the Runnymede Local Plan (Second Alteration) - was adopted in 2001. The new 'Runnymede 2035' Local Plan will comprise a number of policies and proposals to guide future development in the Borough. It will also set out where future development is intended to take place, including land for new housing, community infrastructure and employment uses. In addition, the Local Plan will identify areas to be protected from development, including the Green Belt and Local Green Space. Once adopted, it is intended to be the key document used in the determination of planning applications in the Borough. Runnymede has recently concluded public consultation on its Issues, Options and Preferred Approaches document which sets out a number of options for the delivery of development within the Borough to 2035.

3.1.6 The Local Plan will also respond to the objectives within the Runnymede Corporate Business Plan (2016). Throughout the preparation of the Council's evidence base, the Council has engaged with partner organisations and other relevant LAs under the DtC, a requirement of the Localism Act 2011, and there are also on-going collaborative discussions with partner authorities and organisations such as the Surrey Joint Committee, the Surrey Planning Officers Forum, and the LEP.

3.2 A Current Profile of Runnymede

3.2.1 This chapter presents a profile of Runnymede at the present time. Information is drawn largely from the 'Runnymede 2035: Issues, Options and Preferred Approaches' (IOPA) Local Plan consultation document[6] apart from where otherwise stated.

Spatial Context

3.2.2 Runnymede is located in north-west Surrey, some twenty miles south-west of Central London in the South East Region. Its northern and eastern boundaries are formed by the River Thames and River Wey. Covering an area of some 7,804 hectares, and measuring only eight miles from north to south, Runnymede is a small Borough compared with most of the other Surrey authorities.

3.2.3 The main urban centres of Egham, Chertsey, and Addlestone are situated in the eastern half of the Borough, in contrast with the west of the Borough which is generally less developed. The two largest local centres are located at Virginia Water and Woodham/New Haw. The Borough also contains two smaller centres at Englefield Green and Ottershaw, and the village of Thorpe. Nearby towns in adjoining Boroughs include Staines-upon-Thames, Weybridge, Windsor, Woking, and Camberley. Runnymede is situated within the London Green Belt, which covers about 78% of the total area. A contextual plan of Runnymede can be viewed in Figure 2 below.

Population and Housing

3.2.4 The 2011 Census recorded that the Borough contained 80,510 people. The population age structure generally mirrors that of Surrey, the South East and England, though there is higher proportion of residents in their late teens and early 20s, reflecting the student population.

3.2.5 Over the period 2001-13 the population grew by approximately 6.8%. The population is projected to continue to rise, with notable increases in the number of older people. Between 2013 and 2033 Runnymede's population is forecast to grow by 19.9% to 100,088 people, and the number of households is forecast to grow by 24.7% to 41,848[7].

3.2.6 In recent years there has been considerable redevelopment and intensification of Runnymede's mainly low rise lower density housing, together with development and redevelopment of commercial premises in business areas. House prices are on average higher than in the rest of the South East and similar to those in parts of London. The availability of affordable housing to meet local needs remains a key issue in the Borough[8].

3.2.7 The Borough is within the top 10 per cent of least deprived areas nationally, based on the Index of Multiple Deprivation. However there are 'pockets' of need in the Borough which have health and obesity issues, lack of educational attainment, higher unemployment, and unsuitable housing. According to the Council's Retail Study 2009, 'income growth has also led to increased car ownership and personal mobility'.

[6] 'Runnymede 2035: Issues, Options and Preferred Approaches' Local Plan consultation, (2016); RBC
[7] 1 Runnymede-Spelthorne Strategic Housing Market Assessment (2015), drawing on ONS Sub-National Population Projections (2014).
[8] 'Runnymede 2035: Issues, Options and Preferred Approaches' Local Plan consultation, (2016); RBC

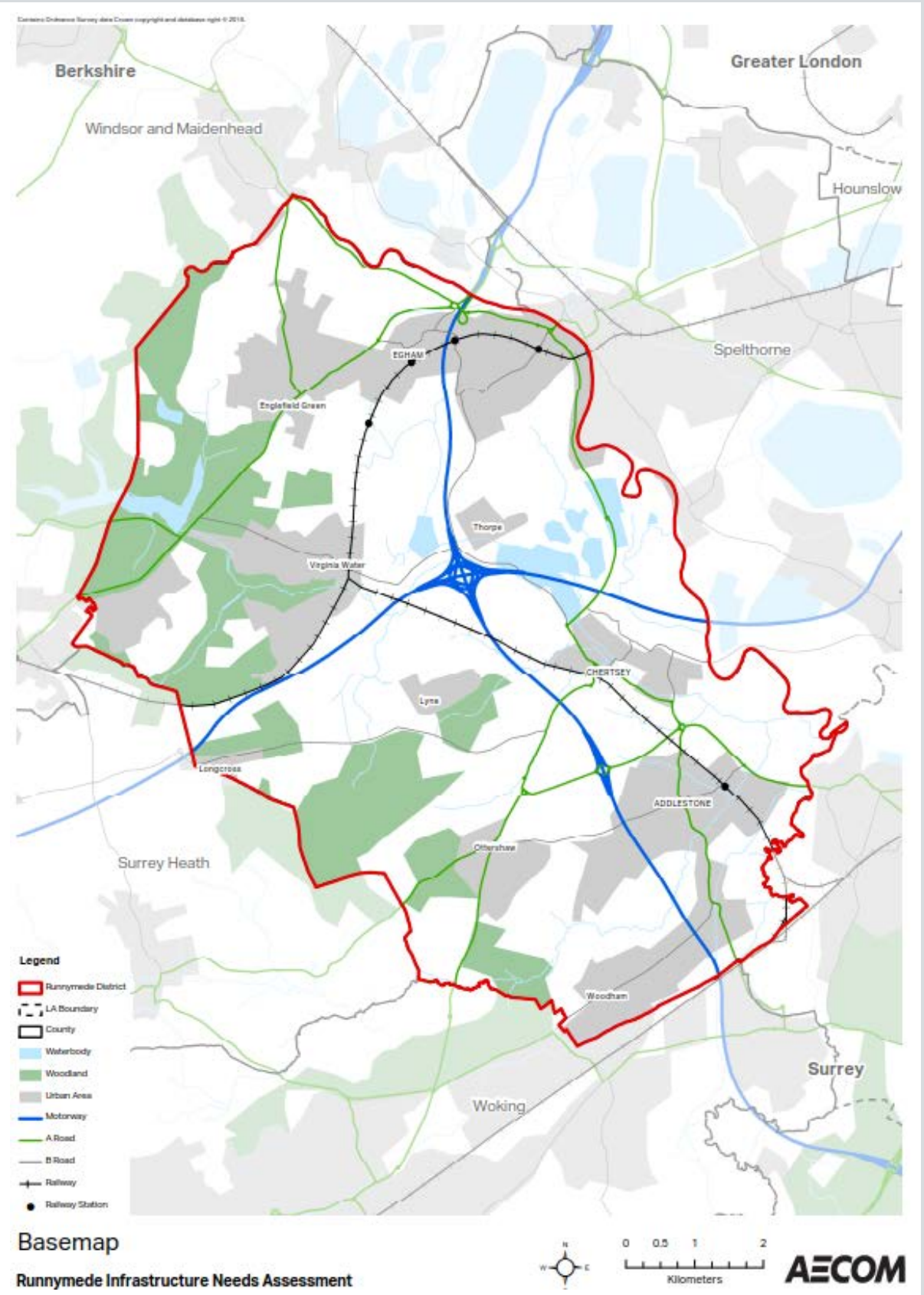

Figure 2. Contextual Plan of Runnymede

Economy, Retail, and Tourism

3.2.8 Runnymede is strategically located at the junction of the M25 and M3 motorways. Accessibility to London and Heathrow and Gatwick airports by rail and motorway makes Runnymede a highly desirable business location. The Borough has a strong local economic base with many commercial enterprises in the town centres, industrial estates, suburban business areas and business parks, including many major international businesses and institutions. Its environment and location within the Green Belt makes the area an attractive location to live, work and visit.

3.2.9 Some notable characteristics of the Runnymede economy and workforce are set out below:

- The local economy, in common with the rest of Surrey, is dominated by the service sector. The ONS Business Register and Employment Survey 2014 found that 83.9% of employees jobs within the Borough were in the service sector compared to just 2.4% in the manufacturing sector
- KPMG's Tech Monitor UK report (2013) noted that Runnymede was the 6th ranked location in the UK for tech firms.
- Experian Regional Planning Service data (2015) showed that there were 66,770 workforce jobs within Runnymede Borough, and between 1999 and 2015 total workforce job numbers steadily increased.
- 2011 Census Workplace data showed that 21,460 people commuted out of Runnymede on a daily basis, with 30,672 workers commuting into the Borough - a daily net inflow of 9,212 people.
- Approximately half of Runnymede residents are employed in higher skilled professions, such as managers, senior officials, professional occupations, associate professional and technical occupations.
- According to the ONS Population Survey (July 2014 to June 2015), of the 55,400 people of working age (16 to 64) in Runnymede, 44,800 were economically active and 43,400 in employment. 3.3% of the resident workforce were out of work, below the South East and Great Britain average at the time.
- Over half of residents in Runnymede (63.6%) were qualified to NVQ Level 3 and above in 2015. Whilst this is higher than the South East average (60.5%), it is lower than the average for Surrey (66.1%).
- Earnings by residence in Runnymede (£597.90) are higher than both the South East average (£574.90) and Great Britain average (£529.60), but lower than the Surrey average (£653.90).
- Between 2000 and 2015 Runnymede exhibited a very high compound annual growth rate in Gross Value Added of 4.3% - higher than that of all the other Local Authorities (LAs) in the sub-region, and considerably higher than for Surrey (2.52%), the South East (2.17%) and the UK (1.76%).

3.2.10 Tourism and leisure are an important part of the local economy. Attractions include Thorpe Park, the River Thames, the Runnymede Meadows and Coopers Hill Slopes (site of the Magna Carta Memorial, the John F Kennedy Memorial and the Air Forces Memorial), Wentworth Golf Club, Virginia Water Lake, Savill Garden and Windsor Great Park, Chertsey Meads and the site of Chertsey Abbey. In July 2015, Visit Britain's analysis of the Great Britain Tourism Survey 2014 estimated that annual tourism spend in Runnymede was approximately £18M.

3.2.11 SCC operates Surrey Connects which is an independent, business-led economic development company and Invest in Surrey which is an inward investment service for the County. Other relevant SCC evidence and activities include:

- The Surrey Local Economic Assessment (2010), providing a comprehensive

assessment of the local economy, integrating economic, social and environmental issues

- Rural Statement for Surrey (Surrey Country and Rural Enterprise Forum 2016), outlining the challenges and opportunities in rural areas and to providing a framework for future action
- Enterprise M3 (EM3) LEP Strategy for Growth (2013), aiming to promote the growth of business in the EM3 LEP area, supported by investments in enterprise support, innovation capacity, skills development, infrastructure and place
- The Surrey Hotel Futures Study (2015), analysing future opportunities and requirements for hotel development across Surrey to inform the future plans and policies of the County Council and its District and Borough councils and LEP partners.

3.2.12 Relevant RBC studies and strategies include:

- Runnymede Employment Land Review (2016)
- Runnymede Town and Local Centres Study (2015)
- Runnymede Corporate Business Plan
- Runnymede Open Space Study (2016)

Environment

3.2.13 The Borough contains a number of nationally and internationally important nature conservation sites including Windsor Forest and Great Park to the north west (a Special Area of Conservation (SAC) and a Special Site of Scientific Interest (SSSI)), and the Runnymede Meadows to the north (incorporating a Sites of Special Scientific Interest (SSSI) (Langham Pond) and a Site of Nature Conservation Interest (SNCI)). A small part of the Borough on its western side is also within 400 metres of the Thames Basin Heaths Special Protection Area (TBHSPA). The South West London Waterbodies SPA and the Ramsar and SSSI components of this SPA also partially lie within Runnymede, as well as a number of other boroughs. There are also two Local Nature Reserves (LNRs) at Chertsey Meads and the Riverside Walk at Virginia Water.

3.2.14 The Borough has a number of ancient woodland sites and open spaces. Watercourses and lakes are a key characteristic of the Borough, with the River Thames running along the Borough's eastern boundary and the Basingstoke Canal forming the south eastern boundary. There are also a range of Grade II, II* and I nationally listed buildings, some important statutorily listed parks and gardens and several Scheduled Ancient Monuments.

3.2.15 The Green Belt in Runnymede is the first substantial area of open land on the south west edge of the London Metropolitan area. Parts of Runnymede's Green Belt are used for mineral working and landfill, public utilities, motorways and their intersections, educational and other institutions, research and development establishments, hotel and conference centres and large scale recreational uses, all of which were largely established before the Green Belt was designated.

3.2.16 Environmental issues in Runnymede include air quality and ambient noise associated with the Borough's proximity to the motorway network and high car dependency, as well as proximity of Heathrow Airport, and flood risk with approximately 1,300 commercial and approximately 11,600 residential addresses at risk from fluvial flooding.

4. Infrastructure Baseline – Education

4.1 Introduction

4.1.1 This section considers existing education provision within Runnymede, including the existing capacity and availability of facilities and education places. Planned provision which will come forward over the Plan period is also outlined.

4.1.2 For the purposes of this baseline, the following types of education provision are considered (the definition and scope for each type is outlined in the sections below):

- Early Years Education;
- Primary Education;
- Secondary Education;
- Further Education;
- Higher Education; and
- Adult Education.

4.1.3 Education is planned for at a county level, and SCC is required to ensure that there are sufficient early years, primary, and secondary places for children resident within Surrey. While SCC does not have a duty to provide early years education places, it is required to plan for and provide primary and secondary education places.

4.1.4 Factors which influence the demand for and capacity of education infrastructure include birth rates, migration, housing provision, and other considerations such as the popularity of schools, and their ratings.

4.2 Early Years Education

Scope

4.2.1 Early years education typically refers to provision for children under five years of age. Attendance at an early years education facility is not compulsory and children aged under five years old are not required to be in full time education.

4.2.2 All three and four year olds in England are entitled to 15 hours of free education for 38 weeks of the year until they reach compulsory school age (the term following their fifth birthday). Since September 2013, a new entitlement has been introduced, providing 15 hours per week of free childcare for eligible two year olds (from families whose income levels are below a certain threshold). Free early years education places are available in a range of private and County run settings nursery schools, children's centres, day nurseries, play groups and pre-schools.

4.2.3 Free childcare provision in England is currently under review and it is anticipated that the entitlement for three and four year olds will be increased to 30 hours per week of free childcare in 2017.

Supply

4.2.4 The majority of early years education provision in the Borough is provided by the private sector. In addition there are a number of maintained nursery schools, Children's Centres and some primary schools with early years facilities attached to them.

4.2.5 The SCC Childcare Sufficiency Assessment[9] outlines that there are 189 day nurseries in the County as a whole, offering a total of 11,301 places; 71 maintained nursery schools offering 3,807 places; and 416 pre-schools offering 13,306 sessional places. There are also an estimated 295 childminders who offer before and after school care to both early years and primary age children.

4.2.6 An overview of early years settings is outlined in Table 1 below, drawing on publicly available information, information published by SCC, and information gathered through consultation. Information on the current availability of places at the below facilities is limited, as some early years providers do not publish this data (and it is not routinely updated by the DfE).

4.2.7 There are 22 early years providers within the Borough: 13 nursery schools, four pre-schools, and four children's centres.

4.2.8 While all the nursery and pre-schools in the Borough are privately operated, SCC are responsible for the delivery of Children's Centres which provide support, health, and childcare education for parents as well as early years education. Children's Centres tend to be situated within more disadvantaged areas and operate a drop in service for families rather than full time early years care.

4.2.9 Early Years Education Facilities within Runnymede are mapped in Figure 3 below.

Table 1. Early Years Education Facilities within Runnymede

Type of Setting	Name of Facility	Capacity	Location (MSOA)
Nursery school	Chertsey Nursery School[10]	80	Runnymede 009
Nursery school	Springtime Nursery School[11]	46	Runnymede 003
Nursery school	Wendover Montessori[12]	30	Runnymede 003
Nursery school	Manorcroft Nursery Egham[13]	26	Runnymede 001
Nursery school	Playbox Nursery[14]	26	Runnymede 001
Nursery school	Milton Hall Montessori Nursery[15]	36	Runnymede 002
Nursery school	Bright Horizons Englefield Green[16]	72	Runnymede 002
Nursery school	Englefield Green Montessori Nursery[17]	22	Runnymede 002
Nursery school	Oaklands Littlebrook Nursery	TBC	Runnymede 002
Nursery school	Windsor Montessori[18]	30	Runnymede 005
Nursery school	Rainbow Nursery[19]	224	Runnymede 008
Nursery school	Toad Hall Nursery Ottershaw[20]	41	Runnymede 008
Nursery school	Buckles and Bows[21]	24	Runnymede 007
Nursery school	Thorpe Nursery pre-school[22]	40	Runnymede 004

[9] Childcare Sufficiency Assessment, (2015); SCC
[10] http://www.chertsey.surrey.sch.uk/index.php
[11] http://www.daynurseries.co.uk/daynursery.cfm/searchazref/50001060SPRC
[12] http://familyinformationdirectory.surreycc.gov.uk/kb5/surrey/fsd/service.page?id=H3Xwr-DOKd0&
[13] http://www.findmyschool.co.uk/schooldetails.aspx?id=76398
[14] http://www.findmyschool.co.uk/schooldetails.aspx?id=92530
[15] http://www.daynurseries.co.uk/daynursery.cfm/searchazref/50001060MILA
[16] http://www.daynurseries.co.uk/daynursery.cfm/searchazref/65432202925
[17] http://www.daynurseries.co.uk/daynursery.cfm/searchazref/50001060ENGA
[18] http://www.daynurseries.co.uk/daynursery.cfm/searchazref/50001023WINA
[19] http://www.daynurseries.co.uk/daynursery.cfm/searchazref/50001060RAIB
[20] http://www.daynurseries.co.uk/daynursery.cfm/searchazref/50001060TOAA
[21] http://familyinformationdirectory.surreycc.gov.uk/kb5/surrey/fsd/service.page?id=0y8L_S7Ox64&
[22] http://familyinformationdirectory.surreycc.gov.uk/kb5/surrey/fsd/service.page?id=Xo7HBjv4Kzs

Type of Setting	Name of Facility	Capacity	Location (MSOA)
Pre-school	Virginia Water Community Pre-School	TBC	Runnymede 005
Pre-school	Sunbeams Pre-School	TBC	Runnymede 006
Pre-school	Addlestone Pre-School[23]	24	Runnymede 007
Pre-school	Footprints Pre-School	38	Runnymede 009
Children's Centre	Chertsey Children's Centre	n/a	Runnymede 006
Children's Centre	Sayes Court Children's Centre	n/a	Runnymede 009
Children's Centre	The Haven Sure Start Children's Centre - Hythe Primary School	n/a	Runnymede 002
Children's Centre	The Haven Sure Start Children's Centre - St Jude's Junior School	n/a	Runnymede 002

Source: Runnymede Borough Council

[23] http://familyinformationdirectory.surreycc.gov.uk/kb5/surrey/fsd/service.page?id=FF9GbV431Pc

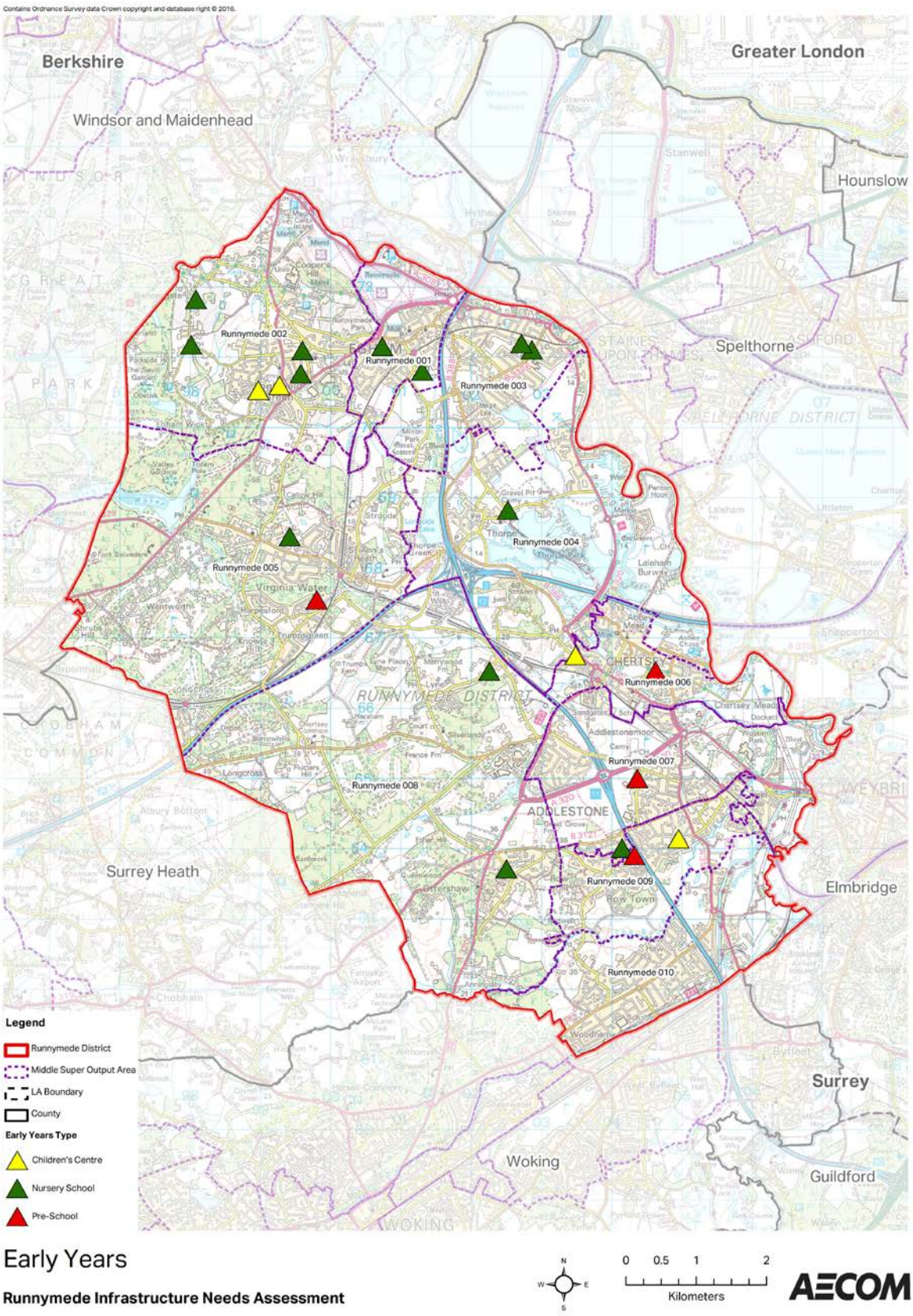

Figure 3. Early Years Education Facilities within Runnymede

Demand

4.2.10 The SCC Childcare Sufficiency Assessment (2015) identifies early years density rates within Runnymede (a rate of 0% means that for every 100 children requiring an early years place there are 0 places; a rate of 100% indicates there are 100 places available). The eastern wards in the Borough have the lowest density rates at between 0% and 60%; as outlined in Figure 4 below.

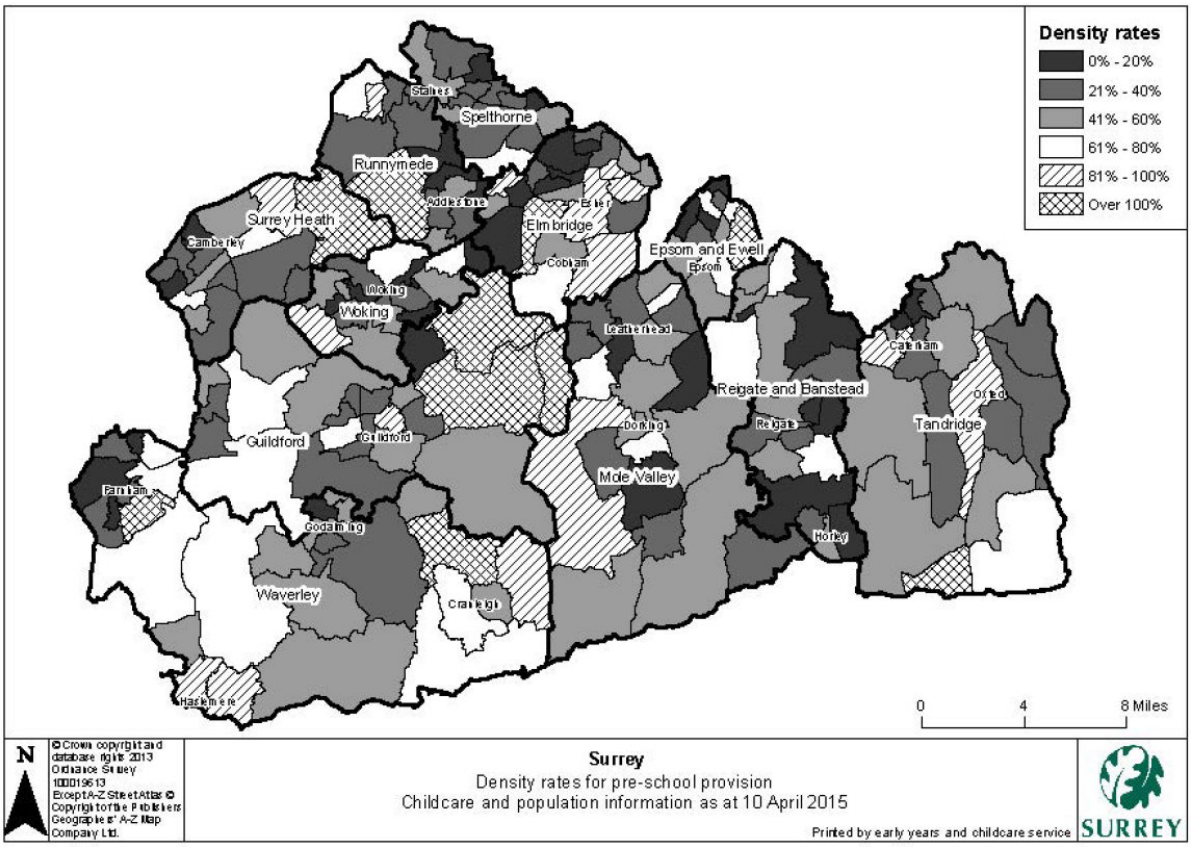

Figure 4. Early Years Childcare Density Rates in Surrey by Ward

4.2.11 The SCC Childcare Sufficiency Assessment[24] projects that the Chertsey Meads and Chertsey St Ann's Wards in Runnymede will not be able to meet the future demand for early years education (including free places) over the Plan period, and that New Haw and Woodham Wards are currently at risk of not being able to meet demand. By contrast, the SCC Childcare Sufficiency Assessment also identifies that in Thorpe and Egham Hythe wards within Runnymede, the take up of free early years education places is currently low compared to rates across the rest of the Borough.

4.2.12 Affordability of childcare and demand for longer opening hours are cited as two key considerations which prevent parents from accessing early years education, or they feel hinders their access to early years provision[25].

[24] Childcare Sufficiency Assessment, (2015); SCC
[25] Childcare Sufficiency Assessment, (2015); SCC

Planned Provision

4.2.13 The Childcare Act 2006 identified LAs as leaders in facilitating early years provision, emphasising the duty (as far as reasonably practicable) to ensure sufficient provision of childcare to enable parents to work or study[26].

4.2.14 The above analysis identifies that availability of early years places is varied across the Borough, and that whilst there is still likely to be some spare capacity within certain locations, new provision will likely be required as a result of growth over the Local Plan period. The locations and methods of provision of new early years places are yet to be determined, however it is envisaged that the majority of these places will be delivered by the private sector.

4.2.15 In terms of specific projects coming forward over the Plan period, a private nursery will need to be provided as part of the development at the former DERA site, with the construction costs of the facility to be funded by the developer.

4.3 Primary Education

Scope

4.3.1 Primary education typically refers to provision for children five to 11 years of age. Attendance at a primary education facility is compulsory for children aged five years and over, although some four year olds also attend primary education dependent on their birth month. SCC has a statutory duty to ensure there is sufficient primary education provision for all children in the County. While some families may choose to send their children to fee paying private schools, these are not overseen by SCC and are not considered to be accessible to all, and are therefore not considered here.

Supply

4.3.2 Primary education in the Borough is provided within primary schools, or infant and junior schools. An overview of primary education settings is outlined in Table 2 and Figure 5 below, drawing on publicly available information, information published by SCC, and information gathered through consultation. Information on the current availability of places (capacity) and the number of children attending the below facilities (Published Admission Number [PAN]) is based on published information by the DfE and the PAN compiled by SCC[27]. The DfE compile data on the number of children on Roll annually.

4.3.3 There are 24 primary education facilities within the Borough: 14 primary schools, six infant schools, and four junior schools. A short stay school is located on the St Peter's Hospital campus which provides for children with medical or mental health needs.

Table 2. Primary Education Facilities within Runnymede

Type of Setting	Name of Facility	PAN	Roll	Surplus / Deficit of places	Location (MSOA)
Infant school	Meadowcroft Community Infant School	90	72	18	Runnymede 007
Infant school	The Grange Community Infant School	270	269	1	Runnymede 010
Infant school	Trumps Green Infant School	180	167	13	Runnymede 005

[26] Childcare Act, (2006); UK Government
[27] School Capacity Data 2015, (2016); DfE

Type of Setting	Name of Facility	PAN	Roll	Surplus / Deficit of places	Location (MSOA)
Infant school	Englefield Green Infant School	180	174	6	Runnymede 002
Infant school	Ottershaw C of E Infant School	180	176	4	Runnymede 007
Infant school	Lyne & Longcross C of E (Aided) Infant School	90	108	-18	Runnymede 008
Junior school	St Ann's Heath Junior School	360	293	67	Runnymede 005
Junior school	New Haw Community Junior School	360	356	4	Runnymede 010
Junior school	Ottershaw C of E Junior School	240	231	9	Runnymede 008
Junior school	St Jude's C of E Junior School	360	336	24	Runnymede 002
Primary school	St Anne's Catholic Primary School	420	411	9	Runnymede 006
Primary school	Stepgates Community School	210	202	8	Runnymede 006
Primary school	Pyrcroft Grange Primary School	210	193	17	Runnymede 004
Primary school	Ongar Place Primary School	210	211	-1	Runnymede 009
Primary school	Manorcroft Primary School	420	418	2	Runnymede 001
Primary school	Sayes Court Primary School	210	198	12	Runnymede 007
Primary school	Thorpe Lea Primary School	210	179	31	Runnymede 003
Primary school	Holy Family Catholic Primary School	210	215	-5	Runnymede 009
Primary school	St Cuthbert's Catholic Primary School	210	209	1	Runnymede 002
Primary school	St Paul's C of E Primary School	420	390	30	Runnymede 007
Primary school	Hythe Community Primary School	420	272	148	Runnymede 003
Primary school	Darley Dene Primary School	210	171	39	Runnymede 009
Primary school	Christ Church C of E (Aided) Primary School	280	79	201	Runnymede 005
Primary school	Thorpe C of E (Aided) Primary School	210	164	46	Runnymede 004
Total		**6,160**	**5,494**	**666**	

Source: Information on primary schools in Surrey 2016/17, (2016); SCC; School Capacity Data 2016, (2017); DfE

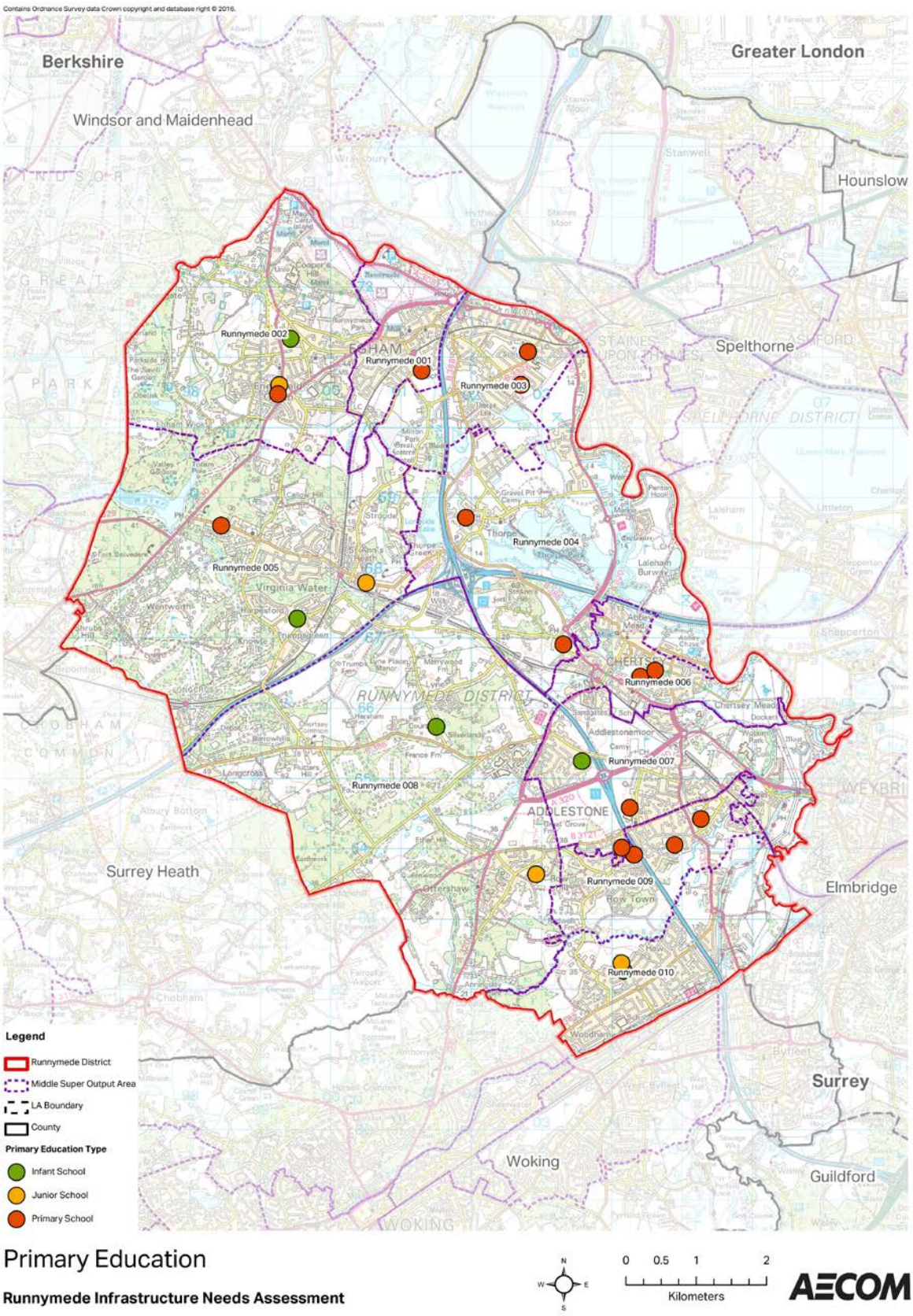

Figure 5. Primary Education Facilities within Runnymede

4.3.4 The current capacity of primary schools in Runnymede amounts to 5,494 education places, and the PAN of pupils on roll (currently attending primary schools in the Borough) amounts to 6,160. Overall, this means that there is a reasonable surplus of primary education places currently, amounting to 666 places.

4.3.5 It is not realistic to assume that primary schools should plan for 100% capacity, given that pupils will move into and out of the area during the school year and some flex should be available. The Audit Commission states that "it is unrealistic and probably undesirable to aim for a perfect match at each school; a sensible approach would be to plan for a 95% occupancy rate at schools and accept some variation, say plus or minus 10% around this target". If it is assumed that approximately 95% occupancy should be planned for (and assuming that a 95% occupancy rate means a school has no further capacity), this means that there remains a surplus of 464 primary education places within Runnymede.

Demand

4.3.6 In assessing the future demand for primary places, the SCC's School Organisation Plan 2015/16[28] projects that the demand for primary places will fluctuate, but experience an overall increase over the next five years (taking account of increasing birth rates and additional demand from residential development), as outlined in Figure 6 below.

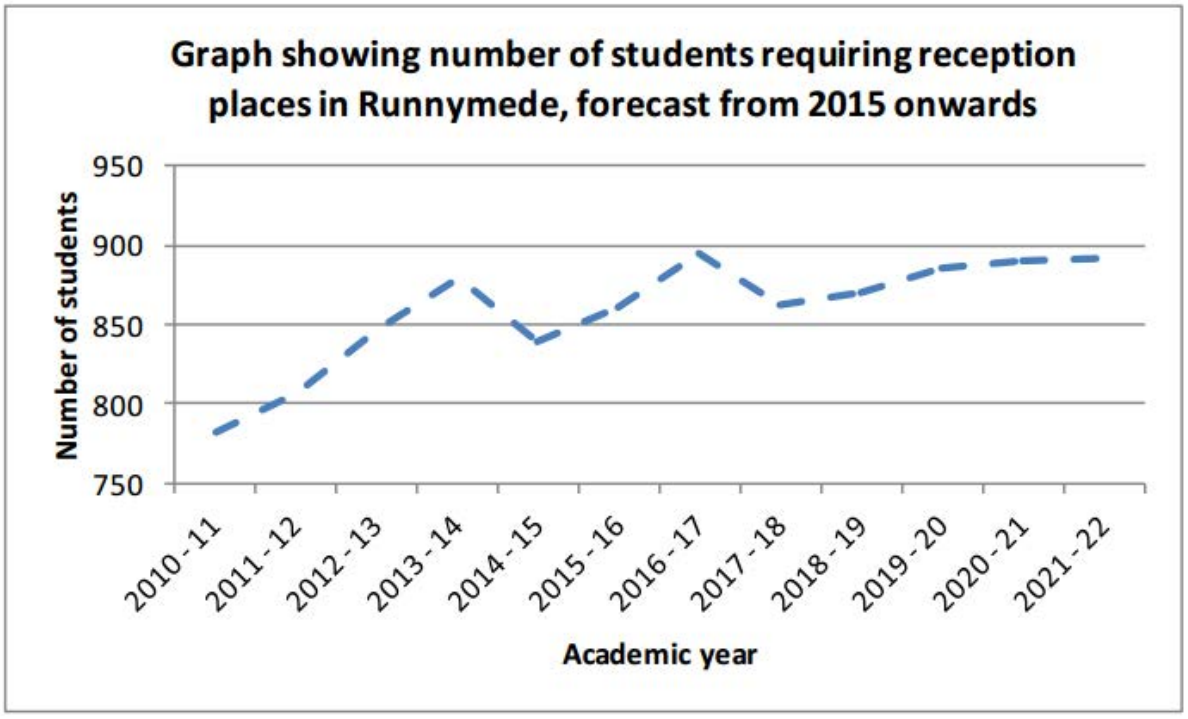

Figure 6. Number of students requiring reception places in Runnymede, forecast from 2015 onwards

Planned Provision

4.3.7 The above analysis identifies that there is considerable available capacity within primary schools in Runnymede currently and indicates that population growth could result in a reduction in surplus places over the Plan period.

[28] School Organisation Plan 2015/16, (2016); SCC

4.3.8 Some additional places will be delivered through school expansion plans currently proposed by SCC in the Borough[29], see Table 3.

Table 3. Planned Primary School Expansions

School	Forms of Entry to be provided	Funding amount and source
Trumps Green Infant School	Unknown	£1,129,230, SCC
St Ann's Heath Junior School	Unknown	£1,304,888, SCC
Thorpe C of E Infant School	Unknown	£1,505,640 SCC
Darley Infant School	Unknown	£1,505,640 SCC
Primary school expansion (school TBC)	1FoE	Unknown
Additional FoE in Chertsey or Addlestone	1FoE	Unknown
Infant school expansion (school TBC)	1FoE	Unknown
Infant to primary school expansion (school TBC)	TBC	Unknown

Source: Consultation with Surrey County Council

4.3.9 A new primary education facility will need to come forward to serve the needs of the proposed development at the former DERA site and the surrounding area. This will be funded by the developer.

4.4 Secondary Education

Scope

4.4.1 Secondary education typically refers to provision for children aged 11 to 16 years of age. SCC has a statutory duty to ensure there is sufficient secondary education provision for all children in the County. While some families may choose to send their children to fee paying private schools, these are not overseen by SCC and are not considered to be accessible to all, and are therefore not considered here.

Current Situation: Supply

4.4.2 Secondary education in the Borough is provided within one state run school, one voluntary aided school, and two academies. An overview of secondary education settings is outlined Table 4 below, drawing on publicly available information, information published by SCC, and information gathered through consultation. Information on current availability of places (capacity) and the number of children attending (PAN) at the below facilities is based on published information by the DfE[30] and SCC[31].

4.4.3 The current capacity of secondary schools in Runnymede amounts to 5,465 education places. The number of pupils on roll (4,863) means there is a reasonable surplus of 602 secondary education places currently. While Magna Carta school is currently showing a surplus of 583 places, it should be noted that the PAN for the 2016/17 year is planned to be 1,680 (due to the phased year on year increasing admissions programme) which means that the surplus in places will reduce somewhat.

4.4.4 If it is assumed that approximately 95% occupancy should be planned for (as per the Audit Commission guidance applied for primary schools), there remains a surplus of 384 secondary education places.

[29] Surrey Infrastructure Study, (2016); AECOM
[30] School Capacity Data 2015, (2016); DfE
[31] Information on secondary schools in Surrey 2016/17, (2016); SCC

4.4.5 Secondary Education Facilities within Runnymede are mapped in Figure 7 below.

Table 4. Secondary Education Facilities within Runnymede

Type of Setting	Name of Facility	Capacity	PAN	Surplus / Deficit of places	Location (MSOA)
Secondary Academy	Magna Carta School	1,785	1,202	583	Runnymede 003
Secondary school	Salesian School	1,100	1,456	-356	Runnymede 007
Secondary Academy	Jubilee High School	900	634	266	Runnymede 007
Secondary school	Fulbrook School	1,680	1,571	109	Runnymede 010
Total		**5,465**	**4,863**	**602**	**-**

Source: Source: School Capacity Data 2015, (2016); DfE; Information on secondary schools in Surrey 2016/17, (2016); SCC

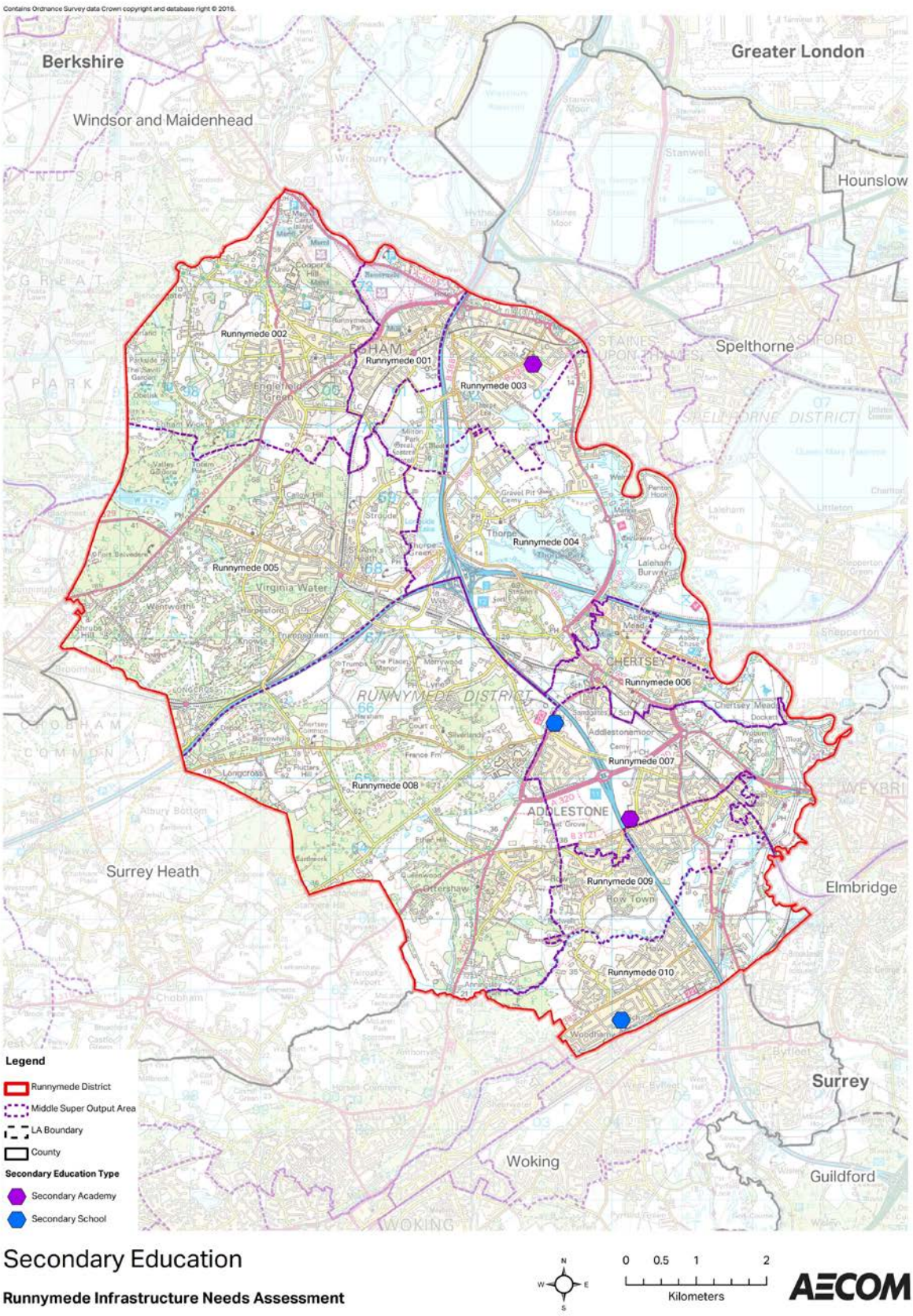

Figure 7. Secondary Education Facilities within Runnymede

Demand

4.4.6 In assessing the future demand for secondary places, SCC's School Organisation Plan 2015/16[32] projects that the demand for secondary places will steadily increase over the next five years (taking account of births and increased demand from residential development), as outlined in Figure 8.

4.4.7 By contrast, the SCC School Organisation Plan 2015/16[33] projects that there will be a shortage of secondary school places in the Borough by 2017 and that by 2021, it is estimated that five or six additional FE will be required in Runnymede.

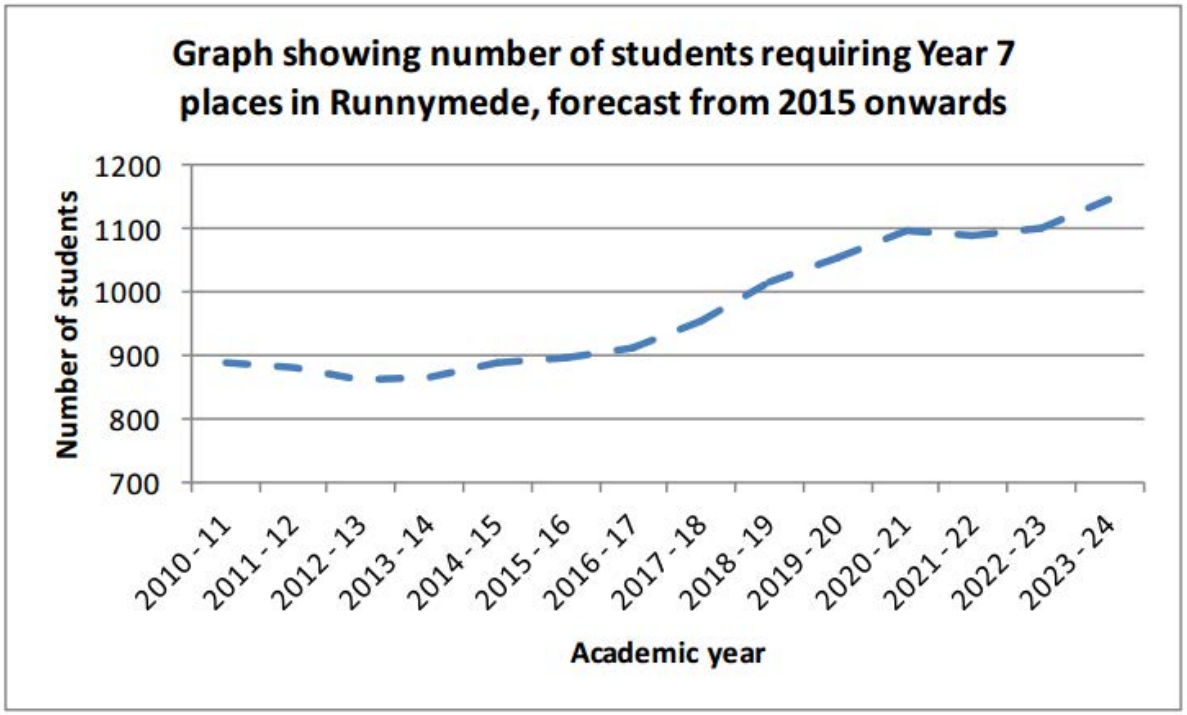

Figure 8. Number of students requiring Year 7 places in Runnymede, forecast from 2015 onwards

Planned Provision

4.4.8 The SCC's School Organisation Plan 2015/16[34] identifies two planned projects which will be funded by the Council or the DfE over the Plan period (at a cost yet to be determined):

- Salesian School expansion (unknown FE); and
- Establishment of a new Runnymede Free School (6FE).

4.4.9 While the DERA site is expected to generate around 491 pupils of secondary school age, this is too small a number to generate the provision of an additional stand-alone Secondary School[35]. As such, residents will be required to access existing secondary education provision within the surrounding Chertsey area.

[32] School Organisation Plan 2015/16, (2016); SCC
[33] Ibid
[34] Ibid
[35] Infrastructure Delivery Plan, (2013); RBC

4.5 Special Educational Needs

Scope

4.5.1 Special educational needs (SEN) provision caters for pupils of all ages. Generally those pupils who attend dedicated SEN schools have needs which cannot be accommodated within mainstream education, or which can be better accommodated within a dedicated SEN setting.

4.5.2 SEN provision is generally provided by the County, and similarly to primary and secondary schools, SCC has a statutory requirement to ensure an adequate supply of SEN places to meet the needs of pupils in the Borough.

Current Situation

4.5.3 There is one SEN school within Runnymede; the Philip Southcote School (in MSOA 006), which provides secondary education facilities for pupils aged 11-16 years old. There is currently no information on the existing capacity and number of pupils on roll within the Philip Southcote School, and guidance on capacity for SEN schools is limited. There is considerably less year-on-year demand for SEN places compared with primary and secondary places (understood to be approximately 1-2% of total admissions).

4.5.4 In line with projections for increases in primary and secondary pupils within the Borough, it is likely that there will be a steady and increasing demand for SEN places as a result of population growth over the Plan period. There is currently no new dedicated SEN provision planned within the Borough.

4.6 Further Education

Scope

4.6.1 Further education refers to provision for children aged 16-18 years of age. The Education and Skills Act (passed in November 2008) introduced compulsory education until the age of 18, either in a sixth form secondary or college setting, or through undertaking a vocational qualification or training such as an apprenticeship.

Current Situation

4.6.2 Further education in the Borough is provided within secondary schools (Salesian School and Fulbrook School, both of which have sixth forms) and Strodes College (which provides dedicated further education provision for 16+ year olds). The location of these facilities is shown in Figure 9 below.

4.6.3 Strodes College is understood to have a capacity of approximately 1,300 students and serves the whole of Runnymede and the wider County level (with applicants from approximately 80 schools across Surrey and beyond). Post-16 students in the south of the Borough are also served by the Weybridge Campus of Brooklands College in the neighbouring borough of Elmbridge.

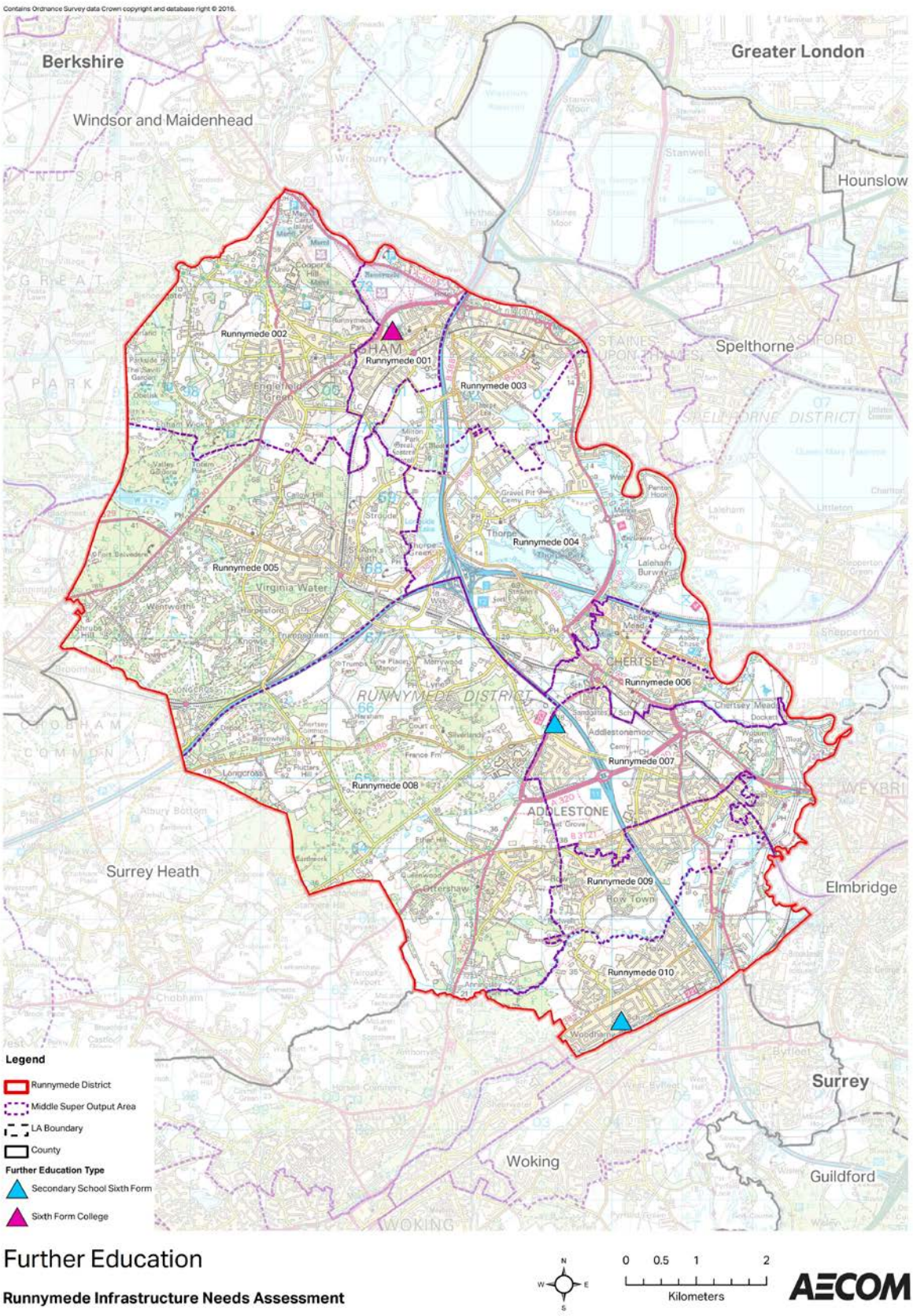

Figure 9. Further Education Facilities within Runnymede

4.6.4 Information on the current availability of places and the number of pupils attending further education facilities is not generally published, and there is no detailed information available on future demand for further education facilities in Runnymede and any potential deficit or surplus in future provision. Generally speaking, catchments for further education providers (particularly colleges) extend beyond Borough boundaries, resulting in a large catchment area for these types of facilities. This, and the fact that additional educational opportunities for 16-18 year olds exist outside of formal educational settings, may imply that provision for further education places is less likely to come under pressure than early years, primary or secondary school services as a direct result of population growth.

4.6.5 Strodes College is currently undertaking extensions to its campus. No additional provision is planned, however should a new secondary school be developed over the Plan period, it is likely that sixth form facilities would be incorporated as part of this model.

4.7 Higher Education

Scope

4.7.1 Higher education refers to degree level provision, usually in a university setting. There is no requirement to undertake higher education study; access is restricted to students aged 18 years and over, and admissions are usually based on academic merit, according to individual criteria set for each course. Study is typically for a three year period for undergraduate degrees, with the opportunity to undertake further study for a postgraduate masters and doctoral qualification in the same setting. All higher education is privately funded by students; however government grants and loans are available.

Current Situation

4.7.2 The only higher education institution in the Borough is Royal Holloway University; a campus based university in Egham. It undertakes teaching and research in the arts, humanities and sciences and has international renown. Royal Holloway is recognized as having a significant economic role within the Borough, with a considerable number of employees and partnerships with local businesses. There are currently estimated to be approximately 9,000 students enrolled at Royal Holloway University, from across the UK and abroad[36].

4.7.3 There is a weak relationship between future population growth in Runnymede and demand for higher education places in the Borough, as catchments to access higher education facilities are not restricted to the Borough or County.

4.7.4 The Surrey Infrastructure Study[37] predicts that by 2030 there will be an increase of approximately 25% in the number of students enrolled at Royal Holloway (up to 12,000) compared with the current enrolment of 9,000.

4.7.5 Royal Holloway has plans to expand and accommodate growth over the plan period. The university is in the process of producing a masterplan which will guide its future development; however currently details of these plans are unknown. It is understood that the current site will be developed to include additional student accommodation and new academic buildings. The costs for this are unknown and will be funded by Royal Holloway.

[36] Surrey Infrastructure Study, (2016); AECOM
[37] Ibid

4.8 Adult Education

Scope

4.8.1 Adult education refers to community learning (not always to achieve a formal qualification) for adults typically aged 18+ years old. It is accessible to all people, and takes place in a variety of formal and informal settings. Study is usually over a short period of time; typically between three months and a year. Students are self-funded, although subsidies are available to certain people, including older people and those on low incomes.

Current Situation

4.8.2 There is one adult education centre in the Borough - Runnymede Adult Learning Centre, situated in Chertsey (operated by SCC). Strodes College also opened a Community Learning Centre in Egham in 2006, and offers courses at a number of community venues within the Borough. Adult education provision is also offered on a more informal basis within local schools, colleges, church halls and community centres.

4.8.3 Catchments to access adult education facilities are not restricted to the Borough or County. There is also understood to be a lower level of uptake for adult education places compared with other types of non-compulsory education, and enrolment numbers in adult education courses are reported to have dropped in recent years.

4.8.4 There are no known plans for expansion of adult education facilities within the Borough.

4.9 Key Findings

- There are 22 early years providers within the Borough: 13 nursery schools, four pre-schools, and four children's centres.
- There are a number of early years providers in the north and south of the Borough, and lower levels of provision in the east (MSOAs 003, 004, and 006) and west (MSOAs 005 and 008).
- SCC data on early years density rates suggests demand for early years places in the east of the Borough.
- SCC Childcare Sufficiency Assessment projects that the Chertsey Meads and Chertsey St Ann's Wards in Runnymede (both in the east of the Borough) will not be able to meet the future demand for early years education over the Plan period.
- No plans for early years expansion or additional provision over the Plan period, have been identified, though provision is likely to be led by the private sector and may come forward as part of major developments such as Longcross Garden Village at the former DERA site.
- There are 24 primary education facilities within the Borough: 14 primary schools, six infant schools, and four junior schools. Facilities are situated throughout the Borough.
- The current capacity of primary schools in Runnymede amounts to 5,416 education places; however there is an estimated deficit of approximately 600 places.
- There is currently planned expansion across seven primary schools over the plan period. A new primary school will need to be provided at the former DERA site.
- There are two secondary academies, one maintained, and one state run secondary school within the Borough. These schools are all situated in the east of the Borough.
- The current capacity of secondary schools in Runnymede amounts to 3,635

education places, however there is an estimated deficit of almost 400 places.

- There is currently planned expansion across one secondary school over the plan period, and the proposed establishment of a new Runnymede Free School.
- There is one SEN school within the Borough; the Philip Southcote School in Addlestone, with an estimated admission rate of approximately 1-2% total school admissions within Runnymede. There is currently no information on the existing capacity and roll.
- In line with projections for increases in primary and secondary pupils within the Borough, it is likely that there will be a steady and increasing demand for SEN places as a result of population growth over the Plan period. There is currently no new dedicated SEN provision planned within the Borough over the Plan period.
- Further education in the Borough is provided within two sixth forms and one dedicated further education facility, Strodes College. Students attend the College from across Surrey and there are an estimated 1,330 currently enrolled. Strodes College is currently undertaking expansions to its campus. There are no other expansions to further education facilities currently planned in the Borough.
- There is one university in Runnymede; Royal Holloway University in Egham. There are estimated to be 9,000 students enrolled from across the UK and abroad. Student numbers are projected to increase by 25% over the Plan period and Royal Holloway has a masterplan in place to guide future development of the campus.
- There is one adult education centre in the Borough; Runnymede Adult Learning Centre in Chertsey, and a community learning centre in Egham operated by Strodes College. There is understood to be a low uptake of adult education courses within the Borough currently.

5. Infrastructure Baseline – Health

5.1 Introduction

5.1.1 For the purposes of this study, primary healthcare is defined as including GP services and dental practitioners.

5.2 Primary Healthcare

Scope

5.2.1 Health policy at a national, sub-regional and local level emphasises reducing health inequalities, improving access to services and making health providers more accountable to the patients they serve. In July 2010 the Government published its White Paper 'Equity and Excellence: Liberating the NHS' which set out plans to restructure the National Health Service (NHS). The introduction of 'The Health and Social Care Act' then resulted in the transfer of responsibility for commissioning the majority of health care services. From April 2013, NHS groups and Primary Care Trusts were abolished and replaced by new Clinical Commissioning Groups (CCG) as the statutory health commissioning bodies. As such, the ownership, management and operating procedures of the NHS have recently undergone a period of considerable transition.

5.2.2 Within Runnymede, the North West Surrey CCG is the relevant statutory body (responsible for overseeing health care within the Boroughs of Runnymede, Elmbridge (West), Spelthorne, and Woking). A small area of Englefield Green within the northwest of the Borough (within MSOA Runnymede 002) falls within the Windsor, Ascot, and Maidenhead CCG area. A separate group, Surrey Community Health, runs community health services e.g. district and school nursing, health visiting and therapy services.

5.3 GPs

Supply

5.3.1 The Department for Health recommends an England average ratio of 1,800 registered patients per GP[38]. Table 5 and Figure 10 below identify the nine GP surgeries within Runnymede. There is a total of 37.7 Full Time Equivalent (FTE) GPs. The average patient list per GP within the Borough is 2,124[39]; somewhat higher (i.e. worse) than the England average ratio of 1,800. Only two of the nine GP surgeries within the Borough (Packers Surgery in Virginia Water and The Bridge Practice in Chertsey) have a lower than average ratio of patients per GP, and may have some 'spare' capacity. Overall however, this suggests that there is little or no available capacity within GP practices currently, and indicates there is a likely shortage of GPs within the Borough.

5.3.2 Consultation with local primary healthcare providers[40] confirmed that there was little spare capacity and that the growth projected in Runnymede would lead to capacity issues in some parts of the Borough where there are existing 'hotspots' of need.

[38] HUDU Planning Contribution Model Guidance Notes, (2007); HUDU, EDAW / AECOM
[39] General Practice Bulletin Tables 2005 - 2015, (2016); Health and Social Care Information Centre
[40] Meeting on 3rd Feb 2017 between RBC, AECOM Ltd and Estates Lead for NW Surrey CCG, Ashford and St Peters NHS Foundation Trust and Surrey and Borders NHS Foundation Trust.

Table 5. GP Facilities within Runnymede

Name of Facility	FTE GPs	Registered Patients	Patients per FTE GP	MSOA
Ottershaw Surgery	2.5	5,281	2,112	Runnymede 008
Packers Surgery	3.2	4,637	1,449	Runnymede 005
Staines and Thameside Medical Centre	1.7	4,200	2,461	Runnymede 003
The Abbey Practice	5.9	11,340	1,912	Runnymede 006
The Bridge Practice	5.4	7,940	1,460	Runnymede 006
The Crouch Oak Family Practice	6.6	16,108	2,444	Runnymede 007
The Grove Medical Centre	4.3	13,949	3,221	Runnymede 001
The Hythe Medical Centre	2.0	4,475	2,237	Runnymede 003
Runnymede Medical Practice[41]	6.1	12,144	1,980	Runnymede 002

Source: NW Surrey CCG (2016); Health and Social Care Information Centre, (2016)

[41] Runnymede Medical Practice is the only GP surgery which falls within the Windsor, Ascot, and Maidenhead CCG area within the Borough.

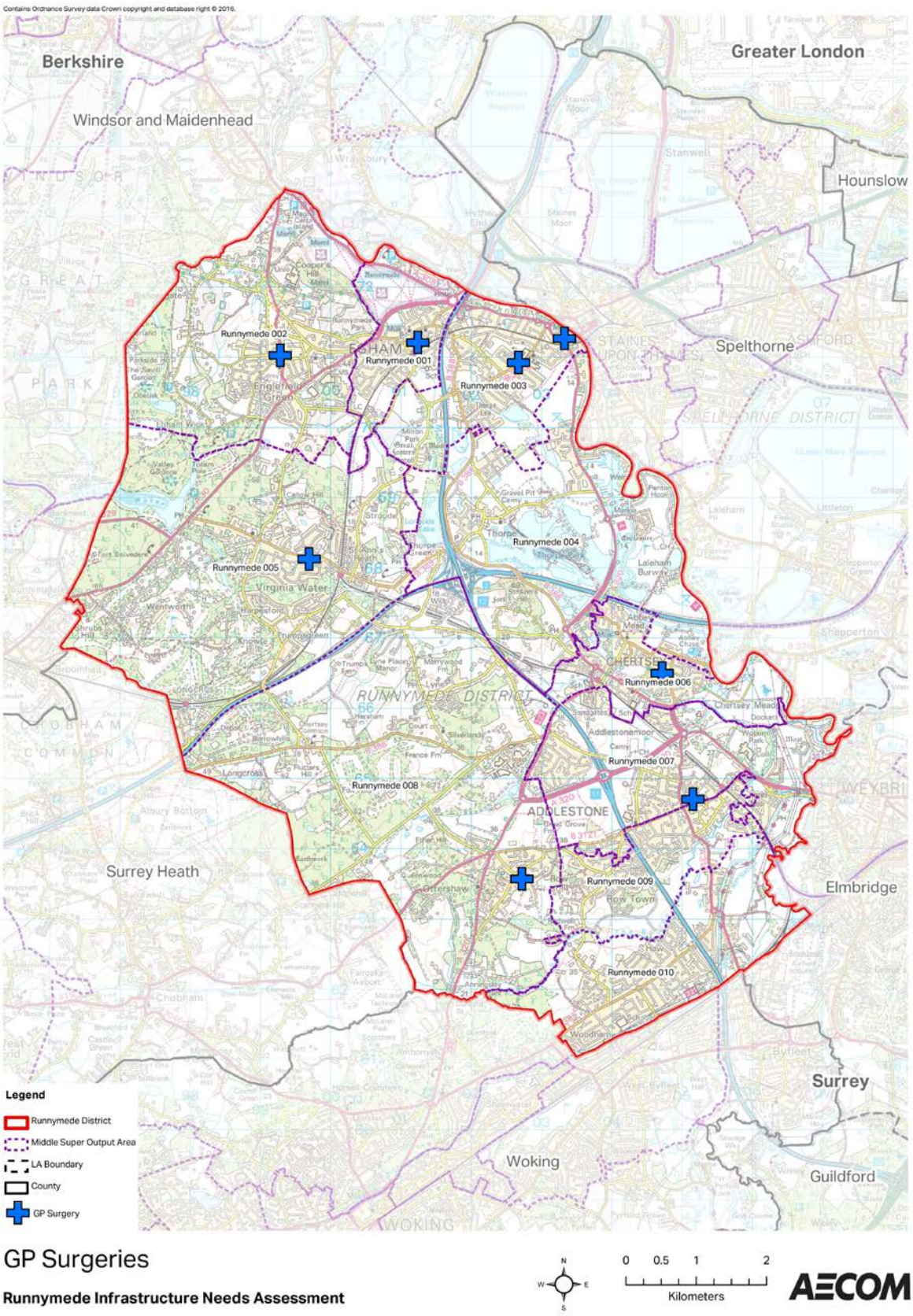

Figure 10. GP Facilities within Runnymede

Future Demand and Planned Provision

5.3.3 The above analysis identifies that there is little or no available capacity within GP surgeries in Runnymede currently and so population growth is likely to place considerable additional pressure on GP services.

5.3.4 Local healthcare providers are developing a spatial infrastructure plan for healthcare services which will cover services in Runnymede. This work will include analysis of GP capacity and demand and identification of locations which are most appropriate to new provision required to accommodate projected growth in Runnymede.

5.3.5 There is a drive to increasingly deliver health services in community-based settings, with the development of integrated primary care facilities and health hubs (including shared community facilities), rather than a reliance on traditional stand-alone GP surgeries. By adopting an integrated approach to health provision, with the involvement of community and voluntary services (as well as a variety of health facilities in one setting) delivery of healthcare in communities will be more efficient and adopt a joined up, integrated approach to facilities planning and delivery.

5.4 Dentists

Supply

5.4.1 The Healthy Urban Development Unit's model recommends a ratio of approximately 2,000 registered patients per dentist[42]. There are nine dental surgeries within Runnymede (that offer NHS treatment) with a total of 27 dentists. Details are shown in Table 6 and Figure 11.

5.4.2 Dental surgeries are not required to publish data in the same way that GP practices are; as such, there is no information on FTE dentists, or the number of patients dentists have registered to them. All of the nine dental surgeries within the Borough are accepting new NHS patients.

Table 6. Dental Surgeries within Runnymede

Name of Facility	Dentists (headcount)	MSOA
Crown House Dental Practice[43]	5	Runnymede 001
Mr G Habberfield-Bateman[44]	2	Runnymede 001
Mydentist Egham[45]	3	Runnymede 001
Thorpe Lea Dental[46]	2	Runnymede 003
Chertsey Dental Practice[47]	1	Runnymede 006
Abbeymead Dental Centre[48]	8	Runnymede 006
Premier Dental Care[49]	3	Runnymede 009
Gatehouse Dental Practice[50]	2	Runnymede 009
Apex Dental Care Ltd[51]	1	Runnymede 009

Source: NHS Choices

[42] HUDU Planning Contribution Model Guidance Notes, (2007); HUDU, EDAW / AECOM
[43] http://crownhousedentalpractice.co.uk/about.html
[44] http://www.nhs.uk/Services/dentists/Staff/DefaultView.aspx?id=22083
[45] http://www.nhs.uk/Services/dentists/Staff/DefaultView.aspx?id=20770
[46] http://www.thorpeleadental.com/
[47] http://www.nhs.uk/Services/dentists/Overview/DefaultView.aspx?id=46868
[48] http://www.abbeymeaddental.co.uk/the-team/
[49] http://www.nhs.uk/Services/dentists/Staff/DefaultView.aspx?id=21432
[50] http://www.nhs.uk/Services/dentists/Staff/DefaultView.aspx?id=22077
[51] http://www.nhs.uk/Services/dentists/Overview/DefaultView.aspx?id=21069

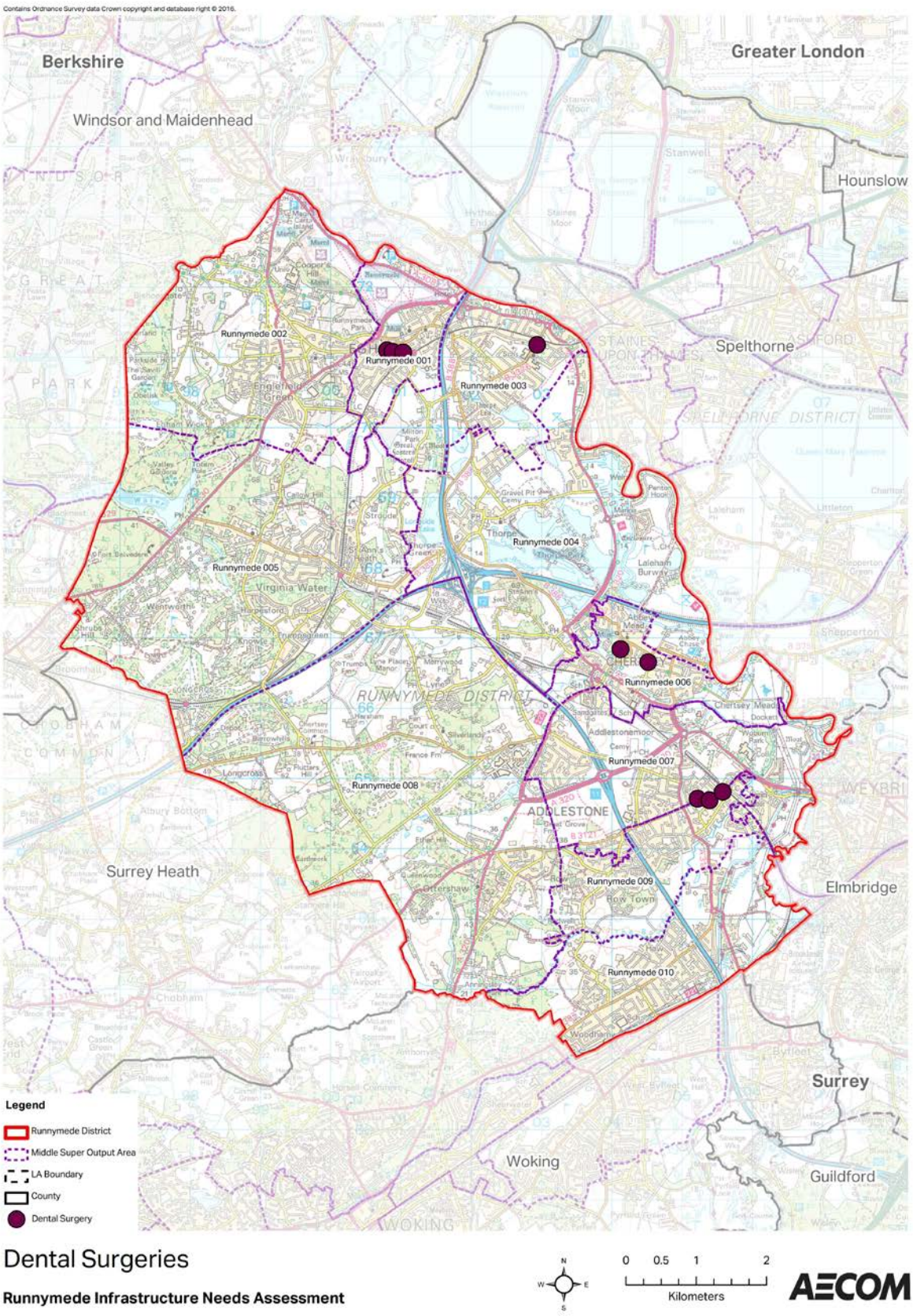

Figure 11. Dental Surgeries within Runnymede

Future Demand and Planned Provision

5.4.3 There is no information available about the available spare capacity within dental surgeries in Runnymede currently. While all nine surgeries are currently accepting new patients, population growth is likely to place additional pressure on dental services over the Plan period.

5.4.4 There are no known plans for new dental surgeries over the plan period, however there is a possibility that dental services could be provided in conjunction with the delivery of new GP services likely to come forward at the former DERA site.

5.5 Acute Healthcare

Scope

5.5.1 For the purposes of this study, acute healthcare is defined as including hospital and specialist care services, including mental health care.

5.5.2 The North West Surrey CCG oversees acute health care within the Boroughs of Runnymede, Elmbridge (West), Spelthorne, and Woking, and small area within the northwest of the Borough falls within the Windsor, Ascot, and Maidenhead CCG area.. The Surrey and Borders Partnership NHS Foundation Trust also provides some services such as community mental health care.

5.6 Hospitals

Supply

5.6.1 Hospital care in Runnymede is provided by the Ashford and St Peter's Hospital NHS Foundation Trust, one of the five hospital trusts in Surrey. The Trust is the largest provider of acute hospital services in the County and serves a population of more than 410,000 people in the Boroughs of Runnymede, Spelthorne, Woking and parts of Elmbridge, Hounslow, Surrey Heath and beyond. The Trust employs 3,700 individual members of staff[52].

5.6.2 The majority of planned care, like day cases, minor surgery, and rehabilitation services, is provided at Ashford hospital, with more complex medical and surgical care and emergency services at St Peter's Hospital in Chertsey[53] – see Figure 12 below. The following hospital and community based health services are provided by the Trust:

- Admitted patient care for planned surgery and emergency medicine and surgery;
- Accident and emergency services;
- Critical care;
- Outpatient services, both in the hospitals and across a number of community settings; and
- Community midwifery services.

[52] http://www.ashfordstpeters.nhs.uk/about-us
[53] http://www.ashfordstpeters.nhs.uk/about-us

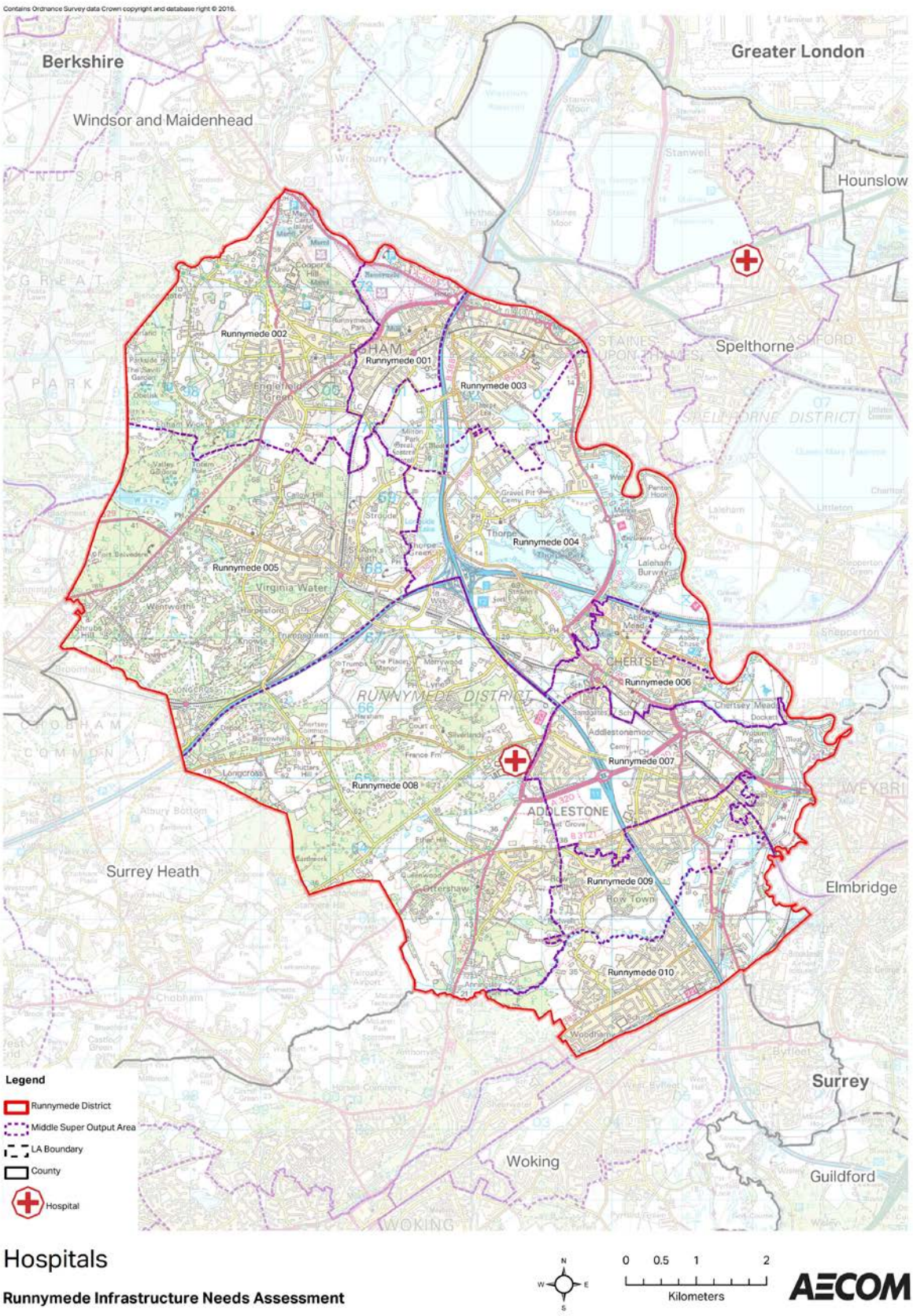

Figure 12. Location of Ashford Hospital and St Peter's Hospital

Future Demand and Planned Provision

5.6.3 The Surrey JSNA 2015[54] is "an assessment of the current and future health and social care needs of the local community". It identifies that overall the County is generally affluent but has areas of considerable poverty and poorer health, and instances of avoidable premature deaths. The Surrey Infrastructure Capacity Survey (2009)[55] found that the biggest impact on health services is likely to be from an ageing population. The JSNA corroborates this, and projects that the number of people in the County aged 85 and over will double to 69,000 by 2033. Older people can place greater demands on the health service in a number of ways, including a higher incidence of long term medical conditions (including dementia) and a higher likelihood of suffering complications associated with minor injuries (for example, falling over can have serious implications for an older person).

5.6.4 While there is no available information confirming a shortfall in hospital provision, and the Ashford and St Peter's Hospital NHS Foundation Trust provides a wide range of services across the County, it is likely that population growth in Runnymede will place additional pressure on hospital services over the Plan period; in particular St Peter's Hospital which is situated in the Borough. Consultation with local healthcare providers confirmed that there was little spare capacity and that the growth projected in Runnymede would lead to capacity issues in some parts of the Borough where there are existing 'hotspots' of need.

5.6.5 In 2010, the Borough Council approved a masterplan for the redevelopment of parts of the St Peter's hospital campus, for the development of new purpose-built healthcare facilities to replace some of the existing buildings, including hospital and mental health services. The cost of the works at St Peter's Hospital are unknown, however it is understood that funding would be by the Hospital Trust. Local healthcare providers are developing a spatial infrastructure plan for healthcare services which will cover services in Runnymede. This work will include analysis of capacity for acute services and identification of locations which are most appropriate to new provision required to accommodate projected growth in Runnymede.

5.7 Mental Health

Supply

5.7.1 The Surrey JSNA 2015[56] defines mental health and mental illness as including social, psychological and biological factors, influenced by:

- The wider determinants of health, particularly socio-economic factors such as low income, unemployment, low levels of education, poor housing, violence and crime;
- Family factors including parenting and family breakup;
- Life events such as bullying, abuse, violence, physical illness, relationship breakdown, job loss, and bereavement; and
- Individual factors including overall health and genetics.

5.7.2 While hospital care in Runnymede is provided by the Ashford and St Peter's Hospital NHS Foundation Trust, as an acute healthcare provider they do not provide mental health services. Mental health services are instead provided and overseen by The Surrey and Borders Partnership NHS Foundation Trust[57].

[54] Surrey Joint Strategic Needs Assessment, (2015); SCC
[55] Surrey Infrastructure Capacity Survey, (2009); SCC
[56] Surrey Joint Strategic Needs Assessment, (2015); SCC
[57] http://www.ashfordstpeters.nhs.uk/about-us

5.7.3 The Surrey and Borders Partnership NHS Foundation Trust operates a Community Mental Health Recovery Service (CMHRS) in Runnymede (and each of the Boroughs in Surrey) providing mental health treatment and support. Services are provided in the community by health and social care professionals, including doctors, nurses, psychologists, social workers and therapists, and community organisations[58].

Future Demand and Planned Provision

5.7.4 The JSNA notes one in four British adults is estimated to experience at least one mental health disorder at some point in their lives, with the World Health Organisation projecting that by 2030 depression will be the leading global disease burden. Mental ill health is currently the largest financial burden of disease in the UK with 23% of the total cost, compared to 16% for heart disease (the second highest cost).

5.7.5 The JSNA estimates that in Surrey, 212,000 people aged over 16 years old have one or more mental health conditions. Runnymede is not identified as one of the Boroughs in Surrey with high rates of mental health need, and at a Lower Super Output Area, the JSNA identifies three of the Borough's wards as experiencing the lowest instances of mental health issues in the County. See Figure 13 below.

Surrey wards with lowest levels of common mental illness (lowest Mental Health Indicator scores)

Lower SOA	Local / Unitary Authority Name	Ward	LSOA_Name	Surrey CCG	Mental Health Indicator
E01030671	Runnymede	Englefield Green East	Runnymede 002A	NHS Windsor, Ascot and Maidenhead CCG	-2.36
E01030687	Runnymede	Thorpe	Runnymede 003E	NHS North West Surrey	-1.94
E01030691	Runnymede	Virginia Water	Runnymede 005C	NHS North West Surrey	-1.88
E01030779	Surrey Heath	Lightwater	Surrey Heath 003B	NHS Surrey Heath	-1.87
E01030474	Guildford	Pirbright	Guildford 002D	NHS Guildford and Waverley CCG	-1.86

Figure 13. Surrey wards with lowest levels of mental illness

5.7.6 There is no information to evidence a current shortfall in mental healthcare provision, and the Borough has relatively low rates of mental health need compared with other areas in the County. However, population growth will likely place additional pressure on mental health services over the Plan period. There are currently no known plans for additional delivery or expansion of the CMHRS service provided by Surrey and Borders Partnership NHS Foundation Trust.

5.8 Services for Older People

Supply

5.8.1 Care for older people is provided by GPs, community health nurses, and in specialist facilities. Elderly care facilities are usually residential homes, such as care or nursing homes (for older people who need regular, dedicated care), and sheltered housing (for people who are able to live more independently but still need some form of regular assistance or access to help, if required). Sheltered housing providers are the private sector, Housing Associations and Runnymede Borough Council.

[58] http://www.sabp.nhs.uk/services/mental-health/adult/community

5.8.2 At the current time there are 15 known residential homes in the Borough which provide for elderly people: 10 care homes and five nursing homes. Of these homes, 11 cater for people with dementia and 10 care for people with Alzheimer's. In total, up to 571 elderly people can be cared for in the Borough's residential care homes, however the current available bed spaces within these facilities is currently unknown. It is understood that some are currently accepting new residents.

5.8.3 There are five sheltered housing schemes owned and managed by the Borough Council, and seven schemes owned and managed by Housing Associations. Additional schemes are operated and managed by private operators.

5.8.4 Care facilities for older people in Runnymede are set out in Table 7a and 7b below.

Table 7a. Care Facilities for Older People within Runnymede

Type of Facility	Name of Facility	Bed spaces	Dementia care?	Alzheimer's care?
Care home	Birchlands	51	Y	Y
Care home	The Grange	62	Y	Y
Care home	Sunrise of Virginia Water	92	Y	Y
Care home	Howards	21	Y	Y
Care home	Red Houses	6	N	N
Care home	St Augustine's	52	Y	Y
Care home	Brook House	4	Y	N
Care home	Church Farm Bungalow	12	Y	Y
Care home	Rosemere	6	Y	Y
Care Home	Queen Elizabeth House	18	N	N
Nursing home	Merlewood	53	N	N
Nursing home	Abbey Chase	62	N	N
Nursing Home	Rodwell House	79	Y	Y
Nursing Home	The Grange	21	Y	Y
Nursing home	Fermoyle House	32	Y	Y
Sheltered housing	Beomonds	36	N	N
Sheltered housing	Darley Dene Court	39	N	N
Sheltered housing	Floral House	75	N	N
Sheltered housing	Grove Court	42	N	N
Sheltered housing	Heatherfields	29	N	N

Source: http://www.carehome.co.uk/; www.housingcare.org

Table 7b. Other Care Facilities for Older People within Runnymede

Type of Facility	Name of Facility	Bed spaces
Housing Association Scheme	Alan Hilton Court	39
Housing Association Scheme	Cheshire House	28
Housing Association Scheme	Hanover Close & Blays Close	76
Housing Association Scheme	Holbrook Court	20
Housing Association Scheme	Schroder Court	47
Housing Association Scheme	Willats Close	7

Type of Facility	Name of Facility	Bed spaces
Extra care	Aldwyn Place	56

Source: Runnymede Borough Council

5.8.5 The Adult Social Care Integrated Commissioning Statements evidence a current shortfall in the supply in both nursing and residential care for older people. This shortfall is set to increase further between now and 2025.

Future Demand and Planned Provision

5.8.6 The JSNA[59] emphasizes that the UK population is ageing steadily; over the period from 1985 to 2010 the number of people aged 65 and over in the UK increased by 20% to 10.3m. Surrey reflects this trend, with 18% of the county's population aged 65 and over. In Runnymede the proportion is similar, with 17.2% of residents aged 65 and over.

5.8.7 Ageing affects individuals differently, with some people having few health care needs, whilst others will rely on long term care. Life expectancy at birth in Surrey is 80.8 years for men and 84.3 years for women, which is higher than the England averages (78.6 and 82.6 respectively). In Runnymede, life expectancy at birth is higher; approximately 85 years for men, and 87 years for women.

5.8.8 Between the period 2013-2020, the JSNA projects that the 65+ years population in Runnymede will increase by 11.9% (the fourth lowest rate of increase of the 11 Surrey Boroughs) and the 85+ years population will increase by 29.2% (the third highest rate of increase of the 11 Surrey Boroughs). This points to a marked increase in the very old population (85+ years) in the Borough, which is likely to place additional demand on older age care and the requirement for residential accommodation over the Plan period and beyond.

5.8.9 There are currently no known plans for additional delivery or expansion of sheltered housing managed by RBC. A new private care home is due to open in Chertsey in winter 2017 providing 93 new bed spaces and dementia care facilities in a purpose built facility at Parklands Manor[60]. Additionally, the Queen Elizabeth Care Home is currently undergoing expansion, adding an additional 47 bed spaces to the facility which are likely to come forward in 2017.

5.8.10 Planning permission has also been given for the following new developments, due to come forward over the next five years:

- 59 luxury retirement properties (planned to open in 2019) on the former Brunel University Runnymede campus;
- 58 assisted living apartments in Virginia Water;
- 70 bedroom care home and 50 extra care apartments in Chertsey; and
- A six bedroom care home in Egham.

5.9 Key Findings

- There are nine GP surgeries within Runnymede with a total of 37.7 FTE GPs. The average patient list per GP within the Borough is 2,124, somewhat higher (i.e. worse) than the England average ratio of 1,800.
- Only two of the nine GP surgeries within the Borough (Packers Surgery in Virginia Water, and the Bridge Practice in Chertsey) has a lower than average ratio of

[59] Surrey Joint Strategic Needs Assessment, (2015); SCC
[60] http://www.carehome.co.uk/carehome.cfm/searchazref/signature-parklands-manor

patients per GP, and may have some ‘spare’ capacity.

- There are nine dental surgeries within Runnymede (that offer NHS treatment) with a total of 27 dentists. All surgeries are accepting new patients currently. There is currently no known expansion of dental surgeries proposed over the Plan period.
- Hospital care in Runnymede is provided by the Ashford and St Peter's Hospital NHS Foundation Trust, serving a population of more than 410,000 people in Surrey. The Trust employs 3,700 individual members of staff. St Peter’s Hospital is situated in the Borough (at Chertsey). Works associated with a masterplan for the redevelopment of parts of the St Peter’s Hospital will be undertaken over the Plan period.
- Mental healthcare in the Borough is provided by the Surrey and Borders Partnership NHS Foundation Trust. Services are provided in the community by health and social care professionals, including doctors, nurses, psychologists, social workers and therapists, and community organisations.
- The Surrey JSNA 2015 identifies that the Borough has relatively low rates of mental health need compared with other areas in Surrey. There are currently no known plans for additional delivery or expansion of mental health services in the Borough over the plan period.
- There are 15 residential homes in the Borough which provide care for elderly people: ten care homes and five nursing homes providing a total of 571 bed spaces. In addition, there are 12 sheltered housing schemes (owned and managed by the Borough and Housing Associations).
- The Surrey JSNA projects that there will be an increase of almost 30% in the number of people aged 85+ years by 2020, which is likely to place additional demand on older age care. There are currently no known plans for additional delivery or expansion of sheltered housing managed by the Borough. A new private care home is due to open in Chertsey in winter 2017; providing 93 new bed spaces at Parklands Manor.
- Planning permission has been given for four new elderly care facilities which are likely to be delivered over the next five years, providing a minimum of 243 new bed spaces.

6. Infrastructure Baseline – Community Infrastructure

6.1 Introduction

6.1.1 For the purposes of this report, community infrastructure includes libraries, community centres, halls, and meeting rooms (including facilities for young people, and day centres).

6.2 Libraries

Scope

6.2.1 Libraries are free to use facilities accessible to the local community; providing a range of services including book lending, computer access, clubs and classes. The 1964 Public Libraries and Museums act sets out the duty of LAs to provide a comprehensive and efficient library service to all local residents and employees[61]. While libraries offer book lending in a traditional library setting, their operation and service model is evolving in line with current trends and technology; for example the need to provide access to virtual resources.

Supply

6.2.2 Library services in the Borough are managed by SCC (with the exception of New Haw Library, as outlined below). There are five libraries in Runnymede[62]. Their location is shown in Figure 14 below.

- Addlestone Library offers DVD lending, internet access and printing facilities, photocopying and faxes, reading groups for adults and children, community events such as police drop in sessions, arts and stationary materials for sale, and assistance for elderly and disabled people with applications for bus passes;
- Chertsey Library has DVD lending, internet access and printing facilities, photocopying and faxes, a reading group for children, adult coffee morning, and arts and stationary materials for sale;
- Egham Library offers DVD lending, internet access and printing facilities, photocopying and faxes, reading groups for adults and children, baby and toddler singing group, story time, community events, arts and stationary materials for sale, and assistance for elderly and disabled people with applications for bus passes;
- Virginia Water Library has DVD lending, map lending, newspapers, internet access and printing facilities, photocopying and faxes, reading groups for adults and children, computer, craft, and story groups, community events such as police drop in sessions, arts and stationary materials for sale, and a coffee shop; and
- New Haw Library; a community managed library since 2012, offers DVD lending, map lending, internet access and printing facilities, photocopying and faxes, rooms for hire, reading groups for adults and children, story time, a weekly Pilates teacher, community events, and arts and stationary materials for sale.

[61] *Comprehensive, Efficient and Modern Public Libraries'*, (2001); Department of Culture, Media and Sport
[62] https://www.surreycc.gov.uk/people-and-community/libraries/your-library/find-your-nearest-library/virginia-water-community-library

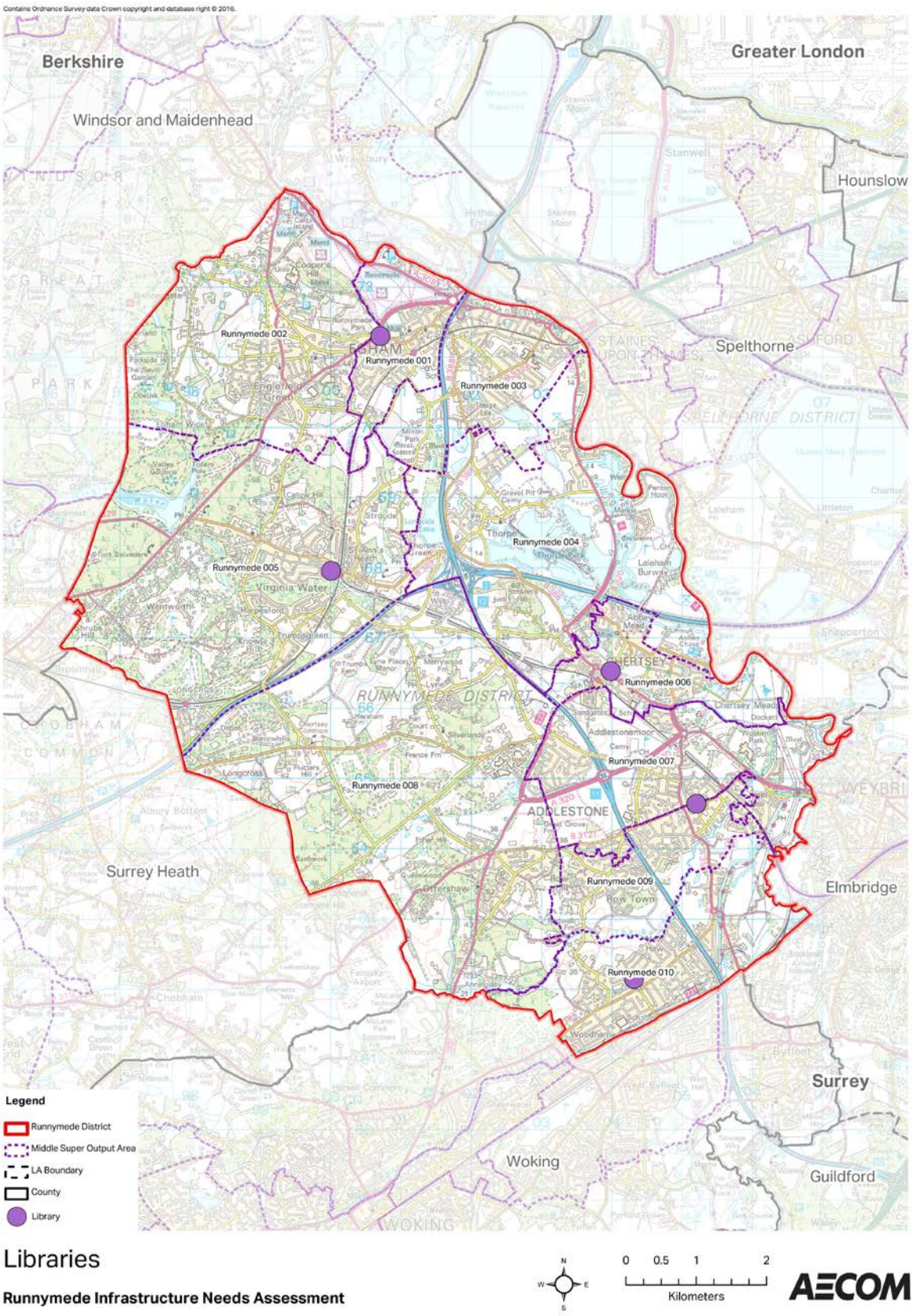

Figure 14. Libraries within Runnymede

6.2.3 It is understood that all five libraries in Runnymede are in a good condition and well maintained. Addlestone Library was co-located with the Council Offices in 2008 and refitted with new facilities, and Egham Library has recently undergone a full refurbishment. Virginia Water, New Haw, and Chertsey Libraries have had recent maintenance by the County, and also have volunteer networks who undertake fundraising and regular maintenance.

6.2.4 In 2011 SCC undertook a review of its libraries; the Public Value Review of Libraries[63], which determined that a number of libraries should be staffed by volunteers as community managed facilities; a process which is currently ongoing. It was recommended that the mobile library service should be discontinued due to low levels of use.

Future Demand and Planned Provision

6.2.5 Following the Public Value Review of Libraries in Surrey, the County Council has confirmed it will retain all libraries in Runnymede. The Review confirmed that any future provision of new facilities is anticipated to be delivered as part of a hub or shared facility (e.g. as in the case of Addlestone Library) in line with the Borough's desire to incorporate community services in easily accessible, shared locations.

6.2.6 Surrey's strategy on library provision is centred on maximising capacity within existing infrastructure rather than the addition of new physical infrastructure. It is also understood that the County is seeking to deliver additional choice to all residents across Surrey through a shift from physical facilities to online services such as e-books and electronic information. A greater shift to digital delivery may generate physical capacity within the Borough's libraries that could be utilised for other community services.

6.3 Community Centres

Scope

6.3.1 Community centres include halls and meeting rooms, youth centres for young people, and day centres for older people. These facilities typically provide community uses such as events for older people, children and youths, and other activities such as mother and baby groups, lunch clubs and other meetings. Community centres can also provide space for events and cultural activities, and serve wider purposes such as providing affordable hireable space for use by individuals or the local community.

Supply

6.3.2 There are a variety of community centres in Runnymede the majority of which are overseen and managed by the Borough, and some of which are run as not for profit or charity facilities. There are nine community centres / halls, five youth centres, and seven day centres in the Borough. See Table 8 and Figure 15 for details.

Table 8. Community Centres within Runnymede

Type of Facility	Name of Facility	Activities / services offered
Community Centre	Addlestone Community Centre	Hireable centre with rooms of different sizes. Daily meetings and classes including languages, fitness, mother and baby groups, and religious gatherings.
Community Centre	The Hythe Centre	Hireable, accessible venue with meeting rooms for events.
Community Centre	The Village Centre	Meeting rooms, a community café, children's play area and information centre offering events including dance, fitness, film nights, mother and baby groups.

[63] Public Value Review of Libraries, (2011); Surrey County Council

Type of Facility	Name of Facility	Activities / services offered
Community Centre	New Haw Community Centre	Hireable centre with rooms of different sizes. Regular events include quiz nights and a horticultural club.
Community Hall	Thorpe Village Hall	Hireable centre with rooms of different sizes. Daily events and classes including choir, theatre, dance, and fitness. A social club for older people operates on a weekly basis offering refreshments, board games, and exercise.
Community Hall	Chertsey Recreation Ground Pavilion	Hireable venue with meeting rooms for events.
Community Hall	Lyne Village Hall	Large hireable venue with rooms of different sizes. Daily events and classes including sport, fitness, mother and baby groups, dog obedience.
Community Hall	Brook Hall	Hireable centre with rooms of different sizes. Regular events including dance, fitness, martial arts, and crafting. It also holds events for over 60 year olds, including social and exercise clubs.
Community Hall	Chertsey Hall	Hireable centre with rooms of different sizes. Regular events include a film club.
Youth Centre	Addlestone Youth Centre	Daily drop in sessions, a coffee bar, computers, games room, events for young women, older youths, and skills classes.
Youth Centre	Chertsey Youth Centre	Weekly drop in sessions, computers, events for young women, younger and older youths.
Youth Centre	Egham Youth Centre	Daily drop in sessions, arts and crafts, computers, games room, band practice, events for younger and older youths, and skills classes, and sessions for disabled and SEN youths.
Youth Centre	Englefield Green Youth Centre	Daily drop in sessions, a coffee bar, computers, games room, events for younger and older youths, study groups, skills classes.
Youth Centre	The Hub	Regular events for carers, disabled people, younger and older youths.
Day Centre	The Eileen Tozer Social Centre	Offers daily social activities and events including keep fit and bingo, outings, hairdressing and chiropody. Daily meals service and a coffee shop for older people.
Day Centre	Manor Farm Social Centre	Offers daily social activities including games, arts and crafts, afternoon tea, exercise classes, hairdressing and chiropody. Daily meals service and a coffee shop for older people. A small shop selling essentials and groceries.
Day Centre	Woodham and New Haw Social Centre	Offers daily social activities and events including dance, games, friendship clubs, computer courses, hairdressing and chiropody. Daily meals service and a coffee shop for older people.
Day Centre	The Orchard Dementia Centre	Operated by the Orchard Dementia Centre charity and offering dementia and Alzheimer's services, activities including games, films, social groups, and gardening. Daily meals service and services such as hairdressing.
Day Centre	Geesemere	Offers daily social activities and events for older people and adults with learning difficulties.

Source: Public Value Review of Libraries, (2011); Surrey County Council

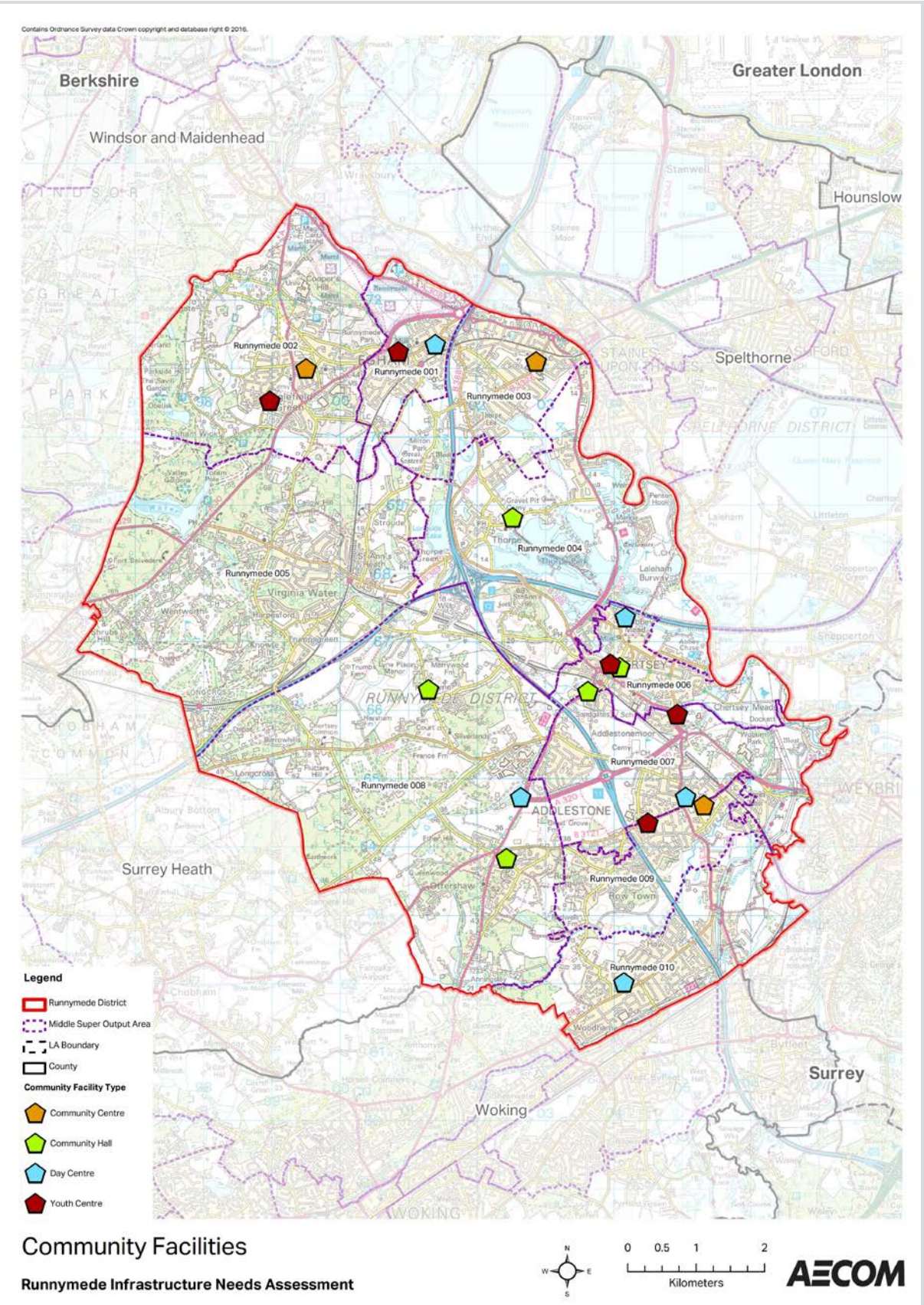

Figure 15. Community Centres within Runnymede

Future Demand and Planned Provision

6.3.3 Runnymede currently appears relatively well-served by a range of community centres, distributed throughout the Borough. However population growth over the Plan period, in particular amongst youth or older age groups, could lead to a requirement to provide additional services or facilities. It is likely that groups who use community centres will seek greater levels of funding and access to facilities, and there will be more volunteers and financial resources required from the Borough to deliver services to support facilities in the local community.

6.3.4 Ten of the Borough's community centres and services for youths and older people are run and managed by volunteers, without whom the range of centres and activities in the Borough could not be offered.

6.3.5 The illustrative masterplan for Longcross Village Centre (2013) includes 300 m^2 D1 space. Otherwise, it is understood that there is no planned expansion of either relevant physical infrastructure or services at this time, as it is understood that existing facilities are not considered to be at capacity.

6.3.6 Should any new facilities be required, consultation has emphasised that the Borough would like to encourage co-location of services within community hub options. As such, there may be the potential for services for youths and older people to be combined with other services such as libraries.

6.4 Key Findings

- There are five libraries located throughout the Borough, which offer a range of facilities. There is not understood to be a shortage in library provision currently and all libraries within Runnymede have been retained following a Surrey-wide review of facilities in 2011. There is currently no further provision planned.
- The Borough is well served by a number of community centres, halls, youth centres and drop in day centres, providing a range of classes, groups, and services for people of all ages (including children, elderly people, and disabled people). These centres are predominantly run by volunteers and rely heavily on fundraising and donations to operate, as well as membership fees for classes and groups. The illustrative masterplan for Longcross Garden Village Centre (2013) includes 300 m^2 D1 space. Otherwise, there is no planned expansion of physical community infrastructure or services at this time, as it is understood that existing facilities are not considered to be at capacity.

7. Infrastructure Baseline – Recreation

7.1 Introduction

7.1.1 This section considers indoor and outdoor sports facilities (e.g. courts and pitches) and equipped child play space. These facilities can accommodate a variety of activities and can be grouped together in a leisure centre or a standalone outdoor space. It is acknowledged that in addition to the facilities considered in this baseline, some people may choose to use privately operated facilities as part of health clubs or fitness centres (such as Virgin Active and LA Fitness) or may conduct sports matches using parks or open spaces not formally designated for sports use; these facilities are not included in this baseline.

7.2 Outdoor Sports

Supply

7.2.1 The Runnymede Open Space Study 2016[64] identified that across the Borough there is a deficiency of outdoor sports facilities across the majority of Runnymede, with Addlestone having the most severe levels of under provision. The Open Space Study identifies that there are 56 outdoor sport facilities in the Borough, with a total area of 671.35 hectares (ha), however only 28.78ha of this space was publically accessible (offering non-fee paying facilities which were publically managed).

7.2.2 The Open Space Study refers to the Fields in Trust (FiT) benchmark for provision of outdoor sports facilities; a target of 1.6 hectares (ha) per 1,000 population. It found however, that provision in the Borough equated to approximately 0.4ha outdoor sports facilities per 1,000 population. Despite this considerable deficit, it is noted that the overall quality of outdoor sports provision in the Borough is generally high. It is also noted, via surveys of residents across the Borough regarding their use of outdoor sports facilities that while 48% of respondents stated that access to outdoor sports facilities was very important, levels of use were low. In Addlestone (which has the most severe level of deficiency in outdoor sports provision) only 4% of respondents stated that they use outdoor sports facilities on a daily basis and only 20% of respondents used outdoor sports facilities on a weekly or occasional basis.

7.2.3 In addition, while there is a considerable deficit in provision of outdoor sports facilities, accessibility across the Borough is good, with the majority of the Borough's population situated within the 1,200m catchment for accessibility outlined in the Open Space Study 2016. See Figure 16 for details.

7.2.4 At the current time there are 19 publically accessible outdoor sports facilities within the Borough which provide a range of pitches and courts for sport, including: five junior or youth football pitches; 13 adult football pitches; 13 tennis courts; four cricket pitches; four mini pitches; eight five-a-side courts; four bowling greens; two netball courts; one BMX tracks; and eight Multi Use Games Areas (MUGA). Details are set out in Table 9. Additionally, there are facilities for dedicated use by the clubs which own/lease them, e.g. the cricket pitch at Englefield Green, which is for exclusive use of the Englefield Green Cricket Club.

[64] Open Space Study 2016-2035, (2016); Runnymede Borough Council

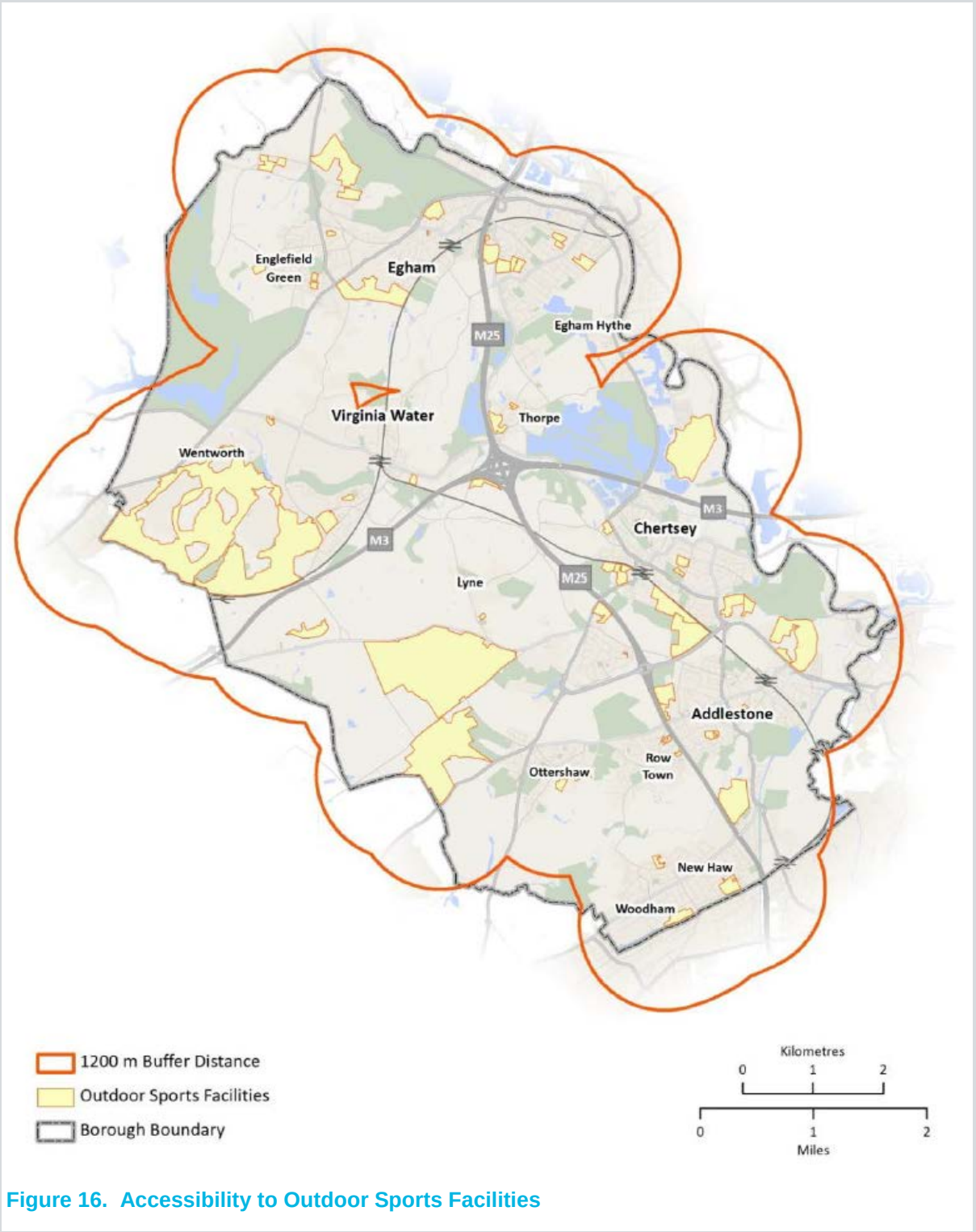

Figure 16. Accessibility to Outdoor Sports Facilities

Source: Runnymede Open Space Study 2016-35

Table 9. Outdoor Sports Facilities within Runnymede

Name of Facility	Type of sports provision
The Orchard and Abbeyfield	Two youth football pitches One cricket pitch
Egham Leisure Centre	Three adult football pitches One mini pitch Six five-a-side courts
Hythe Park	One MUGA Outdoor Gym Facilities One junior football pitch at Hythe Social Centre
Chertsey Recreation Ground	One adult football pitch One mini pitch One cricket pitch One bowling green Two netball / five-a-side football court / tennis courts (floodlit) One ping pong table
Gogmore Farm	One tennis court One MUGA
Heathervale Recreation Ground	Two adult football pitches One cricket pitch One bowling green Three tennis courts One MUGA One skate park
Ottershaw Memorial Fields	Two adult football pitches One cricket pitch One bowling green Two tennis courts One MUGA
Victory Park	One adult football pitch One youth football pitch One mini pitch One bowling green Three tennis courts Outdoor gym facilities
Sayes Court Open Space	One MUGA
Walton Leigh Recreation Ground	One MUGA
Frank Muir Memorial Fields	One adult football pitch One skate park
Thorpe Green	One adult football pitch
King George V Playing Fields	One adult football pitch (and an additional adult football pitch leased to Virginia Water Football Club and only accessible to members) Two tennis courts (only accessible to tennis club members) One MUGA
Kings Lane Sports Fields	Two rugby pitches (leased to Egham Hollowegians rugby club and only accessible to members) One MUGA
Charta Road Recreation Ground	One adult football pitch
Aviator Park	Skate Park One (half) MUGA
Lyne Recreation Ground	One youth football pitch One mini pitch
Hampshire Court	Basketball hoop

Name of Facility	Type of sports provision
Bishops Way Recreation Ground	BMX track

Source: Runnymede Borough Council Infrastructure Assets Register and consultation with Runnymede Borough Council

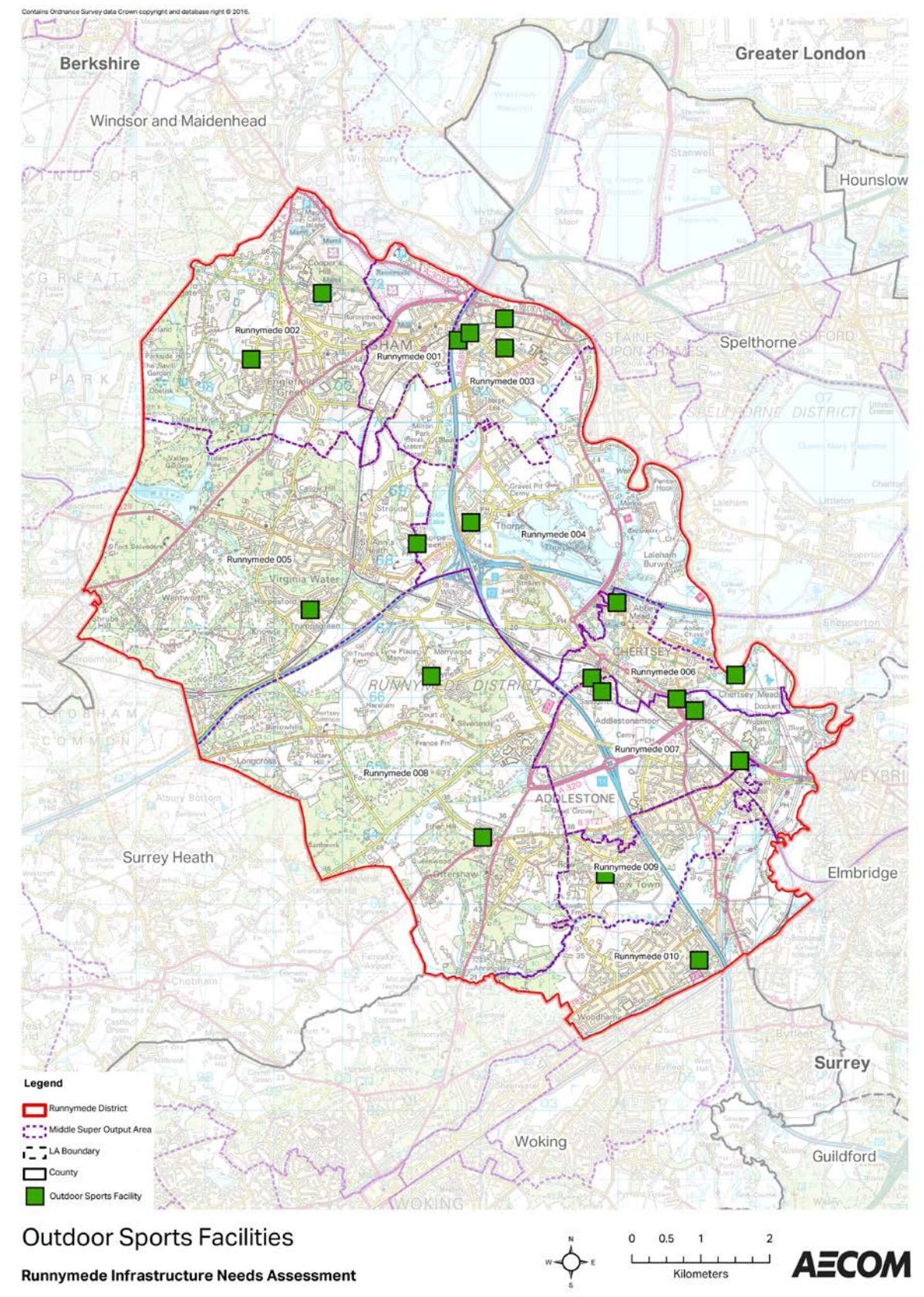

Figure 17. Outdoor Sports Facilities within Runnymede

Forecast Demand and Planned Provision

7.2.5 There is currently an identified shortfall in provision of outdoor sports facilities, and it is reasonable to assume that population growth in Runnymede will increase demand, with pressure on particular types of facilities resulting from growth in particular age groups (e.g. bowling greens tend to be frequented by older people and MUGA tend to cater to younger people).

7.2.6 Despite the findings of the Open Space Study, at the current time there are no known plans to provide new outdoor leisure facilities in the Borough. However there are a number of improvements planned to existing spaces, as shown in Table 10 below.

Table 10. Planned Improvements to existing Outdoor Sports Facilities within Runnymede

Name of Facility	Type of improvement	Funding amount and source
Egham Leisure Centre	Resurfacing of the 5-a-side football pitches.	£TBC; Runnymede Borough Council / Achieve Lifestyle
Chertsey Recreation Ground	Replacement of cricket/football pavilion and provision of larger changing facilities.	£75,000; Source TBC
Gogmore Farm	Provision of trim trail/fitness equipment	£15,000; Runnymede Borough Council
Heathervale Recreation Ground	• Extension/improvement of sports pavilion. • Replacement of skate park	£TBC; Runnymede Borough Council
Ottershaw Memorial Fields	• Resurfacing of tennis courts to include marking out. • Re-fencing and division of tennis courts. • Addition of drainage to football pitches.	£40,000; Runnymede Borough Council
Victory Park	• Improvement of the drainage at the football pitch. • Resurfacing works to tennis courts, to include re marking out, re-fencing and division of tennis courts to include kick boards.	£110,000; Runnymede Borough Council
Barsbrook Farm	• Development of a junior football hub	£TBC; Runnymede Borough Council
Aviator Park	Improvement/extension to skate park	£130,000; Runnymede Borough Council

Source: Consultation with Runnymede Borough Council

7.2.7 It should be noted that while the Borough is expected to provide funding for many of the improvements to outdoor sports facilities outlined above, there is no committed funding currently available.

7.2.8 It is considered reasonable to assume that as part of the development of the former DERA site, outdoor sports facilities to support the population of the new settlement will be provided and funded by the developer.

7.3 Indoor Sports

Supply

7.3.1 There are a range of indoor sports facilities in the Borough. The Borough owns two leisure centres which are operated by an external trust, Achieve Lifestyle, under a 15 year lease. Additionally there are several privately operated clubs and facilities in the Borough, which include Fulbrook School dual use centre (which has a sports hall, gymnasium, and weekly sports clubs), Egham and Chertsey Indoor Bowls Clubs, the River Bourne Health Club, Wentworth Dance Centre, and Weybourne Gymnastics Club.

7.3.2 Table 11 and Figure 18 below describe these facilities.

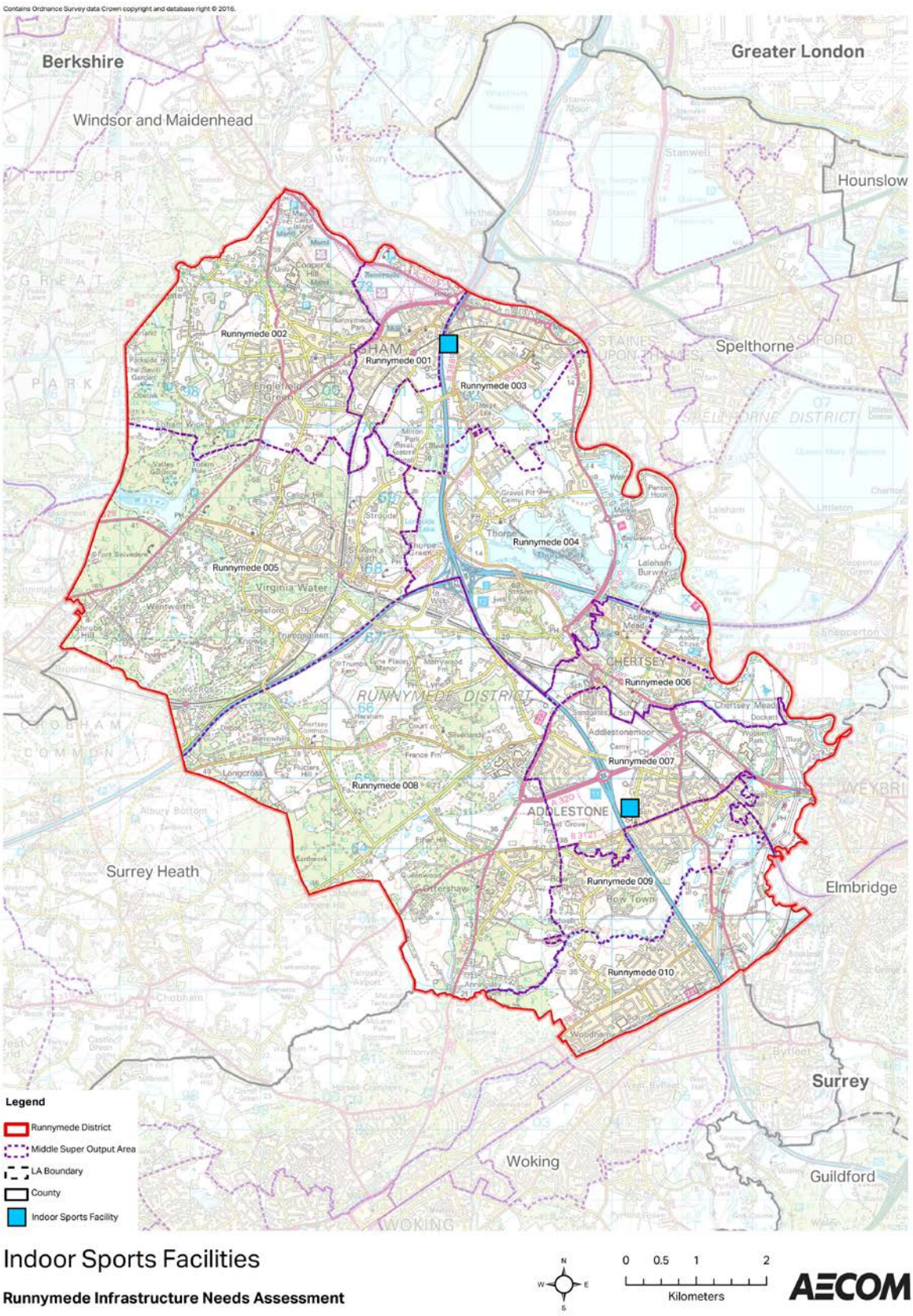

Figure 18. Indoor Sports Facilities within Runnymede

Table 11. Indoor Sports Facilities within Runnymede

Name of Facility	Type of sports provision	Location (MSOA)
Addlestone Leisure Centre[65]	Sports hall Gym Dance studio Spinning room Tae Kwon-Do club	Runnymede 007
Egham Leisure Centre	Sports hall Gym Dance studio Squash courts Tae Kwon-Do club	Runnymede 004

Source: Runnymede Borough Council Infrastructure Assets Register and consultation with Runnymede Borough Council

Future Demand and Planned Provision

7.3.3 A new gym is proposed at the Addlestone One development currently under construction, which is due to open summer 2017. It will be operated by Achieve Lifestyle who have fully funded the fit-out costs of the facility.

7.3.4 There has been recent investment at the Borough's two leisure centres to provide additional services and improve the quality of facilities; this includes a £3M extension to Addlestone Leisure Centre undertaken in 2006, and investment of £600,000 at Egham Leisure Centre in 2006 for a range of improvements including refurbishment and improvements to pitches. In 2015 the Egham Centre's gym was refurbished at a cost of approximately £300,000, shared between Runnymede Borough Council and Achieve Lifestyle (the gym operator).

7.3.5 There are currently proposals for a number of improvements at the Borough's leisure centres:

- Redevelopment of Egham Leisure Centre, including installation of a swimming pool and replacement of fitness equipment, estimated to cost between £15M and £18M, due to commence in 2017.
- Replacement of fitness equipment at Addlestone Leisure Centre at an estimated cost of £135,000.

7.3.6 There is no committed funding from the Borough currently available for these improvements, and it is not yet known how the proposed installation of a swimming pool at Egham Leisure Centre would be funded. There is the potential to apply for a grant or other types of funding, e.g. Lottery funding, however this is currently to be determined.

7.3.7 Additionally, a gym will be provided at the former DERA site to serve the new population residing there and will be funded by the developer.

[65] In 2015 the dual use facilities at Addlestone Leisure Centre (the sports hall, squash courts, and outdoor pitches) were handed back to the School.

7.4 Play Space

Supply

7.4.1 Play space can include equipped play provision, or more informal areas for creative play, and relaxation areas for older children. The Runnymede Open Space Study 2016[66] identified that there is a considerable deficiency of play facilities across the majority of Runnymede. The Open Space Study identifies that there are 41 play facilities in the Borough, with a total area of 4.92ha. See Table 12 and Figure 20 for details.

7.4.2 The Open Space Study refers to the FiT benchmark for provision of play facilities; a target of 0.8 ha per 1,000 population. This is broken down as 0.25ha of equipped play space, and 0.55ha of informal play space. It found however, that provision in the Borough equated to approximately 0.06ha per 1,000 population; considerably less than the 0.8ha target. Provision in Addlestone was found to be the most limited, with approximately 0.04ha play provision per 1,000 population.

7.4.3 A large part of the Borough has poor accessibility to play provision for children and teenagers when assessed against the accessibility guidance outlined within the Open Space Study; Figure 19 shows the small proportion of the Borough's population situated within the 400m catchment (approximately equating to a five minute walk) for accessibility to play space outlined in the Open Space Study 2016.

[66] Open Space Study 2016-2035, (2016); Runnymede Borough Council

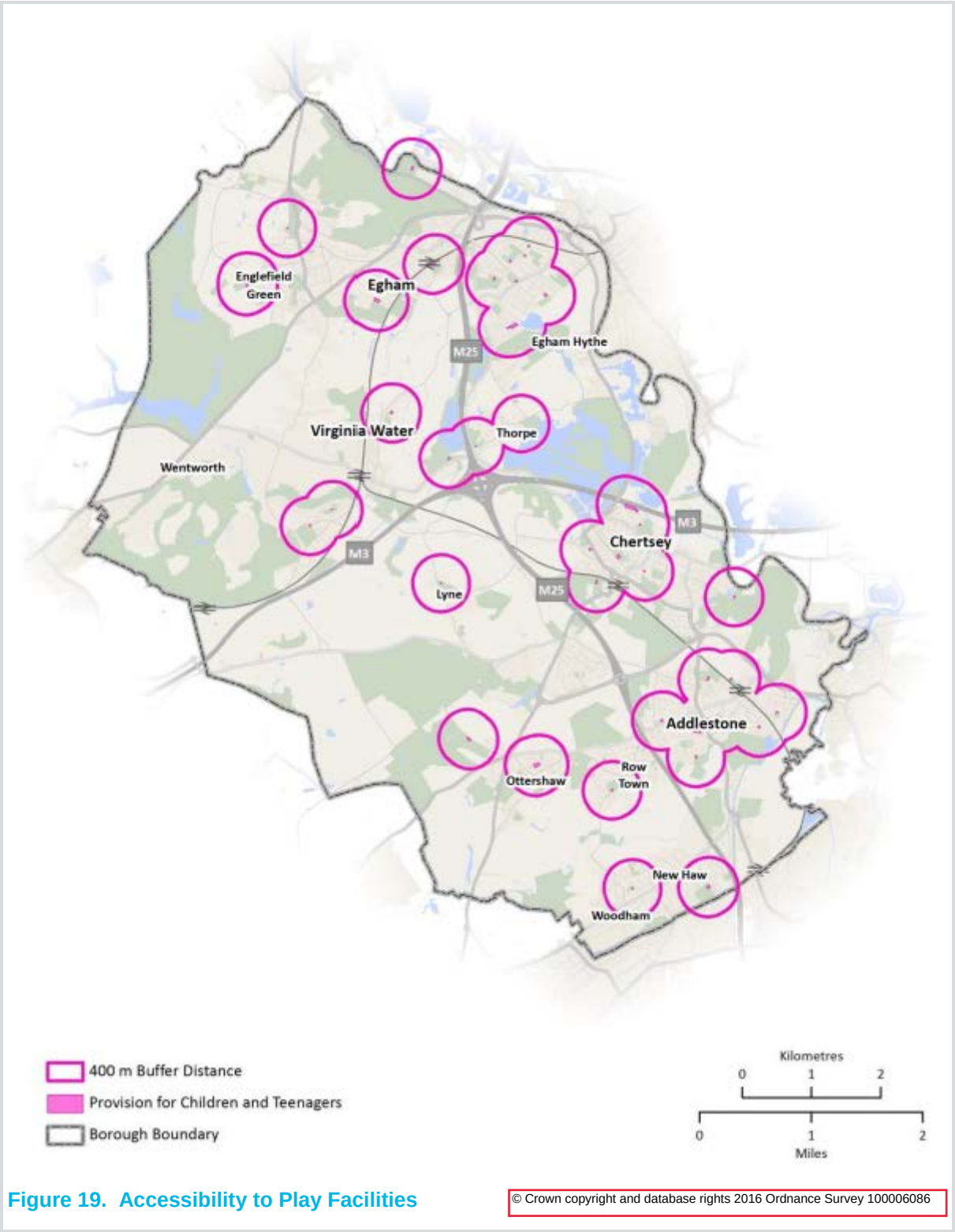

Figure 19. Accessibility to Play Facilities

Table 12. Play Facilities within Runnymede

Name of Facility	Type of play provision
Chertsey Recreation Ground	Playground and paddling pool
Heathervale Recreation Ground	Playground and paddling pool
Ottershaw Memorial Fields	Playground
The Orchard and Abbeyfields	Playground
Victory Park	Playground and paddling pool
Chertsey Meads	Playground
Gogmore Farm Park	Playground
Runnymede Pleasure Grounds	Playground and paddling pool
Hythe Park	Two playgrounds
Englefield Green	Playground
Beomonds Play Area	Playground
Bishops Way Recreation Ground	Two playgrounds (one for 0-4 year olds and one for 5-11 year olds)
Brookside Play Area	Playground
Cabrera Avenue Playing Field	Playground
Charta Road Recreation Ground	Playground
Edgell Close Play Area	Playground
Frank Muir Memorial Field	Two playgrounds (one for 0-4 year olds and one adventure play area)
Hamm Moor Playing Field	Playground
Herondale Playground	Playground
King George V Playing Field	Playground
Lyne Recreation Ground	Playground
Manorcrofts Recreational Ground	Playground
Pooley Green Recreation Ground	Two playgrounds (one for 0-4 year olds and one adventure play area)
Sayes Court Open Space	Two playgrounds (one for 0-4 year olds and one adventure play area)
Spring Rise Play Area	Playground
Staines Lane Open Space	Playground
Sumner Place Play Area	Playground
Surrey Towers play area	Playground
Sussex Court play area	Playground
Thorpe Green	Playground
Thorpe Village Hall play area	Playground
Walton Leigh Recreation Ground	Playground
Wendover Place Play Area	Playground
Caselden Close	Playground
Lasswade Court	Climbing frames
Murray House open space	Playground
Warwick Avenue open space	Playground
Woodham Lodge open space	Playground

Source: Runnymede Open Space Study 2016-2035 and consultation with Runnymede Borough Council

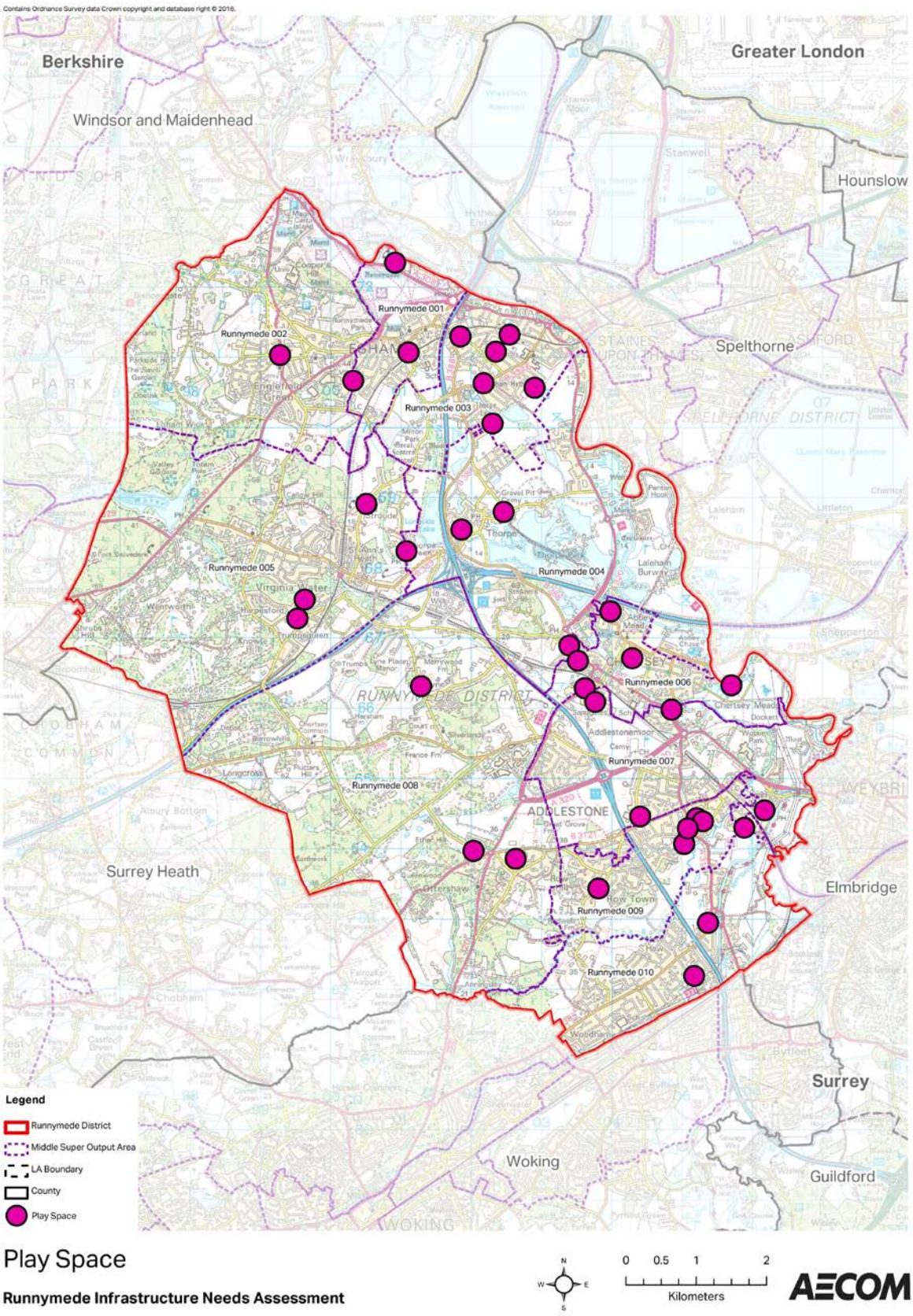

Figure 20. Play Facilities within Runnymede

Future Demand and Planned Provision

7.4.4 The Runnymede Open Space Study[67] undertook surveys of residents across the Borough regarding their use/their children's use of play equipment. In comparison to the 2010 study, the 2016 Open Space Study concludes that there is an increase in demand for play facilities across the Borough.

7.4.5 The findings of the Open Space Study indicate that there is currently a significant shortfall in provision of play facilities. There are a number of improvements planned to existing play facilities, and the delivery of two new play areas.

Table 13. Planned Improvements to existing Play Facilities or new Play Facilities to be delivered within Runnymede

Name	Type of improvement / works	Funding amount and source
Heathervale Recreation Ground	Bow top fencing to play area	£45,000; Runnymede Borough Council
Chertsey Recreation Ground	Bow top fencing for play area and paddling pool	£25,000; Runnymede Borough Council
The Orchard and Abbeyfields	Bow top fencing to play area	£10,000; Runnymede Borough Council
Runnymede Pleasure Grounds	• Re surfacing pool paving with rubber. • Replacement of splash pool with water park. • Addition of play equipment for children with disabilities. • Replacement of fencing around play area.	£278,000; Runnymede Borough Council
Walton Leigh Recreation Ground	Replacement of equipment and provision of an enlarged play space	£110,000; Runnymede Borough Council
Kings Lane Open Space	New play equipment to be installed - improved play facilities for older children	£28,000; 50% S106, 50% SCC grant funded
Marshall Place	New play area to be delivered	£80,000; S106 funded
Fernlands Open Space	New play area to be delivered	£80,000; S106 funded
Various – TBC	Refurbishment / replacement of old / out of date play equipment at various Council owned parks and open spaces	£400,000; Runnymede Borough Council

Source: Consultation with Runnymede Borough Council

7.4.6 It should be noted that while the Borough is expected to provide funding for these improvements, there is no committed funding currently identified.

7.4.7 It is considered reasonable to assume that as part of the development of the former DERA site, play facilities to support the population of the new settlement will be provided and funded by the developer.

7.5 Key Findings

- There are 19 publically accessible outdoor sports facilities within the Borough which provide a range of pitches and courts for sport, including: five youth football pitches; 13 adult football pitches; 13 tennis courts; four cricket pitches; four mini pitches; eight

[67] Open Space Study 2016-2035, (2016); Runnymede Borough Council

five-a-side courts; four bowling greens; two netball courts; a BMX track; and eight MUGA.

- The Borough uses the FiT benchmark for provision of outdoor sports facilities; a target of 1.6ha per 1,000 population. However, provision in the Borough equates to only 0.4ha outdoor sports facilities per 1,000 population. Addlestone is identified as having the most severe deficit in outdoor sports provision.
- While there is a considerable deficit in provision of outdoor sports facilities, accessibility across the Borough is good, with the majority of the Borough's population situated within the 1,200m catchment for access to outdoor sports facilities.
- There are no known plans to provide new outdoor leisure facilities in the Borough, however there are a number of improvements planned to existing spaces.
- The Borough owns two leisure centres which are operated by an external trust, Achieve Lifestyle, under a 15 year lease. Additionally there are several privately operated indoor sports clubs and facilities in the Borough.
- There has been recent investment at the Borough's two leisure centres to provide additional services and improve the quality of facilities, and there are currently proposals for further improvements over the Plan period including the construction of a swimming pool at Egham Leisure Centre. Additionally, a gym will be provided at the former DERA site to serve the new population residing there.
- There are 41 play facilities in the Borough, with a total area of 4.92ha. The Borough uses the FiT benchmark for provision of play facilities; a target of 0.8 ha per 1,000 population. However, provision in the Borough equates to only 0.06ha per 1,000 population.
- There are plans for provision of a new play facility in one location in the Borough at the DERA site north (funded by the developer) and delivery of two new play areas (funded by the Borough). There are also a number of improvements planned to existing play facilities.

8. Infrastructure Baseline – Green Infrastructure

8.1 Introduction

What is Green Infrastructure?

8.1.1 Natural England's Green Infrastructure Guidance states that green infrastructure is a "strategically planned and delivered network comprising the broadest range of high quality greenspaces and other environmental features". According to Natural England, green infrastructure includes: parks and gardens, amenity greenspace, natural and semi-natural urban greenspaces, green corridors, spaces for agriculture (such as allotments), as well as cemeteries and churchyards. Green infrastructure includes spaces which are multifunctional and can deliver a series of environmental, social and economic benefits. For example, an area of green infrastructure might be particularly biodiverse and play an important ecological role. An area of green infrastructure may also promote physical activity and encourage more people to get out into nature, improving health and wellbeing. Areas of green infrastructure can also attract many visitors which may inject money into an area by creating jobs required to manage the space.

8.1.2 In this chapter, each of the various components of green infrastructure is considered in terms of existing levels of provision versus demand in Runnymede. Information (including mapping) is drawn from and consistent with the Runnymede 2035 – Open Space Study (2016)[68].

Current Situation

8.1.3 Runnymede has a rich network of green infrastructure across the Borough, including larger areas of woodland and open space, as well as smaller more formal parks and gardens and green corridors which link the Borough together. These assets are used for ecological and social value across the borough, but there are also areas where provision could be greater and more evenly spread.

8.1.4 Surrey has a number of bodies which look to maintain and improve its green infrastructure. This includes the Surrey Local Nature Partnership, which champions the value of the natural environment in decision making and has two main projects:

- Valuing Surrey, which looks to understand the value of the county's natural assets, and
- Biodiversity Offsetting which allows the biodiversity loss from unavoidable development to be compensated.

8.1.5 Runnymede is also covered in part by the Thames Basin Heaths Special Protection Area (TBHSPA) Delivery Framework, which looks to enable delivery of dwellings in the protected TBHSPA without having a major negative impact on the area. The TBHSPA is an area of lowland heath and woodland which spreads across 11 local planning authorities, consists of a number of SSSIs and is designated due to the presence of breeding bird populations which require protection. The TBHSPA Delivery Framework outlines ways to achieve this, including through the provision of Suitable Alternative Natural Greenspaces (SANGs) via financial contribution from residential development which is within 5km of the TBHSPA, and provided based on the level of at least 8ha per 1,000 people[69].

[68] Runnymede Borough Council, 2016. Runnymede 2035 – Open Space Study 2016. Runnymede Borough Council. Available at: https://www.runnymede.gov.uk/CHttpHandler.ashx?id=14704&p=0

[69] Thames Basin Heaths Joint Strategy Partnership Board, 2009. *Thames Basin Heaths Special Protection Area Delivery Framework*. South East England Regional Assembly. Available at: http://www.bracknell-forest.gov.uk/thames-basin-heaths-spa-delivery-framework.pdf

8.2 Natural and Semi-Natural Greenspace

Scope

8.2.1 Natural and semi-natural greenspace includes any area which has an inherently natural character to it. For the purposes of the Runnymede Open Space Study[70], this includes urban forestry, woodlands, scrub, grasslands (such as downlands, commons and meadows), wetlands, open and running water, wastelands, as well as derelict open land and rock areas (including quarries).

Current Supply

8.2.2 Overall, there is a good provision of natural and semi-natural greenspace across most of the borough, but with some accessibility gaps in much of the Foxhills ward to the west and Woodham to the south. According to the Runnymede Open Space Study[71], there is approximately 12.50ha per 1,000 people of accessible natural and semi-natural greenspace. Based on the FiT[72] quantity standard of 1.80ha per 1,000 people, this provision significantly exceeds what is recommended. According to prior analysis, this typology is of medium quality on average and the standard of quality and quantity of this provision has been considered a sufficient level to maintain provision at 12.50ha per 1,000 people.

8.2.3 This typology is deemed to be highly accessible, using the locally stated accessibility buffer distance of five minutes or 400m. Natural England also sets out standards for accessible natural greenspace known as the Accessible Natural Greenspace Standards. These set out the suggested accessibility buffer zones for accessible natural and semi-natural green spaces according to their different sizes, meaning that larger sites can be less accessible but smaller sites should be more accessible Using these standards, Figure 21 shows that there are some accessibility deficiencies for natural and semi-natural greenspace, specifically in the 300m accessibility buffer for spaces 0-500ha or larger in Foxhills and Woodham to the west and south respectively. However, overall the borough is well-serviced by natural and semi-natural greenspace.

Designated Sites

8.2.4 There is a fairly even distribution of natural and semi-natural green space across the Borough, some of which are designated sites. Designated sites are areas which are recognized as of particular importance for plants, animals, geology or their physical features and are protected from development. Internationally designated sites are afforded a higher level of protection than sites designated on a national level and even more so than locally-designated sites. The designated areas of nature conservation in the Borough include areas of European designation such as one Ramsar site, one SAC, and one Special Protection Area (SPA). There are also areas which have national and local designation such as five SSSIs, two LNRs, and 35 SNCIs. These designated areas of conservation are mainly based around the outskirts of the Borough, particularly those that form part of the Windsor Forest and Great Park SAC towards the north-west. There are also a number of designated sites directly adjacent to the Borough, including notably the TBHSPA and Thursley, Ash, Pirbright & Chobham SAC which need consideration due to their proximity to the Borough.

[70] Runnymede Borough Council, 2016. *Runnymede 2035 – Open Space Study 2016*. [pdf] Runnymede Borough Council. Available at: https://www.runnymede.gov.uk/CHttpHandler.ashx?id=14704&p=0
[71] Ibid
[72] Fields in Trust, 2015. *Guidance for Outdoor Sport and Play – Beyond the Six Acre Standard*. [pdf] Fields in Trust. Available at: http://www.fieldsintrust.org/Upload/file/PAD/FINAL%20ONLINE%20Planning%20Guidance%20for%20Outdoor%20Sport%20and%20Play%20Provision%20Oct%202015.pdf

Table 14. Sites of European Designation within Runnymede and associated SSSIs

Site of European Designation	Site of Special Scientific Interest
South West London Waterbodies Ramsar Site/SPA	Thorpe Park No. 1 Gravel Pit
Windsor Forest & Great Park SAC	Windsor Forest & Great Park

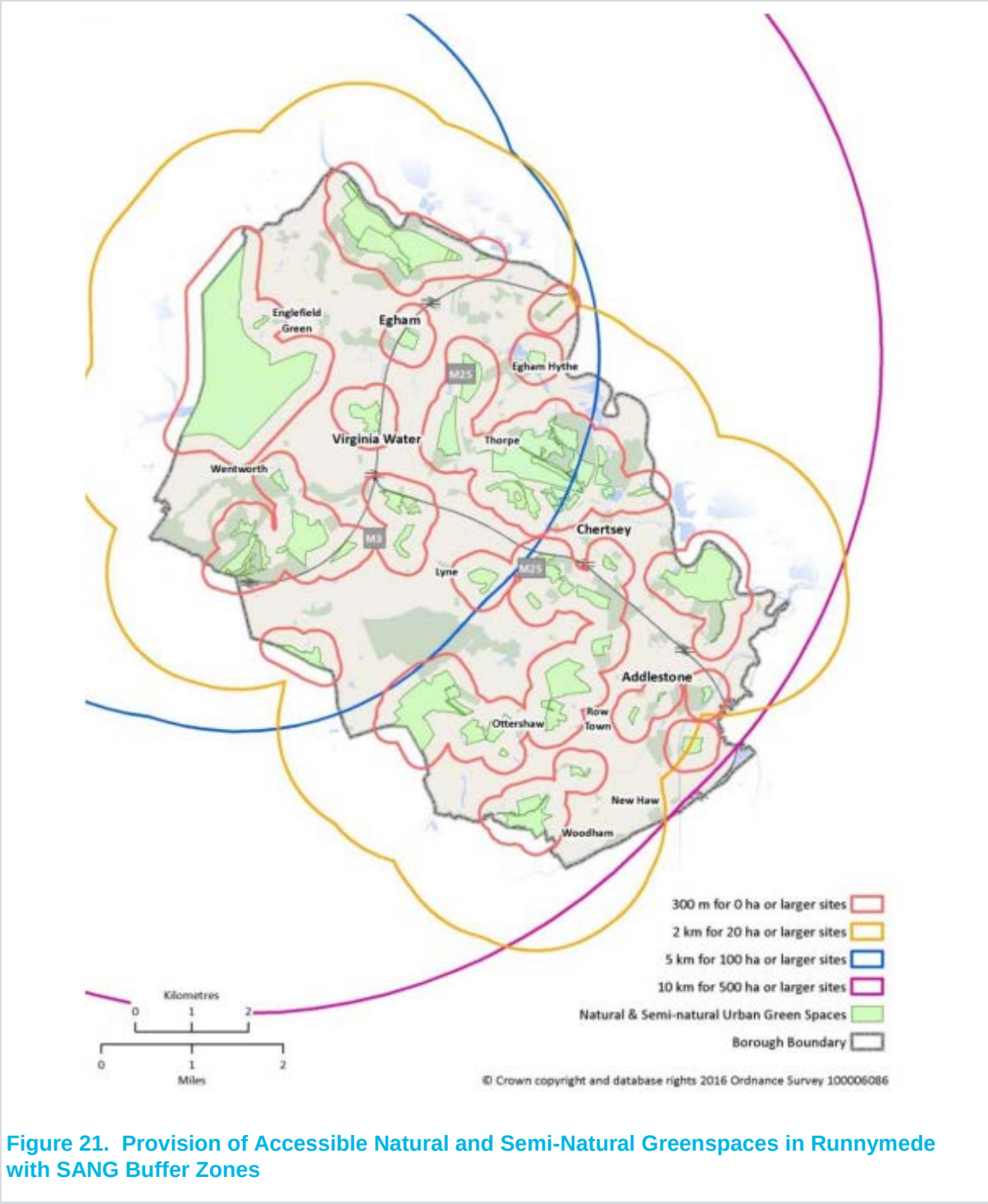

Figure 21. Provision of Accessible Natural and Semi-Natural Greenspaces in Runnymede with SANG Buffer Zones

SANGs

8.2.5 From 2006 onwards it has been established that net additional housing development within 5km of the Thames Basin Heaths Special Protection Area (TBHSPA) has given rise to adverse effects on the numbers of three ground nesting bird species dependent on the SPA, the Woodlark, Nightjar and Dartford warbler. This has been due to an increase from recreational pressures on their heathland habitat and from urbanising effects.

8.2.6 A TBH Joint Strategic Partnership Board (JSPB) was set up between each local authority area affected by the SPA and Natural England to consider how development could avoid impact to the SPA. In 2009 the JSPB published the Thames Basin Heaths Delivery Framework which sets out mechanisms to ensure that residential development can avoid impact to the SPA through a number of mechanisms including:

- No new net additional dwellings within 400m of the SPA to avoid urbanising impacts;
- Provision of alternative recreational land to attract new residents away from the SPA known as Suitable Accessible Natural Greenspace (SANG);
- SANG to be provided for all net additional dwellings within a 400m-5km zone of influence around the SPA;
- Potential requirement for SANG on large sites within 5km-7km of the SPA;
- SANG to be provided at 8ha per 1,000 additional population unless higher standards are necessary;
- Strategic Access Management & Monitoring (SAMM) to monitor impacts to the SPA and ensure better access management.

8.2.7 In Runnymede smaller housing sites within 5km of the SPA are required to make a financial contribution to shared SANG solutions which are set up and managed by the Borough Council. For larger sites, SANG should be provided on site. The SAMM mechanism is also in the form of a developer contribution.

8.2.8 As of 2013, existing SANG in Runnymede include: St Ann's Hill Open Space, Ether Hill/Queenwood, Ottershaw Chase/Timber Hill/Chaworth Copse, Hare Hill Open Space and Homewood Park. The provision of a new shared SANG solution at Chertsey Meads has been agreed with Natural England but this has yet to be implemented. The designated areas of SANG are either a mixture of new spaces or existing greenspace areas which have undergone a series of improvements to bring them up to SANG standard.

8.3 Parks and Gardens

Scope

8.3.1 Parks and gardens is a typology which describes a more formally managed area than natural and semi-natural greenspace, and includes urban parks, country parks and formal gardens.

Current Supply

8.3.2 There is a good provision of parks and gardens in terms of quantity and quality, although there are some minor accessibility deficiencies. There is currently approximately 378ha of accessible parks and gardens in Runnymede, amounting to about 4.7ha per 1,000 people. The parks and gardens are fairly evenly distributed across the Borough, with a large area to the north-west which forms part of the Windsor Forest and Great Park (see Figure 22). Using the FiT recommended quantity standard, which states that there should be 0.80ha per 1,000 people, there are significantly more parks and gardens than is recommended as a minimum. However, surveys carried out through the Open Space Study state that there is a demand for more parks and gardens across the borough. The parks and gardens that do exist are on average high quality and fairly accessible. However, there are deficiencies in accessibility particularly around the Woodham and Virginia Water areas, so new supply should be focused around there.

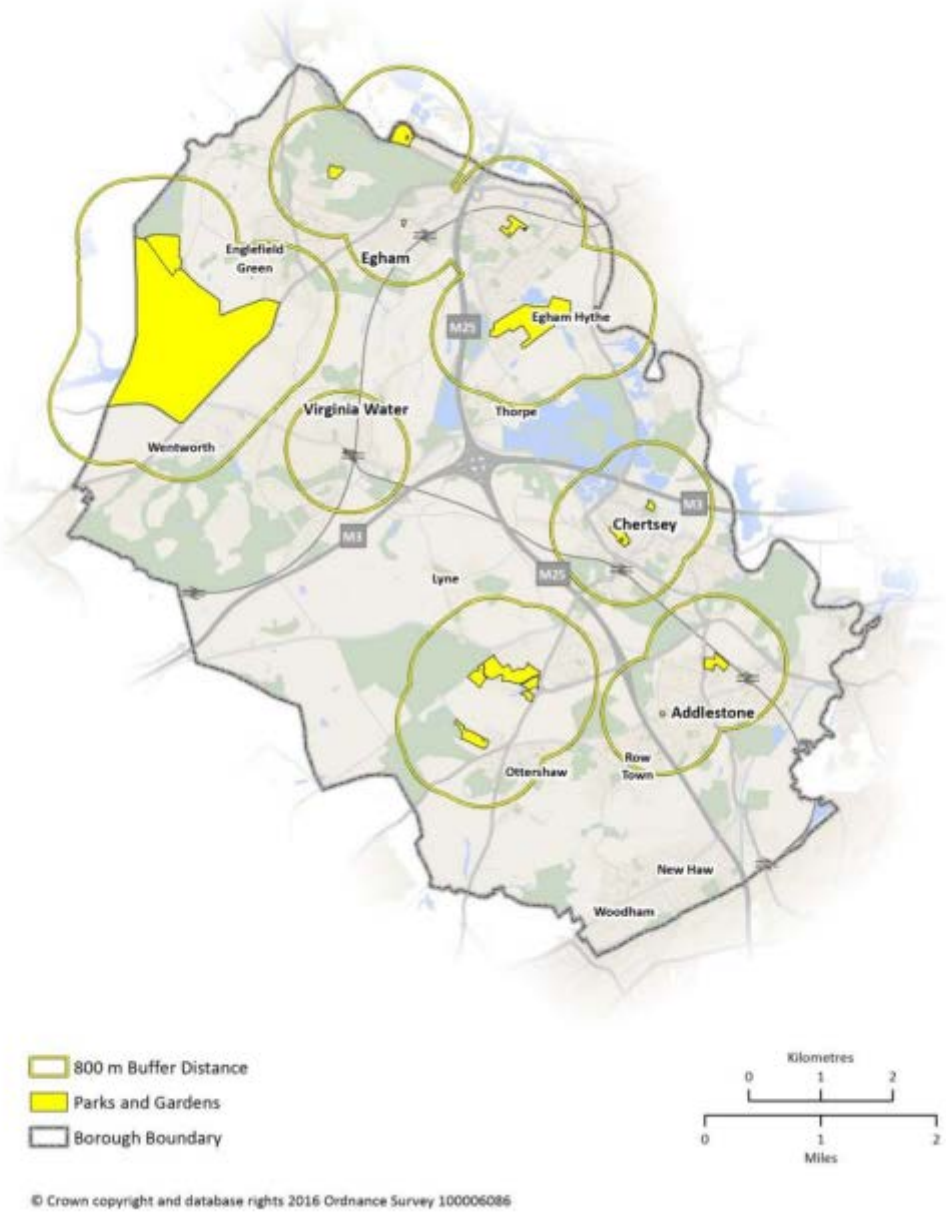

Figure 22. Parks and Gardens Accessibility in Runnymede

8.4 Amenity Greenspace

Scope

8.4.1 Amenity greenspace describes areas which are most commonly but not exclusively associated with housing. This includes informal recreation spaces, greenspaces in and around housing, domestic gardens and village greens.

Current Supply

8.4.2 There appears to be a sufficient amount and quality of amenity greenspace across the borough, although much of it is inaccessible. There are approximately 67.41ha of amenity greenspace in the borough, amounting to about 1.39ha per 1,000 people. Amenity greenspace is concentrated towards the east of the borough, with many medium and smaller areas (see Figure 23). The FiT recommended quantity standard states a provision level of 0.60ha per 1,000 people, which means that provision of amenity greenspace is currently over twice this recommended level. Runnymede's analysis showed that on average the amenity greenspace is deemed to be of medium quality, but a large part of the borough does not meet the recommended accessibility standard of 400m or a five minute walk away. This is particularly the case in Virginia Water, which has poor accessibility to amenity greenspace, although this area has a comparatively low population (see Figure 23).

8.5 Green Corridors

Scope

8.5.1 Green corridors are linkages which connect separate areas, allowing humans and wildlife to move from one area to another. They include river and canal banks, cycle ways and rights of way.

Current Supply

8.5.2 According to surveyed residents, green corridors are deemed to be among the most important spaces across the borough for the role they play in connecting other areas of greenspace and residential areas with nature. While there is no set provision standard for green corridors, there is around 112ha worth in the borough, or 1.39ha per 1,000 people. The current supply of green corridors is considered to be of medium quality. For green corridors, a set accessibility standard irrespective of other open space typologies is less appropriate, and as such there is no set accessibility standard. Instead, the focus is on linking areas together in the right locations, where residents and wildlife need to be connected between them.

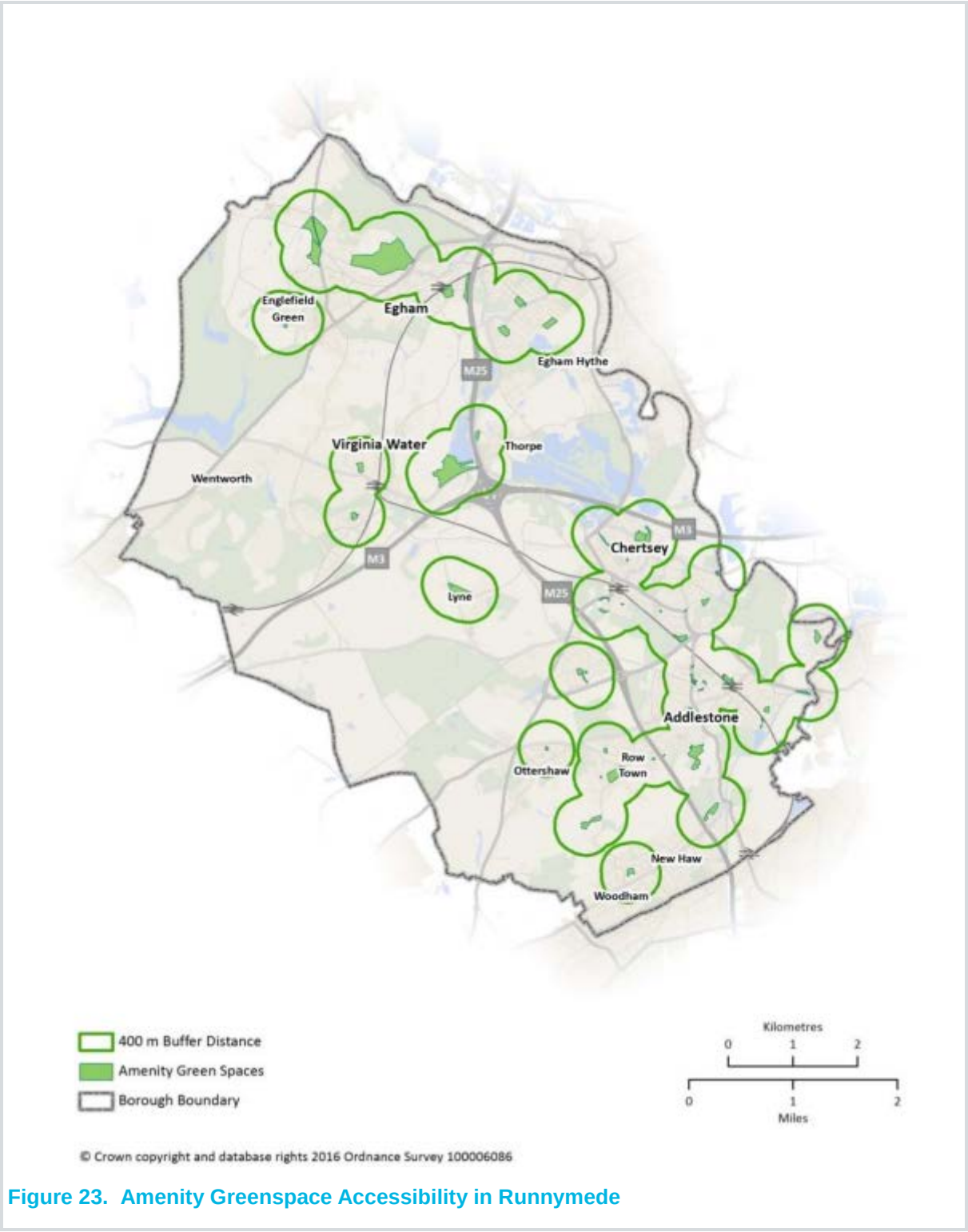

Figure 23. Amenity Greenspace Accessibility in Runnymede

8.6 Allotments

Scope

8.6.1 Allotments provide an opportunity for smaller-scale agriculture, individually or as part of a group to promote understanding of food and horticulture, as well as health and wellbeing. For the purposes of this study, this includes allotments, community gardens and urban farms.

Current Supply

8.6.2 Provision of allotments is concentrated mainly in the eastern half of the borough (see Figure 24). According to The National Society of Allotment and Leisure Gardeners (NSALG) standard, there are not enough allotments in the borough. The NSALG standard for allotments is 20 plots per 1,000 households, with an assumption of 250m^2 per plot. In the Borough there are 36.60ha of allotments, which is equivalent to only 0.45ha or 15.6 plots per 1,000 households. This shortage of provision is particularly the case in the areas of Addlestone and Egham. Similarly, according to the Runnymede accessibility standards of 800m and 10 minute walk away, many allotments are not accessible enough across the Borough, especially in Ottershaw and Virginia Water (see Figure 24). However, on average those allotments that are available are of good quality. Therefore, where possible more allotments should be made available to the population particularly in Addlestone and Egham, and Ottershaw and Virginia Water would benefit from a wider distribution of allotments.

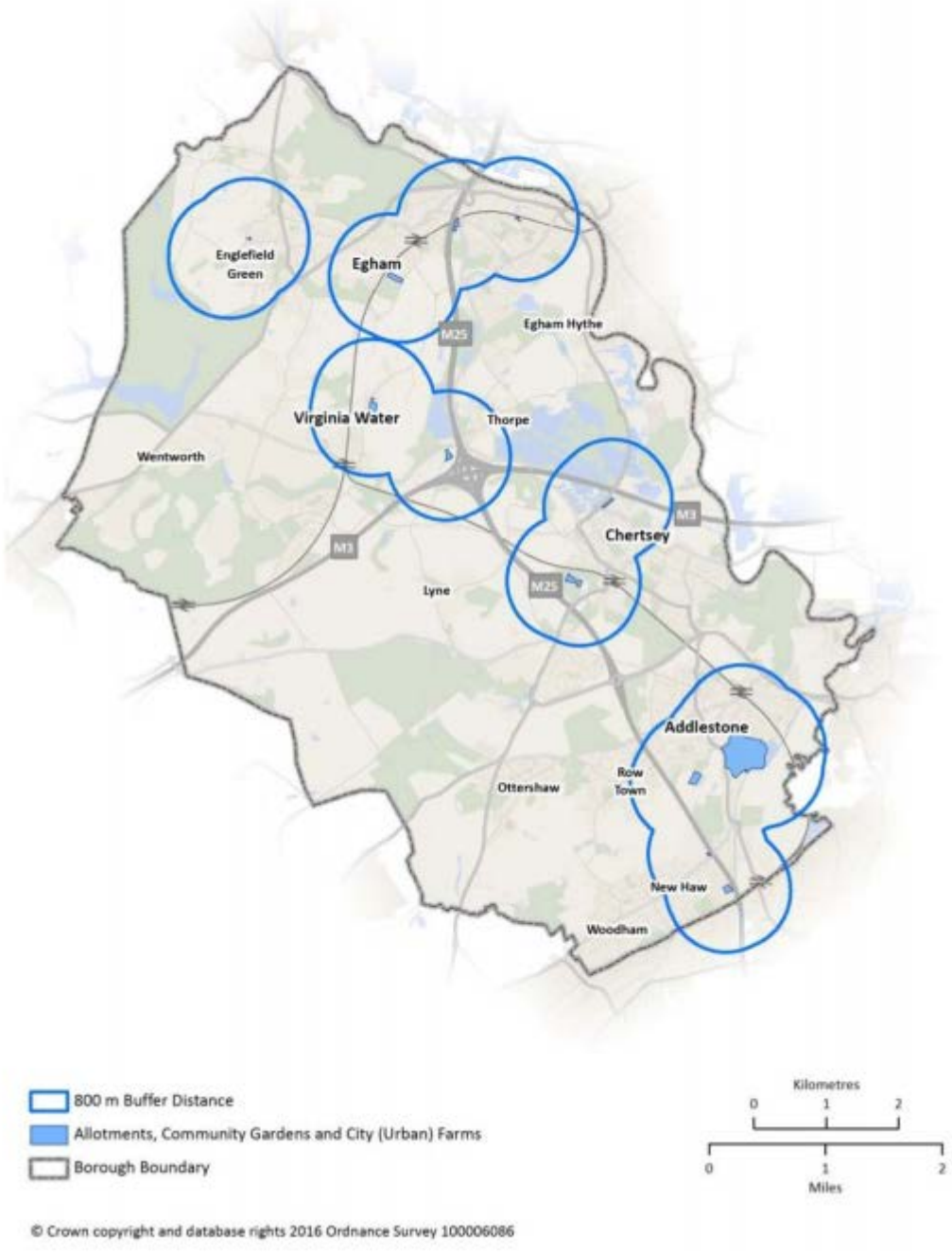

Figure 24. Allotment Accessibility in Runnymede

8.7 Cemeteries and Churchyards

Scope

8.7.1 Cemeteries and churchyards are areas of land which are associated with churches and burial of the dead, and can also be used as a space for quiet contemplation.

Current Supply

8.7.2 While this typology acts as green infrastructure informally, provision would be assessed differently as it does not use simple quantum per population, but would instead use capacity for burial space for provision assessment. There is a general undersupply of cemeteries and churchyards and poor accessibility to them across the borough. There is currently 0.17ha per 1,000 population of current supply, but according to projected burial capacity in the Runnymede Open Space Study[73] from council-owned cemeteries, there is a limited quantity available. This includes there being no more availability at Addlestone Cemetery and only two to three years' capacity at Thorpe Cemetery. In terms of accessibility, a large part of the borough does not meet the Runnymede Open Space Study[74] recommended standard of 800m and 10 minutes' walk away, particularly across Woodham & New Haw, Virginia Water, and Addlestone (see Figure 25). While provision is insufficient currently, the current supply of cemeteries and churchyards is deemed to be of medium quality on average.

[73] Runnymede Borough Council, 2016. *Runnymede 2035 – Open Space Study 2016*. [pdf] Runnymede Borough Council. Available at: https://www.runnymede.gov.uk/CHttpHandler.ashx?id=14704&p=0
[74] Ibid

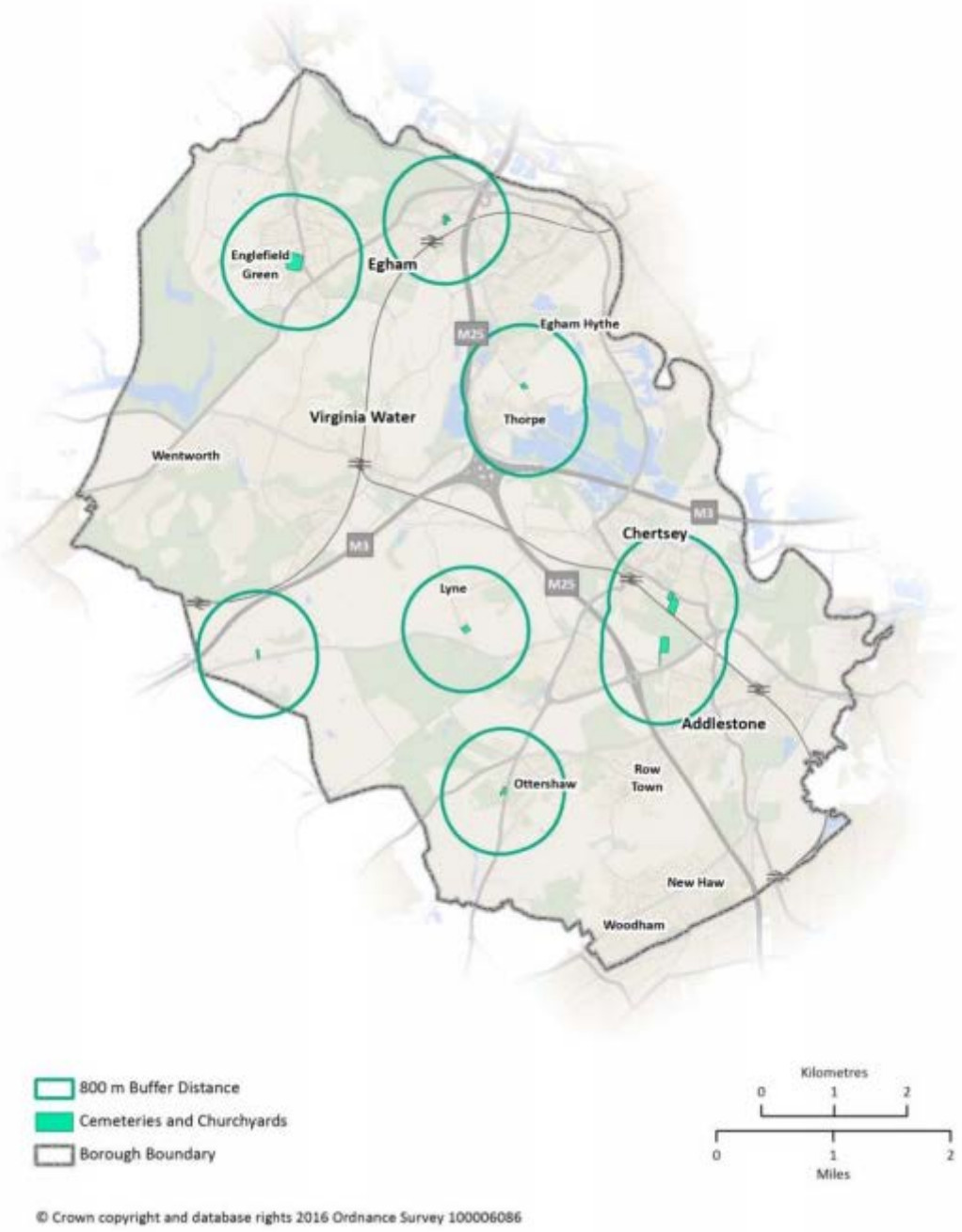

Figure 25. Cemetery and Churchyards Accessibility in Runnymede

8.8 Key Findings

- Natural and Semi Natural Greenspace: Based on the FiT[75] quantity standard of 1.80ha per 1,000 people, there is sufficient provision of natural and semi-natural greenspace. However, current provision is higher than this standard, at the level of 12.50ha per 1,000 people. While these areas are of fairly good quality and accessibility on average, the baseline implies that new areas should be situated around Foxhills and Woodham to address accessibility issues. SANGs should be

[75] Fields in Trust, 2015. *Guidance for Outdoor Sport and Play – Beyond the Six Acre Standard*. [pdf] Fields in Trust. Available at: http://www.fieldsintrust.org/Upload/file/PAD/FINAL%20ONLINE%20Planning%20Guidance%20for%20Outdoor%20Sport%20and%20Play%20Provision%20Oct%202015.pdf

provided for development within 5km of the TBHSPA at a rate of 8ha per 1,000 people.

- Parks and Gardens: Based on the FiT recommended quantity standard of 0.8 ha per 1,000 people, there is sufficient provision of parks and gardens in Runnymede. The current level of provision across the Borough is somewhat higher at 4.7ha per 1,000 people. The baseline indicates that new parks and gardens should be situated around Woodham and Virginia Water.
- Amenity Greenspace: Based on the FiT recommended quantity standard of 0.60ha per 1,000 people, there is sufficient provision. It is noted that the current quantity is at 1.39ha per 1,000 people. The baseline information indicates a requirement for amenity greenspace situated in Virginia Water.
- Green Corridors: Green corridors should effectively link up areas of green infrastructure, so that areas of employment, housing and community facilities are served by a network of green infrastructure.
- Allotments: Based on the NSALG quantity standard of 20 plots per 1,000 households, there is insufficient allotment provision currently. There is also a deficiency of accessibility across much of the Borough. The baseline indicates the new provision could be required across the areas of Addlestone, Egham, Ottershaw and Virginia Water.
- Cemeteries and Churchyards: Based on capacity for burial space across the council there is currently insufficient provision of cemeteries and churchyards, particularly in Addlestone and Thorpe. Based on recommended accessibility standards, there is also insufficient provision across Woodham & New Haw, Virginia Water and Addlestone. This implies the need for more burial capacity in Thorpe Cemetery and Addlestone Cemetery, along with more cemeteries and churchyards across Woodham & New Haw, Virginia Water and Addlestone.

9. Infrastructure Baseline – Transport

9.1 Introduction

Scope

9.1.1 This chapter describes existing transport infrastructure in Runnymede, including current strengths and constraints associated with the different transport modes. It also sets out transport projects which are planned to address existing issues and cater for future growth in Runnymede.

9.1.2 Information has been drawn from RBC's Local Transport Plan (draft October 2016), and AECOM has consulted with SCC, in particular to understand the status of planned transport projects. Other information sources which have been utilised within the report are set out below:

- Highways
  - Route Infrastructure Strategy, Department for Transport (2014)
  - Surrey Transport Plan Congestion Strategy, Surrey County Council (July 2014)
  - Runnymede Borough Council Local Plan Transport Assessment, draft (2016)
- Rail
  - Surrey Rail Strategy, Surrey County Council (September 2013)
  - Surrey Rail Strategy Position Statement, Surrey County Council (2016)
  - Southern Rail Access to Heathrow Feasibility Study, Network Rail (December 2015)
  - Wessex Route Study, Network Rail (August 2015)
  - Office of Rail and Road, station usage data 2014/2015
  - National Rail website
- Public Transport
  - Surrey Transport Plan Passenger Transport Strategy – Part 1 Local Bus, Surrey County Council (July 2014)
  - Bus Timetables, Surrey County Council Website
- Walking & Cycling
  - Surrey Transport Plan Cycling Strategy 2014-2026, Surrey County Council (March 2014)
- Other transport sources
  - Air Quality Action Plan, Runnymede Borough Council (April 2014)
  - Census 2011 Statistics, Office of National Statistics (various datasets).

Overview

9.1.3 Located in north-west Surrey as shown in Figure 26 below, Runnymede Borough sits immediately adjacent to Greater London and is bisected by the M25. Within one of the most densely populated counties in England, it has a predominantly urban form and the main centres of Runnymede are Addlestone, Chertsey and Egham. Runnymede is located approximately 30km from Central London and 10km from Heathrow Airport.

9.1.4 The borough features the following strategic road and rail corridors:

- The M25 (J11 to 13), M3 (J2), A30 (M25 J13 to Runnymede Roundabout) form part of the motorway and trunk road network managed by Highways England; the A30 from Runnymede Roundabout to Sunningdale is managed by Surrey County Council;
- The A308, A317, A318, A319 and A320 which are the responsibility of the local highway authority, Surrey County Council (SCC);
- Three Rail Lines and six stations as follows:
  - Waterloo to Reading Line stopping at Egham, Virginia Water and Longcross stations;
  - Chertsey Branch Line stopping at Chertsey and Addlestone stations to Waterloo;
  - Southwest Main Line (SWML) stopping at Byfleet/New Haw station.

9.1.5 These key rail and road corridors, along with the River Thames bordering the northern and eastern boundaries of Runnymede Borough, provide a high level of connectivity but also create severance for local movements and result in congestion on the surrounding local network.

9.1.6 Runnymede is also served by a network of bus routes operated in majority by Abellio Surrey. These routes connect the main urban centres across the borough. This main bus network is complemented by the yellow bus scheme, a unique scheme in England, transporting students to and from different school institutions across the borough.

9.1.7 An extensive urban and rural walking and cycling network also exists providing opportunities for travel by non-car modes.

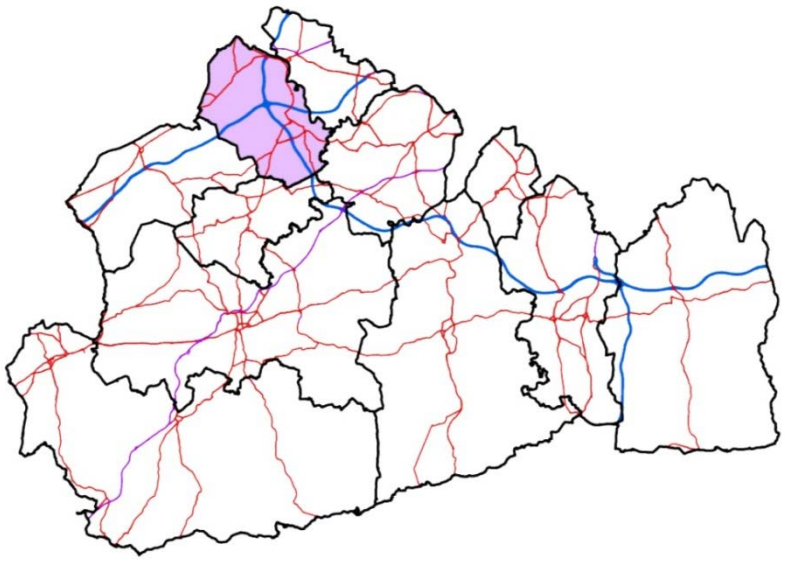

Figure 26. Location of Runnymede within Surrey

Source: Runnymede Draft Local Transport Strategy, October 2016

Travel to Work Analysis

9.1.8 The Origin-Destination Census 2011 Dataset provides insights into the existing commuting patterns for Runnymede. As shown in Table 15 below, the level of people living and working in Runnymede is fairly low (34%).

9.1.9 This means the working population living in Runnymede mainly travels to other boroughs for work purposes. The top 10 destinations are shown in the table below and reflect the local nature of the commuting pattern – mostly surrounding boroughs.

Table 15. Destination of the working population living in Runnymede

Work Destination	No. of Runnymede residents	% of Runnymede Residents
Runnymede total	11,229	34%
Elmbridge	2,908	9%
Spelthorne	2,344	7%
Woking	2,037	6%
Hillingdon	1,687	5%
Hounslow	1,633	5%
Westminster, City of London	1,328	4%
Windsor and Maidenhead	986	3%
Slough	736	2%
Guildford	689	2%

Source: ONS Census 2011

9.2 Roads

Overview

9.2.1 The Strategic road network in Runnymede comprises the following motorway and highway corridors as shown in Figure 27 below:

- The M25 (J11 to 13), M3 (J2), A30 (M25 J13 to Runnymede Roundabout) form part of the motorway and trunk road network managed by Highways England; the A30 from Runnymede Roundabout to Sunningdale is managed by Surrey County Council;
- The A308, A317, A318, A319 and A320 which are the responsibility of the local highway authority, Surrey County Council (SCC).

9.2.2 The strategic network has developed principally to serve London and national and international gateways including Heathrow, with nationally important road corridors spanning the borough such as the M3 and the M25.

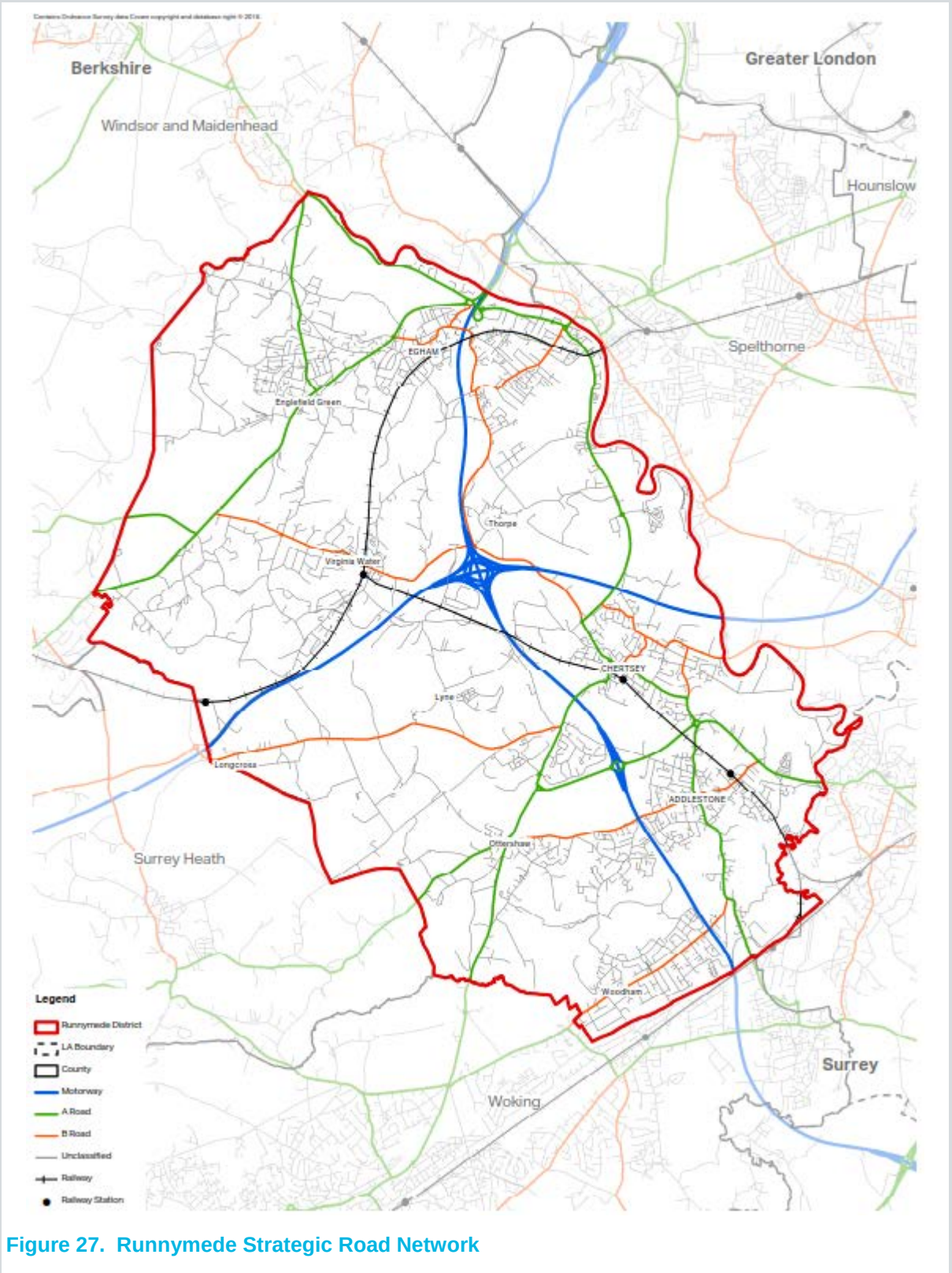

Figure 27. Runnymede Strategic Road Network

Source: Runnymede Draft Local Transport Strategy, October 2016

9.2.3 Travel to work trips are predominantly undertaken by car in Runnymede with 69% of them realised by private motorised mode, more than Surrey's average (64%) and England's (63%) showing a high dependence on the private car. However distances travelled are on average lower (13.4km against 15.6km for Surrey and 14.9km for the rest of the country). Overall, a third of Runnymede's workers travel less than 5km, and another third between 5 and 20km. Reflecting this, car ownership in the Borough is very similar to the rest of Surrey with a lower share than national average of households not possessing a car (15% in Runnymede against 26% in England) but a significantly high share of households possessing two cars or more (45% against 32%).

Table 16. Travel to Work Trips in Runnymede: Distance and Method

	Proportion of Travel to work trips in Runnymede (%)		
	Runnymede	Surrey	England
Distance travelled to work			
Less than 5km	32%	27%	35%
5 to 20km	33%	30%	33%
More than 20km	15%	20%	14%
From home	12%	13%	10%
Other	9%	9%	8%
	100%	100%	100%
Method of Travel to Work			
From home	6%	8%	5%
Car	69%	64%	63%
Public transport	11%	17%	17%
Walking/Cycling	13%	11%	14%
Other	1%	1%	1%
	100%	100%	100%
Car ownership			
No cars	15%	13%	26%
1 car	41%	40%	42%
2 cars or more	45%	46%	32%
	100%	100%	100%

Source: ONS Census 2011

9.2.4 These statistics given by various datasets from the ONS 2011 Census illustrate the important pressure exerted on the local and strategic road network, which is identified by the Surrey Transport Plan Congestion Strategy (2014) as extremely busy yet not suffering from a degree of congestion that major metropolitan conurbations would face. However, the cost of existing congestion was estimated to circa £550M per year and Surrey drivers raised journey time variability as an existing issue.

Existing Infrastructure

9.2.5 The M25, London's Orbital Motorway, provides a north-south connection between south Surrey and the M23/Gatwick Corridor and Heathrow/ M4 corridor but is often congested resulting in increased pressure on surrounding routes. Junctions 11 (A317/A320) and 12 (M3) are located within the borough. They provide access to the M25 for residents of Runnymede, Woking and Elmbridge who commute via Runnymede and the A320 and A317 to access the motorway network in this location. This leads to high levels of congestion and journey delays at peak periods.

9.2.6 Runnymede roundabout, located on the northern boundary of the Borough, also gives access to the M25 J13. The A30 (Egham By-Pass) and A308 Windsor Road/The Causeway also feed into this roundabout, experiencing very high level of congestion and journey delays at peak times as identified in Runnymede's Local Transport Plan (draft October 2016).

9.2.7 The M3 provides an east/west connection towards Sunbury-on-Thames and London eastwards and Basingstoke westwards but suffers from chronic congestion, resulting in increased pressure on surrounding routes. Junction 2 (with the M25) only is located within Runnymede's boundaries.

9.2.8 Despite providing excellent strategic road connections to the rest of South-East and beyond, these two motorways are also important physical severances across the borough dividing it in 4 distinct sections and creating congestion pinch points at crossing points.

9.2.9 Other primary routes passing through Runnymede include:

- The A308 – Old Windsor to Staines-upon-Thames Bridge.
- The A317 – Addlestone Station to Addlestone Moor
- The A318 – Addlestone Moor to Byfleet & New Haw
- The A319 – Ottershaw to Fairoaks Airport and Chobham
- The A320 – Staines Bridge to Dunford Bridge and Woking

9.2.10 Key town-centres within the Borough including Egham and Addlestone currently suffer from high level of congestion as identified in Runnymede's Local Transport Strategy (draft October 2016). This congestion is caused by various instances such as railway crossings, barrier closures and a general high level of traffic passing through Egham town-centre.

9.2.11 The Staines Upon Thames and Chertsey bridges are the only crossings of the River Thames with the exception of the M25 in Runnymede. This results in several highway corridors converging on these routes causing congestion.

9.2.12 Future growth in the borough as identified in Runnymede's Local Transport Strategy (draft October 2016) as part of the Surrey Transport Plan includes the provision of 3,300 new dwellings and 79,000 m^2 of employment floorspace between 2013 and 2028. It should be noted that level of development set out in the Local Transport Strategy is based on the withdrawn Core Strategy. The Local Transport Plan is being re-assessed in order to reflect the revised level of development. This projected demand was assessed[76] against the existing highway network to identify high level areas where without appropriate mitigation measures the network is likely to experience issues. These junctions are the following:

- B386 Holloway Hill/Hardwick Lane
- Trumps Green/Wellington Avenue

[76] Source: Runnymede Borough & DERA Traffic Modelling 2009-2026, Core Strategy Transport Assessment Report, 2012.

- Kitsmead Lane/Chobham Lane
- Kitsmead Lane/Longcross Road
- Accomodation Road/Longcross Road
- Bridge Lane/Lyne Road
- A320 Corridor upgrade

9.2.13 RBC has also produced a Transport Assessment (June 2016) assuming different scenarios of growth from base year 2014 to 2036. The most ambitious scenario (scenario 1) assumes the development of the following sites: Bittams, Thorpe Lea North and West, Longcross South, Row Town East and West, Viginia Water North and South and Ottershaw East for a total of 7,700 net residential units and circa 146,000 m^2 commercial floorspace; resulting in an increase of 2,449 vehicle trips in the weekday average AM peak hour (07.00-10.00). This level of growth projected would highly impact the level of service (LOS) of the following road sections and junctions:

- LOS Cat E – Unstable flow, operating at capacity
  - B 386 Longcross Road eastbound, Longcross
  - C10 Chobham Lane southbound, Longcross
  - A317 St Peters Way southbound approach to the M25 J11, Addlestone
- LOS Cat F – Forced or breakdown of flow
  - A318 Chertsey Road / B3121 Station Road / B3121 Church Road junction
  - B386 Holloway Hill/ Hardwick Lane, Chertsey
  - A30 Guildford Road/ A320 St Peters Way, Ottershaw

9.2.14 Air quality in Runnymede is good overall but the presence of strategic roads make nitrogen dioxide and fine particulates levels high in certain areas of the Borough as identified by Runnymede Air Quality Action Plan (2014). The M25 corridor and Addlestone town centre have both been declared as Air Quality Management Areas (AQMAs) since 2001 and 2008 respectively.

Planned Infrastructure

9.2.15 The Department for Transport's Road Investment Strategy identifies the following on strategic motorway network:

- M25 J10-J16: This scheme aims to upgrade the M25 to Smart Motorway between junctions 10 (A3) and 16 (M40), as well as widen Junction 11 at Chertsey to provide at least four lanes on the M25 between J10 to J16. This scheme was committed in the Autumn Statement 2014 with an estimated cost of £100-250M.
- M3 J2-J4a: This scheme will upgrade the M3 to Smart Motorway between junction 2 (M25) to 4a (A327), including hard shoulder running between these junctions. Committed in the Autumn Statement 2012, this scheme is currently under construction.

9.2.16 Runnymede's Local Transport Strategy (draft October 2016) identifies in its Forward Programme a number of major schemes to address current issues on Runnymede's road network in the short and longer term:

- Runnymede Roundabout: located between the M25 J13 and Egham, this roundabout is a key pinch point in the principle network currently suffering from peak time congestion and affecting surrounding areas. A scheme has been identified to

improve this roundabout which includes enhancing its overall layout (road re-alignment and additional lanes), providing additional signalling and improved pedestrian and cyclist accessibility to neighbouring areas in order to reduce journey times and accident risk. A funding request was submitted to the Enterprise M3 LEP and the £3.6M grant was validated in 2014. Other identified funding sources are Runnymede BC (£1.2M) and SCC (£4.8M). An indicative start date of 2017 has been identified.

- Staines-upon-Thames Bridge Widening and improvements: to tackle current levels of congestion on this bridge crossing, this improvement scheme includes the provision of an additional lane on the northbound direction. The estimated cost is £25M and is likely to be funded via Local Growth Fund (LGF) and Community Infrastructure Levy (CIL). An indicative start date of 2020/2021 has been identified.
- Bridge Road/Weir Road Junction Improvements – Chertsey: the scheme aims to address Bridge Road/Weir Road junction capacity issues and improve pedestrian movements. Indicated to be delivered before 2017 for an estimated cost of £130,000 by SCC) as identified funder.
- High Street/Brighton Road and Station Road/Church Road junction widening – Addlestone: widening scheme to increase capacity at this junction. Land is secured for this scheme and estimated start is 2018 with an indicative cost of £3.5M.
- Station Road/High Street widening & Crouch Oak Lane – Addlestone: enhancing road layout of this junction to improve capacity, subject to necessary land being secured. No indicative start identified or funding source identified at this stage, estimated cost of £1.5M.
- Vicarage Road Underpass: scheme to replace the existing Pooley Green level crossing with highway underpass in order to improve both accessibility and safety in the area. Estimated start is 2020/2021, for a total estimated cost of £25M. LGF funding has been requested.
- Wapshott Way Road Safety Scheme: traffic calming scheme to improve safety for all road users.

9.2.17 Enterprise M3 LEP (EM3 LEP) Local Growth Fund received expressions of interest from Runnymede Borough for the following schemes:

- A320 Corridor upgrade: scheme to upgrade the A320 between Guildford, Woking Town Centre and the M25 J8 currently experiencing congestion as mentioned above. Total project cost identified to be £545M. This scheme is considered a strategic transport scheme and as yet funding is unidentified.
- Vicarage Road Underpass
- Staines-upon-Thames Bridge Widening
- Addlestone Town Centre regeneration phase 2: including High Street/Brighton Road and Station Road/Church Road junction widening

9.2.18 The following road schemes have been identified in Runnymede's Local Transport Strategy (draft October 2016) in relation to the major development site at Longcross (former DERA site) of which the north section is currently being built out.

- Chobham Lane/Burma Road Highway Improvements: scheme aiming to improve access to the northern part of the site and increase capacity through widening of the existing carriageway at the roundabout.
- Trumps Green Road/Wellington Avenue: scheme includes signalisation of existing Trumps Green Road/Wellington Avenue junction to improve local capacity.
- Staple Hill/Longcross Road Improvements: scheme to improve movements between

Staple Hill and Longcross Road and reduce existing and forecasted congestion growth linked to the mixed-use development proposed on the former DERA site.

9.2.19 The Masterplan of both the North and the South section of this development is illustrated in Figure 28 below.

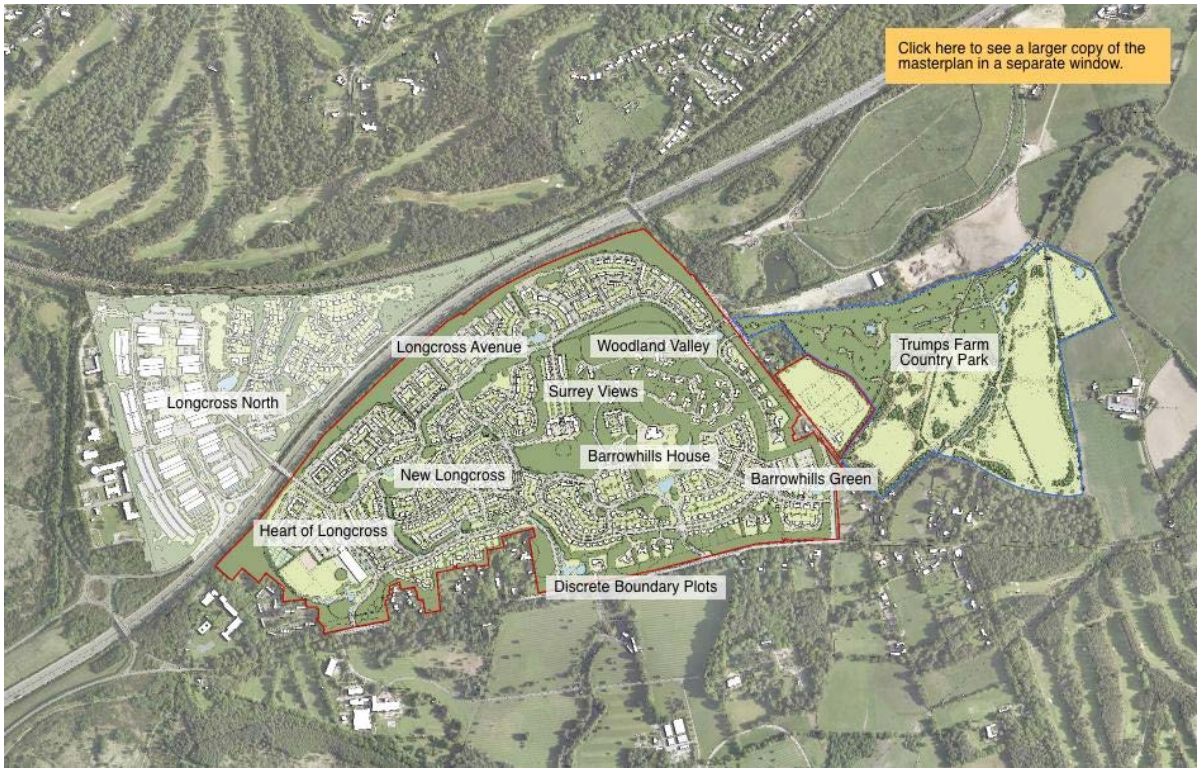

Figure 28. Longcross Village Masterplan

Source: Longcross Village website (http://www.longcrossvillage.info/, accessed 15/11/2016

9.2.20 The traffic impact expected to be generated by this site on the existing road network was assessed and modelled and therefore other surrounding junctions have been identified as affected by the level of development agreed on this site. The following schemes – sourced from the IDP and a discussion with SCC - aim to address these capacity issues and improve the network for all users:

- Kitsmead Lane/Longcross Road Priority junction: provision of a new signalised junction layout
- Kitsmead Lane/Chobham Lane Priority junction: provision of existing junction layout
- Accommodation Road/ Longcross Road Priority Junction: provision of a new signalised junction layout
- Chertsey Road/ Longcross Road/ Chobham Lane Roundabout: Existing agreed mitigation scheme to signalise roundabout
- Trumps Green Road/ Wellington Avenue Priority Junction: existing agreed mitigation scheme to signalise junction that will be subject to further improvements
- Chobham Road/ Chertsey Road/ Windsor Road Roundabout: potential to provide new signs and markings and improve the efficiency of the roundabout
- A30 London Road/ Chobham Road Priority Junction: Existing agreed mitigation scheme to signalise junctions

- Foxhills Road/ A319 Priority Junction: Potential to improve priority junction by providing a new right-turn bay
- B386 Holloway Hill/ A320 Guildford Road/ Green Lane Double Roundabout: potential to provide a new signalised junction layout or improve the double-roundabout junction
- B386 Holloway Hill/ Hardwick Lane Priority Junction: potential to improve priority junction by providing a new right-turn bay
- B383 Windsor Road/ Windlesham Road/ Red Lion Road Priority Junctions: Potential to provide a new roundabout junction.

9.2.21 SCC aim to develop the use of electric vehicles across the county. SCC is currently preparing an Electric Vehicle Strategy; this would involve the implementation of electric vehicle charging facilities for Runnymede Borough for example.

9.2.22 Additionally, other projects improving public transport and walking/cycling infrastructures such as Egham Sustainable Transport Package (currently being delivered and detailed in further sections of this report) may have positive effects on congestion in Runnymede.

9.3 Rail

Overview

9.3.1 Runnymede is served by three rail lines and includes the following stations:

- Waterloo to Reading Line stopping at Egham, Virginia Water and Longcross stations;
- Chertsey Branch Line stopping at Chertsey and Addlestone stations;
- Southwest Main Line (SWML) stopping at Byfleet/New Haw station.

9.3.2 Train Operating Companies (TOC) on these lines are South West Trains and Great Western Railway. The rail network in Runnymede is illustrated in Figure 29 below:

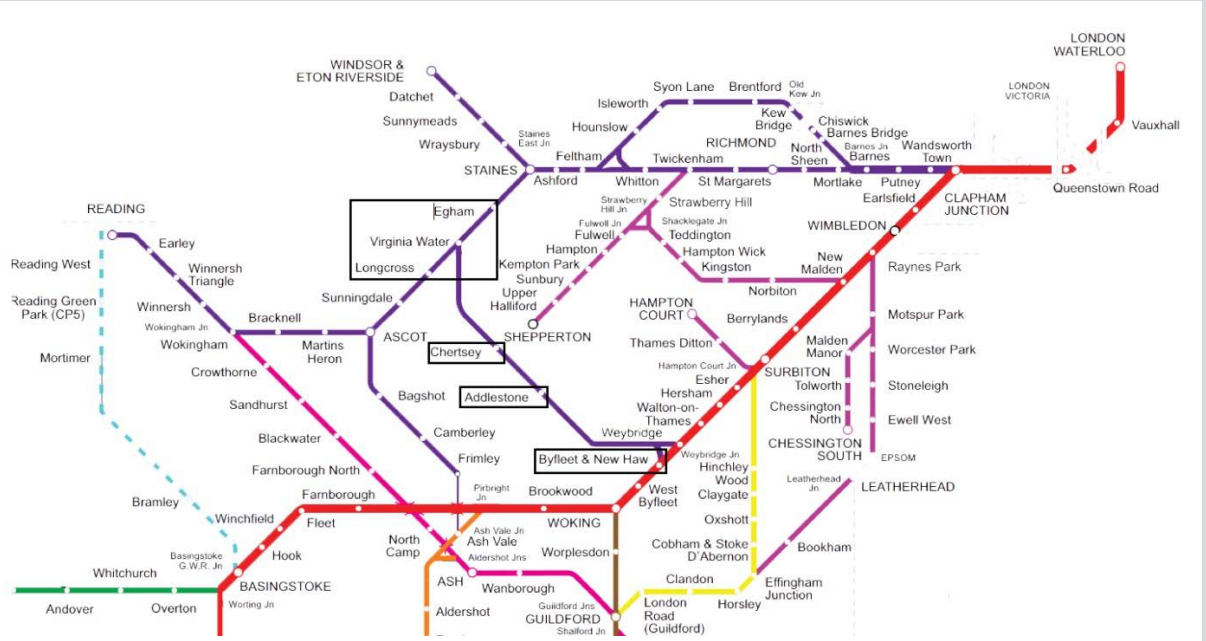

Figure 29. Rail Network around Runnymede stations

Source: Wessex Route Study, August 2015

9.3.3 Rail travel in Runnymede only represents 8% of all work trips. This mode share for rail is lower than England's average (9%) and Surrey's (15%)[77].

Table 17. Rail Travel as Proportion of Travel to Work Mode Share

Method of Travel to Work	Runnymede	Surrey	England
Underground, metro, light rail, tram	0%	1%	4%
Train	8%	14%	5%

Source: ONS Census 2011

Existing Infrastructure

9.3.4 Indicative station usage, journey times[78] and peak time[79] frequencies[80] from Runnymede's stations to main destinations are outlined in the table below:

Table 18. Runnymede Station Usage

Stations	Station Usage 2014 - 2015	London Waterloo		Reading		Woking		Basingstoke	
		Time (min)	Frequency (tph)	Time (min)	Frequency (tph)	Time (min)	Frequency (tph)	Time (min)	Frequency (tph)
Egham	2,121,684	43	7	48	2	29	2	60	4
Virginia Water	596,322	47	7	44	2	25	2	56	4
Longcross	8,960	51	2	40	2	55	2	63	2
Chertsey	695,908	57	7	48	2	19	2	50	2
Addlestone	406,790	54	7	51	2	16	2	47	1
Byfleet & New Haw	439,790	37	6	64	2	7	2	35	2

Source: Office for Rail and Road, station usage data; national rail timetables

9.3.5 These figures show very different levels of usage and frequencies. Whilst Egham has the highest station usage, linked with the high density and important catchment of this station including students of the Royal Holloway University of London; Longcross shows very low usage and frequencies. This situation may evolve with the regeneration of the former DERA site.

9.3.6 Planning for growth across the rail network is the responsibility of Network Rail. They have created a series of route studies to consider the impacts of growth and infrastructure requirements associated with this. These documents will be refreshed on a regular basis and are therefore subject to change but represent current thinking. The route study that covers Runnymede is the Wessex Route Study.

[77] Surrey and England train mode shares identified here combine both train and underground/metro/light rail/tram mode shares.
[78] Best journey time found on period, National Rail.
[79] Between 7-8am, and 7-6pm, National Rail
[80] Counting direct and indirect journeys towards destination, National Rail

9.3.7 With the level of development and growth identified by Network Rail across the whole area of the Wessex Route Study (August 2015), including 6,104 new dwellings in Runnymede in the 2015-2030 period, the anticipated percentage increase in the number of rail passengers travelling on this part of the network towards central London during peak hours during the 2011-2043 period is 37% for the South West Main Line services on which some of Runnymede's stations are located.

9.3.8 The objective for the Wessex Route Study for the Windsor Line services at horizon 2043 is to provide sufficient capacity for passengers travelling into central London during peak hours taking into account the anticipated growth over the same period. Currently, over 13,000 passengers use these services towards London at the busiest time of the day; their number is projected to reach 17,500 by 2043.

9.3.9 Other capacity issues are identified on the South West Main Line, serving Byfleet and New Haw station in Runnymede, and similarly to the passenger usage of the Windsor line services, a 24% increase is expected by 2031.

9.3.10 Identified by LTP3 (Draft October 2016) is a lack of connectivity to Heathrow Airport by rail, currently necessitating several changes and impacting the attractiveness of rail due to lengthy journeys.

Planned Infrastructure

9.3.11 If the loading capacity at all stations in Runnymede is within funder's guidelines as identified by the Wessex Route Study, schemes are identified concerning these stations as part of wider improvements of the network. They are illustrated in Figure 30 and detailed below:

- 10 car capability scheme on the Reading to London line, necessitating upgrade works between Virginia Water and Reading; and platform lengthening planned at Egham, Longcross, Chertsey and Virginia Water stations part of a wider £800M railway package to improve services into Waterloo station, and the station itself;
- Feltham re-signalling project giving the opportunity for potential future 12-car operation on the network, necessitating turnback facility at Virginia Water station;
- Deliver additional capacity on the Reading to Waterloo line by 2019, 1 additional tph via Richmond route and 2 additional tph via Hounslow route.

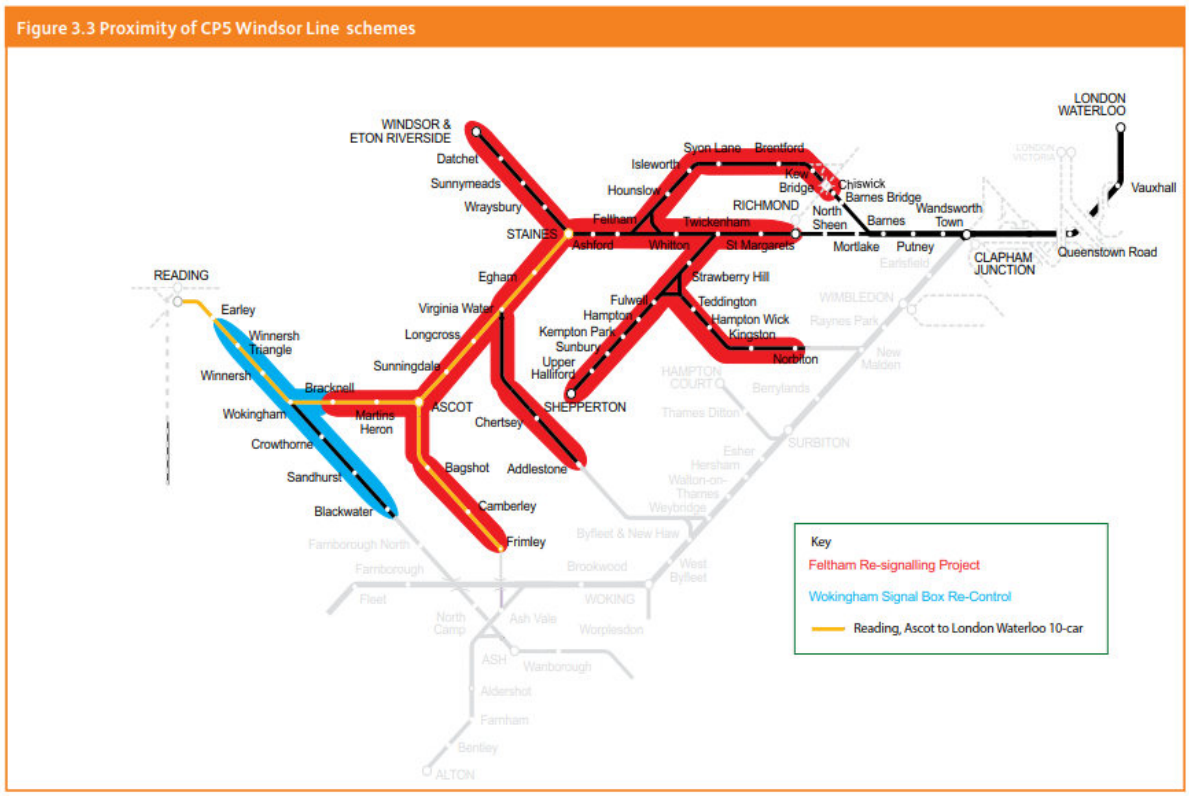

Figure 30. Schemes on Windsor Line Services

Source: Wessex Route Study, August 2015

9.3.12 Other projects planned for rail identified in the Runnymede Local Transport Strategy (draft October 2016) in its Forward Programme include the improvements to Longcross Railway Station in relation to the development of the former DERA site. The current limited train carriage length to serve the station impacts the capacity and level of services and should be addressed by this scheme. The estimated cost is £750,000 (developer funded) and starting date post 2017.

9.3.13 Other major regional rail projects identified to have an impact on Runnymede Borough are the following:

- Southern Rail Access to Heathrow: Network Rail to identify the potential benefit of access to Heathrow airport from the Wessex route. Route study developed in parallel of Wessex route study
- Airtrack Lite: to address rail connectivity issues from Surrey/Runnymede to Heathrow Airport, reusing existing rail tracks and diverting services from London Waterloo. Nothing is currently committed for Airtrack Lite but SCC will continue to engage with and support this project.
- Crossrail 2: connecting Surrey to London and Hertfordshire and providing additional capacity on the SWML in its regional option. £80M was invested by the government in March 2016 to develop this project and SCC will continue to engage with and support this project.
- Digital Railway Programme on the SWML delivering significant reliability and capacity benefits.

9.4 Bus

Overview

9.4.1 Within Surrey, the local bus network is an integral part of the transport system providing public transport provision to numerous communities and supporting the economy. Some of the more urbanised areas of Surrey, and particularly those areas bordering London, are relatively well served by bus services.

9.4.2 Bus or coach travel in Runnymede represents 2% of all work trips, a mode share similar to that of Surrey (3%).

9.4.3 Eight bus routes serve the Borough, essentially connecting the settlements of Egham, Englefield Green, Addlestone, Chertsey and to a lesser extent Virginia Water and Ottershaw. Destinations, frequencies and operators of these routes are detailed in the table below.

9.4.4 Other bus services include education transport with the Yellow Bus Transport Scheme established in Runnymede in 2002. Fares are subsidised through funding from future development funding and sponsorship.

Existing Infrastructure

9.4.5 Surrey counts some 30 bus operators providing these services and the role of Borough and District Councils in this context is to provide bus shelters and if they are willing to, operate community transport/'dial-a-ride' services or conventional bus services.

9.4.6 The destinations and frequencies of the Eight bus routes serving Runnymede Borough identified by the Local Transport Plan (Draft October 2016) are detailed in Table 19 and Figure 31 below.

Table 19. Bus Routes Serving Runnymede

Route Number	Route Itinerary	Frequency	Operator
8	Slough, Windsor, Englefield Green, Egham, Royal Holloway College, Staines, Heathrow T5	1-2 bph	First Berkshire
441	Englefield Green, Egham, Royal Holloway College, Staines, Heathrow T5	1-2 bph	Abellio Surrey
446	Woking, Ottershaw, Chertsey, Staines, Heathrow T5	1-2bph	Abellio Surrey
461	Kingston, Walton-on-Thames, Addlestone, Ottershaw, Chertsey, Staines	1-2bph	Abellio Surrey
500	Frimley Park Hospital, Camberley, Sunningdale, Virginia Water, Egham, Staines	< 1 bph	Dicksons Travel
556/557	Woking, West Byfleet, New Haw, Addlestone, Chertsey, Shepperton, Sunbury	1-2 bph	Abellio Surrey
566/567	Staines, Egham, Virginia Water, Egham, Staines (loop service)	< 1 bph	Abellio Surrey

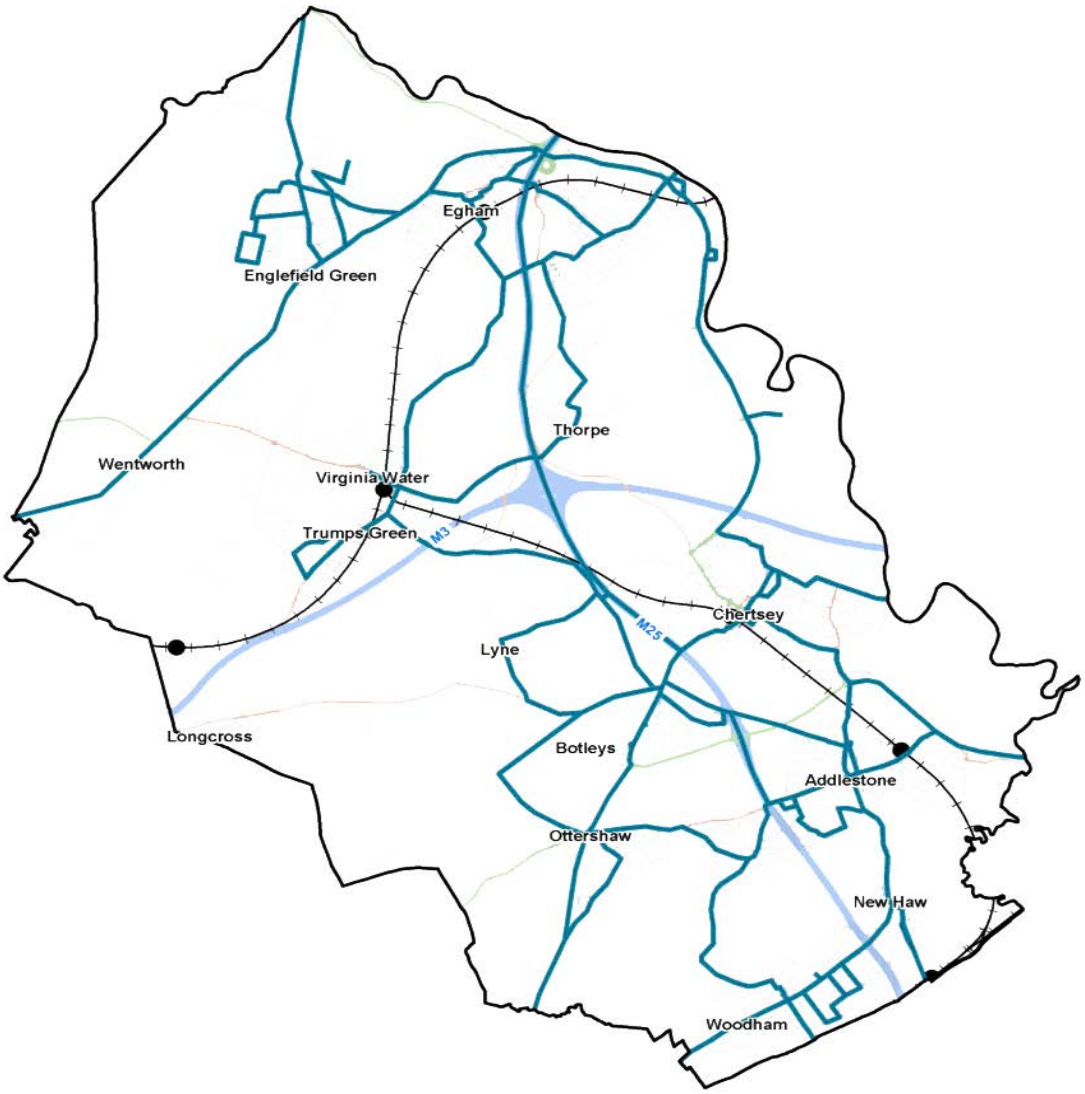

Figure 31. Runnymede Draft Local Transport Strategy, October 2016

Source: Runnymede Draft Local Transport Strategy, October 2016

9.4.7 These buses connect the different communities of Runnymede to various destinations across Surrey and London including Heathrow Airport (1hour from Chertsey, 30min from Egham). Accessibility by bus to these destinations then opens up a wider transportation network for Runnymede, including for example the London Underground Network. It should be noted that several local employers provide employees with a shuttle bus service to various local station.

9.4.8 Other bus services within the Borough, education related, include the following:

- 'Campus Link' student shuttle bus service from Royal Holloway University to Egham Railway Station
- Yellow Bus Services, a scheme providing a bespoke student pick up and drop off service to four secondary schools in Runnymede, developed by the Runnymede Business Partnership and funded through fares (one third of total cost) and supported by local sponsors such as Thorpe Park, World Duty Free and P&G and some Section 106 funds. At present RBC makes up the shortfall.

9.4.9 Challenges faced by bus-based public transport in Runnymede are identified below:

- A high standard of living across the county, resulting in high level of car ownership and a limited attractiveness of bus based transport;
- An important level of congestion identified on the local and strategic road networks compromising journey time reliability and delays of this transport mode. In the case of Runnymede, this affects bus routes relying on key roads of the network such as the A30, the A320, the A317 and the B3121.
- The latter is coupled with a lack of bus priority infrastructure on these key road corridors;
- Currently limited provision of evening and weekend services, limiting usage of bus services for leisure based trips;
- Limited accessibility to these bus services from rural/more remote areas of the Borough, meaning increased reliance on the private car for those areas.

9.4.10 To tackle these challenges, provision of the road improvement schemes identified in the previous section to help reduce congestion will play an important role. Information technology improvements related to transport such as smartcards or real time information also have the opportunity to increase the attractiveness of this mode of transport. Other than that, bus transportation is seen as key player in new major development across the County, including in relation to the former DERA site in Longcross, as alternative to the private car. The provision of a shuttle bus service across the DERA site and towards Longcross rail station (currently not served by any bus service) is detailed in the next section. It will improve connectivity to the adjacent rail station and provide integrated transport offer limiting the need of private car across the site.

Planned Infrastructure

9.4.11 To address the previously identified challenges faced by bus-based public transport in Runnymede, the following local schemes have been identified in the Local Transport Plan (Draft October 2016):

- Runnymede-wide Yellow Bus Service: scheme to ensure the continuation in time of this service across Runnymede Borough. Estimated cost of £200,000 per year currently funded by fares, private sponsors, Section 106 funding with the shortfall being made up by RBC.
- Bus Infrastructure on The Causeway (A308): enhancement of existing road infrastructure for additional bus service to support local employment area and economic growth. Indicative start within 0-2 years, developer funded but no cost estimation at this stage.
- Wider Staines Quality Bus Corridor Improvements: major scheme to start in 2017/2018 funded by the LGF (£4.3M) to improve bus reliability, passenger information and waiting facilities on the bus corridor used by several bus routes between Runnymede and Staines.
- Longcross Garden Village (former-DERA site) Shuttle bus service: developer funded scheme providing an internal shuttle bus service to serve and connect the different parts of the major development site at Longcross Garden Village, as well as to provide a link with the station as shown in yellow in Figure 32 below.
- Egham Sustainable Transport Package: multi-modal scheme including walking, cycling and bus improvements to local, education and leisure based movements. Bus related schemes in this package include priority measures and bus corridor improvements. Funding for this scheme has been secured from the LEP.

Figure 32. Planned Bus Provision in Longcross Village

Source: Longcross Village website (http://www.longcrossvillage.info, accessed 15/11/2016

9.4.12 Road based schemes aiming to reduce congestion across the borough and identified in the previous road section should positively affect traffic flow, reduce bus journey times and increase bus reliability. In addition, SCC and RBC will continue to engage and work with local bus operators to ensure the continuation and improvement of bus routes and services in the area.

9.5 Pedestrian and Cycle

Overview

9.5.1 Census 2011 analysis shows that 13% of all work related trips in Runnymede are undertaken by either walking or cycling (broken down respectively 10% and 3% for the latter). This share is higher than that of Surrey (11%) and in line with England's average (14%). However, when looking at the distances travelled to work, 32% are below 5km, showing potential to target a higher share of work related trips to be undertaken by these modes.

Table 20. Work Related Trips in Runnymede Taken on Bicycle or Foot

Method of Travel to Work	Runnymede	Surrey	England
Bicycle	3%	2%	3%
On foot	10%	9%	11%

Source: ONS Census 2011

9.5.2 Of the National Cycle Network, Route 4, 223, West London Thames Ride and the Thames Valley route pass through Runnymede. Other local cycle routes connect settlements and communities across the Borough.

9.5.3 Walking infrastructure is mixed in Runnymede due to both its urban and rural nature. Main town centres are well served in terms of footways/ key town routes whilst more rural areas such as the western part of the borough have an extensive network of bridleways.

Existing Infrastructure

9.5.4 Existing cycling infrastructure across the Borough includes the following routes, part of the National Cycle Network, illustrated in green on Figure 33 below:

- Sustrans Route 4: long distance cycle route between London and Fishguard (south-west Wales) via Reading, Bath, Bristol, Newport and Swansea.
- West London Thames Ride: route along Thames river beginning at Kingston station and finishing in Staines-upon-Thames.
- Thames Valley: route from Central London to Oxford via Oxford and Reading
- Sustrans Route 223: long distance cycle route using main and quiet roads between Shoreham-by-Sea (West Sussex) and Chertsey.

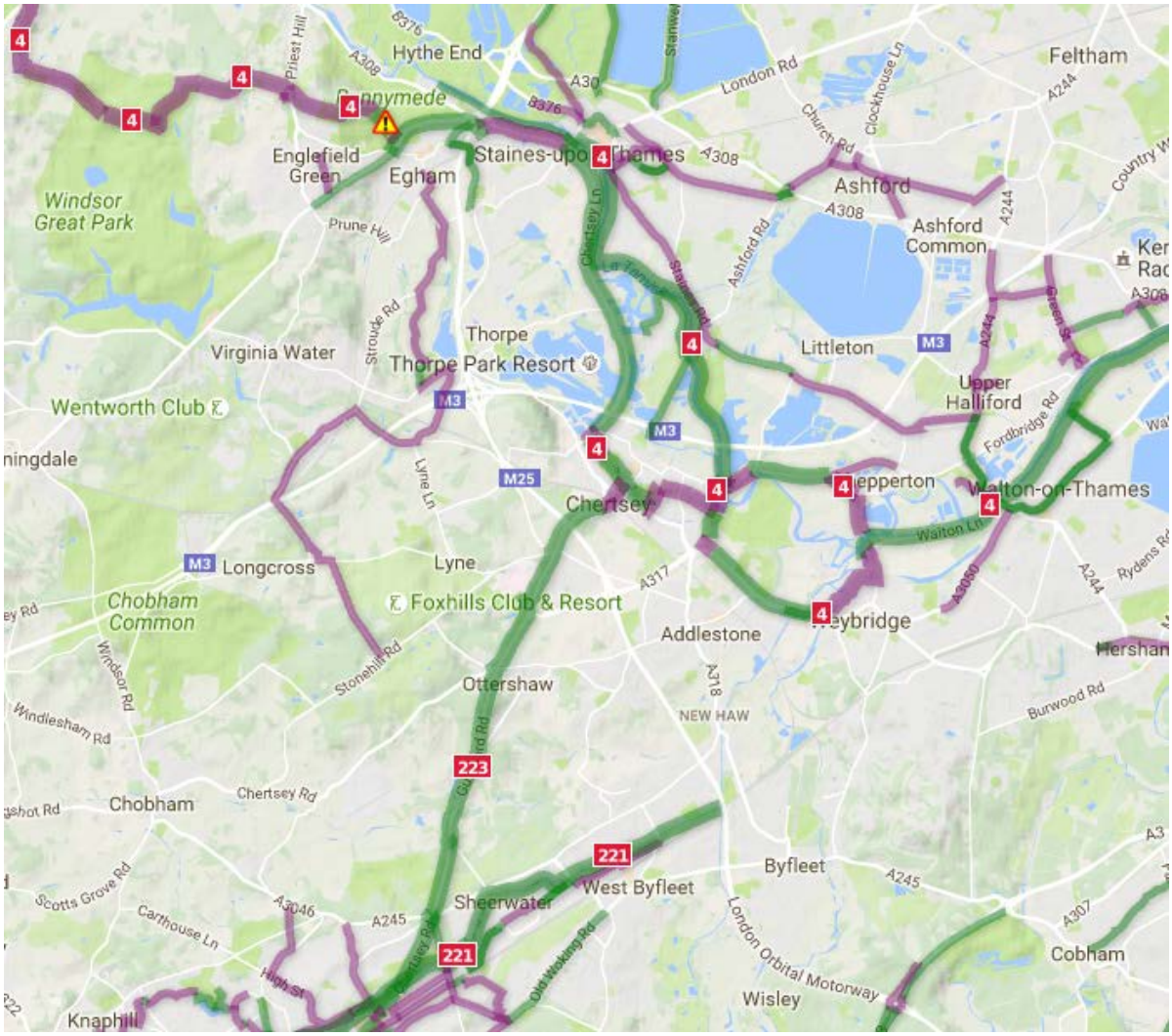

Figure 33. Sustrans Cycle Map in Runnymede Area

Source: Sustrans

9.5.5 Overall the cycle network across Runnymede has been identified as good, with routes that are efficiently connecting the different settlements and are easy to use. Existing dedicated cycle lanes towards Virginia Water Lake on the A30 and A308 provide good quality cycle links to this major leisure destination within the borough. Other cycle infrastructure includes shared footways/cycleways on key link roads such as the A30, the A320, the A318, Vicarage Road and Stroud Road. The latter infrastructure allows urban areas in Runnymede to be connected by cycle infrastructure.

9.5.6 Cycle parking is provided at all stations in Runnymede, with the scale of provision reflecting the level of station usage identified previously:

Table 21. Cycle Parking Provision at Runnymede Stations

Station	Cycle Parking Provision
Egham	76 – Stands & Wheel Racks
Virginia Water	28 – Wheel Racks
Longcross	4 – Wheel Racks
Chertsey	22 – Stands & Wheel Racks
Addlestone	34 – Stands & wheel Racks
Byfleet & New Haw	34 – Wheel Racks

9.5.7 For leisure purposes, walking and cycling are made easy along the Thames with dedicated off-road Sustrans route (despite some conflict between these two modes), as well as towards Virginia Water Lake and Windsor Park. Chobham Common is a key leisure destination that is poorly connected by pedestrian and cycle networks from Runnymede, showing an important gap in the network.

9.5.8 SCC's Cycling Strategy 2014-2026 aims to increase the level of cycling across the county for different purposes. To achieve this, the Cycling Strategy sets different high-level objectives that should be reflected in Local Plans and cycle infrastructure delivery, namely:

- Deliver improvements for cycling
- Oversee development of Local Cycling Plans considering constraints and opportunities for cycling in each borough
- Develop the training offer, in particular at schools
- Capture economic benefits of more people cycling in Surrey
- Seek funding to make cycling safe, attractive and convenient in Surrey

9.5.9 Key challenges for walking and cycling in Runnymede are:

- Main town centres in Runnymede such as Egham, Chertsey or Addlestone are served by main connector roads which are high speed highly trafficked roads. This affects cyclists and pedestrians, notably in terms of safety, currently lacking adequate facilities for seamless walking/cycling journeys in those areas.
- The existing strategic road and rail network creates barriers to movement for pedestrian and cyclists as identified previously. In addition, the lack of crossings at certain junctions or along key routes across the borough affect pedestrian and cycle route choices, prevents direct routes and increases journey times for these modes.
- Narrow roads in certain areas can create conflict between road users over space utilisation, and result in congestion and accidents.
- Certain gaps can be identified in the network, such as in the case of walking and cycling infrastructure provision towards Longcross Railway Station, or along the A30 around Royal Holloway University where students would be likely to use active modes.

Planned Infrastructure

9.5.10 To tackle these challenges, fill in the gaps and improve the existing walking and cycling networks across the Borough in both rural and urban areas, the following schemes have been identified:

- Runnymede Roundabout: as part of the wider Runnymede Roundabout scheme, the new layout will aim to provide improved pedestrians and cyclists accessibility to neighbouring areas in order to reduce journey times and accident risk.
- Wapshott Road, Bowes Road and St Pauls Road Pedestrian and Cycle improvements: scheme to improve sustainable transport facilities and safety for pedestrians and cyclists on these roads. Indicative start 0-5 years, funded by SCC Capital (estimated cost of £125,000)
- A30 London Road/ St Jude's Road: bring controlled pedestrian facilities at this junction. Scheme cost estimated at £120,000, to be completed pre 2016.
- Royal Holloway Masterplan: scheme including the removal of two existing pedestrian bridges to be replaced by three new pedestrian and cyclist crossings on the A30 London Road and improve the Royal Holloway College walking and cycling connectivity, previously identified as a gap.
- Scotland Bridge Road Pedestrian Improvements: Provision of pedestrian crossing on Scotland Bridge road, indicative start within 0-4years, funded by SCC Capital (£130,000).
- Holloway Hill Footway Improvements: to be delivered pre 2017 (£137,000).
- Bridge Road/Weir Road Junction Improvements: improve pedestrian movements at this junction. Part of a wider junction improvement scheme to be delivered pre 2017, SCC Capital funded (overall cost of £130,000)
- High Street/Brighton Road and Station Road/Church Road junction widening – Addlestone: improve pedestrian movements and safety as part of wider junction widening scheme. To be delivered by 2018, overall cost of £3.5M (LGF).
- Guildford Street/Eastworth Road to Curfew Bell Road Cycle Improvements: scheme to provide a northbound cycle track.
- Windsor Street to Gogmore Lane Cycle Facility: Upgrades to provide a cycle gap in both directions. Scheme to provide a missing cycle link. No start date or cost identified at this stage.
- Alwyns Lane Cycle Route Upgrades: scheme to allow contraflow cycling and to provide a missing cycle link. No start date or cost identified at this stage.
- Rowtown Junction Cycle Improvements: developer funded (contributions) to upgrade cycle ways in Rowtown
- Chobham Lane, Longcross Cycle Improvements: scheme to provide a missing cycle link. No start date or cost identified at this stage.
- Increased accessibility at Virginia Water Station – provision of accessible route
- Egham Sustainable Transport Package: secured funding multi-modal scheme including walking, cycling and bus improvements to local, education and leisure based movements. it should be noted that a phase two was proposed to this scheme which included a crossing over the A30 for pedestrians walking from Egham TC to the Meadows. Walking and cycling focus of this scheme include the following:
  - Footway widening along the A308 The Causeway/The Glanty
  - Raised tables at The Causeway/Hawthorn Road/Claremont Road/Avenue

Road

- Improved safety for pedestrians and cyclists near Woodhaw Roundabout with provision of new toucan crossing
- Off road cycle routes on the A308 The Causeway
- Improved walking and cycling connectivity and accessibility between Egham Rail station and Town centre
- Cycle hire scheme at Egham Station

9.6 Key Findings

Context

- Work based trips are predominantly undertaken by car in Runnymede (69%). This level of car based commuting trips is higher than in both Surrey (64%) and England (63%). This is reflected by the level of car ownership, with 45% of Runnymede's households possessing two or more cars, a similar level to Surrey (46%), but a much higher level than England (32%) explained by both the urban/rural nature of the Borough and the generally high standard of living. On the other hand, a key challenge for the Borough is to increase its level of public transport and walking/cycling work based trips (currently respectively 11% and 13%), especially targeting trips under 5km (currently representing 32% of all work trips in Runnymede).
- Origin-Destination analysis from the Census 2011 informs us about Runnymede's commuting patterns, showing a relatively low level of self-containment with only a third of Runnymede's active population living and working in Runnymede. However, work related movements outside the Borough's boundaries are local, in majority towards Elmbridge (9%), Spelthorne (7%), Woking (6%) and London (in particular Hounslow, Hillingdon and Westminster).
- Despite a good existing network, transport modes currently face several challenges to be overcome by additional infrastructure and policy provision. The speed and volume of traffic on the road network in key town centres like Egham, Chertsey or Addlestone affects cyclists and pedestrians, notably in terms of safety. The strategic road and rail network across Runnymede is equally a constraint for walking and cycling movements, creating physical severances and necessitating additional crossing points for more direct journeys.

Roads

- In terms of road provision, Runnymede is well connected to the strategic network with the M25 London Orbital Route and the M3. However these two key corridors are often congested, resulting in increased pressure on the surrounding network and in particular the Runnymede Roundabout, the A320, the A317 and the A308. Other key pinch points in the network include Staines-upon-Thames bridge and Chertsey bridge, the only two crossings of the River Thames with the exception of the M25 in Runnymede, and the key town centres including Egham and Addlestone.
- The levels of growth projected in Runnymede by both the Local Transport Strategy and Runnymede's Transport Assessment imply increased pressure on the existing congested network. Key improvements schemes will need to address the expected capacity issues.
- To address current and projected capacity issues on the road network, major planned road improvement schemes identified to date include the following:

- M25 J11 widening at Chertsey
- M25 J10 to J16 widening to four lanes
- M3 J2 to J4a upgrades (under construction)
- Runnymede Roundabout layout enhancing including road realignment, additional lanes and signalling improvements
- Staines upon Thames Bridge widening
- Addlestone town centre improvements including High Street/Brighton Road and Station Road/Church Road junctions widening
- A320 corridor upgrade
- Package of improvement schemes in relation to the redevelopment of the former DERA site at Longcross.

Rail

- Runnymede is connected by three rail lines and six stations. These lines are operated by South West Trains and Great Western Railway, and serve the main town centres within the Borough to major destinations such as London Waterloo, Reading, Woking or Basingstoke. However, as identified previously, this mode of transport only represents 8% of work based trips in Runnymede, a mode share lower than Surrey's average (14%). If capacity of trains at all Runnymede's stations is currently within funder's guidelines as identified by Network Rail's Wessex Route Study covering the area, the level of growth anticipated in the Borough is going to increase pressure on the network and schemes will be required to address this.
- To address current and projected capacity issues on the rail network, the following schemes have been identified:
  - Platform lengthening at Egham, Chertsey and Virginia Water station allow 10-car trains and improve capacity on the Reading to London Waterloo line
  - Additional frequency of 3tph on the Reading to London Waterloo line (1tph via Richmond, 2tph via Hounslow)
  - Improvements at Longcross Rail station in relation to the development of Longcross Garden Village north and south on the ex-DERA site
  - Other wider projects positively impacting Runnymede but not currently committed include Crossrail 2, Southern Rail Access to Heathrow and Airtrack Lite.

Buses

- The local bus network in Runnymede is predominantly operated by Abellio Surrey and provides public transport provision to numerous communities within the Borough. A total of eight bus routes connecting key town centres in Runnymede with destinations such as Slough, Windsor, Staines, Woking and Heathrow Airport. However frequencies are currently low (only 1 to 2 buses per hour) and journey time reliability highly affected by the road network's capacity issues. Other 'education related' bus services in Runnymede include 'Campus link' linking Royal Holloway College to Egham station, and Yellow buses, a bespoke pick up/drop off service for four secondary schools in Runnymede, funded by the Borough, the fares and local private sponsors.
- In addition to all road improvement schemes likely to improve bus journey time reliability and reduce delays, the following schemes have been identified to address the current reliability and delays issues on the existing bus network:

  - Bus infrastructure provision on the A308 – The Causeway
  - Wider Staines Quality Bus Corridor Improvements – used by several bus routes linking Staines to Runnymede
  - Longcross Garden Village Development shuttle bus service to Longcross station
  - Egham sustainable transport package including priority measures and bus corridors improvements

Walking and Cycling

- Four National Cycle Network routes connect Runnymede (Route 4, 223, West London Thames Ride and Thames Valley) to long distance cycle routes. Other local cycle routes connect settlements and communities across the Borough though there are some gaps in the network. Other cycling facilities include cycle parking located at all stations.
- Walking infrastructure in Runnymede is mixed due to its dual urban and rural nature. Main town centres are well served by footways and rural areas by an extensive network of rural lanes and bridleways.
- Walking and cycling improvements schemes aim to improve the quality of the existing infrastructure and fill in gaps in the network. Major schemes identified are the following:
  - Runnymede Roundabout layout enhancement with improved pedestrian and cyclists accessibility
  - Royal Holloway Masterplan including removal of two existing pedestrian bridges and replacement three new pedestrian bridges
  - Scotland Bridge road pedestrian improvements
  - Multiple junction signalling improvements and pedestrian crossings
  - Egham sustainable transport package including footway widening and off road cycle routes along the Causeway and improved walking and cycling connectivity between rail station and town centre and cycle hire scheme.

10. Infrastructure Baseline – Utilities

10.1 Introduction

10.1.1 This chapter describes the current utilities networks serving Runnymede, including power (electricity, gas and renewable energy), potable water, wastewater and broadband. It identifies current and forecast supply issues and constraints, and investment projects currently planned to cater for future growth.

10.2 Electricity

Current Situation

National Grid

10.2.1 Electricity in the UK is transmitted via the National Grid, which connects power stations and major substations to ensure the electricity generated in England, Scotland, and Wales can be used to satisfy demand. In England it is owned by the National Grid Electricity Plc and operated by a single System Operator (SO). Regional distributors tap onto the National Grid via Grid Supply Points (GSPs) to distribute the electricity regionally, and electricity suppliers sell it on to customers.

10.2.2 Runnymede lies on the boundary of two main Regional Energy Distributors - UK Power Networks (UKPN) and Scottish and Southern Electricity Networks (SSE) - and is served by both. These are responsible for the network of power lines, underground cables, and substations, over the areas shown in Figure 34.

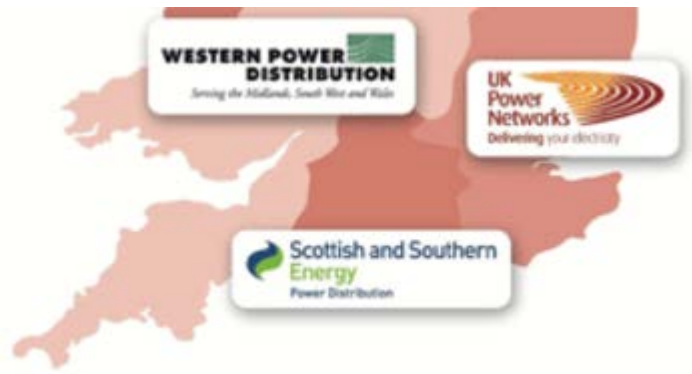

Figure 34. Electricity Distribution, South England

Source: http://www.nationalgrid.com

UK South Eastern Power Networks

10.2.3 UKPN's South Eastern Power Networks PLC (SPN) electricity network, covering the Surrey area, is supplied from three GSPs that have an aggregate demand of 759.9MW (Winter-W) and 519MW (Summer-S) across 10 132kV substations and 34 33kV primary substations. The GSPs that are in the vicinity of Runnymede Borough are the following:

- Chessington 275/132kV
- Laleham 275/132kV
- West Weybridge 275/132kV

10.2.4 The aggregate firm capacity attributed to the three GSPs is 1,797MW (W) and 1,588MW (S) while aggregate load demand is projected to reach 878.2MW (W) and 601.3MW (S) by 2023.

10.2.5 Figure 35 and Figure 36 below are taken from UKPN's Long Term Development Statement (LTDS) May 2016 and show the extents of the UKPN SPN network.

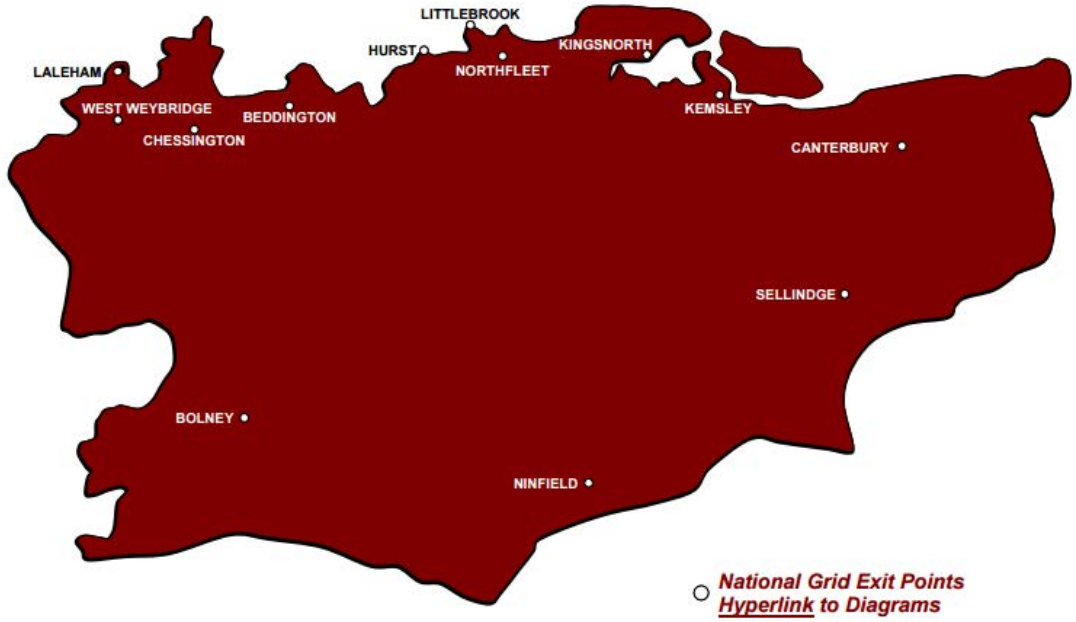

Figure 35. UK South Eastern Power Network's Grid Supply Points

Source: UKPN LTDS 2016

Figure 36. Extract from UK South Eastern Power Network's Main Transmission Network

Source: UKPN LTDS 2016

Scottish and Southern Energy

10.2.6 SSE's Southern Electric Power Distribution Plc (SEPD) LTDS May 2016 covers the period 2015/16 - 2019/20 and assesses opportunities available to make new or additional use of the distribution system for existing and prospective users. SEPD serve just over three million customers in the south of England with 78,000 km of overhead and underground network cables as stated in their Distribution Business Plan Commitment Report 2015/16.

10.2.7 SEPD connects to National Grid's transmission system via a number of substations. In the vicinity of Runnymede Borough is the Laleham 275/132 kV substation which also supplies UKPN's distribution system.

10.2.8 Runnymede Borough is in the eastern corner of the Southern Electric distribution area, as shown in Figure 37. The figure below depicts the electricity network supplied by SEPD in and around Runnymede. There are a number of substations, 33kV cables, national grid cabling and a national grid substation within and in the vicinity of Runnymede Borough.

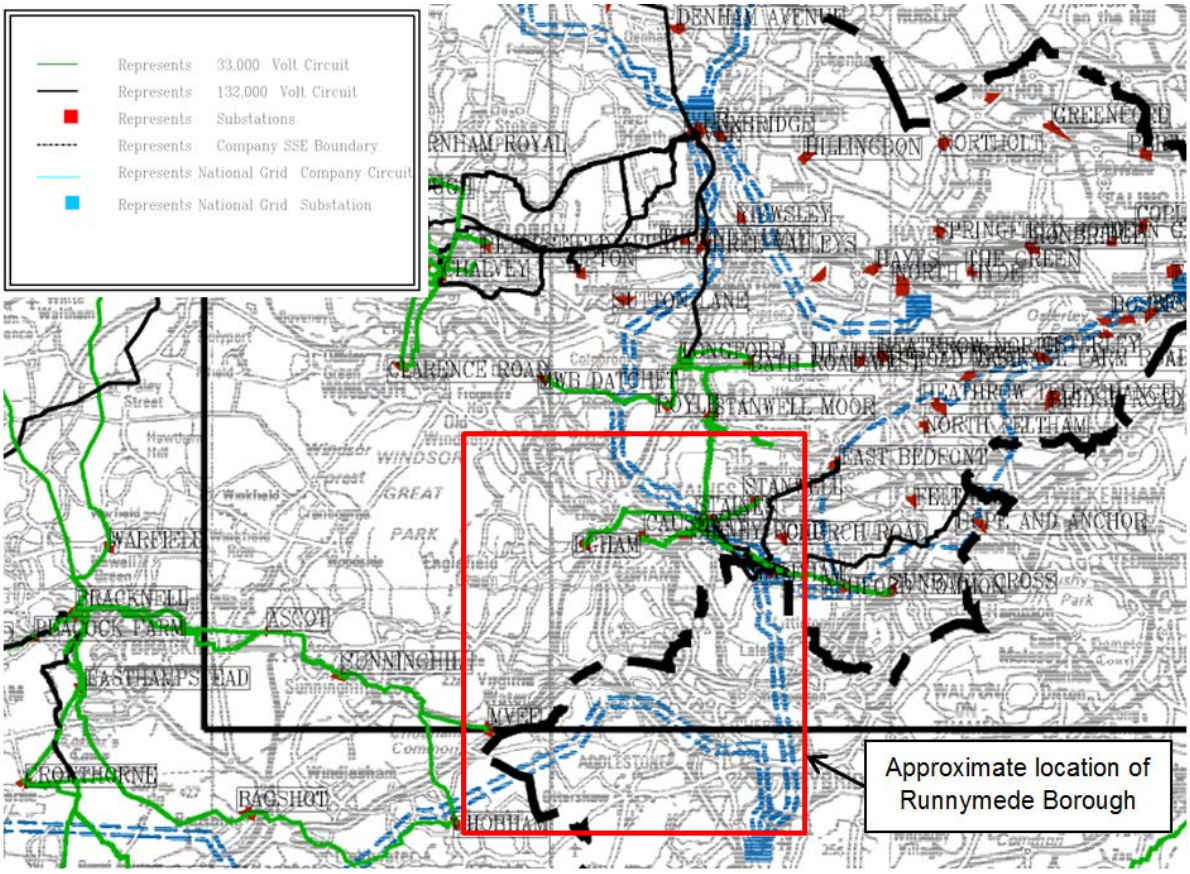

Figure 37. Southern Electric Distribution Area, Focus on Runnymede

Source: SSE Long-term Plan 2015

Existing Infrastructure Capacity and Issues

UK South Eastern Power Networks

10.2.9 According to the UKPN's most recent LTDS, SPN Plc's network is a mature and stable power system successfully supplying the needs of 2.3m customers.

Scottish and Southern Energy

10.2.10 The most recent SSE LTDS states that there are constraint areas for accepting new generation or load, as well as background fault levels at most voltages being generally high. The addition of generation to the network impacts the system fault levels, which means that network reinforcement works are necessary to continue to support connections. This must be properly monitored and controlled to avoid system overload. To ensure that the distribution system has adequate capacity to meet system demand, voltage and current flows are constantly monitored and where shortfalls in network capacity are identified, reinforcements or alternative solutions are planned accordingly.

10.3 Gas

Current Situation

10.3.1 Gas is transmitted through a National Transmission System (NTS) managed by National Grid, from where it is then supplied to towns through Local Distribution Zones (LDZ). National Grid covers the overall UK supply position and security of supply assessment in detail for the NTS within its 10-year statement.

10.3.2 The Gas Distribution Network Operator for Surrey is Southern Gas Networks (SGN). The Runnymede area is on the border between SGN's south east and south LDZs. A number of companies supply gas to Runnymede; with the gas network in the Borough supported by a range of local and regional infrastructure.

10.3.3 SGN manages a gas network that distributes natural and green gas to 5.9m homes and businesses across parts of south of England and Scotland. According to SGN's LTDS 2016 - 2025, the UK primary energy consumption has reflected the economic levels of growth of the UK economy over the last few years. Commercial and industrial demand drivers include the Climate Change Levy (CCL), Carbon Reduction Commitment, generation through renewable sources, combined heat and power capacity, and the EU emissions trading scheme.

10.3.4 The figures below show SGN's south and south east distribution zones and the approximate location of Runnymede within these.

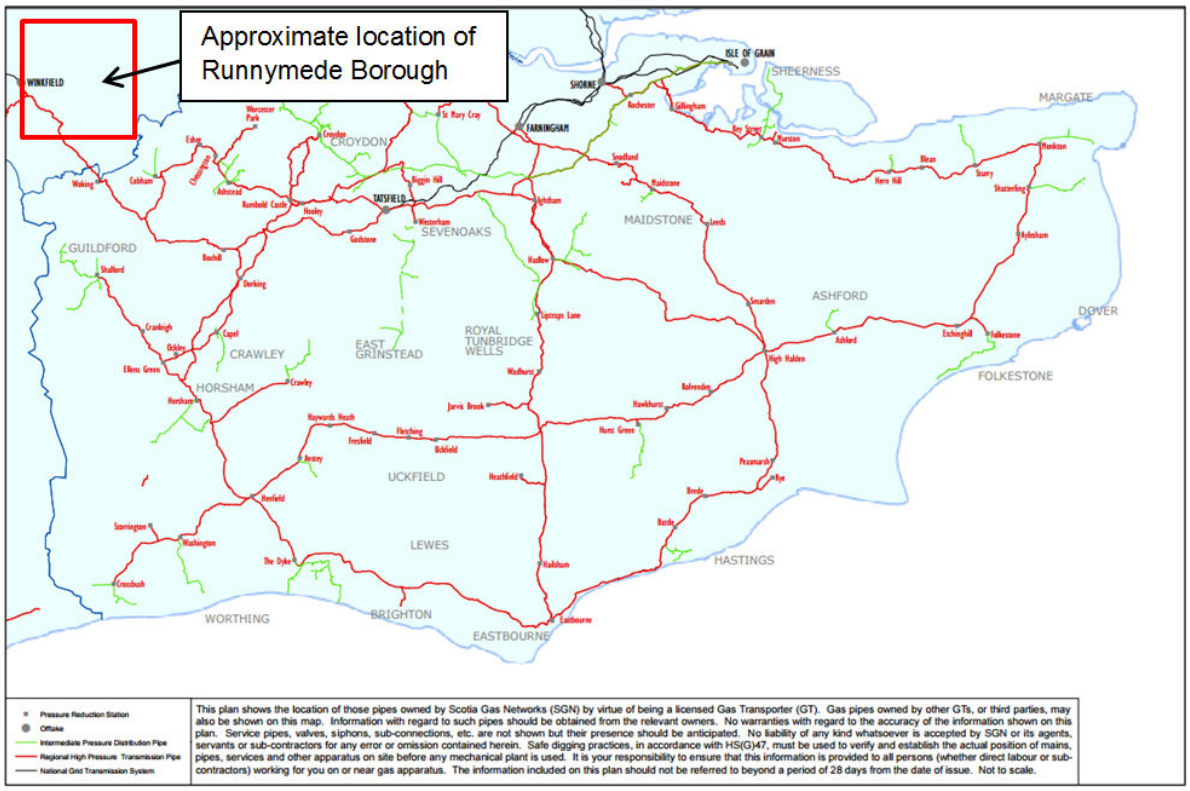

Figure 38. South East LDZ schematic

Source: LTDS, SGN 2016

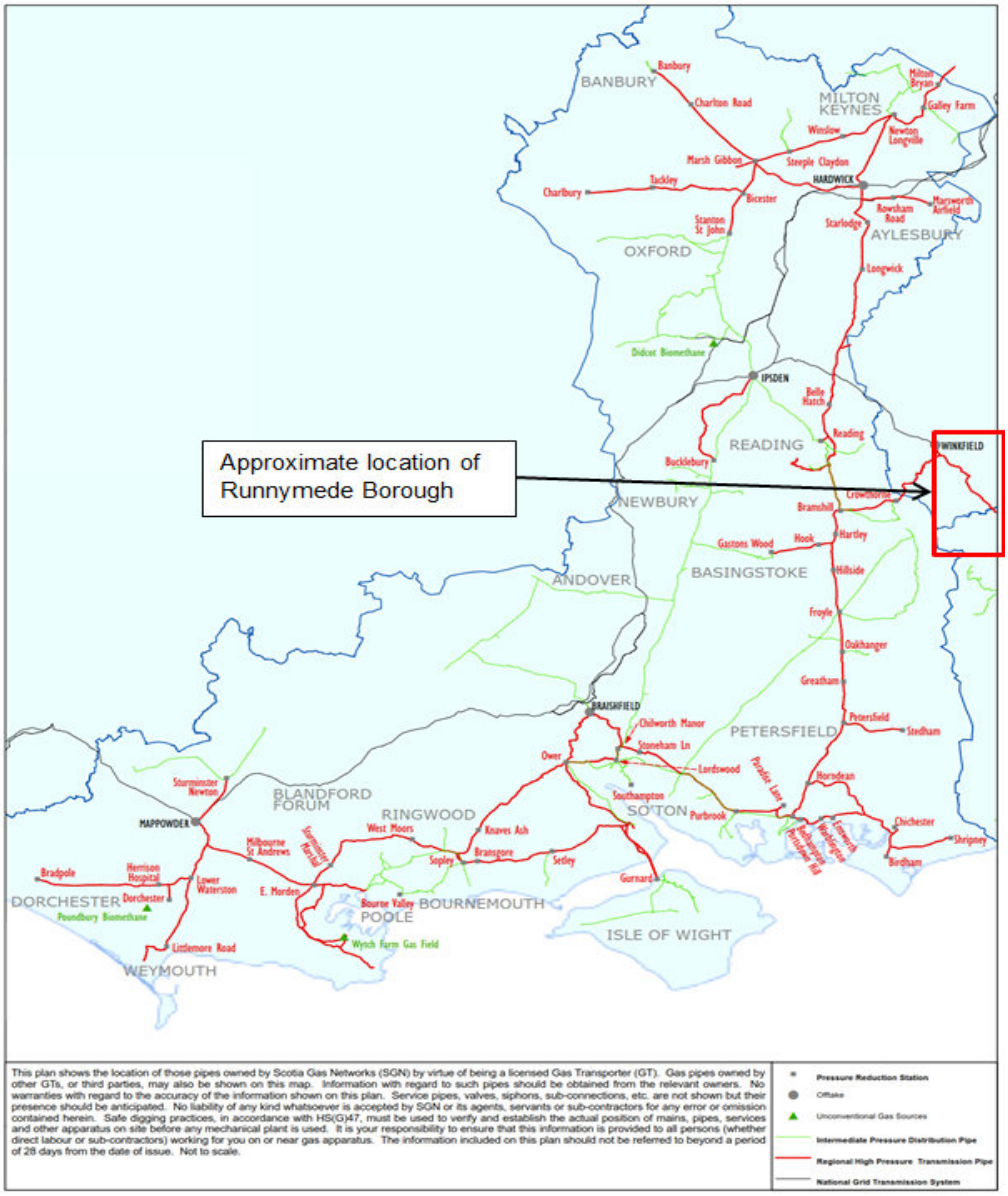

Figure 39. South LDZ schematic

Source: LTDS, SGN 2016

Existing Infrastructure Capacity and Issues

10.3.5 The annual gas demand forecast is based on gas prices, environmental legislation and government energy policy, and levels of household growth. There is an expected UK supply capacity surplus that is forecast to be sustained over the period of the LTDS. The demand forecast in 2016 for the 10 year period 2016-2025 has decreased compared to the previous years'. The LTDS outlines the following factors as the main causes for this:

- Lingering impact of the economic recession
- Changes in gas consumption by customers as a result of energy efficiency improvements
- Introduction of government targets for renewable energy
- Policies to decarbonise the energy economy
- Growing low-carbon economy

- Smart metering

10.3.6 The table below shows the forecast changes in demand over 10-year period 2016-2025.

Table 22. Changes in Demand over a 10-year period 2016-2025

Annual Demand	Peak Day Demand
-10.30%	-6.56%

10.4 Potable Water

Current Situation

10.4.1 Affinity Water is responsible for potable water in Runnymede Borough. Affinity Water has a Water Resource Management Plan (WRMP) that covers the period from 2015 to 2040 with strategies in place that define how they will meet customer demand over the next 25 years. The potential increase in demand from new development must be accommodated and the existing supply of water must be managed whilst accounting for future changes due to climate change. Affinity Water's base population has reached 3.6m customers and is projected to increase by 17% by 2040 according to the WRMP with an associated increase in demand for water. WRMPs are updated every 5 years with the current review being completed in 2014.

10.4.2 Figure 40 below shows Affinity Water's three supply regions and the Water Resource Zones (WRZ) within each. Runnymede falls within their central region in Water Resource Zone 6 (Wey). This region provides water to north London, parts of Essex, Hertfordshire, Buckinghamshire, and a small part of Surrey, making up a population of 3.2m. Affinity's central region abstracts 60% of its water supply from groundwater sources with boreholes abstracting from chalk and gravel aquifers, and 40% from surface water sources and imports from neighbouring water companies including Thames Water, Anglian Water, and Cambridge Water. Some water is exported to South East Water and Cambridge Water.

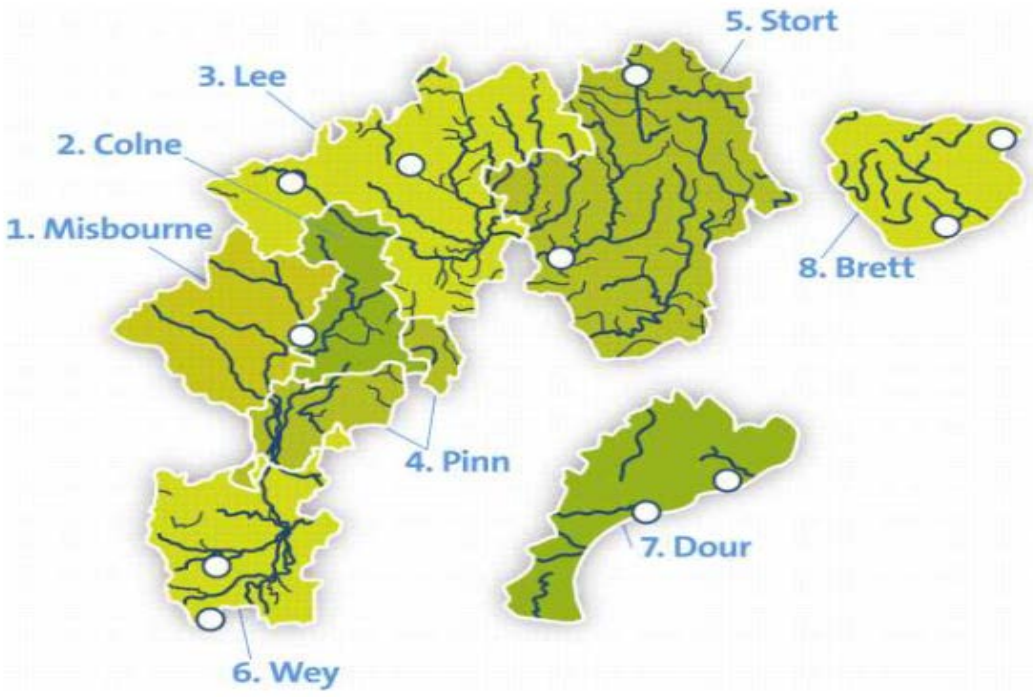

Figure 40. Map of Affinity Water's Water Resource Zones

10.4.3 Affinity has a well-connected network in place that is made more resilient as a result of a number of connections with neighbouring water companies as well as the capacity to transfer water between zones to permit operational flexibility.

Existing Infrastructure Capacity and Issues

10.4.4 The Environment Agency (EA) sets limits to water companies to restrict the amount of water that can be abstracted from certain water sources during certain months of the year at certain flow conditions. These are called 'sustainability reductions' and are notified by the EA when there is a potential risk that current levels of abstraction can have adverse impacts on the water course's flow condition. Sustainability reductions are the biggest challenge in Affinity Water's water resource planning. For all of Affinity Water's supply area, the EA has issued a list of 'confirmed' and 'likely' reductions of almost 70 Ml/d from the existing groundwater sources under average conditions (over 6% of available deployable output). The WRMP identifies that there are supply / demand deficits in five of the eight water resource zones at the beginning of the planning period. With planned sustainability reductions, the total deficit across all WRZs is 170.04 Ml/d. This means that without further consideration, there would not be sufficient water for the whole of the 25-year planning period to meet customers' need.

10.4.5 Figure 41 below shows the supply / demand balance assuming no intervention measures are implemented, where:

- Demand = distribution input + target headroom; and
- Supply = water available for use – sustainability reductions.

10.4.6 The supply / demand balance is calculated by:

- Deployable output (DO)
  - minus climate change impacts
  - minus sustainability reductions (SR)
  - minus outage and process losses (water available for use, WAFU)
  - minus water demand (distribution input, DI)
  - minus target headroom (THR)

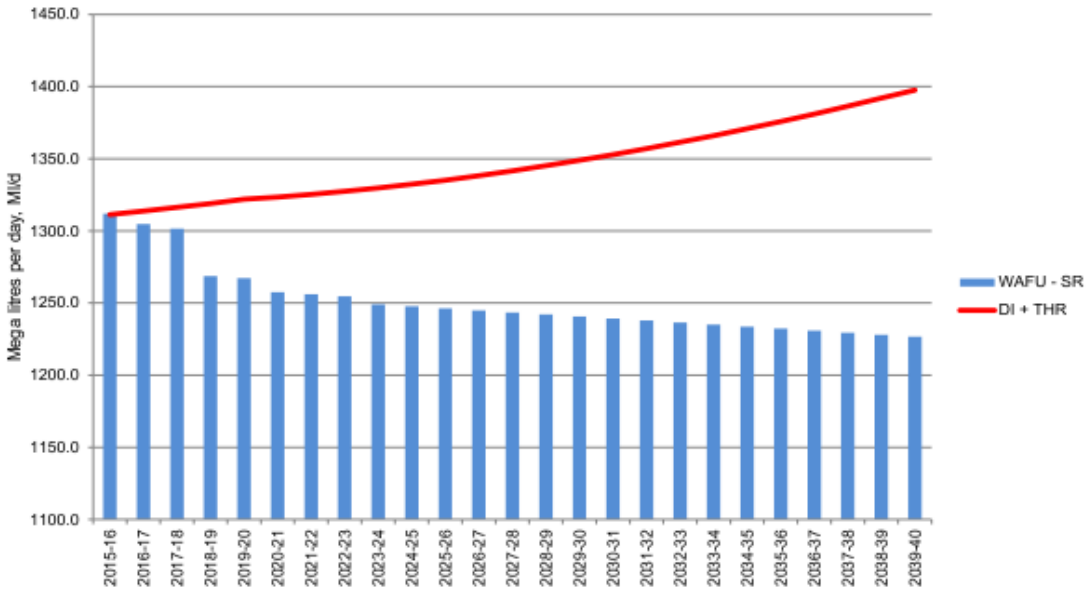

Figure 41. Supply / Demand Balance with No Intervention

Source: WRMP, 2014

10.4.7 The table below summarizes the baseline supply / demand balance for WRZ 6 for the duration of the planning period.

Table 23. Surplus or Deficit available in WRZ 6

Year	DYAA (average)	DYCP (peak)
2015	Deficit 0-1 Ml/d	Surplus 1-10 Ml/d
2020	Deficit 1-10 Ml/d	Surplus 1-10 Ml/d
2040	Deficit > 10 Ml/d	Deficit > 10 Ml/d

DYAA = Dry Year Annual Average / DYCP = Dry Year Critical Period

10.5 Wastewater

Current Situation

10.5.1 Thames Water is the statutory undertaker for wastewater drainage in Runnymede. While they are a private company, they are also responsible for dealing with flooding from the public foul and surface water sewer network. Thames Water removes and treats more than 4 billion litres of sewage for 15m customers in areas in and around London and the Thames Valley.

10.5.2 The European EA provides data on Urban Waste Water Treatment Plants across Europe. Figure 42 is based on this data to show the Waste Water Treatment Plants within Runnymede Borough.

Existing Infrastructure Capacity and Issues

10.5.3 Sewage catchments do not follow authority boundaries, so some wastewater originating from Runnymede may be served by other Treatment Works that are outside the Borough. The two works identified within the Borough currently have sufficient capacity to treat the entering load – see Figure 42 below for exact values.

10.5.4 Recent upgrades to the Chertsey Sewage Treatment Works occurred in 2011 with the construction of a new sludge dewatering plant and in 2002 with improvements to the activated sludge plant, to improve treatment quality and meet growing demand. According to the IDP 2013 for Runnymede, Thames Water invested a further £9M between 2010-2015 in the Chertsey Sewerage Works for improvements. Detailed information about the Weybridge Works is not publicly available but it is likely that similar upgrades have taken place to meet the increasing volumes.

10.5.5 According to the current Local Plan (2001), parts of Runnymede Borough often experience local flooding after heavy rain because of the inadequacy of the sewerage system or watercourses. It is likely that in the time since the writing of the Local Plan, some upgrade works and improvements have taken place to meet demand as Thames Water will be constantly improving their networks and plants.

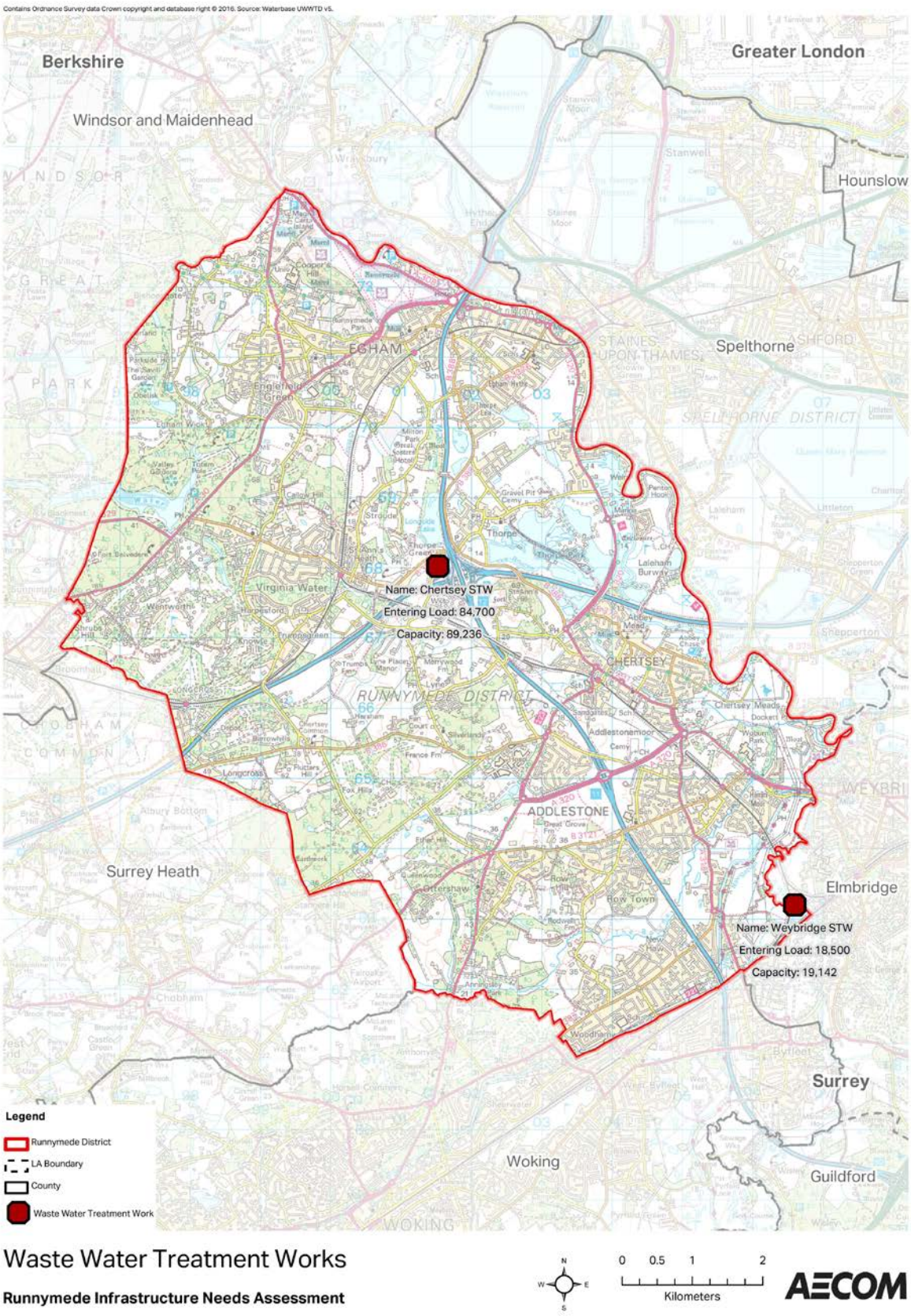

Figure 42. Wastewater Treatment Works within RBC (data from European Environment Agency)

10.6 Renewable Energy

Current Situation

10.6.1 RBC is involved in promoting the sustainable use of resources to tackle the causes and effects of climate change, encouraging among other things renewable energy provision as highlighted in the Runnymede Corporate Business Plan 2016-2020 (RBC 2015).

10.6.2 It is a corporate priority in Runnymede to take opportunities to make the local environment more sustainable (Corporate Business Plan 2012-2016), with a key associated objective to increase awareness of energy efficiency opportunities through a range of means by 2016/17.

10.6.3 There are a number of renewable energy facilities in and around Runnymede Borough. All renewable energy facilities in the country are collated in a public database, from which the map in Figure 43 below was created.

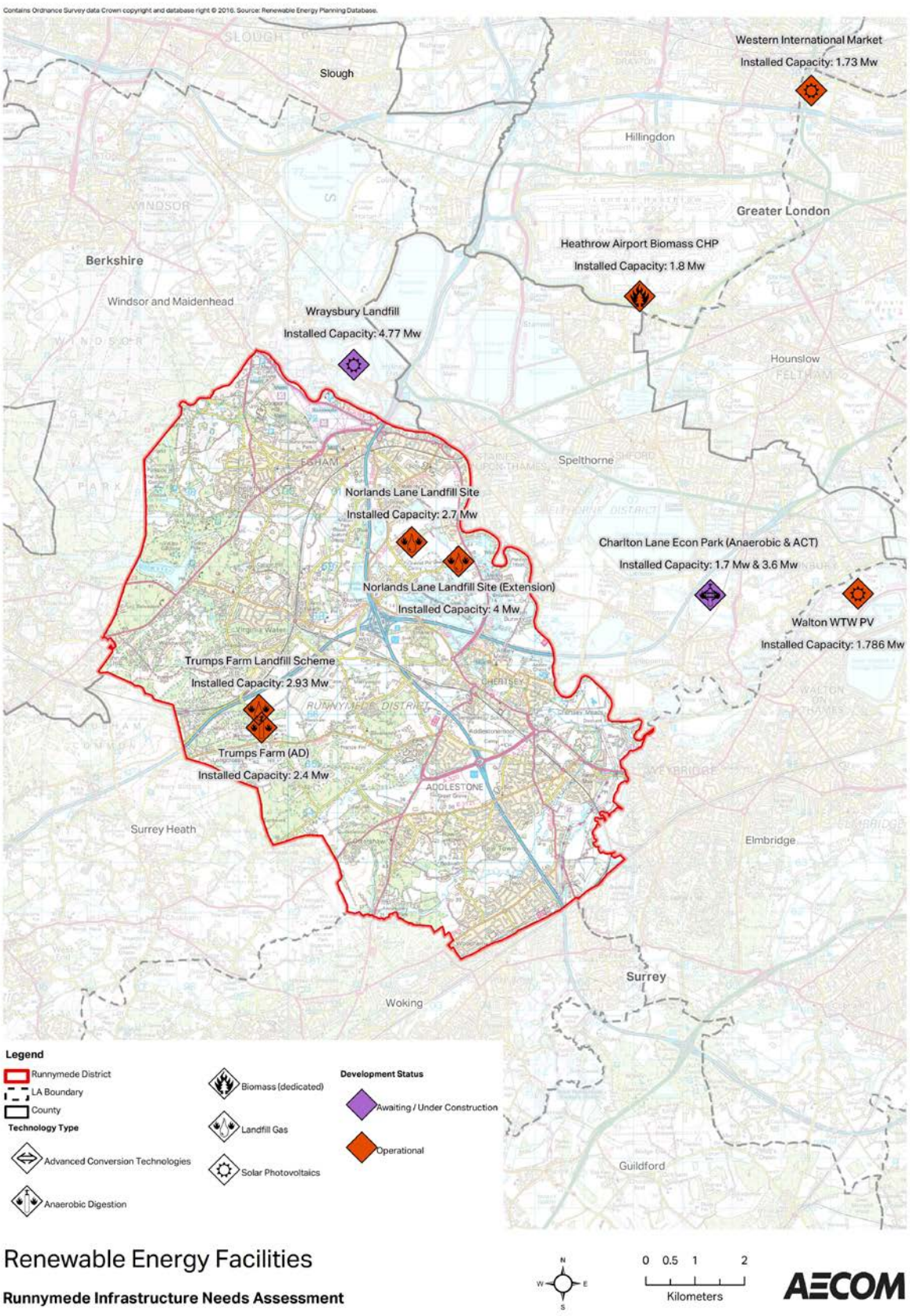

Figure 43. Renewable Energy Facilities in and around RBC (data from Renewable Energy Planning Database

Existing Infrastructure Capacity and Issues

10.6.4 The Borough's website describes a number of projects and requirements in place that are promoting renewable energy use or reducing standard energy use.

10.6.5 The renewable energy sites in and around Runnymede are described in more detail in the tables below.

Table 24. Renewable Energy Facilities in Runnymede

Technology Type	Site Name	Installed Capacity (MWelec)	Operator	Site Address	Development Status
Anaerobic Digestion	Trumps Farm	2.4	Agrivert	Longcross, Chertsey	Operational
Landfill Gas	Norlands Lane Landfill Site	2.7	Thames Waste Management Ltd	Norlands Lane, Thorpe, Egham	Operational
Landfill Gas	Trumps Farm Landfill Scheme	2.9	Renewable Power Systems	Kitsmead Lane, Longcross, Chertsey	Operational
Landfill Gas	Norlands Lane Landfill Site (Extention)	4.0	Thames Waste Management Ltd	Norlands Lane, Thorpe, Egham	Operational

Source: Renewable Energy Planning Database Sep 2016 https://www.gov.uk/government/collections/renewable-energy-planning-data)

Table 25. Renewable Energy Facilities near Runnymede

Technology Type	Site Name	Installed Capacity (MWelec)	Operator	Site Address	Development Status
Anaerobic Digestion	Charlton Eco Park	1.7	Surrey County Council	Charlton Lane Waste Management Facility, Charlton Lane, Shepperton	Under Construction
Advanced Conversion Technologies	Charlton Lane Eco Park (ACT)	3.6	SITA UK	Charlton Lane Waste Managment Facility , Charlton Lane, Shepperton	Awaiting Construction (Planning Permission Granted)
Solar Photovoltaics	Walton WTW PV	1.8	Thames Water	Walton Water Treatment Works, Hurst Road, Walton On Thames	Operational
Solar Photovoltaics (Floating)	London's Queen Elizabeth II reservoir	6.3	Lightsource Renewable Energy	London's Queen Elizabeth II reservoir, Walton-on Thames	Operational

Source: Renewable Energy Planning Database Sep 2016 https://www.gov.uk/government/collections/renewable-energy-planning-data)

10.7 Broadband

Current Situation

10.7.1 The Superfast Surrey September 2016 Newsletter provides updates on the status of broadband connectivity in Surrey and information about subsidy and community funded initiatives. Surrey County Council (SCC) has signed a contract with BT to deliver fibre broadband infrastructure to those homes and business in Surrey that were determined not to be benefitting from commercial rollouts, known as the Superfast Surrey Programme. The Superfast Surrey Programme is funded through SCC, BT, and Broadband Delivery UK (BDUK) and has allowed more than 86,000 premises to now be covered by the fibre broadband network. The programme alongside commercial rollouts has enabled 96% of all Surrey residents to access fibre download speeds of 15mbps or above.

10.7.2 The project is expected to have a positive impact on the economic and social development of Surrey; an economic benefit of more than £30M every year, according to a World Bank estimate based on GDP.

Existing Infrastructure Capacity and Issues

10.7.3 Approximately 20,000 premises in Surrey are still unable to obtain a Next Generation Access (NGA) download speed of 15Mbps or more, of which 15,300 are not included in any further commercial rollout plans. The main reason for this is long telephone lines between the upgraded cabinet and the property. Some telephone cabinets and other structures serving premises in Surrey have not yet been upgraded to the fibre network due to engineering complexity or associated high cost.

10.8 Key Findings

Electricity

- Electricity in the UK is transmitted via the National Grid, which connects power stations and major substations. Runnymede is served by two Regional Energy Distributors which are responsible for the network of power lines, underground cables, and substations: UK Power Networks (UKPN) and Scottish and Southern Electricity Networks (SSE).
- UKPN's SPN electricity network, covering the Surrey area, is supplied from three Grid Supply Points in the vicinity of Runnymede Borough, at Chessington, Laleham and West Weybridge. SSE's SEPD connects to National Grid's transmission system via a number of substations and there are a number of substations, 33kV cables, national grid cabling and a national grid substation within and in the vicinity of Runnymede Borough.
- To allow for the increasing power demand due to population growth, UKPN is involved in both reinforcement and demand side response measures. In Runnymede specifically, the LTDS describes three reinforcements and asset replacement projects planned until 2023 with a funded investment of £2,959,205.
- SPN PLC has development proposals for reinforcement, switchgear upgrading, and new substation construction in place for 18 sites across the entire network that are anticipated to be in progress during 2016-2019; there are five developments underway or planned in the National Grid Connection points relevant to the Surrey / Runnymede area. Apart from these projects, assets are under constant review and maintenance to ensure supply to customers.
- The most recent SSE LTDS states that there are constraint areas for accepting new generation or load, as well as background fault levels at most voltages being

generally high. The addition of generation to the network impacts the system fault levels, which means that network reinforcement works are necessary to continue to support connections.

- To deal with growing demand, SEPD is also undertaking / planning network developments, with a number proposed for 2016-2018.

Gas

- Gas is transmitted through a NTS managed by National Grid, from where it is then supplied to towns through LDZs
- The Gas Distribution Network Operator for Surrey is SGN. A number of companies supply gas to Runnymede; with the gas network in the Borough supported by a range of local and regional infrastructure.
- The annual gas demand forecast is based on gas prices, environmental legislation and government energy policy, and levels of household growth. There is an expected UK supply capacity surplus that is forecast to be sustained over the period of the LTDS. The demand forecast in 2016 for the 10 year period 2016-2025 has decreased compared to the previous years'.
- Nonetheless, SGN is required to invest in major projects to meet the demand of existing and new customers to ensure safe and high quality supply to new developments. SGN is also looking for alternative ways to improve energy supply and reduce the cost of gas for customers to promote environmentally friendly measures, such as the full roll-out of smart meters.

Potable Water

- Affinity Water is responsible for potable water in Runnymede Borough. Its Water Resource Management Plan (WRMP) for 2015 to 2040 identified that potential increase in demand from new development must be accommodated and the existing supply of water must be managed whilst accounting for future changes due to climate change.
- The WRMP identifies that there are supply / demand deficits in five of the eight water resource zones at the beginning of the planning period, including WRZ 6 (Wey) in which Runnymede is located, and that with the EA's planned 'sustainability reductions' (abstraction limitations) the total deficit across all WRZs is 170.04 Ml/d. This means that without further consideration, there would not be sufficient water for the whole of the 25-year planning period to meet customers' need.
- Affinity Water has an overall demand reduction strategy of leakage reduction, universal metering coupled with enhanced water efficiency activities, and making best use of their existing supplies and sharing resources with other water companies in South East England. To deal with increasing demand, new developments are governed by legislation that requires developers to build water efficient properties such that occupants use a maximum of 125 litres per person per day. Affinity Water aims to increase supply to further counteract the predicted supply / demand deficit by increasing the amount that is abstracted from existing licenses without damaging the environment and buying water from neighbouring water companies.
- Affinity Water's preferred plan, which calls for measures to aid the demand / supply deficits in the immediate 5 years 2015-2020 for their whole supply area, includes measures planned for the Wey WRZ relating to leakage reduction, water efficiency and metering.

Wastewater

- Thames Water are the statutory undertaker for wastewater drainage in Runnymede. There are two Wastewater Treatment Works within the Borough, which currently have sufficient capacity to treat the entering load.
- According to the current Local Plan (2001), parts of Runnymede Borough often experience local flooding after heavy rain because of the inadequacy of the sewerage system or watercourses, though it is likely that in the time since the writing of the Local Plan, some upgrade works and improvements have taken place.
- Thames Water has a five-year plan 2015-20 and a Sustainable Future Plan for the next 25 years outlining how they intend to maintain and improve wastewater services and achieve the targets agreed with Ofwat, in the context of population growth and climate change. Measures Thames Water intends to implement to mitigate the future pressures on pipes, treatment works, and the natural environment to move towards long-term resilience include a 150 Ml/d wastewater re-use scheme, improvements to the sewer system to prevent sewage flooding at 2,127 properties and upgrades to 18 sewage treatment works are planned, including six in Surrey.

Renewable Energy

- RBC is involved in promoting the sustainable use of resources to tackle the causes and effects of climate change. Relevant objectives and policies are reflected in documents such as RBC's Corporate Business Plan 2012-2016.
- Renewable energy facilities in and around Runnymede Borough include an anaerobic digestion plant and three landfill gas sites.
- The Borough's website describes a number of projects and requirements in place that are promoting renewable energy use or reducing standard energy use.

Broadband

- Surrey County Council (SCC) has signed a contract with BT to deliver fibre broadband infrastructure to those homes and business in Surrey that were determined not to be benefitting from commercial rollouts, known as the Superfast Surrey Programme. The programme alongside commercial rollouts has enabled 96% of all Surrey residents to access fibre download speeds of 15mbps or above.
- Approximately 20,000 premises in Surrey are still unable to obtain a NGA download speed of 15Mbps or more, of which 15,300 are not included in any further commercial rollout plans. The main reason for this is long telephone lines between the upgraded cabinet and the property. Some telephone cabinets and other structures serving premises in Surrey have not yet been upgraded to the fibre network due to engineering complexity or associated high cost.
- SCC is committed to getting faster broadband to as many of the remaining premises as possible. An OMR and State Aid Public Consultation have recently been undertaken.
- The percentage of Surrey residents that have access to superfast broadband is anticipated to increase to 97% due to additional commercial deployment plans. Additionally, SCC has requested BT to model possible options within the programme's cost constraints and available funding. This will determine which premises will benefit from publicly funded deployment by the end of this year.
- Superfast Surrey provides some alternative options for improvement looking ahead including Community Funded Initiatives, the Better Broadband Scheme, and the USO. Looking forward, options for ultrafast technology are being explored.

11. Infrastructure Baseline – Waste

11.1 Introduction

11.1.1 Waste is defined as including waste disposal and recycling services, which is managed and planned for by SCC as the Waste Planning Authority (WPA) for Surrey. SCC is responsible for the removal and treatment of both domestic and commercial waste and Runnymede is responsible for the collection of domestic waste and the provision of wheeled bins and food caddies to domestic properties.

11.1.2 The strategy for the management of the household, commercial and industrial waste is set out by the Joint Municipal Waste Management Strategy[81] and is consistent with the 2014 National Planning Policy for Waste, which states that WPAs are responsible for preparing Waste Local Plans and identifying the needs and solutions for waste management in their area.

11.2 Supply, Future Demand, and Planned Provision

11.2.1 There is no landfill site in Runnymede, and most of the Borough's commercial and industrial waste is transported to a landfill site in Redhill. Similarly, there is no facility for the processing of recyclable materials, and these are also transported outside the Borough, to a number of centres elsewhere in Surrey.

11.2.2 There are two waste facilities within Runnymede:

- A Community Recycling Centre (CRC) in Chertsey: SITA Surrey Ltd operates 15 CRCs on behalf of SCC. Runnymede residents also have access to two additional CRCs located outside the Borough's borders, in Woking (Woking Borough Council) and Shepperton (Spelthorne Borough Council).
- An anaerobic digestion facility for the treatment of commercial food waste is situated in Egham.

11.2.3 The expected demographic changes and economic growth within Runnymede over the Plan period are likely to place additional pressure on the current capacity of waste facilities within Surrey.

11.2.4 The 2016 Surrey Infrastructure Study estimated that the funding gap for waste management at a County level will amount to £310,000[82] over the Plan period.

11.2.5 The Surrey Waste Plan 2008 is currently being reviewed, and consultation on the Draft Plan is expected for 2018. As such, and until the new Plan is accessible, there is currently no planned provision of new waste facilities within Runnymede.

11.3 Key Findings

- SCC is the WPA for Runnymede and is responsible for the removal and treatment of domestic and commercial waste.
- Landfill and recyclables are transported to sites outside of Runnymede for disposal and there is only one CRC within the Borough, in Chertsey.
- There is currently no known planned provision of new waste facilities within the Borough (or Surrey as a whole); however a new Surrey Waste Plan is due to be published in 2018.

[81] Surrey County Council, (2016); Surrey Waste Local Plan 2018-2033 – Policy Paper No.1: Context and Issues
[82] AECOM, (2016), Surrey Infrastructure Study

12. Infrastructure Baseline – Emergency Services

12.1 Introduction

12.1.1 This section considers existing and planned provision of emergency services in Runnymede, defined as including ambulance services, police services, and fire services.

12.1.2 It is the responsibility of emergency service providers to manage, maintain and deliver expansion of facilities required to support services. Within Runnymede, different bodies oversee the provision and management of emergency services, depending on the targeted service.

12.2 Ambulance

Supply

12.2.1 The South East Coast Ambulance Service (SECAmb) NHS Trust provides emergency, urgent care, and patient transport services across six counties (Brighton & Hove, East Sussex, West Sussex, Kent, Surrey, and North East Hampshire) and also provides non-emergency patient transport services within Surrey.

12.2.2 Within Runnymede there is one Ambulance Community Response Post inside Chertsey Fire Station, which is described as a "small base with facilities where ambulance crews can wait between calls"[83]. There is no ambulance station within Runnymede; the former Chertsey Ambulance Station was replaced by a 'Make Ready Centre', which is a "large depot where ambulance crews start and end shifts and where vehicles are cleaned, maintained and restocked"[84].

Future Demand and Planned Provision

12.2.3 In their 2015-2016 Annual Report and Accounts, SECAmb acknowledges the challenges it faces in terms of emergency services delivery and identifies the activity growth of the NHS as a potential risk for the ambulance services efficiency and provision[85]. The Report identified some gaps in the supply of ambulance services, including: limited resources; levels of staff overtime; and the existence of more private ambulance providers threatening the current service[86].

12.2.4 As a Foundation Trust, SECAmb is allowed to manage its own funding, including the borrowing of funds for capital investment. In the 2015-2016 Report, SECAmb had a surplus of £0.5M out of its £206.2M annual budget[87].

12.2.5 The 'Make Ready Centre' is understood to accommodate existing ambulance needs, and there is no planned provision within Runnymede for additional physical infrastructure.

[83] South East Coast Ambulance Service NHS, website: www.secamb.nhs.uk
[84] South East Coast Ambulance Service NHS, website: www.secamb.nhs.uk
[85] South East Cost Ambulance Services, (2016); Annual Report and Account 2015-2016
[86] South East Cost Ambulance Services, (2016); Annual Report and Account 2015-2016
[87] South East Coast Ambulance Service NHS, website: www.secamb.nhs.uk

12.3 Police

Supply

12.3.1 Surrey Police is responsible for providing policing services for the eleven boroughs within Surrey. It is overseen by the Office of the Police and Crime Commissioner (PCC) for Surrey. There is only one police station located within Runnymede, in Addlestone. The Borough is also equipped with a network of Closed Circuit Television (CCTV).

Future Demand and Planned Provision

12.3.2 Surrey Police funding is overseen and controlled by the PCC for Surrey, which also holds additional funding sources available through application, such as the Victim Fund and the Community Safety Fund.

12.3.3 Though natural population growth is likely to place additional pressure on the capacity of police services in Surrey, currently no additional provision has been planned in terms of physical infrastructure. Cameras within the CCTV network have an estimated lifespan of three years and are therefore likely require upgrading or replacement. There are also a number of projects planned over the Plan period, focused on the expansion of the CCTV network, and delivery of targeted schemes e.g. no-drinking zones.

12.4 Fire

Supply

12.4.1 Fire services within Runnymede are co-ordinated by the Surrey Fire and Rescue Service (SFRS) which is overseen by Surrey County Council[88].

12.4.2 In April 2015, the SFRS comprised a network of 26 fire stations, serving a total population of 1,040,000, and employing 553 FTE firefighters. This represents a decrease in personnel compared to 2013, when 635 FTE firefighters were employed across the county[89].

12.4.3 The North Area Team is the geographical area covering the seven fire stations within Runnymede, Spelthorne and Elmbridge. Two fire stations are located within Runnymede, in Chertsey and Egham, and operate with a total of six vehicles.

12.4.4 According to the Surrey Fire and Rescue Public Safety Plan 2011-2020[90], the North Area Team is expected to have sufficient provision to meet population growth, and no physical or personnel provision is planned within Runnymede at the current time.

Future Demand and Planned Provision

12.4.5 The 2016 Surrey Draft Public Safety Plan identifies that population growth within the County is likely to result in increased demand for fire services, and notes the current limited financial resources available to expand fire service provision[91].

12.4.6 The SFRS is allocated funds by Surrey County Council, which for 2014-2015 amounted to £35M. Additional funding is also available through the central government's Fire Services Improvement Fund, through which Surrey County Council was awarded £5.96M in 2014[92].

[88] Surrey County Council, (2015); Constitution of the Council
[89] Surrey County Council, (2016); Draft Public Safety Plan 2016-2025
[90] Surrey County Council, (2011), Surrey Fire and Rescue Authority Public Safety Plan 2011-2020
[91] Surrey County Council, (2016); Draft Public Safety Plan 2016-2025
[92] Surrey Fire and Rescue Service, (2016); Statement of Assurance 2014-2015

12.4.7 There is no currently identified shortfall in fire stations capacity in the North Area Team of Surrey. Though new fire stations are opening within other parts of the county (in Guildford, Woking and Spelthorne), no additional provision has been planned for Runnymede[93].

12.5 Key Findings

- There is no evidence of a current recognised shortfall in the provision of physical infrastructure for the emergency services within Runnymede. However police and fire services both identify projected population growth within Surrey as a potential risk to the continued quality and efficiency of supply of services over the short to medium term.
- Funding is allocated annually by the County Council and all emergency services also have access to central government funding and grants which they can apply for on a case by case basis.

[93] Surrey County Council, (2011), Surrey Fire and Rescue Authority Public Safety Plan 2011-2020

13. Infrastructure Baseline – Flood Defences and Sustainable Drainage

13.1 Introduction

13.1.1 This chapter provides an overview of the existing flood risk from all sources within Runnymede Borough, as well as the existing flood defence capacity to cope with the flood risk. Furthermore, the flood defence infrastructure planned to accommodate the projected growth between 2016 and 2035 is analysed.

13.1.2 The chapter goes on to focus on the current provision of sustainable drainage across Runnymede, highlighting any capacity issues with the existing infrastructure, as well as planned infrastructure to support growth between 2016 and 2035. For the purposes of this study, sustainable drainage does not consider public and private sewers, and focuses on sustainable drainage provisions designed to manage the discharge of surface water from new and existing developments.

13.2 Flood Defences

13.2.1 The Borough of Runnymede covers an area of approximately 78 km^2 and is situated in the Lower Thames catchment. There are 12 main rivers within Runnymede, with the majority of them originating as tributaries of the River Thames, Chertsey Bourne, Addlestone Bourne and River Wey. Main rivers are usually large rivers and streams, as classified by the EA. Additionally, there are a significant number of ordinary watercourses across the Borough area. Ordinary watercourses are defined as a watercourse that is not part of a main river, as designated by the EA, and includes rivers, streams, ditches, drains and other passages through which water flows[94]. Approximately 5,000 properties are at risk from flooding from a 1 in 100 year return period flood event within the Borough.

13.2.2 At present, there are approximately 18,000 properties within the Lower Thames Catchment that are at risk from a 1 in 100 year return period flood event. This number is likely to rise if the predicted increase in flood risk due to climate change is taken into account. The Lower Thames Catchment is thought to be the largest undefended urbanised catchment in England, and the Borough of Runnymede is one of the ten most at-risk Boroughs in the country[95].

Table 26. Summary of Perceived flood risk from various sources in Runnymede

Source of flooding	Perceived risk of flooding across Runnymede
Fluvial	Up to 5,000 properties at risk of flooding from a 1 in 100 year return period flood event. Sources of fluvial flooding include the River Thames to the East of the Borough, the River Wey, Chertsey Bourne, Addlestone Bourne, to the south of the Borough. The eastern part of the Borough is low lying floodplain attributed to the River Thames. The Borough is comprised of a number of urban centres including Chertsey, Addlestone and Egham, parts of which are located in areas at risk from flooding from the River Thames. Minor watercourses such as Hurst Ditch, Meadlake Ditch and The Moat are tributaries of Chertsey Bourne and carry a potential risk of flooding on the urbanised floodplain, affecting Egham Hythe and Thorpe. The most recent fluvial flood incident recorded was during the storms of 2013-14, where 742 properties within Runnymede were affected, and a major incident was declared by the EA. Historical incidents of fluvial flooding have

[94] https://www.surreycc.gov.uk/people-and-community/emergency-planning-and-community-safety/flooding-advice/more-about-flooding/ordinary-watercourse-consents
[95] Runnymede Infrastructure Delivery Plan, February 2013

Source of flooding	Perceived risk of flooding across Runnymede
	been recorded in 1898, 1947, 1968 and 2003 – and were primarily due to the River Thames overtopping its banks. Additional historical records of fluvial flooding within Runnymede are held by the EA for the years 1929, 1954, 1988 and 1990.
Tidal	Runnymede Borough is not at direct risk of flooding from tidal sources.
Pluvial (surface water)	Surface water flooding is prevalent across Runnymede, given the high proportion of urbanisation in the low lying floodplain. Surface water flooding from overland flow occurs on hilly slopes due to fast flowing surface water. An increased number of surface water flood events have been reported on Egham Hythe and Egham Town due to the steep nature of these catchment areas. Surface water flooding also occurs in Runnymede due to inadequate capacity or poor maintenance of the existing public sewer systems. Historic surface water flooding incidents have been recorded in Chertsey, Egham, Thorpe and Rowtown. Urbanised areas to the north of the Borough (Englefield Green, Virginia Water) and to the south (New Haw, Woodham) rely on free draining geology to allow infiltration of surface water, and can be affected by pluvial flooding if the geology has reached saturation point.
Groundwater	Areas at risk of groundwater flooding lie predominantly within the floodplain of the River Thames, due to the gravel geology holding high water tables. The groundwater is connected with the River Thames, subsequently leading to a high risk of flooding from both sources simultaneously. Areas outside of the Thames floodplain to the east of the Borough are underlain by sandstone geology and are classified as minor aquifers. These areas are also prone to groundwater flood events.
Sewers	Approximately half of the Borough area is serviced by adopted public sewers, with the other half relying on free draining soils. The M3 motorway acts as a natural divider, with areas north of the motorway relying on sustainable drainage schemes and free draining geology in place, and do not have a surface water sewer network. To the south of the M3, surface water sewers have been adopted by Thames Water. Historical sewer flooding records indicate that the areas of Chertsey, Egham Hythe, Thorpe, Pooley Green and Penton Hook are amongst the most affected areas, with up to 20 properties reporting flood incidents in the last decade. It must be noted that only sewer flooding incidents reported to Thames Water are on record, and therefore this is unlikely to be a comprehensive list.
Reservoirs and artificial water bodies.	Reservoirs and impounded waterbodies carry a residual risk of flooding, in that there is potential for flooding to occur in case of a dam break, structural failure of the waterbody. However, there are no recorded flood events from impounded waterbodies within Runnymede. Virginia Water lake, Wey Navigation Canal and Basingstoke Canal are the three main impounded waterbodies within Runnymede, and have the potential to cause flooding. 11 other reservoirs and water bodies surrounding Runnymede carry a residual risk of flooding to the Borough; among those Queen Mary reservoir and Chertsey Settling.

13.2.3 Under The Flood Risk Regulations (2009) and the Flood and Water Management Act (2010), the Lead Local Flood Authority (LLFA), in this case Surrey County Council (SCC), is responsible for developing, maintaining, applying and monitoring a strategy for flood risk management, including flood risk from surface runoff, groundwater and ordinary watercourses. The EA is responsible for flooding from main rivers, the sea and reservoirs. The EA also have powers to carry out flood defence works to main rivers. The responsibility to maintain these flood defences lies with the riparian land owner, who also has the responsibility to accept flood flows through their land. Flood risk from sewers is managed and monitored by Thames Water within Runnymede, as well as maintenance companies, where sustainable urban drainage is used in place of adopted sewers.

13.2.4 Currently adopted policies relating to flooding and development include policy SV2 from the Runnymede Local Plan (2001), which recommends restricting development to ensure that:

- It does not impede the flow of water
- It does not reduce the capacity of the floodplain to store water
- It does not increase the number of people or properties at risk from flooding
- The currently adopted policies are stated in further detail in bullet 13.2.9.

Existing infrastructure Capacity and Issues

13.2.5 The Lower Thames catchment has the largest concentration of undefended properties in the country, which can be attributed to the heavy urbanisation adjacent to the banks of the Thames. There are large areas of the Borough's urban settlements, especially Chertsey and Egham Hythe that are located in Flood Zone 3. This is shown below in Figure 44. By 2100, the number of properties at risk of flooding from a 1 in 100 year return period flood event is expected to rise to 21,800, an increase of 20% from current estimates. In particular, in the areas of Byfleet and Weybridge, the number of properties at risk from a 1 in 100 year return period event is expected to rise to 1,540 in 2,100, a 25% increase in 2009 numbers[96].

[96] Runnymede 2035 Strategic Flood Risk Assessment (SFRA) April 2016.

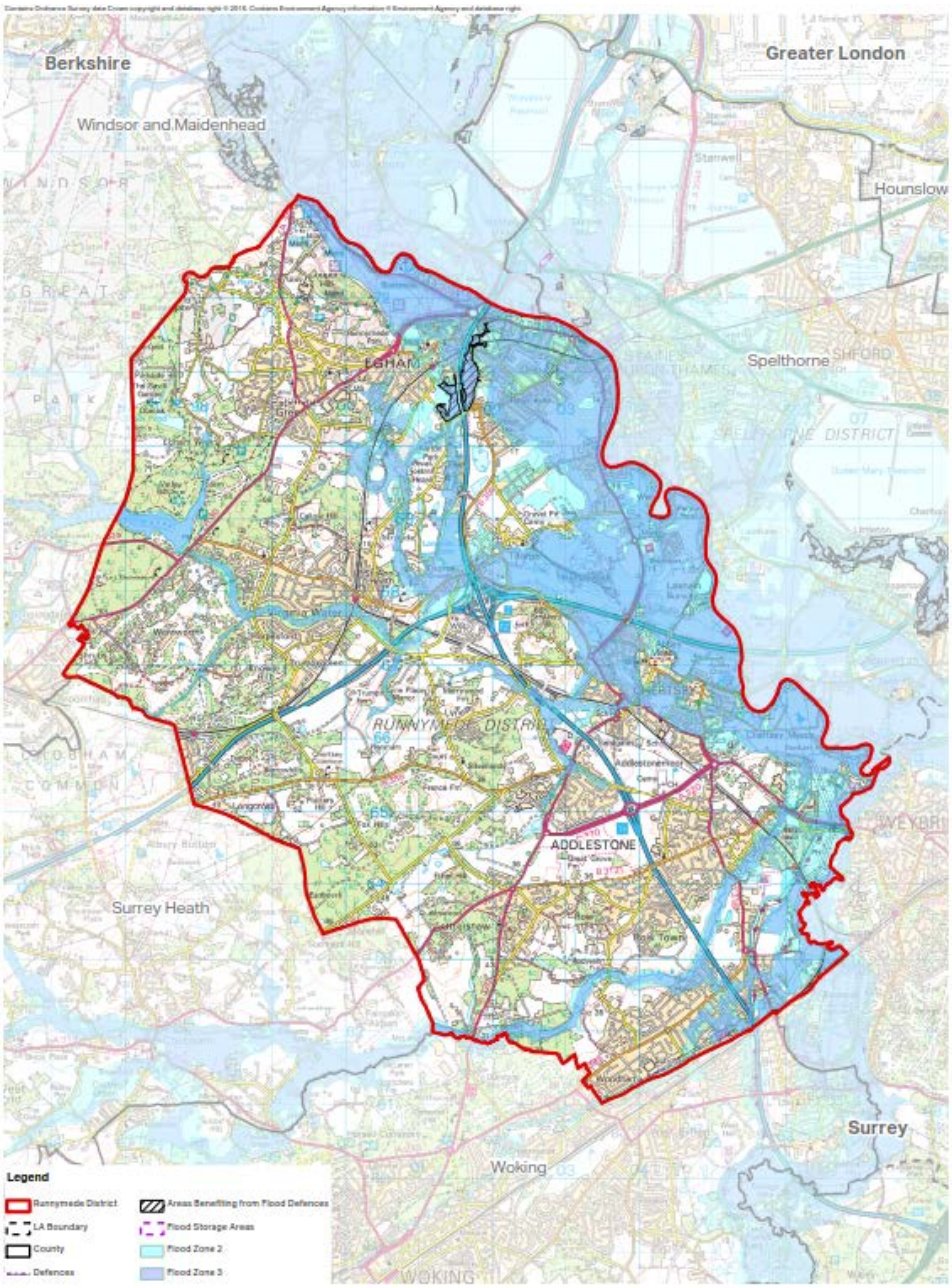

Figure 44. Flood Zones within Runnymede Borough

Source: Environment Agency

13.2.6 The Borough contains no formalised flood defences. However, at times, the M3 and M25 motorways and railway lines act as barriers to flooding. Despite the lack of physical defences, extensive early warning networks are in place for the main rivers within the Borough area. The slow-response characteristics of the Thames and Wey Rivers generally allow ample warning and evacuation time before major flood events. During the flood event of 2013/14, flood warnings were issued for the River Wey across the festive holiday period, during which Wey Meadows was evacuated before any flood damage was incurred. However, smaller tributaries have faster response times to heavy rainfall, and there is considerably less time available in which to issue flood warnings.

13.2.7 Continued development within the functional floodplain across Runnymede will result in an increase in number of properties at risk from fluvial flooding, especially when taking into account the impact of climate change on frequency of storm events. For developments with an expected lifetime of 100 years, the climate change allowance in addition to current water levels and fluvial flows is potentially as high as 70%, based on the latest EA recommendations.

13.2.8 The Thames Catchment Flood Management Plan (CFMP) sets out the preferred approach to flood risk management within various sub-catchments associated with the River Thames. Runnymede is covered by three separate preferred flood risk management policies, corresponding to geographical areas with similar natural catchment characteristics. These are listed below in Table 27.

Table 27. Preferred Flood Risk Management Policies within Runnymede

Sub-area	Flood Risk Management Policy	Significant existing flood defences
Addlestone Bourne, Upper Thames	Areas of low to moderate flood risk, action to store water and manage runoff in locations.	None existing - natural floodplain attenuation.
River Wey catchment	Areas of low to moderate flood risk where existing flood risk management can be reduced.	None existing – natural floodplain attenuation.
Lower Thames catchment	Areas of moderate to high flood risk, can take further action to reduce flood risk. 21,800 properties predicted to be at risk by 2100.	No formalised flood defences. Road and rail network provides barrier to flooding.

Source: Thames Catchment Flood Management Plan, Summary Report December 2009 – Environment Agency

13.2.9 The saved policies in the 2001 Runnymede Local Plan set out the Council's policies for the control of development within the Borough. The relevant flood risk management policies are:

- SV1: Land drainage systems – The Council, in conjunction with the Environment Agency, will seek to manage the floodplain environment and achieve appropriate flood alleviation in the Borough.
- SV2: Flooding – Within the area liable to flood as shown on the proposals map, development will not be normally permitted for new residential or non-residential development, including extensions, unless it can be demonstrated to the satisfaction of the Borough Council, following consultation with the Environment Agency, that the proposal would not of itself or cumulatively in conjunction with other development:
  - Impede the flow of flood water;
  - Reduce the capacity of the flood plain to store flood water; and
  - Increase the number of people or properties at risk from flooding.

13.2.10 From the flood risk management policies for the sub areas within Runnymede, it can be seen that there are no formalised flood defences in place. Currently, much of the flood mitigation is achieved by storage in the open floodplain and flood warning measures to minimise tangible damages. Control structures, culverts to increase conveyance and minor embankments make up other flood risk management assets controlled by the EA. However, due to the localised and concentrated flooding across Runnymede, it is challenging, both economically and technically, to reduce flood risk using flood defences on a Borough wide basis.

Infrastructure Planned to Support Growth to 2035

13.2.11 The flood management policies set out for the short to medium term and the flood defence infrastructure required to support future development have been analysed using existing strategic flood risk management documents and the Thames CFMP.

13.2.12 The following data sources were primarily used to identify planned and existing pipeline infrastructure:

- Surrey County Council Flood Defences Programme.
- Flood and Coastal Erosion Risk Management Pipeline Projects – EA
- Local Flood Risk Management studies (SFRAs, CCL s, etc.)

13.2.13 From the RBC and EA pipeline programmes, only infrastructure projects that have associated project cost estimates have been included as 'existing pipeline infrastructure'. Furthermore, projects that were indicated as maintenance or repair/refurbishment have not been included in the analysis, as these projects do not facilitate future growth but maintain the existing level of protection.

13.2.14 The key project identified to facilitate the development needs within Runnymede is the River Thames Scheme[97] [98]. This scheme is a proposed programme of projects and investment opportunities to mitigate flood risk in communities adjacent to the River Thames between Datchet and Teddington, aiming to better protect up to 15,000 homes from flooding. The scheme consists of the following components:

- Construction of a new flood channel of length 17 km, covering the reach of the Thames in three sections – Datchet to Hythe End; Egham Hythe to Chertsey and Laleham to Shepperton.
- Improvements to three existing weirs on the River Thames.
- Installation of property level protection measures for up to 1,200 homes in the catchment area.
- Improved flood incident response plans.
- Creation of over 40 hectares of habitats (as per the Biodiversity Action Plan).
- Raising flood awareness and support communities with flood preparedness, response and recovery.

13.2.15 The River Thames Scheme is expected to cost up to £476M. Funding for the River Thames Scheme is expected to be procured from the Thames Regional Flood and Coastal Committee local levy, local councils, Thames Valley Berkshire LEP and Enterprise M3 LEP. Delivery for the River Thames scheme is currently proposed to be in 2024/25.

13.2.16 A number of infrastructure projects across the County provided by SCC do not have an estimated capital cost associated with them at this stage of the assessment. These projects are therefore considered to be at a stage of development and likely to materialise into future flood defence or sustainable drainage infrastructure across the County.

[97] Surrey Infrastructure Study, (2016); SCC
[98] River Thames Scheme: reducing flood risk from Datchet to Teddington – Policy Paper, 4th March 2016, Environment Agency

13.2.17 Given that there is a shortage of formalised flood defences, and that the Thames catchment has high ranging predictions for climate change allowances, it can be concluded that there is a shortage of flood mitigation and flood protection measures in place to supply the existing developments, and to facilitate future growth, and the need for flood protection measures will be addressed to some extent by the River Thames Scheme, once operational, particularly in the areas stated in point 13.2.14.

13.2.18 To facilitate planned growth to 2035, development must be controlled carefully to ensure that flood risk policies are met, and that the existing flood risk is not exacerbated for new developments as well as surrounding areas. Particular challenges include mitigating the increasing flood risk from continued development in the floodplain, as well as the management of groundwater flood risk from basement developments.

13.3 Sustainable Drainage

13.3.1 The LLFA is responsible for preparing and implementing planning strategies that help deliver sustainable drainage by encouraging developers to incorporate SuDS (Sustainable Urban Drainage Systems) for proposed developments where possible. For the Borough of Runnymede, Surrey County Council acts as the LLFA. This role is supported by the requirements of the NPPF.

13.3.2 Runnymede Borough Council is the Local Planning Authority (LPA) and, under the NPPF and Schedule 3 of the Flood and Water Management Act (2010), have responsibility to ensure that new developments are appropriately flood resilient and resistant, and will not increase overall flood risk. The LPA also has responsibility to undertake a Strategic Flood Risk Assessment to fully understand the flood risk in the area. The Borough Council also requires new developments to incorporate SuDS where appropriate, in line with the requirements of the NPPF. Under this arrangement, the LLFA acts as statutory consultee in the planning process for major developments and provide technical support to the LPA.

13.3.3 The most appropriate SuDS techniques for use within a development can be determined using site specific investigations for proposals within Flood Zone 2 and 3 and for all major developments. The SuDS management train should be followed when selecting suitable SuDS methods, and the impact of climate change should also be accounted for in the design of SUDS. The SuDS management train is shown in Figure 45 below, and is a sequence of measures designed to mimic the natural catchment drainage process. SuDS schemes should therefore be designed with references to the sequence identified in the SuDS management train[99].

[99] http://www.susdrain.org/delivering-suds/using-suds/suds-principles/management-train.html

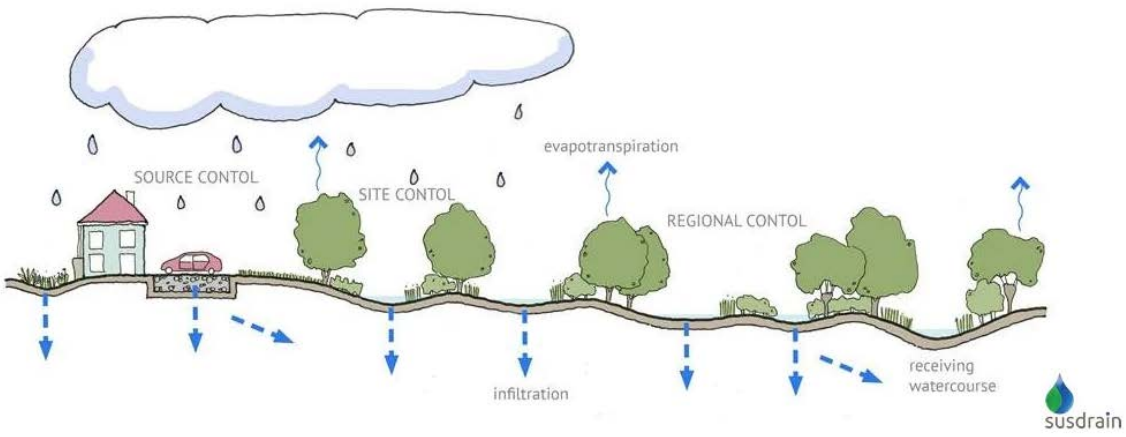

Figure 45. SuDS Management Train

Source: www.susdrain.org

Existing Infrastructure Capacity and Issues

13.3.4 The existing surface water drainage issues, and subsequently the surface water flood risk areas, are located adjacent to ordinary watercourses within the Borough. The areas at risk of surface water flooding comprise the Borough's largest urban centres, including Chertsey and Egham.

13.3.5 Existing geology mapping and desk study review show that large areas of the Borough are underlain by sand, gravel and silt, with sandstone bedrock. This provides ample opportunities at a localised scale for the incorporation of infiltration SuDS schemes within major developments, to ensure that further urbanisation within the Borough does not lead to an increase in the risk of surface water flooding. Geological datasets suggest that to the north-east of the Borough, there is high potential for groundwater flooding at the surface as a result of a high water table. It is recommended however, that site specific assessments for new developments are carried out in line with CIRIA recommendations and BRE365 to confirm the suitability of using infiltration methods.

13.3.6 Existing sustainable drainage infrastructure within the Borough consists of attenuation and detention features, utilising the open floodplain and free draining geology. The responsibility for the maintenance of these features lies with the riparian land owner in the case of large impounded water features and waterbodies linked to main rivers, and with the LLFA for water features that link ordinary watercourses.

13.3.7 Furthermore, a number of sites with 'permitted development rights' exist across the Borough, sometimes within Flood Zone 2/3. These sites do not require planning applications for certain types of development which derive from a general planning application granted by Parliament. Therefore, there is no requirement for these sites to propose sustainable drainage solutions to manage the runoff generated from the development, due to there being no requirement for a planning application. To date, RBC has not removed the permitted development rights of sites in areas at risk of flooding. In locations where there is potential for new developments as well as permitted developments, the impact on flood risk is cumulative, and requires careful management[100].

Infrastructure Required to Support Growth

[100] Runnymede 2035 Strategic Flood Risk Assessment (SFRA) April 2016.

13.3.8 The datasets used to analyse the planned flood defence infrastructure have been used to analyse the pipeline sustainable drainage infrastructure, and follows the same methodology presented in section 1.3. The pipeline infrastructure relating to areas with surface water flooding 'hot spots' have been taken as sustainable drainage infrastructure. Additionally, pipeline projects that do not require clear hard engineering have also been categorised as sustainable drainage infrastructure where appropriate.

13.3.9 Similar to the flood defence infrastructure analysis, only projects that have estimated capital costs are considered under 'existing pipeline infrastructure'. Furthermore, projects that indicated as maintenance or repair/refurbishment are not included in the analysis, as they do not facilitate future growth.

13.3.10 On a more localised scale, it is expected that new developments will not exacerbate existing levels of flood risk at the site or elsewhere, and should manage any flood risk from surface water generated on site through the incorporation of SuDS. An overall increase in the impermeable areas within the Borough will lead to an increased surface water risk, if left unmitigated. Additionally, the anticipated impacts of climate change on storm events and surface water flows must be considered in relation to the lifetime of the development, when planning site specific SuDS measures.

13.3.11 At a local scale, new developments with sustainable drainage solutions will lead to a reduced risk of surface water flooding. Developments proposed on 'dry islands' should be accompanied by sustainable drainage proposals, safe access and escape routes to prevent isolation during flood events, as recommended in the NPPF guidance[101]. Permitted Developments must be monitored closely, especially those occurring on Flood Zone 3B (functional floodplain) and alongside major new developments.

13.3.12 The Council does not require full scale SuDS to be implemented for minor developments. However, developers and applications should note the requirements of the Approved Document H of the Building Regulations, and paragraph 029 of the Planning Practice Guidance that they need to consider flood risk to and from the development site.

13.4 Key Findings

Flood Defences

- Areas at the greatest risk from surface water flooding are generally located adjacent to smaller watercourses and ordinary watercourses. Surface water flooding is prevalent in the major urban centres of Egham, Addlestone and Chertsey;
- Surface water flooding due to overland runoff and lack of drainage network capacity is the second largest source of flooding within Runnymede. High water tables within permeable geology in parts of the Borough serve to exacerbate flood events following heavy rainfall.
- The Lead Local Flood Authority (SCC) is responsible for the management of flood risk from ordinary watercourses, surface water flooding and groundwater flooding, whilst flood risk from main rivers is managed by the EA.
- There are no major formalised flood defences within the Borough. The M25 and M3 motorways, as well as major railway lines serve as an informal barrier to flooding.
- Urban areas at moderate/high risk of flooding are located to the east of the Borough. As a result, providing flood protection on a Borough-wide basis is a challenging task.
- The River Thames scheme is the largest flood defence project identified to facilitate growth until 2035, and is due for completion in 2024/25. It is estimated that up

[101] National Planning Policy Framework – Planning Practice Guidance - Flood Risk and Coastal Change

15,000 properties will be better protected from flooding as a direct result of this scheme.

Sustainable Drainage

- Areas at the greatest risk from surface water flooding are generally located adjacent to ordinary watercourses. Surface water flooding is prevalent in the major urban centres of Egham, Addlestone and Chertsey'.
- Currently, large areas in the north of the Borough utilise infiltration methods to provide surface water drainage, as a form of natural catchment drainage. Open water attenuation features have also been used to mitigate surface water flood risk.
- As approximately 30% of the Borough is located in Flood Zone 2 or 3, future development is likely to require a well-planned approach to provide sustainable surface water drainage measures to mitigate for the increase in impermeable areas.
- Development on 'dry islands' requires planning to ensure that safe access and safe refuge is provided to prevent isolation during times of flooding.
- The cumulative effects of 'permitted developments' and minor developments on the level of flood risk in the area should be taken into account by the Council. As part of their consideration, the Council should decide whether permitted development rights should be removed in areas at high flood risk (especially in the functional floodplain).
- The spread of geology across the Borough is favourable to the use of infiltration SuDS. However, given the high water table levels and high risk of groundwater flooding at the surface, especially in the north of the Borough, thorough site specific investigations should be undertaken to identify the most suitable drainage method.

14. Future Infrastructure Requirements – Aims and Context

14.1 Introduction

14.1.1 The remaining sections of the INA identify the needs associated with growth to 2035, associated costs, any pipeline projects which may help meet the need, and the gap evident in terms of unmet demand.

14.1.2 The key questions which this section aims to answer are:

- What is the demand for different types of infrastructure associated with planned growth in Runnymede to 2035?
- What infrastructure investment and projects are planned to help meet forecast demand, and what are their costs? How certain are these investments / projects to come forward? Once these plans have been taken into account, is there evidence of a potential 'gap' in future provision?

14.1.3 In the rest of this section, planned growth in Runnymede is set out in order to establish the drivers for future infrastructure needs to 2035 and the context for the INA. Housing growth, population growth and non-residential sites are covered. The approach taken to assessing infrastructure needs associated with this growth is then described.

14.2 Growth in Runnymede

14.2.1 RBC has undertaken work to identify the scale and location of future growth in Runnymede in order to develop its new Local Plan to 2035, and this work forms the basis for the INA. RBC officers also provided AECOM with information to supplement and update published evidence base work where necessary.

Housing Growth

14.2.2 The Runnymede IOPA Local Plan consultation document (2016) sets out seven Spatial Strategy (SS) options with associated growth forecasts. AECOM was asked to consider three of these options as part of the INA.

14.2.3 The three options considered are:

- SS3: 7,600 new homes to 2035, based on delivery of development within the Borough's existing urban areas and on previously developed sites in the Green Belt, as well as returning the village of Thorpe to settlement and release of some of the Green Belt Residual Land Parcels (RLPs) identified in the Green Belt Review (GBR) for housing. The indicative plan target of 380 dwellings per annum reflects an assumption in the Strategic Land Availability Assessment (SLAA)[102] of discounting supply by 20%.
- SS5: 9,320 new homes to 2035 (a target of 466 dwellings p.a.), based on delivery of development as described under SS3 plus if necessary, release of additional land in the Green Belt for housing allocations. This would deliver a lower under delivery rate than options SS3 & SS4 and reflects the demographic-based Objectively Assessed Need (OAN) for housing identified within the Strategic Housing Market Assessment (SHMA)[103].
- SS6: 10,700 homes to 2035 (a target of 535 dwellings p.a.), based on delivery of

[102] Interim SLAA (June 2016), Runnymede Borough Council
[103] Runnymede & Spelthorne Strategic Housing Market Assessment (2015), GL Hearn Limited.

development as described under SS3 plus if necessary, release of additional land in the Green Belt for housing allocations. Pursuing a strategy based on this option would deliver 100% of Runnymede's economically derived OAN.

14.2.4 These options are shown below including indicative phasing over the four five-year periods of the Local Plan.

Table 28. Spatial Strategy Options to 2035 Considered in the INA

Spatial Strategy Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	Total 2015/16- 2034/35
SS3	1,839	2,840	1,681	1,241	7,600
SS5	2,282	2,346	2,346	2,346	9,320
SS6	2,572	2,709	2,709	2,709	10,700

Source: AECOM analysis of RBC data, 2017

14.2.5 Figure 46 below shows the current pipeline of housing sites over 10 dwellings in Runnymede, as identified by RBC for the purposes of this INA. Table 29 summarises the distribution of growth across the Borough by MSOA. MSOA Runnymede 008 includes the two sites over 250 units: the former DERA site (south) at Longcross (1,400 units) and St Peter's Hospital at Chertsey. Otherwise, growth is concentrated in the main urban centres of Egham, Chertsey and Addlestone.

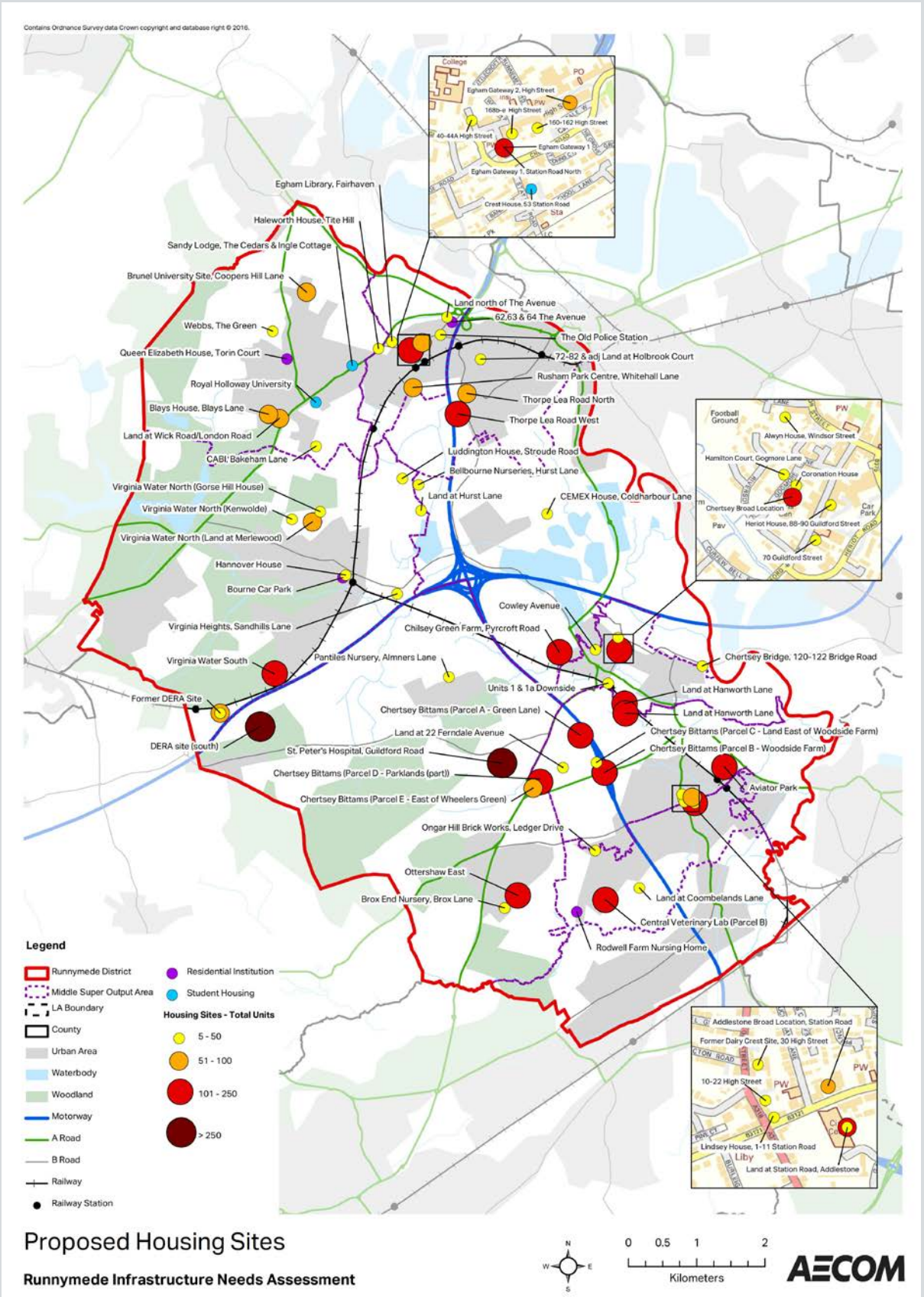

Figure 46. Current pipeline of housing sites over 10 dwellings in Runnymede.

Source: AECOM analysis of RBC data, 2016

Table 29. Residential Growth (Sites >10 Dwellings) by MSOA

MSAO	Dwellings
Runnymede 001	421
Runnymede 002	297
Runnymede 003	316
Runnymede 004	272
Runnymede 005	529
Runnymede 006	588
Runnymede 007	710
Runnymede 008	2,222
Runnymede 009	391
Total	5,746

Source: AECOM analysis of RBC data, 2017

Population Growth

14.2.6 The population projections used within the INA are shown in Table 30 below.

14.2.7 The Runnymede & Spelthorne SHMA (2015) sets out that the population of Runnymede is projected to increase by 16,640 people over a 20 year period and calculates a demographically based OAN of 434 dwellings per annum or 8,680 over the 20 years. However, in line with the Planning Practice Guidance note on undertaking housing needs assessments, the SHMA adjusted this need figure upwards to take account of market signals, affordability and London migration. This resulted in a demographic OAN of 466 dwellings per annum. The demographic OAN was adjusted to take account of affordability issues which already occur within the population projections not in addition to them. As such, whilst the demographic OAN as articulated in SS5 has been uplifted this does not change the overall population projection of 16,640.

14.2.8 This INA has therefore assumed that the population arising from Local Plan option SS5 is 16,640 over the plan period and the population for options SS3 and SS6 have been adjusted up or down accordingly using an assumed occupancy rate of 1.92 people per household (as per the ratio indicated by 16,640 population to 8,680 dwellings).

Table 30. Population Projections to 2035 Used in the INA

Spatial Strategy Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	Total 2015/16- 2034-35
SS3	3,530	5,452	3,227	2,383	14,592
SS5	4,074	4,189	4,189	4,189	16,640
SS6	4,939	5,202	5,202	5,202	20,544

Source: AECOM analysis of RBC data, 2017

Non-residential development

14.2.9 RBC have identified the current pipeline of sites over 500 m^2 which will support economic growth in Runnymede. This totals 97,213m^2 employment space (including office, industrial and storage and distribution) which could support 5,131 jobs, and 20,801 m^2 retail and leisure space (including hotel and a theatre) which could support 552 jobs. A summary by each five year Local Plan phase is set out in Figure 47.

14.2.10 Pipeline sites are mapped in Figure 47 below, with a summary by MSOA provided in Table 31. Once again, growth is concentrated in the main urban areas, apart from the former DERA site (north) at Longcross.

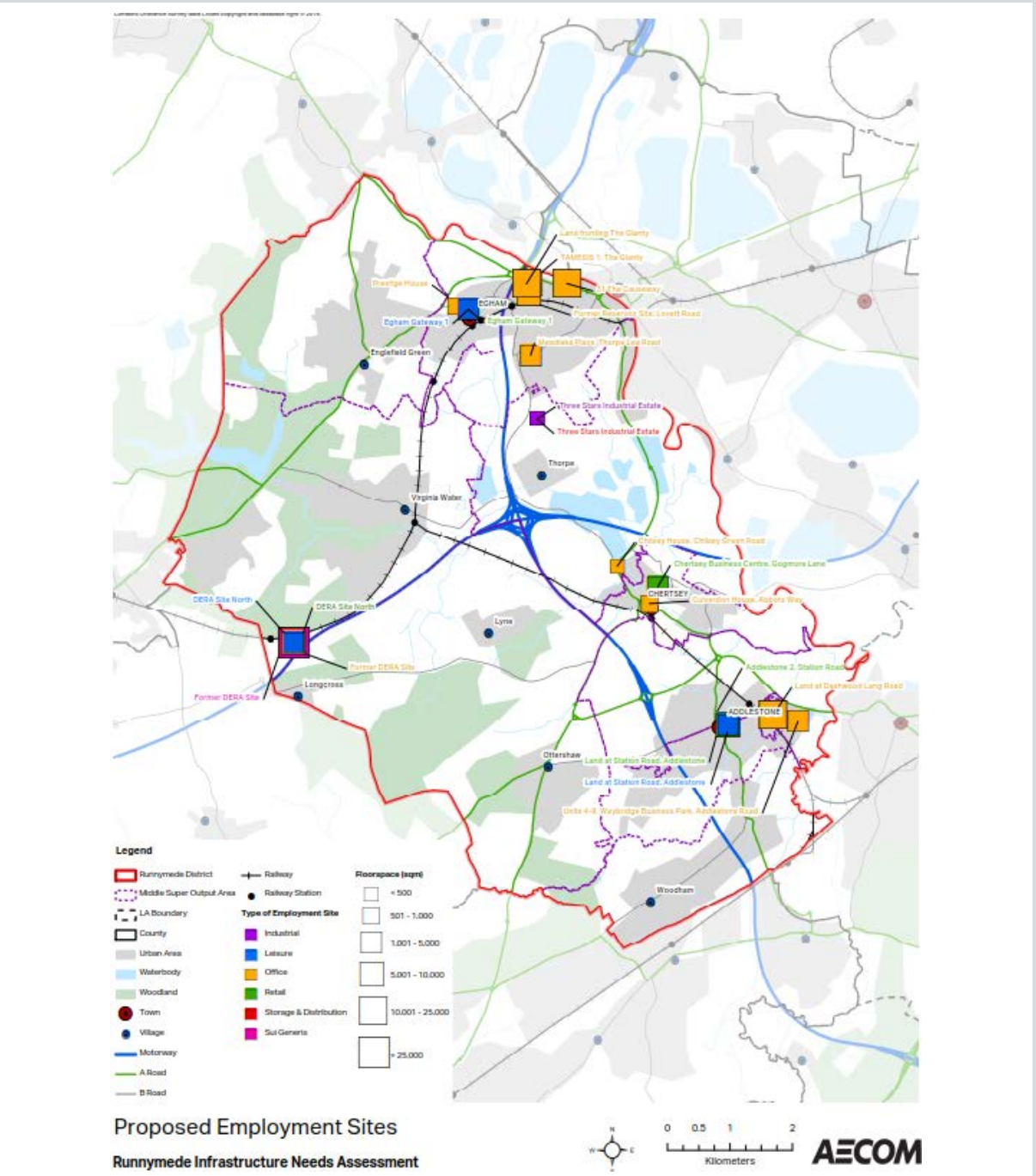

Figure 47. Current pipeline of Non-Residential Sites over 500 m^2 in Runnymede

Table 31. Non-Residential Growth (sites >500 m^2) by MSOA

MSOA	Employment floorspace (m^2)	Retail and Leisure Floorspace (m^2)
Runnymede 001	803	3,536
Runnymede 002		
Runnymede 003	45,693	
Runnymede 004	1,765	
Runnymede 005	43,350	3,226

MSOA	Employment floorspace (m^2)	Retail and Leisure Floorspace (m^2)
Runnymede 006	571	1,140
Runnymede 007	1,253	540
Runnymede 008		
Runnymede 009	11,400	12,332
Total	104,835	20,774

Source: AECOM analysis of RBC data, 2017

14.3 Approach to Assessing Infrastructure Needs

14.3.1 The starting point for the assessment of infrastructure needs has been a review of information from infrastructure providers. Consultation has been undertaken with stakeholders for each infrastructure topic to understand their forecasts of requirements, the capacity of the network to respond, planned investment, costs and potential gaps in funding[104].

14.3.2 For infrastructures where it is meaningful and useful to do so, AECOM has undertaken modelling work employing theoretical benchmarks and provision standards to provide an indication of demand associated with growth. This applies to most of the social infrastructure items and a number of green infrastructure items. The model is driven by the population forecasts for all topics apart from allotments, where the driver is dwelling numbers.

14.3.3 It should be noted that:

- For the analysis in Chapter 15 to 19 which cover social and green infrastructures, the Borough-wide population forecasts set out above are employed. Where demand is associated with specific cohorts of the population only (e.g. education), assumptions on the age profile of the total population have been applied, drawn from the ONS Sub-National Population Projections 2014.
- For the analysis in Chapter 25 which considers specific allocated sites, the method for estimating resident population follows the approach agreed between Local Authorities and Natural England to assessing impacts of development on the Thames Basin Heath SPA (referred to as the Strategic Access Management and Monitoring approach), and recently employed by RBC to assess the capacity of many of the allocation sites covered within this report.

14.3.4 The assumptions applied in estimating resident population and the benchmark assumptions applied to the relevant population cohorts to estimate infrastructure demand for each relevant infrastructure topics are set out in Appendix B.

[104] Where responses from consultees were limited or no feedback was provided, the assessment of needs is based on available literature and professional judgement.

15. Future Needs – Education

15.1 Early Years Education

15.1.1 As described in the baseline section, the majority of early years education provision in the Borough is provided by the private sector. In addition there are a number of maintained nursery schools, Children's Centres and some primary schools with early years facilities attached to them.

15.1.2 The SCC Childcare Sufficiency Assessment projects that the Chertsey Meads and Chertsey St Ann's Wards in Runnymede will not be able to meet the future demand for early years education (including free places) over the Plan period, and that New Haw and Woodham Wards are currently at risk of not being able to meet demand. Availability of early years places is varied across the Borough, and whilst there is still likely to be some spare capacity within certain locations, new provision will likely be required as a result of growth over the Local Plan period. The locations and methods of provision of new early years places are yet to be determined, however it is envisaged that the majority of these places will be delivered by the private sector.

15.1.3 Modelling has been undertaken to determine the future requirement for early years education in Runnymede over the period 2015/16-2034-35. Our estimate of the demand and cost for early years infrastructure has been derived by applying the assumptions listed in Appendix B to the population projections for the 0 to 3 year olds in the Borough.

15.1.4 A private nursery will be provided as part of the development at the former DERA site, with the construction costs of the facility to be funded by the developer. There are no other planned projects which would assist in meeting forecast demand.

15.1.5 As shown in Table 32 below, modelling indicates that gross demand for nursery places over the Local Plan period is 330 to 462 places, depending on the growth option, with associated costs of £5.3M to £7.4M. It is assumed that the nursery at the former DERA site will provide 50 places in line with standard models; net demand is therefore estimated at 280 to 412 places (£4.5M to £6.6M).

Table 32. Demand and Costs for Nursery Places in Runnymede

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
Gross demand (nursery places):					
SS3	81	125	73	51	330
SS5	94	96	95	90	374
SS6	113	119	117	112	462
Planned capacity:					50
Net demand (nursery places):					
SS3					280
SS5					324
SS6					412
Gross costs (£):					
SS3					5,282,198
SS5					5,987,175
SS6					7,390,946
Net costs (£):					

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
SS3					4,482,198
SS5					5,187,175
SS6					6,590,946

Source: AECOM analysis, 2017

15.1.6 The delivery of this identified future requirement will need to be considered within the context of a number of models for early years delivery, including:

- Expansion/provision of nurseries linked to primary schools;
- Expansion/provision of free-standing children's centres;
- Encouragement of delivery of privately operated nurseries across the Borough, including in community centres, libraries, other co-location spaces, and easily accessible facilities which are situated close to areas of new residential and employment development.

15.1.7 A number of early years education models do not rely upon funding channelled through the Council e.g. privately operated facilities. While the Council should plan for and encourage nursery provision within Runnymede, it is likely that a considerable proportion of the funds available for early years provision will be available additional to that provided by existing programmes and specific s106 / CIL agreements.

15.2 Primary Education

15.2.1 Modelling has been undertaken to determine the future requirement for primary education in Runnymede over the period 2015/16-2034/35. Our estimate of the demand and cost for primary education infrastructure has been derived by applying the assumptions listed in Appendix B to the population projections for 4 to 10 years olds in the Borough.

15.2.2 Over the Plan period, information gathered through consultation and derived from the Surrey Infrastructure Study 2016 indicates that additional places are planned at a number of locations across the Borough. These potential projects are set out in the Project Schedule (see also Section 4.3 of the baseline situation). However the number of places and planned investment associated with these projects is not yet confirmed. A new primary school is planned at the former DERA site; this will be developer funded. It is assumed for the purposes of the modelling exercise that this will be 2 FoE as this is DfE's preferred model of provision. SCC will seek to maintain smaller schools where the quality of provision is high and where the school offers value for money[105], however delivery of larger primary schools or expansion of existing schools is likely to be most feasible.

15.2.3 Gross demand for primary school places is estimated at 919 to 1,290 places, depending on the growth option (see Table 33 for details). Gross costs are £12.8M to £18.0M. Net demand and costs are estimated on the basis that 2 FoE at the former DERA site are funded, and are shown in Table 33 below as 709 to 1,080 places (£9.9M to £15M).

[105] School Organisation Plan 2015-16, (2016); Surrey County Council

Table 33. Demand and Costs for Primary Education Places in Runnymede

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
Gross demand (primary school places):					
SS3	223	347	202	147	919
SS5	258	267	262	258	1,045
SS6	313	331	326	321	1,290
Planned capacity:					210
Net demand:					
SS3					709
SS5					835
SS6					1,080
Gross costs (£):					
SS3	3,122,538	4,853,208	2,825,924	2,052,688	12,854,358
SS5	3,603,777	3,728,511	3,668,199	3,608,099	14,608,587
SS6	4,368,872	4,630,248	4,555,350	4,480,715	18,035,185
Net costs (£):					
SS3					9,918,558
SS5					11,672,787
SS6					15,099,385

Source: AECOM analysis, 2017

15.3 Secondary Education

15.3.1 This section covers secondary education including education for 16 to 17 year olds which may be provided within a sixth form or within an FE setting.

15.3.2 Modelling has been undertaken to determine the future requirement for education in Runnymede for 11 to 17 year olds over the period 2015/16-2034-35. Our estimate of the demand and cost for secondary education infrastructure has been derived by applying the assumptions set out in Appendix B to the population projections for 11 to 17 years olds in the Borough.

15.3.3 Both Salesian School and Fulbrook School have sixth forms and Strodes College provides dedicated FE provision for 16+ year olds. Post-16 students in the south of the Borough are also served by the Weybridge Campus of Brooklands College in the neighbouring borough of Elmbridge.

15.3.4 A number of projects have been identified as potentially coming forward over the Plan period, on the basis of information gathered through consultation and derived from the Surrey Infrastructure Study 2016 and the SCC School Organisation Plan 2015/16. These are the expansion of Salesian School (number of places / FoE unknown), the expansion of an existing school in the Chertsey area to accommodate demand arising from the former DERA site (number of places / FoE unknown), and the establishment of a new Runnymede Free School (6 FoE). These projects are listed within the Project Schedule; however, as the scale of provision is to be confirmed and it is not evident as yet that the funds committed to these projects would cover the costs, these projects are ignored within our estimate of net demand. Consultation has indicated that should a new secondary school be developed over the Plan period it is likely that sixth form facilities would be incorporated as part of this model.

15.3.5 As shown in Table 34, gross demand for secondary school places in Runnymede is estimated as 845 to 1,195 places over the 20 year Local Plan period. Associated costs are £17.8M to £25.2M. Net demand over the Local Plan period is assumed to be the same as gross demand given that there are no confirmed planned projects.

Table 34. Demand and Costs for Secondary Education Places within Runnymede

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
Demand (secondary school places):					
SS3	190	316	198	141	845
SS5	219	243	257	248	967
SS6	266	301	319	308	1,195
Costs (£):					
SS3	4,005,074	6,650,441	4,171,742	2,974,474	17,801,732
SS5	4,622,329	5,109,248	5,415,142	5,228,362	20,375,081
SS6	5,603,666	6,344,916	6,724,789	6,492,836	25,166,207

Source: AECOM analysis, 2017

15.3.6 There is one SEN school within Runnymede, the Philip Southcote School (in MSOA 006), which provides secondary education facilities for pupils aged 11-16 years old. There is currently no information on the existing capacity and roll within the Philip Southcote School. There is currently no new dedicated SEN provision planned within the Borough.

15.4 Higher Education

15.4.1 There is a weak relationship between future population growth in Runnymede and demand for higher education places in the Borough, as catchments to access higher education facilities are not restricted to the Borough or County.

15.4.2 Royal Holloway has plans to expand and accommodate growth over the Local Plan period. An outline masterplan has been approved at RHUL under RU.14/0099 and two reserved matters applications in association with this outline masterplan have already been approved. It is understood that the current site will be developed to include additional student accommodation and new academic buildings. The costs for this are unknown and will be funded by Royal Holloway.

15.5 Adult Education

15.5.1 There is one adult education centre in the Borough - Runnymede Adult Learning Centre, situated in Chertsey (operated by SCC). Strodes College also opened a Community Learning Centre in Egham in 2006, and offers courses at a number of community venues within the Borough. Adult education provision is also offered on a more informal basis within local schools, colleges, church halls and community centres.

15.5.2 Catchments to access adult education facilities are not restricted to the Borough or County. There is also understood to be a lower level of uptake for adult education places compared with other types of non-compulsory education, and enrolment numbers in adult education courses are reported to have dropped in recent years. There are no known plans for expansion of adult education facilities within the Borough.

15.5.3 Demand for adult learning facilities has been estimated applying the assumptions listed in Appendix B. Additional demand over the Local Plan period is estimated at 292 to 411 new adult education places, depending on the growth option, with associated costs of £5.9M to £8.3M.

Table 35. Demand and Costs for Adult Education Places within Runnymede

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
Demand (additional adult learning clients):					
SS3	71	109	65	48	292
SS5	81	84	84	84	333
SS6	99	104	104	104	411
Costs (£):					
SS3	1,422,189	2,196,611	1,300,072	960,073	5,878,945
SS5	1,641,374	1,687,562	1,687,562	1,687,562	6,704,060
SS6	1,989,844	2,095,697	2,095,697	2,095,697	8,276,936

Source: AECOM analysis, 2017

15.6 Education Future Needs – Key Findings

Early Years

- The majority of early years education provision in the Borough is provided by the private sector, and the SCC Childcare Sufficiency Assessment projects that several locations will not be able to meet future demand or are at risk of not being able to meet demand. The locations and methods of provision of new early years places are yet to be determined, however it is envisaged that the majority of these places will be delivered by the private sector.
- Modelling to determine the future requirement for early years education in Runnymede indicates that gross demand for nursery places over the Local Plan period is 330 to 462 places, depending on the growth option, with associated costs of £5.3M to £7.4M.
- A private nursery will be provided as part of the development at the former DERA site, with the construction costs of the facility to be funded by the developer. It is assumed that the nursery at the former DERA site will provide 50 places in line with standard models. Net demand is therefore estimated at 280 to 412 places (£4.5M to £6.6M). There are no other planned projects which would assist in meeting forecast demand.
- Models for the delivery of this identified future requirement could include expansion or provision of nurseries linked to primary schools and free-standing children's centres and encouragement of the delivery of privately operated nurseries across the Borough. It is likely that a considerable proportion of the funds available for early years provision will be available additional to that provided by existing programmes and specific s106 / CIL agreements, through private funding sources.

Primary

- Additional primary places are planned at a number of locations across the Borough over the Plan period, however the number of places and planned investment associated with these projects is not yet confirmed.
- Modelling to determine the future requirement for primary education in Runnymede

indicates that gross demand for primary places over the Local Plan period is 919 to 1,290 places, depending on the growth option, with associated costs of £12.8M to £18.0M.

- A new primary school is planned at the former DERA site; this will be developer funded. It is assumed for the purposes of modelling that this will provide 2FE, in line with the DfE's preferred model of provision. Net demand is therefore estimated at 709 to 1,080 places (£9.9M to £15M).

Secondary

- Additional secondary places will potentially come forward over the Plan period at Salesian School (number of places / FoE unknown), the expansion of an existing school in the Chertsey area to accommodate demand arising from the former DERA site (number of places / FoE unknown), and the establishment of a new Runnymede Free School (6 FoE).
- Modelling to determine the future requirement for secondary education in Runnymede indicates that gross demand for secondary places over the Local Plan period is 845 to 1,195 places, depending on the growth option, with associated costs of £17.8M to £25.2M. Net demand over the Local Plan period is assumed to be the same as gross demand given that there are no confirmed planned projects.
- There is one SEN school within Runnymede, the Philip Southcote School, which provides secondary education facilities for pupils aged 11-16 years old. There is currently no information on the existing capacity and roll within the Philip Southcote School and there is currently no new dedicated SEN provision planned within the Borough.

Higher Education

- There is a weak relationship between future population growth in Runnymede and demand for higher education places in the Borough, as catchments to access higher education facilities are not restricted to the Borough or County. Royal Holloway is the only Higher Education facility within the Borough and has plans to expand and accommodate growth over the Local Plan period. An outline masterplan has been approved however currently details of these plans and costs are unknown. The development will be funded by Royal Holloway.

Adult Education

- There is one adult education centre in the Borough - Runnymede Adult Learning Centre, and Strodes College operates a Community Learning Centre which offers courses at a number of community venues within the Borough. Catchments to access adult education facilities are not restricted to the Borough or County, and there is understood to be a low and falling level of uptake for adult education places in recent years.
- There are no known plans for expansion of adult education facilities within the Borough. Additional demand associated with growth over the Local Plan period is estimated at 292 to 411 new adult education places, depending on the growth option, with associated costs of £5.9M to £8.3M.

16. Future Needs – Healthcare

16.1 Primary Healthcare

GPs

16.1.1 Modelling has been undertaken to determine the future requirement for GP provision in Runnymede, over the period 2015/16-2034/35. Our estimate of the demand and cost for GP surgery infrastructure has been derived by considering the population projections for the Borough and applying the assumptions listed in Appendix B.

16.1.2 Consultation with local healthcare providers indicated that there are currently no firm plans for new or expanded GP facilities in Runnymede. Local NHS providers' preferred model for future provision is a hub with a minimum of 3GPs, with co-located services (e.g. dentists, ophthalmologists, district nurses and health visitors) as appropriate, ideally in a town centre or some other location which has good public transport accessibility. Single-handed GPs are generally now retiring and there is a minimum size or 'critical mass' which is required for provision to be efficient and sustainable.

16.1.3 Potential locations for new primary healthcare provision are the former DERA site at Longcross where some space (200 m^2) is currently set aside for healthcare within the development; however the CCG has yet to confirm whether provision at this location would be considered appropriate and sustainable (an alternative would be for the expansion of practices within the local town centres of Chertsey, Virginia Water or Sunningdale). There is also an existing healthcare facility which could be improved and expanded as part of the forth-coming Addlestone 2 development. However, plans cannot be confirmed until the production of the spatial infrastructure plan for healthcare services which is due in April / May 2017. This document will consider the scale and location of growth in Runnymede and propose locations for new or expanded provision.

16.1.4 Demand for GPs across the Borough is estimated as 8.1 to 11.4 FTE GPs over the Local Plan period, depending on the growth option in question. See Table 36 below. Available evidence indicates there is little or no spare capacity in primary healthcare services in Runnymede at present and there are no firm planned or committed projects. The cost of this provision would be approximately £3.3M to £4.7M.

Table 36. Demand and Costs for GP Services within Runnymede

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
Demand (additional GPs required)					
SS3	1.96	3.03	1.79	1.32	8.11
SS5	2.26	2.33	2.33	2.33	9.24
SS6	2.74	2.89	2.89	2.89	11.41
Costs (£):					
SS3	808,955	1,249,453	739,493	546,099	3,344,000
SS5	933,629	959,901	959,901	959,901	3,813,333
SS6	1,131,842	1,192,053	1,192,053	1,192,053	4,708,000

Source: AECOM analysis, 2017

16.1.5 The infrastructure plan for health being produced by the local NHS will identify costs and funding relating to primary healthcare provision in Runnymede. Potential funding sources include Department for Health, NHS and developers (CIL / s106).

Dentists

16.1.6 There is no information available about current capacity within dental surgeries in Runnymede. While all nine surgeries are currently accepting new patients, population growth is likely to place additional pressure on dental services over the Local Plan period.

16.1.7 Modelling has been undertaken to determine the future requirement for dentists in Runnymede from 2015/16-2034/35. Our estimate of the demand and cost for dental surgeries has been derived by applying the assumptions set out in Appendix B to the population projections for the Borough.

16.1.8 There are no known plans for new dental surgeries over the plan period, however there is a possibility that dental services could be provided in conjunction with the delivery of new GP services likely to come forward at the former DERA site. As these plans do not represent a firm commitment to provision, they have not been factored into the assessment of demand presented below.

16.1.9 Demand is estimated at 7.3 to 10.3 additional dentists over the Local Plan period, depending on the growth scenario, with associated costs of £0.6M to £0.8M.

Table 37. Demand and Costs for Dentists in Runnymede

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
Demand (additional dentists required)					
SS3	1.8	2.7	1.6	1.2	7.3
SS5	2.0	2.1	2.1	2.1	8.3
SS6	2.5	2.6	2.6	2.6	10.3
Costs (£):					
SS3	133,963	206,909	122,460	90,434	553,766
SS5	154,609	158,960	158,960	158,960	631,488
SS6	187,433	197,404	197,404	197,404	779,645

Source: AECOM analysis, 2017

16.2 Acute Healthcare

Hospitals

16.2.1 This section covers acute services provided in hospital settings for physical and mental healthcare.

16.2.2 The projected increase in resident population within Runnymede, plus the naturally aging population, will place additional demand on existing hospital services. Modelling has been undertaken to determine the future requirement for hospital facilities to accommodate acute physical healthcare needs and mental healthcare needs in Runnymede, over the period 2015/16-2034/35. Our estimate of the demand and cost for hospital infrastructure has been derived by applying the assumptions listed in Appendix B to the population projections for the Borough.

16.2.3 In 2010, RBC approved a masterplan for the redevelopment of parts of the St Peter's hospital campus, for the development of new purpose-built healthcare facilities to replace some of the existing buildings, including hospital and mental health services. This project will result in improved and expanded Accident and Emergency (A&E) services. The cost of the works at St Peter's Hospital are unknown, however it is understood that funding would be by the Hospital Trust. There are no other projects for new or expanded acute physical heathcare provision in the current pipeline. The infrastructure plan for healthcare services which will be produced by the local NHS in April 2017 will set out the location, timing and cost of any required acute provision to meet needs arising from growth in Runnymede.

16.2.4 There are currently no confirmed plans for additional delivery or expansion of the CMHRS service provided by Surrey and Borders Partnership NHS Foundation Trust. Consultation with local providers indicated that plans for a potential expansion of acute mental healthcare services will be consulted on over the summer, however services may be located outside of Runnymede. The infrastructure plan for healthcare services which will be produced by the NHS in April 2017 will set out the location, timing and cost of any required provision to meet needs arising from growth in Runnymede.

16.2.5 Demand for hospital facilities for physical acute healthcare is estimated to be 4,576 m^2 to 6,442 m^2 (£22.4M to £31.6M) depending on the growth option. Demand for hospital facilities for mental healthcare is estimated to be 2,431 m^2 to 3,422 m^2 (£7.8M to £11.0M) depending on the growth option. Table 38 below provides details.

Table 38. Demand and Costs for Acute Healthcare within Runnymede

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
Demand (m^2 hospital space) for acute physical needs					
SS3	1,107.00	1,709.80	1,011.95	747.30	4,576
SS5	1,277.61	1,313.56	1,313.56	1,313.56	5,218
SS6	1,548.85	1,631.25	1,631.25	1,631.25	6,442
Demand (m^2 hospital space) for acute mental health needs					
SS3	588.10	908.33	537.60	397.00	2,431
SS5	678.73	697.83	697.83	697.83	2,772
SS6	822.83	866.60	866.60	866.60	3,422
Costs (£) for acute physical needs					
SS3	3,542,410	8,378,007	4,958,553	3,661,776	22,422,651
SS5	6,260,300	6,436,463	6,436,463	6,436,463	25,569,690
SS6	7,589,384	7,993,116	7,993,116	7,993,116	31,568,732
Costs (£) for acute mental needs					
SS3	1,881,905	2,906,656	1,720,314	1,270,412	7,779,287
SS5	2,171,941	2,233,059	2,233,059	2,233,059	8,871,117
SS6	2,633,052	2,773,122	2,773,122	2,773,122	10,952,417

Source: AECOM analysis, 2017

16.3 Services for Older People

16.3.1 Modelling has been undertaken to determine the future requirement for older age care in Runnymede over the period 2015/16-2034/35. Our estimate of the demand and cost for older age care infrastructure has been derived by applying the assumptions listed in Appendix B to the population projections for older people in the Borough.

16.3.2 There are currently no known plans for additional delivery or expansion of sheltered housing managed by RBC. A number of planned projects are described in the baseline section; in total these schemes will see a total of 216 care beds and 167 assisted living units coming online within the next five years. These projects will assist in meeting new demand arising over the Local Plan period. However, there will be older people who cannot afford these private facilities and meeting their needs will require public sector provision. For this reason, supply represented by these planned projects is not factored into the demand estimates presented below.

16.3.3 As set out in Table 39, demand over the Local Plan period is estimated at 60 to 86 nursing care beds, 86 to 124 residential care beds, and 33 to 48 Extra Care Housing units, depending on the growth option. Associated costs are £3.4M to £4.9M.

Table 39. Demand and Costs for Services for Older People within Runnymede

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
Demand - nursing care beds					
SS3	13	21	14	11	60
SS5	15	16	18	19	69
SS6	18	20	23	24	86
Demand - residential care beds					
SS3	19	31	20	16	86
SS5	22	24	27	28	100
SS6	27	29	33	35	124
Demand - extra care housing units					
SS3	7	12	8	6	33
SS5	8	9	10	11	39
SS6	10	11	13	13	48
Costs (£) - all older peoples accommodation					
SS3	744,934	1,201,721	802,482	626,608	3,375,745
SS5	859,742	923,231	1,041,664	1,101,415	3,926,052
SS6	1,042,268	1,146,513	1,293,589	1,367,792	4,850,162

Source: AECOM analysis, 2017

16.4 Healthcare Future Needs – Key Findings

GPs

- Available evidence indicates there is little or no spare capacity in primary healthcare services in Runnymede at present and there are no firm planned or committed projects. Modelling to determine the future requirement for GP provision in Runnymede indicates that demand for GPs over the Local Plan period is estimated as 8.1 to 11.4 FTE GPs, depending on the growth option, with associated costs of £3.3M to £4.7M.
- Potential locations for new primary healthcare provision are the former DERA site at Longcross (an alternative would be for the expansion of practices within the local town centres of Chertsey, Virginia Water or Sunningdale). There is also an existing healthcare facility which could be improved and expanded as part of the forth-coming Addlestone 2 development.

- However, plans cannot be confirmed until the production of the spatial infrastructure plan for healthcare services which is due in April / May 2017. This document will consider the scale and location of growth in Runnymede and propose locations for new or expanded provision. The plan will identify costs and funding relating to primary healthcare provision in Runnymede.

Dentists

- There is no information available about current capacity within dental surgeries in Runnymede. While all nine surgeries are currently accepting new patients, population growth is likely to place additional pressure on dental services over the Local Plan period. There are no known plans for new dental surgeries over the plan period, however there is a possibility that dental services could be provided in conjunction with the delivery of new GP services likely to come forward at the former DERA site.
- Modelling to determine the future requirement for dental provision in Runnymede indicates that demand for dentists over the Local Plan period is estimated as 7.3 to 10.3 FTE dentists, depending on the growth option, with associated costs of £0.6M to £0.8M.

Hospitals

- In 2010, RBC approved a masterplan for the redevelopment of parts of the St Peter's hospital campus. The cost of the works at St Peter's Hospital are unknown, however it is understood that funding would be by the Hospital Trust. There are no other projects for new or expanded acute physical heathcare provision in the current pipeline.
- Modelling to determine the future requirement for hospital provision in Runnymede indicates that demand for hospital floorspace over the Local Plan period is estimated as 4,576 m^2 to 6,442 m^2 (£22.4M to £31.6M) depending on the growth option. Demand for hospital facilities for mental healthcare is estimated to be 2,431 m^2 to 3,422 m^2 (£7.8M to £11.0M) depending on the growth option.
- The infrastructure plan for healthcare services which will be produced by the local NHS in April 2017 will set out the location, timing and cost of any required acute provision to meet needs arising from growth in Runnymede.

Services for Older People

- There are currently no known plans for additional delivery or expansion of sheltered housing managed by RBC. A number of planned private projects will deliver a total of 216 care beds and 167 assisted living units and assist in meeting new demand arising over the Local Plan period. However, these private facilities are not affordable to all older people, and meeting their needs will therefore require public sector provision. For this reason, supply represented by these planned projects is not factored into the demand estimates.
- Modelling to determine the future requirement for older age provision in Runnymede indicates that demand for beds over the Local Plan period is estimated as 60 to 86 nursing care beds, 86 to 124 residential care beds, and 33 to 48 Extra Care Housing units, depending on the growth option. Associated costs are £3.4M to £4.9M.

17. Future Needs – Community Infrastructure

17.1 Community Space

17.1.1 Runnymede currently appears relatively well-served by a range of community centres, distributed throughout the Borough. The illustrative masterplan for Longcross Garden Village Centre (2013) includes 300 m^2 D1 space. Otherwise, it is understood that there is no planned expansion of either relevant physical infrastructure or services at this time.

17.1.2 Population growth over the Plan period, in particular amongst youth or older age groups, could lead to a requirement to provide additional services or facilities. It is likely that groups who use community centres will seek greater levels of funding and access to facilities, and there will be more volunteers and financial resources required from the Borough to deliver services to support facilities in the local community. Ten of the Borough's community centres and services for youths and older people are run and managed by volunteers, without whom the range of centres and activities in the Borough could not be offered. Should any new facilities be required, consultation has emphasised RBC would encourage the co-location of services within community hub options. As such, there may be the potential for services for youths and older people to be combined with other services such as libraries.

17.1.3 Potential demand for additional community space has been modelled based on the assumptions set out in Appendix B. In line with the current preferred models of provision, it is assumed that this space would comprise flexible community space which could be used for a variety of purposes by different community groups. Net demand and costs are somewhat lower than gross demand and costs because it is assumed that provision at the former DERA site is committed and will come forward as planned. Net demand is 648 m^2 to 1,035 m^2, depending on the growth option. Associated costs are £0.9M to £1.5M.

Table 40. Demand and Costs for Community Space within Runnymede

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
Gross demand (m^2 flexible community space required):					
SS3	229	354	210	155	948
SS5	265	272	272	272	1,082
SS6	321	338	338	338	1,335
Planned capacity (m^2):					300
Net demand (m^2):					
SS3					648
SS5					782
SS6					1,035
Gross costs (£)					
SS3	327,674	506,102	299,538	221,202	1,354,516
SS5	378,175	388,816	388,816	388,816	1,544,624
SS6	458,462	482,851	482,851	482,851	1,907,016
Net costs (£)					
SS3					926,089
SS5					1,116,196
SS6					1,478,589

Source: AECOM analysis, 2017

17.2 Libraries

17.2.1 Baseline information indicates that Surrey County Council do not consider expansion of Runnymede's libraries as appropriate or required to cater for future demand which may arise from growth over the Local Plan period. It is understood that all five libraries in Runnymede are in a good condition and well maintained.

17.2.2 A review of libraries in Surrey in 2011 led SCC to confirm that it will retain all libraries in Runnymede. SCC's strategy on library provision is centred on maximising capacity within existing infrastructure rather than the addition of new physical infrastructure. It is also understood that SCC is seeking to deliver additional choice to all residents across Surrey through a shift from physical facilities to online services such as e-books and electronic information.

17.2.3 Any future provision of new facilities is anticipated to be delivered as part of a hub or shared facility in line with the RBC's desire to incorporate community services in easily accessible, shared locations. Therefore, it is not considered appropriate to include additional library space within AECOM's demand model – rather it is assumed that any such requirements would be reflected within the estimate of demand and costs for multi-use community space above.

17.3 Community Infrastructure Future Needs – Key findings

- Runnymede is currently well served by a range of community facilities, and the illustrative masterplan for Longcross Garden Village Centre (2013) includes 300 m^2 D1 space. Otherwise, there is no planned expansion of either relevant physical infrastructure or services at this time. Modelling to determine the future requirement for community space in Runnymede indicates that net demand over the Local Plan period is estimated as 648 m^2 to 1,035 m^2, depending on the growth option. Associated costs are £0.9M to £1.5M.
- A review of libraries in Surrey in 2011 has confirmed that all libraries in Runnymede will be retained, with a focus on maximising capacity within existing infrastructure rather than the addition of new physical infrastructure going forward. It is understood that all five libraries in Runnymede are in a good condition and well maintained.
- Any future provision of new facilities is anticipated to be delivered as part of a hub or shared facility in line with RBC's desire to incorporate community services in easily accessible, shared locations. Therefore, any such requirements would be reflected within the estimate of demand and costs for multi-use community space above.

18. Future Needs – Recreation

18.1 Outdoor Sports

18.1.1 The Runnymede Open Space Study 2016 identified that across the Borough there is a deficiency of outdoor sports facilities across the majority of Runnymede, with Addlestone having the most severe levels of under provision.

18.1.2 The Open Space Study refers to the Fields in Trust (FiT) benchmark for provision of outdoor sports facilities; a target of 1.6 hectares (ha) per 1,000 population which breaks down into 1.2ha playing fields or pitches and 0.4ha parks. Based on this benchmark and the other assumptions set out in Appendix B, demand for outdoor sports facilities arising over the Local Plan period has been estimated.

18.1.3 At the current time there are no known plans to provide new outdoor leisure facilities in the Borough. There are a number of improvements planned to existing spaces, as shown in the Project Schedule. The costs of these projects total £370,000, with funding anticipated to come from RBC and Achieve Lifestyle. However while the Borough is expected to provide funding for many of the improvements to outdoor sports facilities outlined above, there is no committed funding currently available. The former DERA site will provide 3.13ha sports pitches including 2.46ha off-site at Trumps Farm and dual use with a new primary school on-site. These facilities will be provided and funded by the developer.

18.1.4 Gross demand is estimated 23.4ha to 32.9ha of additional outdoor sports space (parks and pitches), depending on the growth option. The net demand and costs in Table 41 below assume that provision at the former DERA site comes forward but do not factor in other planned improvements as funding is not committed. Net demand is estimated as 20.2ha to 29.7ha of additional outdoor sports space, depending on the growth option. Net costs are £6.4M to £9.4M.

Table 41. Demand and Costs for Outdoor Sports (parks and pitches) within Runnymede

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
Gross demand (ha)					
SS3	5.65	8.72	5.16	3.81	23.4
SS5	6.52	6.70	6.70	6.70	26.6
SS6	7.90	8.32	8.32	8.32	32.9
Planned capacity (ha)					3.1
Net demand (ha)					
SS3					20.2
SS5					23.5
SS6					29.7
Gross costs (£)					
SS3	1,803,335	2,785,301	1,648,490	1,217,372	7,454,498
SS5	2,081,261	2,139,827	2,139,827	2,139,827	8,500,744
SS6	2,523,121	2,657,343	2,657,343	2,657,343	10,495,149
Net costs (£)					
SS3					6,364,272
SS5					7,410,518

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
SS6					9,404,923

Source: AECOM analysis, 2017

18.2 Indoor Sports

18.2.1 There is little information within the baseline analysis relating to existing levels of use and capacity within Runnymede's indoor sports facilities; it is not therefore clear whether there is spare capacity or a shortage of these facilities in Runnymede at present.

18.2.2 There has been recent investment at the Borough's two leisure centres to provide additional services and improve the quality of facilities. In addition, there are plans for a number of further improvements at the Borough's leisure centres. The redevelopment of Egham Leisure Centre, including installation of a swimming pool and replacement of fitness equipment, is estimated to cost between £15M and £18M and due to commence in 2017. In addition, replacement of fitness equipment at Addlestone Leisure Centre at an estimated cost of £135,000 is planned. It is assumed that these projects have been identified by providers as required to meet the needs arising from forecast growth in Runnymede over the Local Plan period. It is noted however that there is no committed funding from the Borough currently available for these improvements. Grant or other types of funding, e.g. Lottery funding, could make a contribution. These projects are therefore listed in the Project Schedule as unfunded, with a funding gap of £16.6M.

18.2.3 A new gym at the Addlestone One development is currently under construction, which is due to open summer 2017. It will be operated by Achieve Lifestyle who have fully funded the fit-out costs of the facility. Additionally, a gym will be provided at the former DERA site to serve the new population residing there and will be funded by the developer.

18.3 Play Space

18.3.1 Demand has been estimated based on the application of the benchmark assumptions listed in Appendix B to the total additional population forecast to arise in Runnymede over the Local Plan period. The RBC Open Space Study refers to the FiT benchmark for provision of play facilities; a target of 0.8 ha per 1,000 population. This is broken down as 0.25ha of equipped play space, and 0.55ha of informal play space.

18.3.2 The Runnymede Open Space Study 2016[106] identified that there is a considerable deficiency of play facilities across the majority of Runnymede.

18.3.3 There are a number of improvements planned to existing play facilities across Runnymede, and the delivery of two new play areas. These projects are shown in the Project Schedule. Their costs total £986,000 with funding anticipated to come from RBC and s106 / grants. This planned investment may offset some of the additional demand forecast to arise over the Local Plan period. However, many of the projects represent improvements to existing play areas rather than an increase in supply. Moreover, while the Borough is expected to provide funding for these improvements, there is no committed funding currently identified. For these reasons, it is not considered valid to assume that the planned investments will offset gross demand for playspace across the Borough estimated below.

[106] Open Space Study 2016-2035, (2016); Runnymede Borough Council

18.3.4 As part of the development of the former DERA site, play facilities to support the population of the new settlement will be provided and funded by the developer (the current masterplan includes 0.75ha equipped playing space and 3.47ha informal playing space). It is considered reasonable to assume that this provision will come forward, and it has therefore been factored into the estimate of net demand below.

18.3.5 As shown in Table 42 below, gross demand for playspace is estimated as 11.7ha to 16.4ha. Net demand is 7.5ha to 12.2ha outdoor sports space, with associated costs of £11.2M to £17.1M.

Table 42. Demand and Costs for Playspace within Runnymede

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
Gross demand (ha) formal play space and equipped play space					
SS3	2.8	4.4	2.6	1.9	11.7
SS5	3.3	3.4	3.4	3.4	13.3
SS6	4.0	4.2	4.2	4.2	16.4
Planned capacity (ha)					4.2
Net demand (ha)					
SS3					7.5
SS5					9.1
SS6					12.2
Gross costs (£)					
SS3	3,524,700	5,443,998	3,222,049	2,379,409	14,570,156
SS5	4,067,920	4,182,390	4,182,390	4,182,390	16,615,090
SS6	4,931,554	5,193,897	5,193,897	5,193,897	20,513,246
Net costs (£)					
SS3					11,152,025
SS5					13,196,959
SS6					17,095,114

Source: AECOM analysis, 2017

18.4 Recreation Future Needs - Key Findings

Outdoor Sports

- The Runnymede Open Space Study 2016 identified that across the Borough there is a deficiency of outdoor sports facilities across the majority of Runnymede. At the current time there are no known plans to provide new outdoor leisure facilities in the Borough, however there are a number of improvements planned to existing spaces. The costs of these projects total £370,000, with funding anticipated to come from RBC and Achieve Lifestyle (however no funding is currently committed or available from RBC). The former DERA site will provide 3.13ha sports pitches including 2.46ha off-site at Trumps Farm and dual use with a new primary school on-site. These facilities will be provided and funded by the developer.
- Modelling to determine the future requirement for outdoor sports space in Runnymede indicates that net demand over the Local Plan period is estimated as 20.2ha to 29.7ha of additional outdoor sports space, depending on the growth option. Associated costs are £6.4M to £9.4M.

Indoor Sports

- There is little information currently available regarding existing levels of use and capacity within Runnymede's indoor sports facilities; it is not therefore clear whether there is spare capacity or a shortage of these facilities in Runnymede at present.
- There are plans for a number of improvements at the Borough's leisure centres, including the redevelopment of Egham Leisure Centre (estimated to cost between £15M and £18M) and replacement of fitness equipment at Addlestone Leisure Centre (estimated to cost £135,000). These projects have been identified by providers (and it is assumed they will meet the needs arising from forecast growth over the Local Plan period) however there is no committed funding from the Borough currently available for these improvements.
- A new gym at the Addlestone One development is currently under construction, and will be operated and fully funded by Achieve Lifestyle. Additionally, a gym will be provided at the former DERA site to serve the new population residing there and will be funded by the developer.

Play Space

- The Runnymede Open Space Study 2016 identified that there is a considerable deficiency of play facilities across the majority of Runnymede. There are a number of improvements planned to existing play facilities across Runnymede, and the delivery of two new play areas. Their costs total £986,000 with funding anticipated to come from RBC and s106 / grants, however there is no committed funding currently identified by RBC.
- As part of the development of the former DERA site, play facilities to support the population of the new settlement will be provided and funded by the developer. It is considered reasonable to assume that this provision will come forward, and it has therefore been factored into the estimate of net demand. Gross demand over the Local Plan period is estimated as 11.7ha to 16.4ha of additional play space. Net demand is estimated to be 7.5ha to 12.2ha outdoor sports space, depending on the growth option. Associated costs are £11.2M to £17.1M.

19. Future Needs – Green Infrastructure

19.1 Introduction

19.1.1 This section considers Green Infrastructure requirements associated with future growth in Runnymede to 2035, and planned investment projects which may contribute towards meeting those needs. Information is drawn from RBC's planning work and AECOM's demand model as appropriate.

19.2 Future Needs

Natural and semi-natural greenspace

19.2.1 There is a significant amount of natural and semi-natural greenspace in Runnymede (12.50ha per 1,000 people), which far exceeds quantity standard as set out by FiT of 1.8ha per 1,000 people. Under all spatial strategy options, the future requirement for this typology is to maintain the current quantity of natural and semi-natural greenspace assets and to ensure that they are highly accessible and of high quality.

19.2.2 A number of projects are planned and underway to provide natural and semi-natural green space across Runnymede. These are listed in the Project Schedule. RBC has provided a progress update on each project, including total costs and expenditure up to December 2016. This allows the outstanding funding requirement for each project to be identified. As such, the Project Schedule identifies six projects relating to natural and semi-natural green space, with a total project cost of £0.08M, of which £0.07M represents a funding gap.

SANGs

19.2.3 According to the TBHSPA Delivery Framework[107], SANGs are provided through financial contribution from net residential development which is within 5km of the TBHSPA and are managed by the Borough Council. The Framework also states that SANGs should also be provided on the basis of at least 8ha per 1,000 people after discounting any other publically accessible open space. Therefore, any new development within 5km of the TBHSPA should provide financial contribution (subject to available SANGs capacity) at the rate of 8ha per 1,000 of new population assuming 2.4 persons per dwelling. Bespoke solutions may be provided for developments based on developer's choice, policy requirement or due to lack of SANGs capacity. This is the case for large residential developments located between 400m and 5km of the SPA and other larger developments.

19.2.4 The Runnymede 2035 Issues, Options and Preferred Approaches Consultation Document considers the approach to SANGs as part of the wider spatial strategy options which it puts forward. It states for SS3, SS5 and SS6 that the potential for SANG on RLP sites (and for SS5 and SS6 additional Green Belt sites) will be explored, and additional SANG for longer term needs will also be identified. The residual amount of development requiring SANG (after taking into account planned provision at Chertsey Meads and the DERA South site) is as follows for the different options considered within this INA:

- SS3: indicative requirement for between approximately 25.6ha and 55ha of SANG
- SS5: indicative minimum requirement for 85.5ha of SANG
- SS6: indicative minimum requirement for 111ha of SANG.

[107] Thames Basin Heaths Joint Strategic Partnership Board, 2009. *Thames Basin Heaths Special Protection Area Delivery Framework.* [pdf] Thames Basin Heaths Joint Strategic Partnership Board. Available at: http://www.bracknell-forest.gov.uk/thames-basin-heaths-spa-delivery-framework.pdf

19.2.5 A number of SANGs projects are planned and underway across Runnymede. These are listed in the Project Schedule. RBC has provided a progress update on each project, including total costs and expenditure up to December 2016. This allows the outstanding funding requirement for each project to be identified. As such, the Project Schedule identifies 14 projects relating to SANGs with a total project cost of £1.3M. RBC has indicated that expenditure of £15,970 towards these projects was made in 2015-16, and so the remaining funding gap is slightly less. The projects listed include the SANG planned at the former DERA site (31.9ha, 6ha on site and 25.9ha at Trumps Farm) and the additional SANG provision at Chertsey Meads[108]. Costs of a SANG Implementation Officer are also included.

Parks and Gardens

19.2.6 Current provision level of parks and gardens is higher than FiT recommended standard, indicating good levels of supply. Future needs have been modelled by applying the FiT recommended level of 0.80ha per 1,000 people to additional population and the additional assumptions listed in Appendix B. No planned projects which could offset gross demand have been identified.

19.2.7 Accordingly, demand for parks and gardens across Runnymede over the Local Plan period is estimated at 11.7ha to 16.4ha, depending on the growth option. Associated costs are estimated at £2.7M to £3.8M. Table 43 below provides details.

Table 43. Demand and Costs for Parks and Gardens within Runnymede

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
Demand (ha parks and gardens):					
SS3	2.8	4.4	2.6	1.9	11.7
SS5	3.3	3.4	3.4	3.4	13.3
SS6	4.0	4.2	4.2	4.2	16.4
Costs (£):					
SS3	655,758	1,012,837	599,451	442,681	2,710,727
SS5	756,822	778,119	778,119	778,119	3,091,180
SS6	917,498	966,306	966,306	966,306	3,816,418

Source: AECOM analysis, 2017

Amenity Greenspace

19.2.8 Current provision level is higher than FiT recommended standard, indicating good levels of supply. Future needs have been modelled by applying the FiT recommended level of 0.60ha per 1,000 people additional to the population, along with the additional assumptions set out in Appendix B.

19.2.9 No planned provision has been identified over the plan period. Provision is likely to be made at the former DERA site and this is listed in the Project Schedule accordingly. However the scale of provision and the status of the investment relating to this provision is not clear.

19.2.10 Demand for amenity greenspace over the Local Plan period is therefore estimated as 8.8ha to 12.3ha, depending on the growth option. Costs are estimated at £1.0M to £1.4M.

[108] The estimate of Borough-wide need over the Local Plan period within the IOPA document and set out above takes provision at the former DERA site and Chertsey Meads into account and assumes that this provision will come forward.

Table 44. Demand and Costs for Amenity Greenspace within Runnymede

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
Demand (ha amenity space):					
SS3	2.1	3.3	1.9	1.4	8.8
SS5	2.4	2.5	2.5	2.5	10.0
SS6	3.0	3.1	3.1	3.1	12.3
Costs (£):					
SS3	245,909	379,814	224,794	166,005	1,016,522
SS5	283,808	291,795	291,795	291,795	1,159,192
SS6	344,062	362,365	362,365	362,365	1,431,157

Source: AECOM analysis, 2017

Green corridors

19.2.11 Green corridors are important for their connectivity role in the environment. Ensuring an additional quantum of provision per planned dwelling is not an appropriate approach for forward planning. However, it is important that the current provision of 112ha of green corridors across the Borough is maintained. Provision of green corridors should be decided based on location of residents and wildlife.

Allotments

19.2.12 Current allotment provision level across Runnymede is lower than the recommended NSALG standard, which states that there should be 20 plots per 1,000 households assuming 250m^2 per plot[109].

19.2.13 This NSALG standard is applied to additional growth in Runnymede to estimate demand arising over the Local Plan period (see Appendix B for all assumptions applied).

19.2.14 There is planned provision of 0.67ha of allotments at the former DERA site (26 plots, with 0.43ha off-site at Trumps Farm). This has been assumed as committed investment, and is reflected in the demand estimate presented below. No other planned projects have been identified which would offset the gross requirement.

19.2.15 Demand for allotments (net of provision at the former DERA site) is therefore estimated as 3.1ha to 4.7ha, depending on the growth option, with associated costs of £0.7M to £0.9M.

Table 45. Demand and Costs for Demand and Costs for Allotments within Runnymede

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
Gross Demand (ha):					
SS3	0.9	1.4	0.8	0.6	3.8
SS5	1.1	1.2	1.2	1.2	4.7
SS6	1.3	1.4	1.4	1.4	5.4
Gross costs (£):					
SS3	213,462	329,699	195,133	144,101	882,398
SS5	264,933	272,388	272,388	272,388	1,082,098

[109] Runnymede Borough Council, 2016. *Runnymede 2035 – Open Space Study 2016*. [pdf] Runnymede Borough Council. Available at: https://www.runnymede.gov.uk/CHttpHandler.ashx?id=14704&p=0

Option	2015/16 - 2019/20	2020/21- 2024/25	2025/26- 2029/30	2030/31- 2034/35	2015/16- 2034/35
SS6	298,664	314,552	314,552	314,552	1,242,323
Planned provision:					0.7
Net demand (ha allotments):					
SS3					3.1
SS5					4.0
SS6					4.7
Net Costs (£):					
SS3					726,817
SS5					882,398
SS6					882,398

Source: AECOM analysis, 2017

Cemeteries and churchyards

19.2.16 The INA baseline assessment highlighted that there are quantity and accessibility issues across the Borough relating to this typology. RBC has provided information on cemetery capacity, which states that Addlestone Cemetery ran out of capacity in 2011/2012 and that Thorpe Cemetery has only two to three years' capacity. Accessibility issues exist across a large part of the Borough and much of the borough does not meet the Runnymede Open Space Study[110] recommended standard of 800m and 10 minutes' walk away.

19.2.17 RBC also outlines that in order to accommodate the lack of capacity at Addlestone Cemetery; Chertsey and Englefield Green cemeteries (which have 30 to 40 years' capacity) have been used. As Thorpe Cemetery has a lack of availability, there is a project in the pipeline to extend this site into land owned by Thames Water to increase capacity.

19.2.18 Cemeteries and churchyards are primarily needed as provision for burial and therefore future needs are dependent on this projected demand rather than on the secondary function of green infrastructure suitable for quiet contemplation. Purely from a green infrastructure perspective, the minimum quantity of cemeteries and churchyards should be maintained at the current level of 13.37ha across the Borough.

19.3 Green Infrastructure Future Needs – Key Findings

- There is a significant amount of natural and semi-natural greenspace in Runnymede which far exceeds FiT standards. The future requirement for this typology is to maintain the current quantity, quality, and accessibility of natural and semi-natural greenspace assets.
- Six projects are planned and underway over the Local Plan period, to provide natural and semi-natural green space across Runnymede. This will serve any future requirement arising from development. There is a current outstanding funding gap of £0.07M.
- There are 14 SANGs projects planned and underway across Runnymede over the Plan period with a total funding gap of approximately £1.3M. These include the SANG planned at the former DERA site (31.9ha, 6ha on site and 25.9ha at Trumps Farm) and the additional SANG provision at Chertsey Meads. SANGs are provided through financial contributions from net residential development which is within 5km of the TBHSPA and are managed by the Borough Council.

[110] Ibid

- Current provision of amenity greenspace within Runnymede is higher than the FiT recommended standards. No planned provision has been identified over the Local Plan period; however provision is likely to be made at the former DERA site. The scale of provision and the status of the investment relating to this provision is currently unknown.
- Modelling to determine the future requirement for amenity greenspace in Runnymede indicates that there is an estimated demand of 8.8ha to 12.3ha, depending on the growth option. Associated costs are £1.0M to £1.4M.
- Green corridors are important for their connectivity role in the environment, however they are not planned on a per dwelling basis. The current provision within Runnymede should be maintained and further provision determined on a case by case basis, relative to the location of residential development.
- Current allotment provision level across Runnymede is lower than the recommended NSALG standard. There is planned provision of 0.67ha of allotments at the former DERA site (26 plots, with 0.43ha off-site at Trumps Farm). No other planned projects have been identified which would offset the gross requirement.
- Modelling to determine the future requirement for allotments in Runnymede indicates that there is an estimated gross demand of 3.1ha to 4.7ha, depending on the growth option, with associated costs of £0.7M to £0.9M.
- Current provision of cemeteries within Runnymede is constrained, with Addlestone Cemetery at capacity and Thorpe Cemetery with only two to three years' capacity remaining. While churchyards can be used as areas for passive recreation, their primary purpose is for burial and this is dependent on projected future demand. As such, from a green infrastructure perspective, the current quantity of cemeteries and churchyards should be maintained across the Borough.

20. Future Needs – Transport

20.1 Introduction

20.1.1 This section describes the needs arising from forecast growth in Runnymede relating to transport infrastructure, and identifies pipeline projects planned to meet those needs as well as potential gaps in the network which might be evident in 2035 without further investment.

20.1.2 Information on future needs and planned projects is drawn from the following list of documents:

- Draft for Consultation London South East Market Study, Network Rail, April 2013
- Longterm Planning Process: London and the South East Market Study, Network Rail, October 2013
- Southern Rail Access to Heathrow Feasibility Study, Network Rail, December 2015
- Wessex Route Study, Network Rail, August 2015
- Surrey Rail Strategy, SCC 2013
- Surrey Transport Plan Runnymede Draft Local Transport Strategy and Forward Programme, Surrey County Council, October 2015
- Runnymede Infrastructure Development Plan, Runnymede Borough Council, 2013
- Runnymede 2035 Issues, Options and Preferred Approaches Consultation, Runnymede Borough Council, July 2016
- Surrey Local Transport Plan, Surrey County Council, February 2016
- Census data, Office of National Statistics, 2011

20.1.3 Furthermore, consultation with Surrey County Council (SCC) has taken place. SCC is in the process of developing a highways model for the whole of the Surrey area. At the stage of reporting Surrey have developed a baseline scenario which includes committed developments up to 2036. Currently Surrey are developing their mitigation package of measures, of which some information has been made available for inclusion in this report, however the full package of measures were unavailable at the time of writing.

20.2 Rail Network

Future Needs

20.2.1 Runnymede is served by six railway stations, namely Egham, Virginia Water and Longcross station located on the Waterloo to Reading line, Chertsey and Addlestone station on the Chertsey Branch Line (both of which form part of the 'Windsor Line') and Byfleet & New Ham Station located on the South West Main Line (SWML).

20.2.2 Table 46 below illustrates the anticipated percentage growth forecast by Network Rail on train lines operating via stations in Runnymede between 2015 to 2023 and 2015 to 2043.

Table 46. Peak Hour Passenger Demand Projections

Route	Increase from 2015 to 2023	Increase from 2015 to 2043

Route	Increase from 2015 to 2023	Increase from 2015 to 2043
SWML	13%	40%
Windsor Line	20%	37%

Source: South East Market Study October, Network Rail, 2013

20.2.3 Chertsey, Egham and Virginia Water stations are not currently able to facilitate 10 car trains which will be operating along the Windsor Line between Reading and Waterloo from 2017.

20.2.4 June 2017 will see a new operator of the South West Train franchise, which will in turn affect the services running through Runnymede, including additional services via Longcross Station and station enhancements. However, given the proposed amount of growth in both employment and housing, improvements to Longcross Station will be required to support the growth.

20.2.5 Despite the close proximity to Heathrow, no direct link by rail exists between Runnymede and Heathrow, resulting in passengers and staff driving to Heathrow instead of choosing the more convoluted rail route via London Paddington, adding pressure onto the M25 and M3.

Planned Investment

20.2.6 The following rail infrastructure projects are committed to be delivered pre 2035:

- 10 coach operation on the Windsor Line between Reading to London Waterloo to provide additional capacity;
- Enhancement works as part of Feltham Re-signalling;
- Lengthening of platforms at Chertsey, Egham and Virginia Water Stations to enable 10 car trains to operate on the Windsor Line, all which are identified as areas of growth
- Enhancements to Longcross Station including platform extension to allow 10 car trains to operate on the Windsor Line cost £745,000.

Gap Analysis

20.2.7 Key gaps in rail infrastructure required to support growth anticipated within the Borough are as follows:

- Crossrail 2 would connect Surrey to London and Hertfordshire and provide additional capacity on the SWML in its regional option. £80M was invested by the government in March 2016 to develop this project and SCC will continue to engage with and support this project;
- Network Rail have identified that the Southern Rail Access scheme to Heathrow is potentially beneficial. Costs range from £700M - £1.8BN (depending on option selected);
- 20 trains per hour and 12 car operation to provide sufficient capacity late 2020's / early 2030s on the Windsor Line;
- Enhancements to Addlestone Station including platform extension to allow 10 car trains to operate on the Windsor Line; and
- Additional services from Longcross Station to London cost £700,000.

20.3 Bus Network

Future Needs

20.3.1 High levels of congestion also occur along the A320 from Woking, through Ottershaw and up to St Peter's Hospital and J11 of M25 result in significant delays to bus services operating throughout the Borough due to the lack of bus priority, making travel by bus an unreliable choice. This coupled with the high level of car ownership and limited accessibility in interurban and rural areas has led to a low level of commuter trips being undertaken by bus. The bus network which operates across Runnymede is illustrated in Figure 31.

20.3.2 Bus provision in Runnymede is limited in rural and interurban areas, in particular the west of Runnymede where growth is proposed at the former DERA site in Longcross. Discussions with SCC have highlighted that issues are evident in the south of the Borough due to congestion, resulting in bus services being unable to meet timetables. Therefore a reduction in services may be implemented to increase reliability.

Planned Investment

20.3.3 The following bus infrastructure improvements are committed to be delivered by 2035:

- Developer funded shuttle bus service connecting different parts of the former DERA development at Longcross Garden Village and provide a link to Longcross Station. The timescales for delivery are dependent on time of occupation.
- Enhancement of bus infrastructure on the Causeway (A308) at Egham to reduce delays and provide additional services, indicative start within two years funded by developers
- Bus corridor improvement schemes across wider Staines to improve bus reliability, passenger information and waiting facilities for several routes between Runnymede and Staines, to start 2017/18 funded by the Local Growth Fund (LGF).

Gap Analysis

20.3.4 Key gaps in bus infrastructure required to support growth anticipated within Runnymede are as follows:

- Chertsey and Addlestone are identified as areas with major housing and employment growth; however no bus improvements schemes are identified within these areas.

20.4 Roads

Future Needs

20.4.1 Highways England have released the 'M25 to Solent Route Based Strategy' (2014) which identifies the section of M3 to the west of the M25 as an area where the top 10% of journey delays are experienced, whilst the 'London Orbital and M23 to Gatwick Route Strategy' identifies Junction 12 as having key capacity issues with the stretch of M25 running through Runnymede experiencing speeds of between 31 and 40mph during the peak.

20.4.2 The Runnymede Core Strategic Transport Assessment Report (2012) anticipates that the following junctions will experience congestion issues due to economic and housing growth:

- B386 Holloway Hill/Hardwick Lane;
- Trumps Green/Wellington Avenue;
- Kitsmead Lane/Chobham Lane;
- Kitsmead Lane/Longcross Road;

- Accommodation Road/Longcross Road; and
- Bridge Lane/Lyne Road.

20.4.3 Modelling of the highway network undertaken by SCC has identified that the following junctions and links require mitigation up to 2036:

- B386 / Holloway Hill / Stonehill Road;
- Signalisation of B386 / Hardwick Lane junction;
- Signalisation of the two mini roundabouts with the A320 (Green Lane and Holloway Hill);
- A318 Addlestone High Street;
- B318 through Addlestone;
- Partial signalisation of the A320 roundabout at St Peters;
- Partial signalisation of the A320 roundabout at Ottershaw; and
- A320 / A317 / A318 roundabout.

Planned Investment

20.4.4 The following improvements to the road network are anticipated to be delivered by 2035, assuming LGF funding is secured:

- Highways England are currently upgrading the M3 into a Smart Motorway between junctions 2 and 4a, including the hard shoulder between these junctions. The project will be completed by June 2017 and will cost £174M;
- Smart Motorway upgrades along the M25 between junctions 10 and 16, as well as widening of junction 11 at Chertsey to provide at least four lanes on the M25 between junction 10 and 16. This is likely to cost in the region of £100-250M;
- Introducing second generation ramp metering at junction 13 on the M25, construction to begin in the Summer 2017;
- Improvements to the Runnymede Roundabout, including road realignment and additional lanes to alleviate peak time congestion in the surrounding areas, due for completion December 2017. The cost is approximately £7M;
- Staines upon Thames Bridge Widening and improvements, anticipated to start 2020/2021. Costs are anticipated to be £12.6M;
- Bridge Road / Weir Road junction improvements in Chertsey to improve capacity to be delivered by 2017;
- High Street / Brighton Road and Station Road / Church Road junction widening to increase capacity at Addlestone estimated to start by 2018;
- Station Road / High Street junction and Crouch Oak Lane widening at Addlestone to increase capacity. The cost is in the region of £1.5M;
- Replacement of Pooley Green level crossing with highway underpass with underpass at Vicarage Road to improve accessibility and safety, estimated to start 2020/2021;
- Developer funded improvements as part of the former DERA development including:
  - Staple Hill / Longcross Road junction improvements to mitigate future congestion;
  - Carriageway widening at Chobham Lane / Burma Road roundabout at

Longcross to increase capacity; and

- Signalisation on Trumps Green Road / Wellington Avenue / Virginia Water junction;

- Partial / full signalization of:
  - B386 / Hardwick Lane junction;
  - Two mini roundabouts with the A320 (Green Lane and Holloway Hill);
  - A320 roundabout at St Peters; and
  - A320 roundabout at Ottershaw;
- Mitigation is required at the following junctions:
  - B386 / Holloway Hill / Stonehill Road;
  - A318 Addlestone High Street;
  - B318 through Addlestone; and
  - A320 / A317 / A318 roundabout.

Gap Analysis

20.4.5 Key gaps in the road network required to support growth anticipated within the Borough of Runnymede are as follows:

- Existing congestion at the Egham Bypass will be exacerbated by development proposed along the Causeway at Egham. However, British Gas, who will be implementing a multi storey car park at the Causeway, will be making a £90,000 contribution towards improvements along the causeway (and the Runnymede and Staines-upon-Thames roundabout);
- Improvements to Egham town centre to alleviate congestion which will be exacerbated by development proposed in Egham;
- Improvements to level crossings to reduce congestion in town centres including Egham;
- Junction improvements to support growth at Chertsey Bittams and the former DERA site;
  - Holloway Hill / Hardwick Lane;
  - Kitsmead / Chobham Lane;
  - Kitsmead Lane / Longcross Road; and
  - Accommodation Road / Longcross Road.
- Junction improvements required to address capacity issues at
  - A320 / A317 / A318 roundabout;
  - Roundabout junction of A320 Pyrcroft Rd, Cowley Ln, A317 Pyrcroft Rd and A320 Bell Bridge.

20.5 Active Modes

Future Needs

20.5.1 Walking infrastructure is mixed in Runnymede due to both its urban and rural nature. Main town centres are well served in terms of footways / key town routes whilst more rural areas such as the western part of the Borough have an extensive network of bridleways.

20.5.2 At present there is lack of appropriate facilities for pedestrians and cyclists travelling through many of the town centres in Runnymede due to the high speed connector roads through the town centres and high level of traffic, leaving pedestrian and cyclists safety vulnerable. Narrow roads also create conflict between road users over space utilisation, resulting in congestion and accidents.

20.5.3 In addition, lack of crossing facilities along the existing strategic road network (M25 and M3) and rail network creates a severing effect on pedestrian and cycle routes, preventing direct routes and inhibiting movement.

Planned Investment

20.5.4 The following pedestrian and cycle infrastructure improvements are committed to be delivered by 2035:

- A number of proposals are included in the former DERA development to be delivered post 2016 including:
  - Cycle link on Chobham Lane to Kitsmead Lane;
  - Multi user route from the A320 through Homewood Park to Stonehill Road; and
  - Multi user route along the northern boundary of the site.

20.5.5 Egham Sustainable Transport Package, which has secured funding, is a multi-modal scheme including walking, cycling and bus improvements to local, education and leisure based movements. The estimated costs for the package of measures is £1.7M and it is estimated that the works will be completed by 2023. British Gas will be providing a financial contribution of £300,000 towards providing cycle and pedestrian routes along the Causeway:

- Walking and cycling focus of this scheme include the following:
  - Footway widening along the A308 The Causeway / The Glanty;
  - Raised tables at The Causeway / Hawthorn Road / Claremont Road/Avenue Road;
  - Improved safety for pedestrians and cyclists near Woodhaw Roundabout with provision of new toucan crossing;
  - Off road cycle routes on the A308 The Causeway;
  - Improved walking and cycling connectivity and accessibility between Egham Rail station and town centre; and
  - Cycle hire scheme at Egham Station;
- Royal Holloway Masterplan scheme includes the removal of two existing pedestrian bridges to be replaced by three new pedestrian and cyclist crossings on the A30 London Road and improvements to the Royal Holloway College walking and cycling connectivity, previously identified as a gap; and
- Cycle and pedestrian improvements at the Runnymede Roundabout to improve cycle and pedestrian movements to be delivered 2017/18.

Gap Analysis

20.5.6 Key gaps in cycle and pedestrian infrastructure required to support growth anticipated within the Borough of Runnymede are as follows:

- Pedestrian improvements in Chertsey at the Bridge Road / Weir Road junction;
- Improved pedestrian and cycle links in the west of Runnymede towards Chobham Common and
- Improved pedestrian and cycle crossings at rail lines and motorways.

20.6 Future Needs Transport - Key Findings

- Increased development in the area will lead to increased stress on the rail network, whilst increased 10 car services will not be facilitated by existing stations including Longcross Station. Housing and employment schemes are evident in the vicinity of the Longcross Station, therefore improvements will be needed to accommodate this. The lack of a direct link from Runnymede towards Heathrow will continue to cause pressure on the M3 and M25.
- Improvements surrounding the former DERA site will be subject to developer contributions, however the scale of investment required and the status of funding has not been confirmed. Larger projects including the Southern Access scheme to Heathrow and Crossrail 2 would rely on funding from Network rail and Government.
- Additional services serving Longcross Station are seen as vital in order to deliver the level of development proposed in the surrounding area.
- Increased development will continue to cause congestion along the key bus corridors including the A30, A317 and B3121 leading to delays to services. In order to encourage bus as a realistic mode of transport instead of private car, bus priority measures will need to be introduced to alleviate congestion and increase reliability. In tandem with this, bus services are sparse in the rural and interurban areas in particular to the west of Runnymede where large scale development is proposed.
- Shuttle buses serving the DERA site in the west of Runnymede will be funded by the developer, however future maintenance has not been agreed. Funding from British Gas has been confirmed to improve congestion along the Causeway and towards the Egham Transport Strategy, both of which should in turn improve the reliability of services. Bus corridor improvement schemes across wider Staines will be funded by the LGF.
- No improvements are proposed in the areas surrounding Chertsey and Addlestone which are identified as areas of major growth. High car ownership across the Borough will influence mode share choices for road users.
- Congestion is evident across the Borough, in particular sections of the M3 to the west of the M25 which runs through Longcross, at rural junctions in the Longcross and Virginia Water Area and at Junction 11 of the M25. Modelling undertaken by SCC has also highlighted the need for mitigation measures in the Addlestone area.
- Highways England are currently upgrading the M3 between junctions 2 and 4a and the M25 between junctions 10 and 16 to a smart motorway to ease congestion, as well as widening junction 11 to provide four lanes. Capacity improvements are proposed by SCC across the Borough to ease congestion, whilst funding from developers at the former DERA site will provide junction improvements in the Longcross area.
- Improvement to level crossings will be important in easing congestion in town centres such as Egham. Further junction improvements may need to be brought forward with additional developer contributions in the vicinity of the former DERA site, whilst roundabout improvements will be required in Chertsey.

- A range in provision for cyclists and pedestrians is evident across Runnymede, with some bridleways in the west of the Borough providing good connectivity whilst in some towns there is a lack of facilities available due to high speed connector roads. Heavy congestion and narrow roads often leads to a conflict between road users.
- A network of cycle infrastructure is proposed through the former DERA site to accommodate the development. Egham Sustainable Transport Package will provide a number of walking and cycling focused schemes to improve user safety and improve provision, making active modes more accessible and attractive. British Gas have agreed to contribute £300,000 towards the delivery of this scheme.
- However, pedestrian and cycle improvements in Chertsey, the west of Runnymede and at rail and motorway crossings are still needed.

21. Future Needs - Utilities

21.1 Electricity

UK South Eastern Power Networks

21.1.1 To allow for the increasing power demand due to population growth, UKPN is involved in both reinforcement and demand side response measures. In Runnymede specifically, the LTDS describes three reinforcements and asset replacement projects planned until 2023 with a funded investment of £2,959,205.

21.1.2 SPN Plc has development proposals for reinforcement, switchgear upgrading, and new substation construction in place for 18 sites across the entire network that are anticipated to be in progress during 2016-2019. The following developments are underway or planned in the National Grid Connection points relevant to Surrey / Runnymede area:

- Brookwood 11kV – Reinforcement & ITC (2014-2017)
- Chertsey 11kV – ITC (2015-2018)
- Weybridge 11kV – ITC (2015-2016)
- West Weybridge 33kV – Reinforcement (2015-2017)
- Byfleet 132kV – Reinforcement (2016-2017)

21.1.3 These developments will provide an increase in network capacity or demand side response. Apart from these projects, assets are under constant review and maintenance to ensure supply to customers. Looking forward, the LTDS states that they are happy to consider alternative proposals that achieve net load reductions if they can be implemented in a cost effective, safe, and environmentally friendly manner.

Scottish and Southern Energy

21.1.4 The LTDS describes SEPD's understanding of the growth within the generation area, and their responsibility to provide information and support to potential distributed generation customers and operators wishing to connect to their network. They are also supporting the government's push for greener energy generation and attractive feed-in-tariffs. Going forward, SEPD will work together with new developers to produce the best possible connection package for optimum benefit.

21.1.5 To deal with growing demand, SEPD is also undertaking / planning network developments. The table below shows the developments proposed in the period 2016-2018, and although not all in Runnymede Borough, the works will strengthen and affect the whole network. See Table 47for details.

Table 47. Network Development Proposals

Name	Purpose	Estimated Completion
Dorchester Town System Reinforcement	Increase Capacity	Jul 2017
Salisbury Central 33/11 kV Installation of 3rd Transformer	Increase Capacity	Jul 2016
Canal Bank 66/11kV System Reinforcement	Increase Capacity	Jul 2018

Name	Purpose	Estimated Completion
Cowley – Headington – Yarnton – Witney 132 kV Network Substation and Supply to Bicester and Surrounding Areas	Increase Capacity	Jul 2019
Maybush to Shirley System Reinforcement	Increase Capacity	Jul 2016
Cowes to Wootton 132kV System Reinforcement	Increase Capacity	Dec 2016
Velmore Bishopstoke Hedge End System Reinforcement	Increase Capacity	Mar 2018
Cirencester – Fairford System Reinforcement	Increase Capacity	Sep 2017
Wymering 33kV Switchgear Replacement	Network Security	Sep 2016
Fleet – Coxmoor Wood 132 kV Circuit Reinforcement	Network Security	Mar 2017
Kingsclere 11 kV Switchgear Replacement	Network Security	Jul 2016
Hayes 11 kV Switchgear Replacement	Network Security	Jul 2017

Source: SEPD LTDS 2016

21.2 Gas

21.2.1 Regardless of the forecast reduction in demand and the resulting expected surplus, SGN is required to invest in major projects to meet the demand of existing and new customers to ensure safe and high quality supply to new developments.

21.2.2 SGN is also looking for alternative ways to improve energy supply and reduce the cost of gas for customers to promote environmentally friendly measures. For example:

- Full roll-out of smart meters, which are an effective means to reduce domestic energy demand, planned for the end of 2020.
- Undertaking trials to show that widening the regulations of gasses allowable for import into the UK would still provide a clean, secure, and affordable source of gas. This is still underway, but could demonstrate that using gas from a wider set of sources without expensive processing can still be used for safe and efficient transport and use of gas.

21.2.3 National Grid Gas Distribution Limited's Network Strategy Team has performed a high-level capacity analysis on their network based on key proposed development schemes in Runnymede Borough. Their results are presented in Table 48.

Table 48. High-Level Capacity Analysis based on key development schemes in Runnymede

Site Ref	Site Name	Site Address	Housing Capacity	Traveller Pitches	Commercial Floorspace (m^2)	Pressure	Phasing Period	Capacity Available	Reinforcement Required
48	Hanworth Lane	Land East of Hanworth Lane, Chertsey, KT169	170	2	0	LP	2016/17 – 2020/21	YES	NO
60	Chilsey Green Farm	Land at Chilsey Green Farm, Pyrcroft Road, Chertsey, KT169ER	175	5	0	Not available	2021/22 – 2025/26	Not available	Not available
99	DERA Site South	Longcross Road, Longcross, KT160EX	1700	10	3,000 m^2 D1, 1,150 m^2 A1-A5	LP	2016/17 – 2030/31	NO	YES
157	Egham Gateway 1	Land at Station Road North, Egham, TW209LD	150	0	256 m^2 A1-A5 & 3,280 m^2 D2	LP	2016/17 – 2020/21	YES	NO
201	Chertsey Broad Location	Land at Guildford Street/Gogmore Lane & Heriot Road, Chertsey, KT169AD	159	0	1,140 m^2 A1-A5	LP	2016/17 – 2020/21	NO	YES
253	Egham Gateway 2	Land at 1-39 The Precinct, Egham, TW209HN	73	0	0	LP	2021/22 – 2025/26	YES	NO
254	Parcel B, Veterinary Laboratory Site	Land South of Leigh Close, Rowtown, KT151EL	160	2	0	LP	2021/22 – 2025/26	NO	YES
255	Parcel A, Chertsey Bittams	Green Road, Chertsey, KT169QP	200	5	0	LP	2016/17 – 2020/21	YES	NO
255	Parcel B, Chertsey Bittams	Woodside Farm, Bittams Lane, Chertsey, KT169QX	130	2	0	LP	2026/27 – 2030/31	NO	YES
255	Parcel C, Chertsey	Land East of Woodside Farm, Bittams Lane,	40	1	0	LP	2026/27 – 2030/31	YES	NO

Site Ref	Site Name	Site Address	Housing Capacity	Traveller Pitches	Commercial Floorspace (m^2)	Pressure	Phasing Period	Capacity Available	Reinforcement Required
	Bittams	Chertsey, KT169QN							
255	Parcel D, Chertsey Bittams	Parklands, Bittams Lane, Chertsey, KT169RG	200	0	0	LP	2016/17 – 2020/21	NO	YES
255	Parcel E, Chertsey Bittams	Land West of Wheelers Green, Bittams Lane, Chertsey, KT169RG	100	0	0	LP	2016/17 – 2020/21	NO	YES
256	Thorpe Lea Road North	Thorpe Lea Manor & Glenville Farm, Thorpe Lea Road, Egham, TW208EZ	100	0-11	0	LP	2026/27 – 2030/31	YES	NO
257	Thorpe Lea Road West	Land at Mayflower Nurseries, Thorpe Lea Road, Egham, TW208JL	190	5	0	LP	2021/22 – 2025/26	YES	NO
258	Merlewood, Virginia Water North	Land at Merlewood Nursing Home, Hollow Lane, Virginia Water, GU254LR	100	0	0	LP	2021/22 – 2025/26	YES	NO
258	Kenwolde, Virginia Water North	Land at Kenwolde, Hollow Lane, Virginia Water, GU254LF	35	0	0	LP	2026/27 – 2030/31	YES	NO
258	Gorse Hill House, Virginia Water North	Land at Gorse Hill House, Hollow Lane, Virginia Water, GU254LP	20	0	0	LP	2026/27 – 2030/31	YES	NO
261	Virginia Water South	Land at Trumps Green Road, Virginia Water, GU254JA	120	5	0	LP	2021/22 – 2025/26	NO	YES
263	Ottershaw East	Land East of Brox Road & West of Bouseley Rise, Ottershaw,	210	5	0	LP	2026/27 – 2030/31	NO	YES

Site Ref	Site Name	Site Address	Housing Capacity	Traveller Pitches	Commercial Floorspace (m^2)	Pressure	Phasing Period	Capacity Available	Reinforcement Required
		KT160LQ							
264	Addlestone Broad Location	Land at 13-19, 37-63, 1-6 Eversleigh House & Eileen Tozer Centre, Station Road, Addlestone, KT152AL, KT152BH, KT152AN	73	0	540 m^2 A1-A5	LP	2021/22 – 2025/26	YES	NO

Source: Correspondence with Network Strategy - Planning Team, National Grid Gas Distribution Limited

21.2.4 This high level analysis shows that regardless of the forecast reduction in demand nation-wide, a number of the proposed key development schemes in Runnymede cause a deficit in available supply and require reinforcement. It has been noted in correspondence with National Grid Gas Distribution that as “the gas networks are dynamic, the capacity stated is available today; may not be available when the official connections requests are received, meaning reinforcements may still be required”.

21.2.5 The details for each site within Table 48 above are incorporated into the site specific analysis within Chapter 25 of this report.

National Grid

21.2.6 National Grid is committed to invest in network upgrades to meet the demand of existing and new customers to ensure safe and high quality supply to new developments. This involves promoting sustainable gas connections.

21.2.7 RIIO-GD1 is the price control determined by Ofgem that sets out the outputs that the UK’s gas distribution companies must deliver for the 8 year period from 2013 to 2021. As part of this, Ofgem has introduced Network Innovation Allowance (NIA) and Network Innovation Competitions (NICs), where network companies compete for funding for research, development and trialling new technologies, operating and commercial arrangements. This will ensure all distribution companies are active in providing environmental benefits and security of supply at value for money to their customers as the UK moves towards a low carbon economy.

21.2.8 National Grid is aiming to facilitate new connections to the gas distribution network that will enable biomethane producers to inject their renewable gas into the pipeline and grid network. The addition of biomethane into the grid will help the UK minimise its carbon footprint and avert from unsustainable fossil fuels. Biomethane provides a sustainable, flexible and economic solution that could provide a significant contribution to the UK’s heat demand by 2050. By supporting this, National Grid is involved in increasing the security and diversity of energy supplies into the UK market. They have further helped develop the industry by:

- Supporting the government and convincing them of the long term need for gas used as heating
- Responding on the consultation regarding the Renewable Heating Incentive (RHI)
- Reducing costs through policy evolution
- Driving innovation by working closely with customers to trial new ways of working
- Removing barriers and obstacles to make connecting to the grid easier

21.2.9 In collaboration with the other networks and the Energy Networks Association, National Grid has developed the 2050 Energy Scenarios report, which shows a range of plausible pathways for the future of energy from today until 2050. To ensure the 2050 energy system is sustainable and affordable, National Grid must continue to gain funding for innovation projects such as the development of the BioSNG Plant in Swindon and undertake testing for new renewable technologies. Together with Southern Gas Networks and Wales & West Utilities, National Grid is involved in investigating the effects of and potential obstacles to introducing new sources of gas such as biomethane, shale and coal bed methane into the UK distribution network. This would increase the security of supply for customers looking forward.

21.2.10 In Our Innovation Strategy – RIIO GD1, National Grid Gas Distribution (April 2012), National Grid outline possible large-scale innovation projects, some of which, for example the Bio-SNG Production, have received funding and are already underway:

Table 49. Possible Large-Scale Projects

Possible Project	Output Commitment
Optimisation of Gas Smart Grids	Dynamic fuel switching to manage heating in the most efficient and economical way
CNG / LNG Refuelling Network	Review potential of establishing a national / regional network of fuelling stations open to the public for refuelling with CNG and LNG as well as other fuelling options for other market users such as Hydrogen vehicles.
Gasification / Bio-SNG Production and Distribution	Develop the process of converting waste material into grid quality gas.
Hydrogen Injection / Enrichment	Assess concept feasibility and economic analysis of hydrogen injection directly into the gas network.

Source: Our Innovation Strategy - RIIO GD1, National Grid Gas Distribution (April 2012)

21.2.11 In addition, National Grid Distribution has identified five innovation themes and projects within these they plan to progress during the RIIO-GD1 period. The relevant themes and the corresponding output commitments set for the RIIO-GD1 period are listed in Table 50.

Table 50. Innovation Themes and Output Commitments

Innovation Theme	Output Commitment
Efficient and Safe Work Delivery and Removal of Risk / Transition to Low Carbon Economy & Minimise Environmental Impact	Reduce risk of iron mains by 55% and deliver customer benefit through the mains replacement programme
	Minimise impact that operations have on the environment reducing leakage by 1% and Business Carbon Footprint Emissions by 20%
Asset Condition and Network Optimisation	Maintain the performance of key operational assets such as the accuracy of our offtake meter errors and timely response to asset faults
Enhanced Industry Frameworks and Commercial Services	Lead in shaping future energy policy and facilitate sustainable gas resources to connect to the network

Source: Our Innovation Strategy – RIIO GD1, National Grid Gas Distribution (April 2012)

21.3 Potable Water

21.3.1 Affinity Water has an overall strategy of leakage reduction, universal metering coupled with enhanced water efficiency activities, and making best use of their existing supplies and sharing resources with other water companies in South East England. To deal with increasing demand, new developments are governed by legislation that requires developers to build water efficient properties such that occupants use a maximum of 125 litres per person per day.

21.3.2 Affinity Water has a preferred plan, which calls for measures to aid the demand / supply deficits in the immediate 5 years 2015-2020 for their whole supply area.

DEMAND

- 20 Ml/d by controlling leakage in distribution network
- 29 Ml/d from universal metering
- 2 Ml/d from water efficiency targeted at non-domestic customers

SUPPLY

- 2 Ml/d from existing licences, by increasing the amount abstracted without causing damage to the environment
- Buying 17 Ml/d from neighbouring water companies as bulk transfer

21.3.3 The population is projected to grow by 15% within the Wey WRZ. Affinity Water is implementing and/or planning measures to ensure this growing demand can be met as well as fulfilling the sustainability reductions throughout the planning period to 2040, as set out in the WRMP. The measures planned for the Wey WRZ are outlined in Table 51 below.

Table 51. Schemes Selected in Wey WRZ

Option Type	Option Description	Delivery Year
Leakage	Leakage reduction through increased Active Leakage Control (ALC) – 2.23 Ml/d during 2015-40	2015
Water Efficiency	Water audits commercials (non-process & process)	2020
Metering	Community integrated Automated Water Reading (AMR) & water efficiency	2024
Water Efficiency	Additional Water Efficiency for households	2033
Leakage	Pressure management with new Pressure Reducing Valves (PRVs)	2035
Water Efficiency	Dual flush WCs for households	2035
Supply	Increased import from Thames Water	2036
Supply	Local Source Recommissioning	2038

Source: Affinity Water, WRMP 2014

21.3.4 These measures coupled with measures throughout the other seven WRZs will impact the supply / demand balance positively. The figure below shows the demand falling during the first 10 years of the planning period as a result of metering and water efficiency programmes, after which it increases alongside population growth. In contrast to Figure 11, the supply meets and slightly exceeds the level of demand.

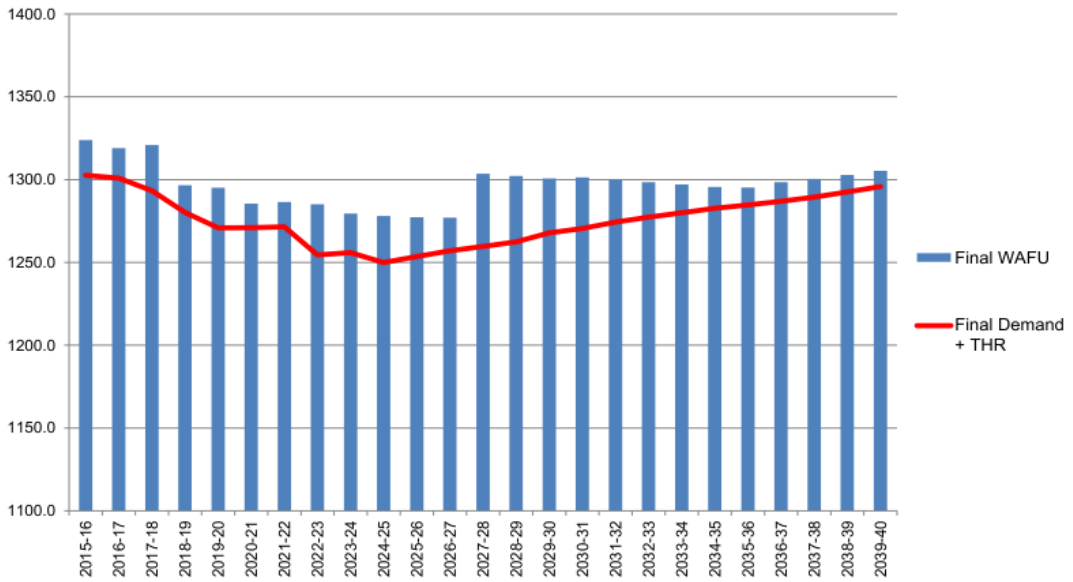

Figure 48. Supply / demand balance with Affinity Water's Preferred Plan Implemented

Source: Affinity Water WRMP, 2014

21.3.5 Affinity Water will have to make future investment in projects like these and in other water saving measures in order to reduce environmentally unsustainable water abstractions, combat climate change and allow for future growth. The shortfall in deployable output is expected to be mitigated by reductions in leakage and demand management, however further future investment will be required to achieve the positive supply / demand balance in the figure above.

21.3.6 Affinity Water has provided a high-level capacity check for the 20 proposed developments identified as site allocations by RBC to identify whether reinforcement works will be required to ensure supply. The sites have been split into four main areas and network performance assessed for a) current demand and b) future demand, including future developments both in Affinity Water records and the preliminary list of allocated sites provided to them.

21.3.7 Proposed reinforcements will aim to recover the current level of service and the loss of capacity in the network due to the additional load. Each developer will contribute to the required reinforcements depending on the relative impact on the network. Results are summarized in the table below.

Table 52. Summary of Affinity Water potable water demand / supply simulation

Area	Sites	Estimated demand increase	Simulation results
1	Egham Gateway 1 Egham Gateway 2 Merlewood, Virginia Water North Kenwolde, Virginia Water North Gorse Hill House, Virginia Water North	Sunningdale Village 0.07 Ml/d Egham Town 0.05 Ml/d	Major reinforcements in the network in the Sunnigdale Village area will be required when all future developments are taken into account due to pressure drop at critical points.
2	Hanworth Lane Chilsey Green Farm DERA Site South Chertsey Broad Location	Parcel A,B,C,D,E Chertsey Bittams 0.645 Ml/d Chertsey Broad Location 0.130 Ml/d	Major reinforcements in the network in the area will be required when all future developments are taken into

Area	Sites	Estimated demand increase	Simulation results
	Parcel B, Veterinary Lab Site Parcel A, Chertsey Bittams Parcel B, Chertsey Bittams Parcel C, Chertsey Bittams Parcel D, Chertsey Bittams Parcel E, Chertsey Bittams Virginia Water South Ottershaw East	Chilsey Green Farm 0.130 Ml/d DERA Site South 2.127 Ml/d Hanworth Lane 0.127 Ml/d Ottershaw East 0.178 Ml/d Parcel B, Veterinary Lab 0.136 Ml/d Virginia Water South 0.139 Ml/d	account due to pressure drop at critical points.
3	Thorpe Lea Road North Thorpe Lea Road West	Thorpe Lea Road North 0.065 Ml/d Thorpe Lea Road West 0.124 Ml/d	Major reinforcements in the network in the Thorpe Lea Road area will be required when all future developments are taken into account due to pressure drop at critical points.
4	Addlestone Broad Location	Station Road, Addlestone 0.05 Ml/d	Major reinforcements in the network in the Station Road, Addlestone area will be required when all future developments are taken into account due to pressure drop at critical points.

21.4 Wastewater

21.4.1 There is no Water Cycle Study or similar document available for Surrey or the South East of England. As Thames Water is the undertaker for sewage in Runnymede, its plans for the future will affect the Borough. Thames Water has a five-year plan 2015-20 and a Sustainable Future Plan for the next 25 years outlining how they intend to maintain and improve wastewater services and achieve the targets agreed with Ofwat (the Water Services Regulation Authority). The population in Thames Water's wastewater area is forecast to rise from 15m to 16m by 2040. Additionally, climate change will cause additional strains on the system. The figure below taken from their sustainability plan shows how climate change will impact the business. In Runnymede Borough, Thames Water is responsible for the 'Wastewater to sewer', 'Wastewater treatment', and 'effluent discharge' parts of the diagram.

Figure 49. Climate change impacts on Thames Water Business

Source: Thames Water Sustainable Future Plan

21.4.2 Some measures Thames Water intends to implement to mitigate the future pressures on pipes, treatment works, and the natural environment to move towards long-term resilience are:

- 150 Ml/d wastewater re-use scheme
- Improvements to the sewer system to prevent sewage flooding at 2,127 properties
- Upgrades to 18 sewage treatment works are planned, including the following in Surrey: Merstham WwTW, Mogden WwTW, Old Woking WwTW, Hogsmill WwTW, Guildford WwTW, and Loxwood WwTW
- Increases in sewer capacity to serve new developments
- Taking ownership of 3,000 pumping stations, assessing them and if required improving them to meet standards (October 2016).
- Adapting treatment processes to manage changes in wastewater volume and composition caused by climate change and other trends.
- Generating 33% of their power needs from renewable sources using their own treatment process, reduce what they take from the watercourse, and educate 20,000 pupils about the environment by 2020.

21.5 Renewable Energy

21.5.1 Runnymede Borough continues to push for renewable energy sources, as outlined on the Borough website and in the 2001 Local Plan. This will be replaced by the emerging 2035 Local Plan, which is currently under consultation.

21.6 Broadband

21.6.1 SCC is committed to getting faster broadband to as many of the remaining premises as possible. An Open Market Review (OMR) and State Aid Public Consultation has recently been undertaken to understand the broadband landscape of Surrey before further decisions are taken.

21.6.2 The percentage of Surrey residents that have access to superfast broadband is anticipated to increase to 97% due to additional commercial deployment plans. Additionally, SCC has requested BT to model possible options within the programme's cost constraints and available funding. This will determine which premises will benefit from publicly funded deployment by the end of this year.

21.6.3 Superfast Surrey provides some alternative options for improvement looking ahead:

- Community Funded Initiatives
- Better Broadband Scheme, a UK government subsidy scheme for homes and businesses that are unable to access a broadband service with a download speed of at least 2 Mb per second (Mbps). It is funded by BDUK and will run until the end of 2017.
- Universal Service Obligation (USO), a proposal by UK government to give people the legal right to request a connection to broadband with download speeds of 10Mbps from a supplier in 2020. This is still being drafted and details are not available to date.

21.6.4 Looking forward, options for ultrafast technology are being explored. Ultrafast is defined, depending on the supplier, as delivering between 300Mbps and 1,000Mbps and will be the next step in providing broadband service to customers.

21.7 Future Needs Utilities - Key Findings

- The National Grid has planned five projects at the National Grid Connection points relevant to Surrey / Runnymede area which will provide an increase in electricity network capacity. Apart from these projects, National Grid undertake regular reviews and maintenance to ensure sufficient supply within the network.
- To deal with growing demand, SEPD is also undertaking or planning network developments, with 12 projects currently planned or underway over the Local Plan period.
- Regardless of the forecast reduction in gas demand nation-wide, a number of the proposed key development schemes in Runnymede cause a deficit in available supply and require reinforcement.
- National Grid has provided a high-level capacity check for the key proposed development schemes in Runnymede and found that reinforcement is required in eight out of the 20 proposed development sites. See Chapter 25 for further details.
- Affinity Water is anticipating population growth of 15% within the Wey WRZ to 2040, Its WRMP sets out a series of measures which are being implemented or planned to ensure growing demand for potable water can be met and to fulfil the required

sustainability reductions over the planning period.

- Affinity Water has provided a high-level capacity check for Runnymede's key proposed developments to identify whether reinforcement works will be required to ensure supply. The sites have been split into four main areas and network performance assessed for a) current demand and b) future demand, including and future developments both in Affinity Water records and the preliminary list of allocated sites provided to them. All the assessed scenarios have been scaled to reflect peak summer demand conditions. Proposed reinforcements will aim to recover the current level of service and the loss of capacity in the network due to the additional load. Each developer will contribute to the required reinforcements depending on the relative impact on the network.
- In order to respond to population growth and increased demand as a result of development, Thames Water is undertaking upgrades to six sewage treatment works in Surrey, and providing increases in sewer capacity to serve new developments coming forward over the Local Plan period. Their current five year planning cycle lasts until 2020, at which time capacity and requirement for new services and upgrades will be reviewed.
- SCC has requested BT to model possible options within the programme's cost constraints and available funding. This will determine which premises will benefit from publicly funded deployment by the end of 2017. Options for ultrafast technology are being explored.

22. Future Needs - Waste

22.1.1 Domestic and commercial waste disposal and recycling services in Runnymede are managed and planned for at the SCC level by the WPA.

22.1.2 The SCC Joint Municipal Waste Management Strategy[111] identifies that demographic changes and economic growth within Runnymede over the Plan period are likely to place additional pressure on the current capacity of waste facilities within Surrey. As such, a new waste-specific plan is being developed to replace the Surrey Waste Plan 2008, which will help to meet new challenges that have arisen since the 2008 Plan was adopted. SCC state that these challenges include:

- "New policy that has been introduced;
- Waste management technology that has become more advanced; and
- Changes to the amount and type(s) of waste we need to manage".

22.1.3 Consultation on the SCC Draft Local Waste Plan is planned to take place between July and October 2017, with adoption targeted for 2018.

22.1.4 At present, landfill and recyclables are transported to sites outside of Runnymede for disposal and there is only one CRC within the Borough, in Chertsey. As part of the development of the new Waste Local Plan, SCC are "going to look at a large number of possible locations", applying environmental and other criteria to choose the most appropriate sites. Potential locations are currently unknown however, and the sites being considered for inclusion in the new Surrey Waste Local Plan will be published once all potential sites have been reviewed as part of the draft plan.

22.1.5 Available evidence indicates there is likely to be little spare capacity in waste services in Runnymede at present, and there are no planned or committed projects publically available, and no associated costs. The SCC Draft Local Waste Plan will consider the scale and location of growth in Runnymede (and the rest of Surrey) and propose locations for new or expanded provision on this basis. The Council will also bear the cost of any additional wheelie bins facilities which may be needed to deal with population growth.

22.2 Future Needs Waste - Key Findings

- Demographic change and residential growth are anticipated to place additional pressure on waste services over the Local Plan period. A new Surrey waste-specific plan is currently being developed to respond to these challenges.
- There is likely to be little spare capacity in waste services in Runnymede at present and there are no planned or committed projects publically available, and no associated costs.

[111] Surrey County Council, (2016); Surrey Waste Local Plan 2018-2033 – Policy Paper No.1: Context and Issues

23. Future Needs - Emergency Services

23.1 Ambulance

23.1.1 The SECAmb NHS Trust provides emergency, urgent care, and patient transport services within Surrey, with one Ambulance Community Response Post 'Make Ready Centre' co-located with Chertsey Fire Station. There is limited information within the baseline analysis relating to existing levels of service and capacity within SECAmb, and it was not possible to undertake consultation directly with the Trust.

23.1.2 In their 2015-2016 Annual Report and Accounts paper, SECAmb acknowledges the challenges it faces in terms of emergency services delivery, with the growth of NHS activities as a potential risk for ambulance services efficiency and provision[112]. While the SECAmb paper acknowledges the context of future population and NHS growth, it indicates that The 'Make Ready Centre' is able to accommodate existing ambulance needs with Runnymede over the Plan period. As such, there is no planned provision within Runnymede for additional physical infrastructure.

23.2 Police

23.2.1 Surrey Police is overseen by the PCC for Surrey, and is responsible for providing policing services for the eleven boroughs within the County. There is only one police station located within Runnymede, in Addlestone. There is limited information within the baseline analysis relating to existing levels of service and capacity within Surrey Police, and it was not possible to undertake consultation directly with the PCC. It is therefore unclear whether there is spare capacity or a shortage of these facilities in Runnymede at present.

23.2.2 Funding for maintenance of the existing estate and staffing is overseen by the PCC, and other projects such as CCTV provision have been planned to be delivered in partnership with the PCC and RBC. While there are currently no planned investments in relation to planned development, it is reasonable to assume that any specific requirement for CCTV within new residential developments (e.g. the DERA site) will be provided and funded by the developer.

23.2.3 Though natural population growth is likely to place additional pressure on the capacity of police services in Surrey over the Local Plan period, currently no additional provision has been planned in terms of physical infrastructure. It is therefore assumed that the capacity of the existing estate, and evolving methods of policing (e.g. a desire for a greater police presence in the community, for example by allowing officers to work flexibly from locations other than police stations) will enable any additional staff to be accommodated, without the need for additional physical infrastructure delivery.

23.3 Fire

23.3.1 The SFRS provides fire and rescue services within Runnymede, overseen by SCC. Two fire stations are located within Runnymede, in Chertsey and Egham, with a total of six vehicles. There is limited information within the baseline analysis relating to existing levels of service and capacity within SFRS, and it was not possible to undertake consultation directly with the Service.

[112] South East Cost Ambulance Services, (2016); Annual Report and Account 2015-2016

23.3.2 The 2016 Surrey Draft Public Safety Plan identifies that population growth within the County is likely to result in increased demand for fire services[113]. There is no currently identified shortfall in fire stations capacity in the North Area Team of Surrey (which includes Runnymede), though new fire stations are opening within other parts of the county[114]. As such, there is no planned provision within Runnymede for additional physical infrastructure at present.

23.3.3 While the 2016 Surrey Draft Public Safety Plan notes that financial resources for expansion of fire service provision are limited, it is assumed that SCC (which allocates funds to SFRS) will make funding available for new fire infrastructure in Runnymede associated with residential development during the Plan period, should the need arise.

23.4 Future Needs Emergency Services - Key Findings

- SECAmb project that at present, ambulance provision and physical infrastructure within Runnymede is suitable to accommodate ambulance needs over the Local Plan period. There is no planned provision within Runnymede for additional physical infrastructure.
- There is limited information within the baseline analysis relating to existing levels of service and capacity within Surrey Police and the SFRS, and it is therefore unclear whether there is spare capacity or a shortage of personnel and physical infrastructure within Runnymede at present. There is no planned provision within Runnymede for additional physical infrastructure to support these services.

[113] Surrey County Council, (2016); Draft Public Safety Plan 2016-2025
[114] Surrey County Council, (2011), Surrey Fire and Rescue Authority Public Safety Plan 2011-2020

24. Future Needs - Flood Defences and Sustainable Drainage

24.1 Flood Defences

24.1.1 An analysis of the additional flood infrastructure requirements was made using the datasets listed at paragraph 13.2.12, as well as the following datasets acquired from SCC:

- Database of published wet spots for Runnymede.
- Database of internal and external property flooding, grouped by roads.

24.1.2 Upon review, the wet spots database and the property flooding database relate closely to localised flooding events, and are therefore covered in further detail in the Sustainable Drainage section below.

24.1.3 A trajectory of housing sites within the Borough has been provided by RBC (see paragraph 14.2.5). These sites have been mapped against the flood zones, shown in Figure 50. From this figure, it can be seen that a number of sites to the north-east of the Borough are located within flood zone 2 or 3, adjacent to the River Thames and within the functional floodplain. A number of the sites to the south-east of the Borough are also located within flood zones 2/3. Sites to the west of the Borough, surrounding Addlestone, Ottershaw and Longcross are located in flood zone 1, but are susceptible to localised flood events. A number of commercial development sites are also located within areas of flood risk (flood zones 2/3) but given that these sites are classified as ‘less vulnerable’, this is generally acceptable.

24.1.4 20 allocation sites have been prioritised for more detailed analysis within this INA and this analysis has been carried out based on the datasets listed above. The outcomes can be found in Chapter 25. The majority of the prioritised allocated development sites are located in flood zone 1, and therefore do not require large scale flood risk infrastructure to facilitate their development. The allocated sites to the north-east of the Borough, the area at highest risk of flooding, could potentially benefit from the River Thames Scheme once it is fully operational. It is estimated that the River Thames Scheme will provide a return on investment of £5 for every £1 invested, saving local homes and businesses up to £2.3bn in damages.

24.1.5 Other major flood defence projects expected to be operational within the timeframe of this study are associated with the larger Weybridge Flood Alleviation scheme, which will provide further protection to both existing and proposed developments to the south-east of Runnymede.

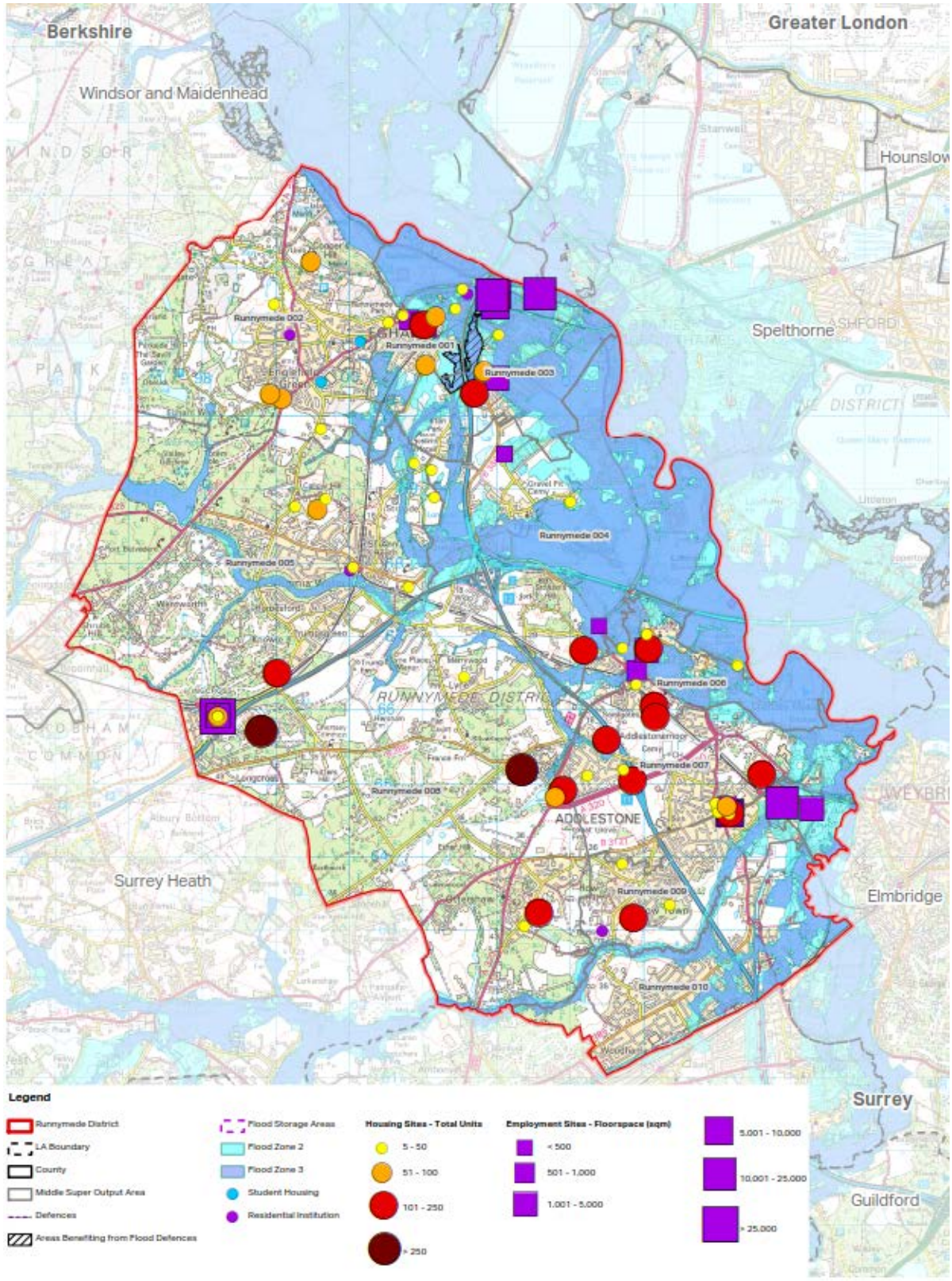

Figure 50. Allocated Development Sites and Flood Zones

24.1.6 It has been assumed that all new developments proposed to be located on the floodplain will adhere to the Local Plan flood risk policies SV1 and SV2 or any new flooding policies introduced in the Runnymede 2035 Local Plan. This is to ensure that there is no increase in flood risk to people, properties and the surrounding area. In areas where the floodplain is built on, there could be a requirement to assign compensatory storage elsewhere, in line with Local Plan policy SV1.

24.1.7 It must also be noted that given the revised climate change allowances, which are significantly higher than the previous guidance, further flood mitigation and defence measures may be required outside of the scope of this study, but within the lifetime of the proposed developments.

Associated Costs

24.1.8 The costs associated with the planned flood defence infrastructure have been derived from the rolling medium term FCERM programme and the River Thames Scheme publications, as made available by the EA.

24.1.9 The relevant flood risk projects for which delivery responsibility lies with the EA are as follows (see Annex 1 Runnymede Project Schedule for more detail):

- River Thames Scheme (Property Level Protection)
- Penton Hook Restoration
- River Wey Weir Refurbishment
- Wey Road, Weybridge Flood Alleviation
- Wey Meadows Flood Alleviation

24.1.10 Based on the figures provided by the EA in December 2016, a total requirement of £18.9M has been identified for the above projects, of which £14.9M has been secured through various funding routes, including Grant in Aid funding and private sources. A funding gap of £4.0M has been calculated based on these figures.

24.1.11 The River Thames Scheme has not been included in the figures set out above. A River Thames Scheme publication available from the EA states the total estimated cost of the scheme to be £476M. Funding for the scheme has been broken down as follows:

Table 53. The River Thames Scheme: Funding

Sources of funding	Funding expected
Central Government	£60M
Grant in Aid (GiA)	£152M
Partnership funding	£36M
Secured/expected funding	£248M
Funding gap	£228M

24.1.12 The funding gap identified for the River Thames Scheme is calculated as the difference between the estimated total cost of the scheme and the secured/expected funding.

24.1.13 It should be noted that the EA's FCERM is a rolling programme updated on an annual basis, and the cost figures identified above are likely to change based on further investigation and changes to funding provisions.

24.1.14 Further to this, a list of planned projects was also received from SCC. However, the projects relevant to Runnymede are still in early stages of planning, and have no identified costs and/or funding routes.

24.2 Sustainable Drainage

24.2.1 The analysis of additional requirements for sustainable drainage infrastructure has been carried out alongside the analysis for Flood Defences, and was made using the following datasets provided by SCC:

- Database of published wet spots for Runnymede.
- Database of internal and external property flooding, aggregated by roads (Confidential).

24.2.2 The housing trajectory sites within the Borough (see paragraph 14.2.5) have been reviewed against the wet-spots database. The database identifies locations where flood risk mitigation has already been put in place, as well as locations where the problem of flooding is yet to be addressed. A large proportion of proposed developments to the north-east of the Borough are located adjacent to areas at risk from surface water flooding.

24.2.3 Additional infrastructure required to facilitate growth and provide sustainable drainage has been identified from the SCC list of planned projects. The additional infrastructure focus is primarily on the urban centres of Egham and Chertsey. However, flooding 'hot spots' on a more localised scale are more likely to be identified during meetings between Surrey CC and RBC, and mitigation measures could be provided on a more ad-hoc basis.

24.2.4 Future developments located adjacent to wet-spots, or within flood zone 2/3 would require site-specific sustainable drainage provisions and proposals to manage the runoff from site in accordance with the National Planning Policy Framework.

Associated Costs

24.2.5 The relevant sustainable drainage infrastructure projects derived from the SCC list are listed below, with additional detail set out in the Runnymede Project Schedule (Appendix A):

- South Avenue, Egham
- St.Peter's Way, Addlestone
- Guildford Road, Chertsey
- Delta Way, Thorpe
- Lyne Lane, Chertsey

24.2.6 As noted earlier in this section, the projects are due for costing in the near future, and at present do not have identified project costs and funding provision information. An average project cost of £110,000 will be reportedly used by SCC for forecasting purposes, until further detailed costing information is available.

24.2.7 Furthermore, sustainable drainage provisions should be made on a site-wide basis at the time of applying for planning permission. This should be in line with the current planning guidelines, Local Plan adopted policies SV1 and SV2 (or any flooding policies subsequently adopted through the Runnymede 2035 Local Plan), and should be suited to the level of flood risk to the site. Therefore, only the costs of high level sustainable drainage projects are available for use in this study.

24.2.8 Based on the forecasting figures for project cost, a total estimated cost of £590,000 has been identified for projects relating to drainage and sustainable drainage within Runnymede. As there is no information on allocated/expected funding available at the time of writing, the funding gap has been calculated as £590,000. These figures are based entirely on the projects listed in the SCC Drainage Programme, and does not take into account site-specific provisions.

24.3 Future Needs Flood Defences and Sustainable Drainage - Key Findings

- The housing trajectory sites provided by RBC have been mapped against flood zones, indicating that a large number of sites to the north-east of the Borough are located within flood zone 2 or 3, adjacent to the River Thames and within the functional floodplain. A large proportion of the sites to the south-east of the Borough are also located within flood zones 2/3. Sites to the west of the Borough, surrounding Addlestone, Ottershaw and Longcross are located in flood zone 1, but are susceptible to localised flood events.
- From the EA's FCERM programme and the SCC's drainage programme, it has been identified that a total of £18.9M of flood defence infrastructure has been planned for delivery within the scope of this study, of which £14.9M has been funded through grant in aid funding, private partnerships and other sources. A funding gap of £4M has been identified.
- The River Thames scheme has not been included in the funding gap analysis above, as the project has a phased costing approach. At the time of writing, the estimated project cost was put at £476M, of which £228M was yet to be sourced. This is likely to change as the scheme and phases progress. Initial estimates show a return of investment of £5 for every £1 of investment into the scheme.
- With regard to sustainable drainage, the housing trajectory sites within the Borough have been reviewed against the wet-spots database. The database identifies locations where flood risk mitigation has already been put in place, as well as locations where the problem of flooding is yet to be addressed. A large proportion of proposed developments to the north-east of the Borough are located adjacent to areas at risk from surface water flooding.
- From the SCC's drainage programme, it has been identified that a total of £590,000 of sustainable drainage infrastructure has been planned for delivery within the time scope of this study. As further funding and source of funding information is not yet available, it has been assumed at the time of writing that no funds have been acquired towards meeting the project cost. Therefore, a funding gap of £590,000 has been taken forward for analysis. .

25. Infrastructure Requirements for Allocated Sites

25.1 Introduction

25.1.1 This section considers infrastructure requirements associated with 20 sites identified within the Runnymede Strategic Land Availability Assessment which are now being progressed through the planning system for development.

25.2 Approach

25.2.1 The list of allocation sites for consideration was confirmed by RBC and key details provided to AECOM including maps of site location and addresses, housing capacity and floorspace estimates and phasing information. See Appendix A for details. For the relevant sites, the infrastructure required to mitigate the impacts of development was assessed at a relatively high level, reflecting the level of detail appropriate for a plan-level assessment of site-specific infrastructure requirements. The assessment covers social infrastructure, green infrastructure, flood risk and sustainable drainage and utilities. More information on the approach taken for each of these topics is provided below.

Social and Green Infrastructure

25.2.2 The demand for key items of social and green infrastructure arising from development has been modelled. The infrastructure items covered are:

- Early years, primary and secondary education
- Primary healthcare (GP and dentists)
- Outdoor sports, play space
- Green Infrastructure: allotments, SANGs.

25.2.3 Gross demand arising and associated costs are set out. Where possible, comment is provided on whether provision should be made on-site or whether contributions towards off-site provision are likely to be more appropriate, and on funding arrangements.

25.2.4 RBC has undertaken work to assess the capacity of most of the sites covered within this assessment. RBC's work was provided to and built upon by AECOM; this includes using the same approach to estimating the number of new residents at each site (see paragraph 14.3.3). The assessment of social infrastructure needs for the topics above then follows the same approach as used for the Runnymede-wide needs assessment within the earlier chapters of the INA. This includes employment of the benchmark assumptions set out in Appendix B.

Flood risk and sustainable drainage

25.2.5 An assessment of the potential flood risk to the development has been made using the Flood Zones and Surface Water Flooding maps referred to in Chapter 13. As set out in the Planning Practice Guidance tables 2 and 3, the flood risk vulnerability classification and development compatibility have been used to assess the requirement for flood risk infrastructure to support the proposed development within the allocated site.

25.2.6 The allocated development sites and their context within flood zones is shown below. It should be noted that this approach is broad-brush and does not consider the individual sources of potential flood risk to the development.

Table 54. List of prioritised allocated development sites and flood zone classification

Site name	Development type	Flood Zone Classification
Addlestone Broad Location	Mixed	Flood Zone 1
Chertsey Broad Location	Mixed	Flood Zone 1
DERA Site South	Mixed	Flood Zone 1
Egham Gateway 1	Mixed	Flood Zone 2
Egham Gateway 2	Residential	Flood Zone 1
Hanworth Lane	Residential	Flood Zone 1
Ottershaw East	Residential	Flood Zone 1
Parcel A, Chertsey Bittams	Residential	Flood Zone 1
Parcel B, Veterinary Laboratory Site	Residential	Flood Zone 1
Parcel B, Chertsey Bittams	Residential	Flood Zone 1
Parcel C, Chertsey Bittams	Residential	Flood Zone 1
Parcel D, Chertsey Bittams	Residential	Flood Zone 1
Parcel E, Chertsey Bittams	Residential	Flood Zone 1
Thorpe Lea Road North	Residential	Flood Zone 2/3 (partial)
Thorpe Lea Road West	Residential	Flood Zone 1
Gorse Hill House, Virginia Water North	Residential	Flood Zone 1
Kenwolde, Virginia Water North	Residential	Flood Zone 1
Merlewood, Virginia Water North	Residential	Flood Zone 1
Virginia Water South	Residential	Flood Zone 1
Chilsey Green Farm	Residential	Flood Zone 3

25.2.7 Further to the flood zone mapping, the allocated sites were also assessed against two datasets received through SCC:

- Database of internal and external property flooding, grouped by roads.
- Database of locally identified wet-spots and status of remedial works, identified based on discussions with RBC. Wet-spots have been defined within the database as “current” (issue of flooding not addressed), “works scheduled” (where remedial works are yet to be completed but has been planned) and “reduced flood risk” (where issue of flooding has been identified and remedied). No records are available as to the lifespan and type of remedial works carried out.

25.2.8 Based on these datasets and the planning policies noted within the INA the following process has been used to draw conclusions for requirements on a site-by-site basis:

1. It has been assumed that all proposed development sites will require a drainage strategy utilising sustainable drainage to manage the surface runoff generated on site. This is in line with Planning Policy Guidance and with Thames Water recommendations to limit surface water runoff within a ‘water stress area’.
2. Where allocated development is adjacent to a current wet-spot (as defined above) or a wet-spot where works have been scheduled to remedy the flooding issue, it has been assumed that this is an area of localised flood risk.
3. Where development is adjacent to roads showing internal and/or external property flooding problems, it has been assumed that this is an area of localised flood risk. The source of flooding has not been recorded in the database.

4. Where development is within flood zone 2 or 3 with a combination of recorded localised flood risk as stated in points 1) and 2), it has been assumed that a drainage strategy will be required, and that there is potential for wider remedial works or a flood defence/drainage scheme to address the issue of flooding and provide benefit to the proposed development.

Utilities

25.2.9 The details of the 20 allocation sites were sent to utility providers to seek their views on any gaps in infrastructure and the future infrastructure required to support this growth in the network.

25.2.10 National Grid Gas Distribution Limited's Network Strategy Team provided a high-level capacity check for the proposed developments to identify whether reinforcement works will be required to ensure supply. The information received has been included in the site-specific table below.

25.2.11 Affinity Water also provided a high-level capacity check for the proposed developments to identify whether reinforcement works will be required to ensure supply. The sites have been split into four main areas and network performance assessed for a) current demand and b) future demand, including and future developments both in Affinity Water records and the preliminary list of allocated sites provided to them. The four areas are:

- 1 - Egham Gateway Merlewood, Virginia Water North, Kenwolde, Virginia Water North Gorse Hill House, Virginia Water North
- 2 - Hanworth Lane, Chilsey Green Farm, DERA Site South, Chertsey Broad Location, Parcel B, Veterinary Lab Site, Parcel A, Chertsey Bittams, Parcel B, Chertsey Bittams, Parcel C, Chertsey Bittams, Parcel D, Chertsey Bittams, Parcel E, Chertsey Bittams, Virginia Water South, Ottershaw East
- 3 - Thorpe Lea Road North, Thorpe Lea Road West
- 4 - Addlestone Broad Location

25.2.12 No response was received from UKPN or SSE. Thames Water also indicated they were unable to provide detail in terms of network capacity to serve the sites in the spreadsheet provided. General feedback was received from these providers, and those general comments are set out in the Summary of Findings below.

25.3 Requirements for Individual Allocation Sites

25.3.1 In this section, a summary table is provided for each of the allocation sites which sets out available information on infrastructure requirements, costs, mode of provision and funding.

Table 55. Site 1: Addlestone Broad Location, Station Road

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	3.7 early years places. 10.2 primary school places. 10.9 secondary school places.	£59,485 early years. £143,225 primary. £183, 706 secondary. Total: £386,415.		Baseline information indicates need identified for additional FoE in Chertsey or Addlestone	SCC, developer contributions.
Health	0.09 GPs, 0.08 dentists.	£37,105 GPs, £6,145 dentists. Total £43,250	TBC. There is a healthcare facility within the Addlestone 2 development which could be expanded / improved (town centre is favourable location for provision of integrated primary health services).	TBC. Contributions to acute (physical and mental) healthcare provision off-site may be appropriate.	NHS / CCG. Developer contributions.
Other Social Infrastructure	0.19ha playing pitches, 0.06 ha parks, 0.09ha informal play space, 0.04 equipped play space.	£82,716 outdoor sports space. £161,672 total play space.	TBC. Dependent on site capacity.		RBC, developer.
Green Infrastructure	0.04ha allotments, 1.3ha SANG.	£8,476 allotments. £150,392 SANG.	TBC. Play space should ideally be provided on-site.	Contribution to off-site provision of SANGs and allotments?	
Flood risk & Sustainable Drainage	Site located in flood zone 1. Site at low risk of fluvial / pluvial flooding. Site is in an area with recorded internal property flooding. Therefore, surface water	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC. Site is located in an area with recorded internal property flooding, and a wider drainage scheme is potentially likely.	Infrastructure will be funded by developer for on-site provisions. Public sector funding TBC.

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
	management on-site will be required through SuDS. Site is adjacent to flooding 'wet-spot' which has been remedied / recently 'dormant'.				
Potable Water	Estimated demand increase: 0.05 Ml/d.	TBC.		Major reinforcements in the network in the Station Road, Addlestone area will be required when all future developments are taken into account due to pressure drop at critical points.	Network upgrades funded by service providers with contribution from developer according to impact of the scheme. Connection charges will also be payable by the developer.
Gas	Low Pressure – capacity available, no reinforcement required.				
Other utilities	See comments in Summary Section				

Table 56. Site 2: Chertsey Broad Location, Station Road

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	16.2 early years places. 27.9 primary places. 16.9 secondary places.	£129,563 early years, £311,956 primary, £284,107 secondary		Providers have identified need for additional FoE in Chertsey or Addlestone; off-site contribution towards this expansion of supply?	SCC, developer contributions
Health	0.2 GPs. 0.18 dentists.	£80,818 GPs, £13,384 dentists.	TBC. Chertsey Town Centre would be a sustainable location for primary healthcare services.		NHS / CCG. Developer contributions.
Other Social Infrastructure	0.42ha playing pitches, 0.14ha parks, 0.19ha informal play space, 0.09ha formal play space	£180,162 total outdoor sports, £45,045 informal play space, £307,094 formal play space.	TBC. Playspace would ideally be provided close to new dwellings.		RBC, developer.
Green Infrastructure	Allotments 0.08ha. SANG 2.82ha	£327,567 SANG. £18,461 allotments.		TBC; SANG would probably need to be provided off-site.	RBC, developer.
Flood risk & Sustainable Drainage	Site is in flood zone 1, adjacent to flood zone 2 and 3 areas. The highway adjacent to site is at high risk of pluvial flooding, and within flood zone 3. Site is located in a dry-island, surrounded by an area of moderate/high surface water flooding. Site is previously developed and comprises Chertsey Town Centre. Surface water management on-site will	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC.	Infrastructure will be funded by developer for on-site provisions. Site located within dry island so may benefit from future planned flood mitigation schemes.

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
	be required through SuDS.				
Potable Water	Estimated demand increase: 0.130 Ml/d	TBC		Major reinforcements in the network in the area will be required when all future developments are taken into account due to pressure drop at critical points.	Network upgrades funded by service providers with contribution from developer according to impact of the scheme. Connection charges will also be payable by the developer.
Gas	Low pressure - Capacity Available – no reinforcement required.				
Other Utilities	See comments in Summary Section				

Table 57. Site 3: DERA Site, Longcross

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	173 nursery places. 298 primary places. 254 secondary places.	£1.3M early years, £3.3M primary, £4.2M secondary.	Private nursery and primary school to be provided on-site; these facilities are likely to cater for the needs arising from the development.	Secondary school provision likely to be via contribution to expansion of local facilities.	SCC, developer contributions.
Health	2.1 GPs, 1.9 dentists.	£864,096 GP, £143,094 dentists.	TBC. Space for primary healthcare has been set aside onsite; however CCG may prefer contribution to expansion of facilities within nearby local centres.	Off-site contribution to acute (physical and mental) and older people's social care may be appropriate.	NHS / CCG. Developer contributions.
Other Social Infrastructure	4.52ha pitches, 1.51 ha parks. 2.07ha informal playspace and 0.94ha formal playspace.	£1.9M total gross costs for outdoor sports facilities. £0.8M gross costs for play space.	Onsite provision of 3.13ha pitches, including 2.46ha off-site at Trumps Farm and dual use with a new primary school, is made within the masterplan. A total of 4.22ha of playspace is also planned onsite.	Some provision will be off-site within the local area.	RBC, developer.
Green Infrastructure	41.5ha SANG[115]. 0.85ha allotments.	£3.5M SANG costs, £197,379 allotment costs.	31ha of SANG, on-site and off-site, plus SANG at Barrow Hills Woodlands of approx. 6ha., plus 0.67ha for allotments (26 plots) with 0.43ha off-site at Trumps Farm, will cater for forecast demand.	Some provision will be off-site within the local area.	RBC, developer.
Flood risk & Sustainable Drainage	Site is in flood zone 1, and is at low risk of pluvial and	TBC. Costs will depend on the drainage strategy	Yes, drainage provisions will have to be provided	TBC.	Infrastructure will be funded by developer for

[115] Based on 11ha per 1,000 population to reflect Natural England's requirement for higher SANG on DERA site due to proximity to SPA

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
	fluvial flooding. Site is partially developed, but will be a major development and surface water management on-site will be required through SuDS. Minor wet-spot to the south-east of site on access road B386.	adopted to manage surface water runoff from site.	on site.		on-site provisions.
Potable Water	Estimated demand increase: 2.127 Ml/d	TBC		Major reinforcements in the network in the area will be required when all future developments are taken into account due to pressure drop at critical points.	Network upgrades funded by service providers with contribution from developer according to impact of the scheme. Connection charges for will also be payable by the developer.
Gas	Low Pressure – no capacity available, reinforcement required.				
Other Utilities	See comments in Summary Section				

Table 58. Site 4: Egham Gateway 1 – Station Road North

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	15.3 early years places, 26.3 primary places, 15.9 secondary places.	£122,229 early years, £294,298 primary, £268,044 secondary.			SCC, developer contributions.
Health	0.2 GPs, 0.2 dentists.	£76,244 GPs, £12,626 dentists.	TBC. Egham town centre would be a sustainable location for primary healthcare services, in line with the CCGs model of provision.	TBC. A contribution to acute (physical and mental) and older people's services may be appropriate, to be provided at an off-site location.	NHS / CCG. Developer contributions.
Other Social Infrastructure	0.4ha pitches, 0.1ha parks. 0.2ha informal playspace, 0.1ha formal playspace.	£169,964 outdoor sports, £332,202 playspace.	TBC. Playspace should be provided locally to dwellings.		RBC, developer.
Green Infrastructure	2.7ha SANG, 0.1ha allotments.	£309,025 SANG, £17,416 allotments.	TBC. Given town centre location, on-site capacity for GI may be constrained.		RBC, developer.
Flood risk & Sustainable Drainage	Site is in flood zone 1, and is at low risk of pluvial and fluvial flooding. Site is a town centre location and will be a major development. Surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Together with the other development sites in Area 1, site will contribute to a demand increase of:				Network upgrades funded by service providers with contribution from developer according to

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
	Sunningdale Village 0.07 Ml/d, and Egham Town 0.05 Ml/d.				impact of the scheme. Connection charges for will also be payable by the developer.
Gas	Low pressure – capacity available, no reinforcement required.	TBC		Major reinforcements in the network in the Sunningdale Village area will be required when all future developments are taken into account due to pressure drop at critical points	
Other Utilities	See comments in Summary Section				

Table 59. Site 5: Egham Gateway 2 – High Street, Egham

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	3.7 early years places, 10.3 primary places, 6.2 secondary places.	£59,485 early years, £143,225 primary, £130,618 secondary.			SCC, developer contributions.
Health	0.09 GPs, 0.08 dentists.	£37,105 GPs, £6,145 dentists.	TBC. Town centre location would be favourable to CCG.		NHS / CCG. Developer contributions.
Other Social Infrastructure	0.19ha pitches, 0.1ha parks. 0.9ha informal play space, 0.04ha formal playspace.	£82,716 outdoor sports, £161,672 play space.			RBC, developer.
Green Infrastructure	1.32ha SANG, 0.04ha allotments.	£150,392 SANG, £8,476 allotments.	Town centre location may indicate limited capacity for on-site provision.		RBC, developer.
Flood risk & Sustainable Drainage	Site is in flood zone 1, and is at low risk of pluvial and fluvial flooding. Site is a town centre location. It will be a major development and surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Together with the other development sites in Area 1, the site will contribute to a demand increase of: Sunningdale Village 0.07 Ml/d, and Egham Town 0.05 Ml/d.	TBC		Major reinforcements in the network in the Sunningdale Village area will be required when all future developments are taken into account due to pressure drop at critical points.	Network upgrades funded by service providers with contribution from developer according to impact of the scheme. Connection charges for will also be payable by the developer.
Gas	Low Pressure – capacity				

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
	available, no reinforcement required.				
Other Utilities	See comments in Summary Section				

Table 60. Site 6: Land at Hanworth Lane, Chertsey

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	Early years 16.9 places, primary 29.0 places, secondary 24.7 places.	Early years £134,830, primary £324,639, secondary £416,393.			SCC, developer contributions.
Health	0.2 GPs, 0.2 dentists.	£84,104 GPs, £13,928 dentists.			NHS / CCG. Developer contributions.
Other Social Infrastructure	0.4ha pitches, 0.1ha parks. 0.2ha formal playspace, 0.1ha formal playspace.	£187,486 outdoor sports, £366,451 playspace.			RBC, developer.
Green Infrastructure	2.9ha SANGs, 0.1ha allotments.	£340,884 SANGs, £19,738 allotments.	RBC site capacity analysis indicates surplus open space provision in the northern section of the site could contribute to meeting open space requirements on the southern section by 0.09ha, and that SANG would be delivered off-site.		RBC, developer.
Flood risk & Sustainable Drainage	Site is in flood zone 1, and is at low risk of pluvial and fluvial flooding. St.John's Way, adjacent to site has an extensive history of internal property flooding. Site is undeveloped, but will be a major development and surface water management on-	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC.	Infrastructure will be funded by developer for on-site provisions. Site is adjacent to an area with extensive internal flooding, and may potentially trigger a drainage scheme led by the LLFA.

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
	site will be required through SuDS.				
Potable Water	Estimated demand increase: 0.127 Ml/d	TBC		Major reinforcements in the network in the area will be required when all future developments are taken into account due to pressure drop at critical points.	Network upgrades funded by service providers with contribution from developer according to impact of the scheme. Connection charges for will also be payable by the developer.
Gas	Low Pressure – capacity available, no reinforcement required.				
Other Utilities	See comments in Summary Section				

Table 61. Site 7: Ottershaw East

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	10.7 early years, 29.4 primary places, 17.7 secondary places.	£170,466 nursery, £410,443 primary, £373,968 secondary.			SCC, developer contributions.
Health	0.3 GPs, 0.2 dentists.	£106,333 GPs, £17,609 dentists.			NHS / CCG. Developer contributions.
Other Social Infrastructure	0.6ha pitches, 0.2ha parks. 0.3ha informal playspace, 0.1ha formal play space.	Outdoor sports £237,040, playspace £463,305.			RBC, developer.
Green Infrastructure	3.7ha SANG, 0.1ha allotments.	£430,981 SANG, £24,382 allotments.	RBC analysis indicates there is capacity for SANGs and green infrastructure to be provided on-site.		RBC, developer.
Flood risk & Sustainable Drainage	Site is in flood zone 1, and is at low risk of pluvial and fluvial flooding. Site is undeveloped, but will be a major development and surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site. Existing drain on site could provide additional capacity.	TBC.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Estimated demand increase: 0.178 Ml/d	TBC		Major reinforcements in the network in the area will be required when all future developments are taken into account due to pressure drop at critical points.	Network upgrades funded by service providers with contribution from developer according to impact of the scheme. Connection charges for will also be payable by the
Gas	Low Pressure – no				

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
	capacity available, reinforcement required.				developer.
Other Utilities	See comments in Summary Section				

Table 62. Site 8: Chertsey Bittams (Parcel A – Green Lane)

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	10.2 early years places. 28.1 primary school places. 23.9 secondary school places.	£163,199 early years. £392,752 primary. £503,757 secondary. Total £1.01M.			
Health	0.25 GPs. 0.22 dentists.	£101,750 GPs. £16,850 dentists. Total: £118,600		Not known. Additional off-site contributions may be appropriate for acute health care and older people's social care.	
Other Social Infrastructure	Outdoor sports 0.71ha (0.53 ha playing pitches, 0.18ha parks). Play space 0.36ha (0.24 informal, 0.11ha formal).	£226,823 outdoor sports. £443,335 play space.			
Green Infrastructure	0.1ha allotments. 3.5 ha SANG.	£23,221 allotments. £412,405 SANG.	RBC analysis indicates SANG would be provided off-site.		
Flood risk & Sustainable Drainage	Site is in flood zone 1, adjacent to flood zone 2 and 3 areas. The highway adjacent to site is at high risk of pluvial flooding, and is within flood zone 3. Site will be a major development and surface water management on-site will be required through the use SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC. Site is adjacent to wet-spot on Guildford Road and could benefit from potential drainage improvements.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Together with the other parcels at the site, the total estimated demand increase will be: 0.645	TBC		Major reinforcements in the network in the area will be required when all future developments are	Network upgrades funded by service providers with contribution from developer according to

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
	Ml/d			taken into account due to pressure drop at critical points.	impact of the scheme. Connection charges for will also be payable by the developer.
Gas	Low Pressure – capacity available, no reinforcement required.				
Other Utilities	See comments in Summary Section				

Table 63. Site 9: Central Veterinary Lab (Parcel B), Row Town

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	8.01 early years places, 22.0 primary places, 18.8 secondary places.	£128,217 early years, £308,717 primary, £395,971 secondary.			
Health	0.19 GPs, 0.17 dentists.	£79,979 GPs, £13,245 dentists.			
Other Social Infrastructure	0.42ha pitches, 0.14ha parks. 0.19ha informal playspace, 0.09ha formal playspace.	£178,291 outdoor sports, £348,478 playspace.			
Green Infrastructure	2.79ha SANG, 0..8ha allotments.	£324,165 SANG, £18,577 allotments.	RNC analysis indicates SANG provision will be made off-site.		
Flood risk & Sustainable Drainage	Site is located within Flood Zone 1. There is low risk of fluvial / pluvial flooding to the site. Site is undeveloped, but will be a major development and surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC. No flood risk areas identified in close proximity to trigger future flood/drainage schemes.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Estimated demand increase: 0.136 Ml/d	TBC		Major reinforcements in the network in the area will be required when all future developments are taken into account due to pressure drop at critical points.	Network upgrades funded by service providers with contribution from developer according to impact of the scheme. Connection charges for will also be payable by the developer.
Gas	Low Pressure – no capacity available,				

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
	reinforcement required.				
Other Utilities	See comments in Summary Section				

Table 64. Site 10: Chertsey Bittams (Parcel B – Woodside Farm)

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	6.5 early years places, 17.9 primary places, 15.3 secondary places.	£104,080 early years, £250,600 primary, £321,429 secondary.			
Health	0.16 GPs, 0.14 dentists.	£64,923 GPs, £10,751 dentists.			
Other Social Infrastructure	0.34ha pitches, 0.11ha parks. 0.16ha informal playspace, 0.07ha formal playspace.	£144,727 outdoor sports, £282,876 playspace.			
Green Infrastructure	2.27ha SANG, 0.07ha allotments.	£263,140 SANG, £15,094 allotments.		RBC analysis indicates SANG provision off-site, and other open space provided on-site.	
Flood risk & Sustainable Drainage	Site is in flood zone 1. There is low risk of fluvial / pluvial flooding to the site. Site is undeveloped, but will be a major development and surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC. No flood risk areas identified in close proximity to trigger future flood/drainage schemes.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Together with the other parcels at the site, the total estimated demand increase will be: 0.645 Ml/d	TBC		Major reinforcements in the network in the area will be required when all future developments are taken into account due to pressure drop at critical points.	Network upgrades funded by service providers with contribution from developer according to impact of the scheme. Connection charges for will also be payable by the developer.
Gas	Low Pressure – no capacity available, reinforcement required.				

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Other Utilities	See comments in Summary Section				

Table 65. Site 11: Chertsey Bittams (Parcel C – Land east of Woodside Farm)

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	2.0 early years places, 5.6 primary, 4.8 secondary.	£32,532 early, £78,329 primary, £100,468 secondary.			
Health	0.05GPs, 0.04 dentists.	£20,293 GPs, £3,360 dentists.			
Other Social Infrastructure	0.11ha pitches, 0.04ha parks. 0.05ha informal playspace, 0.02ha formal playspace.	Outdoor sports £45,237, playspace £88,417.			
Green Infrastructure	0.71ha SANG, 0.02ha allotments.	£82,249 SANG, £4,644 allotments.	RBC analysis states 0.42ha within an AQMA for the M25 could accommodate some green infrastructure.		
Flood risk & Sustainable Drainage	Site is in flood zone 1. There is low risk of fluvial / pluvial flooding to the site. Site is undeveloped, but will be a major development and surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC. No flood risk areas identified in close proximity to trigger future flood/drainage schemes.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Together with the other parcels at the site, the total estimated demand increase will be: 0.645 Ml/d	TBC		Major reinforcements in the network in the area will be required when all future developments are taken into account due to pressure drop at critical points.	Network upgrades funded by service providers with contribution from developer according to impact of the scheme. Connection charges for

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Gas	Low Pressure – capacity available, no reinforcement required.				will also be payable by the developer.
Other Utilities	See comments in Summary Section				

Table 66. Site 12: Chertsey Bittams (Parcel D – Parklands)

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	10.2 early years places, 28.1 primary places, 23.9 secondary places.	£163,119 early years, £392,752 primary, £503,757 secondary.			
Health	0.25 GPs, 0.22 dentists.	£101,750 GPs, £16,850 dentists.			
Other Social Infrastructure	0.53ha pitches, 0.18ha parks. 0.24ha informal playspace, 0.11ha formal playspace.	£226,823 outdoor sports, £443,335 playspace.			
Green Infrastructure	3.55ha SANG, 0.1ha allotments.		RBC analysis states SANG likely to be delivered offsite. An area to the west of the site covered by a TPO is approximately 0.07ha in area and could form part of overall green infrastructure requirements.		
Flood risk & Sustainable Drainage	Site is in flood zone 1. There is low risk of fluvial / pluvial flooding to the site. Site is undeveloped, but will be a major development and surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC. No flood risk areas identified in close proximity to trigger future flood/drainage schemes.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Together with the other parcels at the site, the total estimated demand increase will be: 0.645	TBC		Major reinforcements in the network in the area will be required when all future developments are	Network upgrades funded by service providers with contribution from developer according to

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
	Ml/d			taken into account due to pressure drop at critical points.	impact of the scheme. Connection charges for will also be payable by the developer.
Gas	Low Pressure – no capacity available, reinforcement required.				
Other Utilities	See comments in Summary Section				

Table 67. Site 13: Chertsey Bittams (Parcel E – East of Wheelers' Green)

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	4.9 early years places, 13.4 primary, 11.4 secondary.	£78,014 early years, £187,840 primary. £240,930 secondary.			
Health	0.12 GPs, 0.11 dentists.	£48,664 GPs, £8,059 dentists.			
Other Social Infrastructure	0.25ha pitches, 0.08ha parks. 0.12ha informal playspace, 0.05ha formal playspace.	£108,482 outdoor sports, £212,032 playspace.			
Green Infrastructure	1.7ha SANG, 0.05ha allotments.	£197,239 SANG, 11,611 allotments.	0.25ha of the site is covered by a Tree Preservation Order; this could be incorporated into any green infrastructure on site. Sports pitches and allotments are unlikely to be included on the site, given its overall size.		
Flood risk & Sustainable Drainage	Site is in flood zone 1. There is low risk of fluvial / pluvial flooding to the site. Site is undeveloped, but will be a major development and surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC. No flood risk areas identified in close proximity to trigger future flood/drainage schemes.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Together with the other parcels at the site, the total estimated demand increase will be: 0.645	TBC		Major reinforcements in the network in the area will be required when all future developments are	Network upgrades funded by service providers with contribution from developer according to

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
	Ml/d			taken into account due to pressure drop at critical points.	impact of the scheme. Connection charges for will also be payable by the developer.
Gas	Low Pressure – no capacity available, reinforcement required.				
Other Utilities	See comments in Summary Section				

Table 68. Site 14: Thorpe Lea Road North, Egham

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	4.9 early years places, 13.4 primary, 11.4 secondary.	£78,014 early years, £187,840 primary, £240,930 secondary.			
Health	0.12 GPs, 0.11 dentists.	£48,664 GPs, £8,059 dentists.			
Other Social Infrastructure	0.25ha pitches, 0.08ha parks. 0.12ha informal playspace, 0.05ha formal playspace.	£108,482 outdoor sports, £212,032 playspace.	RBC analysis indicates that neither Thorpe Lead Road North or West is large enough to include provision for either sports pitches or allotments. However, general amenity space will be expected to be provided on site		
Green Infrastructure	0.05ha allotments.	£11,611 allotments.	RBC analysis indicates that the site is not within 5km of TBHSPA so SANGs offsetting is not required.		
Flood risk & Sustainable Drainage	Site is in flood zone 1, and is at low risk of pluvial and fluvial flooding. Site is surrounded by flood zone 2 and 3 areas. Site will be a major development and surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC. Site is surrounded by flood zones 2 and 3, as well as recorded incidents of property flooding and wet-spots. Site could benefit from potential flood/drainage mitigation schemes in the future.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Estimated demand increase: 0.065 Ml/d	TBC		Major reinforcements in the network in the Thorpe Lea Road area will be	Network upgrades funded by service providers with contribution from

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
				required when all future developments are taken into account due to pressure drop at critical points.	developer according to impact of the scheme. Connection charges for will also be payable by the developer.
Gas	Low Pressure – capacity available, no reinforcement required.				
Other Utilities	See comments in Summary Section				

Table 69. Site 15: Thorpe Lea Road West, Egham

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	Early years places 9.7, primary 26.7, secondary 22.7.	£155,036 early years, £373,291 primary, £478,796 secondary.			
Health	GPs 0.2, dentists 0.2.	GPs £96,708, dentists £16,015.			
Other Social Infrastructure	0.5ha pitches, 0.2ha parks. 0.2ha informal playspace, 0.1ha formal playspace.	£215,584 outdoor sports, £421,368 playspace.	The AQMA for the M25 covers an additional 0.83ha along with the vegetation and adopted highway. Part of this area could be used for green infrastructure (around 0.31ha), excluding equipped playing space.		
Green Infrastructure	0.1ha allotments.	£22,060 allotments.	RBC analysis indicates that the site is not within 5km of TBHSPA so SANGs offsetting is not required.		0.1ha allotments.
Flood risk & Sustainable Drainage	Site is in flood zone 1, and is at low risk of pluvial and fluvial flooding. Site is adjacent to flood zone 2 and 3 areas. Site will be a major development and surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC. Site is adjacent to flood zones 2 and 3. Site could benefit from potential flood/drainage mitigation schemes in the future.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Estimated demand increase: 0.124 Ml/d	TBC		Major reinforcements in the network in the Thorpe Lea Road area will be	Network upgrades funded by service providers with contribution from

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
				required when all future developments are taken into account due to pressure drop at critical points.	developer according to impact of the scheme. Connection charges for will also be payable by the developer.
Gas	Low Pressure – capacity available, no reinforcement required.				
Other Utilities	See comments in Summary Section				

Table 70. Site 16: Virginia Water North (Gorse Hill House)

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	1 nursery place, 2.7 primary places, 2.3 secondary places.	£15,871 early years, £38,214 primary, £49,014 secondary.			
Health	0.02 GPs, 0.02 dentists.	£9,900 GPs, £1,639 dentists.			
Other Social Infrastructure	0.05ha pitches, 0.02ha parks. 0.02ha informal playspace, 0.01ha formal playspace.	£22,069 outdoor sports, £43,135 playspace.	One of three parcels at Virginia Water North. RBC analysis states Gorse Hill House or Kenwolde could deliver green infrastructure in the form of sports pitch, but this could be swapped out either for park/gardens or natural/semi-natural greenspace.		
Green Infrastructure	0.35ha SANG. 0.01ha allotments.	£40,125 SANG, £2,322 allotments.	SANG to be delivered off-site.		
Flood risk & Sustainable Drainage	Site is in flood zone 1, and is at low risk of pluvial and fluvial flooding. Site is undeveloped, but will be a major development and surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Together with the other development sites in Area 1, the site will contribute to a demand increase of: Sunningdale Village 0.07	TBC		Major reinforcements in the network in the Sunningdale Village area will be required when all future developments are	Network upgrades funded by service providers with contribution from developer according to impact of the scheme.

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
	Ml/d, and Egham Town 0.05 Ml/d.			taken into account due to pressure drop at critical points.	Connection charges for will also be payable by the developer.
Gas	Low Pressure – capacity available, no reinforcement required.				
Other Utilities	See comments in Summary Section				

Table 71. Site 17: Virginia Water North (Kenwolde)

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	1.6 early years places, 4.5 primary, 3.8 secondary.	£26,103 early years, £62,849 primary, £80,612 secondary.			
Health	0.04 GPs, 0.04 dentists.	£16,282 GPs, £2,696 dentists.			
Other Social Infrastructure	0.09ha pitches, 0.03ha parks. 0.04ha informal playspace, 0.02ha formal playspace.	£36,297 outdoor sports. £70,944 playspace.	One of three parcels at Virginia Water North. RBC analysis states Gorse Hill House or Kenwolde could deliver green infrastructure in the form of sports pitch, but this could be swapped out either for park/gardens or natural/semi-natural greenspace.		
Green Infrastructure	0.578ha SANG, 0.02ha allotments.	£65,991 SANG, £4,064 allotments.	SANG to be delivered off-site.		
Flood risk & Sustainable Drainage	Site is in flood zone 1, and is at low risk of pluvial and fluvial flooding. Site is undeveloped, but will be a major development and surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site	Yes, drainage provisions will have to be provided on site.	TBC.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Together with the other development sites in Area 1, the site will contribute to a demand increase of: Sunningdale Village 0.07	TBC		Major reinforcements in the network in the Sunningdale Village area will be required when all future developments are	Network upgrades funded by service providers with contribution from developer according to impact of the scheme.

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
	Ml/d, and Egham Town 0.05 Ml/d.			taken into account due to pressure drop at critical points.	Connection charges for will also be payable by the developer.
Gas	Low Pressure – capacity available, no reinforcement required.				
Other Utilities	See comments in Summary Section				

Table 72. Site 18: Virginia Water North (Land at Merlewood)

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	4.9 early years places, 13.4 primary, 11.4 secondary.	£78,014 early years, £187,840 primary, £240,930 secondary.			
Health	0.1 GPs, 0.1 dentists.	£48,664 GPs, £8,059 dentists.			
Other Social Infrastructure	0.3ha pitches, 0.1ha parks. 0.12ha informal playspace, 0.05ha formal playspace.	£108,482 outdoor sports, £212,032 playspace.			
Green Infrastructure	SANG 1.7ha, allotments 0.1ha.	£197,239 SANG, £11,611 allotments.	SANG to be delivered off site.		
Flood risk & Sustainable Drainage	Site is in flood zone 1, and is at low risk of pluvial and fluvial flooding. Site is undeveloped, but will be a major development and surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Together with the other development sites in Area 1, the site will contribute to a demand increase of: Sunningdale Village 0.07 Ml/d, and Egham Town 0.05 Ml/d.	TBC		Major reinforcements in the network in the Sunningdale Village area will be required when all future developments are taken into account due to pressure drop at critical points.	Network upgrades funded by service providers with contribution from developer according to impact of the scheme. Connection charges for will also be payable by the developer.
Gas	Low Pressure – capacity available, no reinforcement required.				

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Other Utilities	See comments in Summary Section				

Table 73. Site 19: Virginia Water South

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	6.3 early years places, 17.2 primary, 14.7 secondary.	£100,149 early years, £241,135 primary, £309,288 secondary.			
Health	0.2 GPs. 0.1 dentists.	£62,471 GPs, £10,345 dentists.			
Other Social Infrastructure	0.3ha pitches, 0.1ha parks. 0.15ha informal playspace, 0.07ha formal playspace.	£139,261 outdoor sports, £272,192 playspace.			
Green Infrastructure	2.2ha SANG, 0.1ha allotments.	£253.202 SANG, £13,933 allotments.	SANG delivered off-site.		.
Flood risk & Sustainable Drainage	Site is in flood zone 1, and is at low risk of pluvial and fluvial flooding. Site is undeveloped, but will be a major development and surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site.	Yes, drainage provisions will have to be provided on site.	TBC.	Infrastructure will be funded by developer for on-site provisions.
Potable Water	Estimated demand increase: 0.139 Ml/d	TBC		Major reinforcements in the network in the area will be required when all future developments are taken into account due to pressure drop at critical points.	Network upgrades funded by service providers with contribution from developer according to impact of the scheme. Connection charges for will also be payable by the developer.
Gas	Low Pressure – no capacity available, reinforcement required.				
Other Utilities	See comments in				

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
	Summary Section				

Table 74. Site 20: Chilsey Green Farm, Pyrcroft Road, Chertsey

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
Education	8.9 early years places, 24.6 primary, 21 secondary.	£142,913 early years, £344,100 primary, £441,354 secondary.			
Health	0.2 GPs, 0.2 dentists.	£89,146 GPs, £14,763 dentists.			
Other Social Infrastructure	0.5ha pitches, 0.2ha parks. 0.2ha informal playspace, 0.1ha formal playspace.	£198,725 outdoor sports, £288,418 playspace.			
Green Infrastructure	SANG 3.1ha, allotments 0.1ha.	£361,319 SANG, £20,318 allotments.	SANG delivered offsite.		
Flood risk & Sustainable Drainage	Site is in flood zone 2, adjacent to flood zone 3 areas. The highway adjacent to site is at high risk of pluvial flooding, and is within flood zone 3. Site is located adjacent to ordinary watercourse. Site is located near to an area with extensive historic property flooding. Site is undeveloped, but will be a major development and surface water management on-site will be required through SuDS.	TBC. Costs will depend on the drainage strategy adopted to manage surface water runoff from site	Yes, drainage provisions will have to be provided on site.	TBC. Works are scheduled to mitigate flooding along the wet spot on A317, adjacent to site. Site could benefit from future flood risk mitigation schemes, as internal and external property flooding events have been recorded on the A317 adjacent to the site.	Infrastructure will be funded by developer for on-site provisions. Site located near historically flooded properties so may benefit from County led flood mitigation scheme.
Potable Water	Estimated demand increase: 0.130 Ml/d	TBC		Major reinforcements in the network in the area will be required when all	Network upgrades funded by service providers with contribution from

	Infrastructure requirements	Costs	On-site provision?	Contribution to off-site provision?	Funding
				future developments are taken into account due to pressure drop at critical points.	developer according to impact of the scheme. Connection charges for will also be payable by the developer.
Gas					
Other Utilities	See comments in Summary Section				

25.4 Summary of Findings

Social and Green Infrastructure

25.4.1 The social and green infrastructure requirement for each site has been assessed according to the method outlined at the start of this chapter.

25.4.2 Table 75 below presents the 20 sites, ordered by highest to lowest total cost. Costs are greatest for the DERA site (£16.4M). Costs are lowest for the Gorse Hill House site (£0.2M). As is to be expected, the total cost of infrastructure tends to be greater for those sites which have a larger housing capacity. The total cost per dwelling ranges from £11,683 to £7,903, with 50% of the sites incurring a cost of over £11,000 per dwelling for social and green infrastructure.

25.4.3 Social and green infrastructure will be funded through a combination of sources; with developers likely to make a considerable contribution towards on-site infrastructure, in combination with public sector funding from RBC and SCC in some instances. There is also the possibility that other funding sources (such as grants and central government schemes) may be applicable in some instances.

Table 75. Total Cost of Social and Green Infrastructure at Allocated Sites

Site	Name	Total social and green infrastructure cost	Housing Capacity	Cost per dwelling – social and green infrastructure
3	DERA Site South	£16,441,727	1,700	£9,671
8	Parcel A, Chertsey Bittams	£2,284,011	200	£11,420
12	Parcel D, Chertsey Bittams	£2,284,011	200	£11,420
7	Ottershaw East	£2,234,258	210	£10,639
20	Chilsey Green Farm	£2,001,055	175	£11,434
6	Hanworth Lane	£1,888,454	170	£11,108
9	Parcel B, Veterinary Laboratory Site	£1,795,639	160	£11,222
15	Thorpe Lea Road West	£1,778,858	190	£9,362
2	Chertsey Broad Location	£1,698,151	159	£10,680
10	Parcel B, Chertsey Bittams	£1,457,620	130	£11,212
19	Virginia Water South	£1,401,976	120	£11,683
4	Egham Gateway 1	£1,185,520	150	£7,903
13	Parcel E, Chertsey Bittams	£1,092,869	100	£10,929
18	Merlewood, Virginia Water North	£1,092,869	100	£10,928
14	Thorpe Lea Road North	£895,630	100	£8,956
1	Addlestone Broad Location	£832,921	73	£11,409
5	Egham Gateway 2	£779,833	73	£10,682
11	Parcel C, Chertsey Bittams	£455,529	40	£11,388
17	Kenwolde, Virginia Water North	£365,841	35	£10,452
16	Gorse Hill House, Virginia Water North	£222,291	20	£11,114
Total		**£42,189,063**		**£10,681 (average per dwelling)**

Source: AECOM analysis, 2017

Flood Risk and Sustainable Drainage

25.4.3.1 Of the sites assessed, 17 allocated development sites are located in flood zone 1, and therefore do not require large scale flood risk infrastructure to facilitate their development. The allocated sites to the north-east of the Borough, the area at highest risk of flooding, will be protected by the River Thames Scheme once it is fully operational. Two sites are located within Flood Zone 2 and only one within Flood Zone 3. Three of the sites listed are adjacent to areas with recorded internal property flooding, and one site is adjacent to an area with recorded external property flooding. Four sites are adjacent to recorded wet-spots.

25.4.3.2 Costs will depend on the drainage strategy adopted to manage surface water runoff from each site. On-site provision of infrastructure will be required in each case; any contribution to off-site provision remains to be confirmed. On-site infrastructure will be funded by the developer. There may in some instances also be a role for public sector funding in the form of larger scale mitigation schemes located in the nearby area.

Utilities

25.4.3.3 National Grid Gas Distribution Limited indicated that for 11 of the allocation sites capacity is available and no reinforcements are therefore required. For 8 of the allocation sites no capacity is available and so reinforcements will be required.

25.4.3.4 This high level analysis shows that regardless of the forecast reduction in demand nation-wide, a number of the proposed key development schemes in Runnymede cause a deficit in available supply and require reinforcement. It has been noted in correspondence with National Grid Gas Distribution that as “the gas networks are dynamic, the capacity stated is available today; may not be available when the official connections requests are received, meaning reinforcements may still be required”.

25.4.3.5 Affinity Water divided the 20 allocation sites into four geographical areas and a water demand / supply simulation exercise was undertaken for each site. In each of these geographical areas major reinforcements to the network will be required, based on the increase in demand for portable water forecast for each site.

26. Key Findings and Conclusions

26.1 Introduction

26.1.1 This chapter reviews the Project Schedule which has been compiled as part of the INA and summarises the total infrastructure costs associated with planned growth in Runnymede which have been identified.

26.1.2 It also sets out next steps to develop the analysis within the INA into a full Runnymede IDP.

26.2 Infrastructure Needs in Runnymede

26.2.1 The INA has identified infrastructure projects which will be required over the Local Plan period to meet the needs arising from planned growth. These projects are listed in the accompanying Project Schedule (Appendix A).

26.2.2 A summary of the Project Schedule is presented in Table 76 below. There are 131 line entries. The greatest number (50) relate to social infrastructure. Total costs identified are £540.0M. The greatest proportion of these costs (70%) relate to transport infrastructure.

Table 76. Runnymede Infrastructure Projects and Costs Summary

Infrastructure Category	Line entries (no.)	Line entries (%)	Identified Costs (£)	Identified Costs (%)
Social Infrastructure	50	38%	£ 141,040,516	26%
Green Infrastructure	26	20%	£ 6,425,330	1%
Flood Risk / Sustainable Drainage	10	8%	£ 12,011,100	2%
Transport	40	31%	£ 380,531,900	70%
Utilities	5	4%		
Total	131		£ 540,008,846	

Source: AECOM analysis, 2017

26.2.3 It should be noted with regard to the Project Schedule and total costs that:

- Analysis reflects the information available to date and there are various information gaps, for example at this stage no detail on costs is available on utilities projects and there are other projects for which costs are as yet unknown.
- The Project Schedule includes line entries reflecting benchmark demand and cost modelling undertaken by AECOM for some social and green infrastructure items. The model forecasts demand and costs for three growth scenarios and the average cost is taken for the purposes of estimating total Runnymede-wide costs.
- For projects drawn from provider plans and other sources, where a cost range has been identified the average cost has been assumed to estimate Runnymede-wide costs.
- The following schemes are listed in the Project Schedule but have not been included within Runnymede's infrastructure costs, because they are strategic projects catering for demand arising from a much wider catchment than Runnymede:
  - Southern Rail Access scheme to Heathrow (£1.25BN)
  - M25 Jn 10 (A3) to Jn 16 (M40 interchange), upgrading Smart Motorway and

substantial widening of Jn 11 at Chertsey (£175M)

- M3 Jn 2 (M25 interchange) to Jn 4a (A327 Farnborough), upgrading M3 to Smart Motorway (£174M)
- River Thames Scheme, Property Level Protection (£7.4M)

- Some scheme costs have been included within Runnymede's infrastructure costs in their entirety but in reality will not cater solely for development occurring in Runnymede. Therefore only a portion of the costs should be attributed to development in Runnymede. An apportionment exercise will be undertaken as part of the IDP work when this INA analysis will be refined.

26.2.4 The highest cost projects or line entries in the Project Schedule are:

- Platform lengthening at Longcross station, 10 coach operation on the Windsor Line between Reading to London Waterloo to provide additional capacity (2014 – 2019). These are Network Rail projects costed at £350M.
- Secondary healthcare, acute physical. AECOM benchmark modelling indicates that demand for hospital facilities will total 4,576 m^2 to 6,442 m^2 over the Local Plan period depending on the growth option, with associated costs of £22.4M to £31.6M.
- Secondary Schools, including sixth form / FE. AECOM benchmark modelling indicates demand in Runnymede over the Local Plan period of 845 to 1,195 places, depending on the growth option, with associated costs of £17.8M to £25.2M.
- Indoor sports, redevelopment of Egham Leisure Centre. Due to commence in 2017, this project is costed at £15M to £18M.
- Play space. AECOM benchmark modelling indicates net demand for 7.5ha to 12.2ha of additional play space over the Local Plan period, depending on the growth option, with associated costs of £11.2M to £17.1M.
- Highways, Staines upon Thames Bridge Improvements at Egham, Egham Hythe & Englefield Green. This project is planned for post 2019 and costs are estimated at £12.6M.
- Primary Schools. AECOM benchmark modelling indicates net demand in Runnymede over the Local Plan period of 709 to 1080 places, depending on growth option, with associated costs of £9.9M to £15.0M.

26.2.5 Available information on funding indicates that Runnymede's infrastructure requirements are largely unfunded. There is an estimated funding gap of £534.1M. Details are set out in the Project Schedule.

26.3 Next Steps

26.3.1 This INA has set out the baseline of existing infrastructure capacity in Runnymede. It has assessed demand likely to arise over the Local Plan period from planned growth and the type, timing and location of infrastructure projects and investment required to meet this demand. The site specific analysis lays the foundations for infrastructure plans for key development sites which will deliver growth over the Local Plan period. The intention is that this INA is used for consultation with RBC's partners under the DtC.

26.3.2 The next step will be to build on this INA to develop a full Runnymede IDP. It is envisaged that the formulation of the IDP will involve gathering additional detail on the infrastructure projects including timelines, phasing, funding status, delivery arrangements and costs), including through an infrastructure provider workshop. The IDP will confirm Runnymede's infrastructure funding gap and include a prioritisation exercise to identify the critical showstoppers to growth.

26.3.3 The IDP will form part of the evidence base for Runnymede's Local Plan as it progresses through consultation and examination and if relevant will inform the development of a Community Infrastructure Levy (CIL) charge for Runnymede.

Appendix A – Site Allocations for Assessment

Table 77. Site Allocations for Assessment

INA Site Ref	SLAA Site Ref	Site Name	Site Address	Housing Capacity	Gypsy / Traveller Pitches	Commercial Floorspace (m^2)	Phasing Period
1	264	Addlestone Broad Location	Land at 13-19, 37-63, 1-6 Eversleigh House & Eileen Tozer Centre, Station Road, Addlestone	73	0	540 m^2 A1-A5	2021/22 - 2025/26
2	201	Chertsey Broad Location	Land at Guildford Street/Gogmore Lane & Heriot Road, Chertsey	159	0	1,140 m^2 A1-A5	2016/17 - 2020/21
3	99	DERA Site South	Longcross Road, Longcross	1700	10	3,000 m^2 D1, 1,150 m^2 A1-A5	2016/17 - 2030/31
4	157	Egham Gateway 1	Land at Station Road North, Egham	150	0	256 m^2 A1-A5 & 3,280 m^2 D2	2016/17 - 2020/21
5	253	Egham Gateway 2	Land at 1-39 The Precinct, Egham	73	0	0	2021/22 - 2025/26
6	48	Hanworth Lane	Land East of Hanworth Lane, Chertsey	170	2	0	2016/17 - 2020/21
7	263	Ottershaw East	Land East of Brox Road & West of Bouseley Rise, Ottershaw	210	5	0	2026/27 - 2030/31
8	255	Parcel A, Chertsey Bittams	Green Road, Chertsey	200	5	0	2016/17 - 2020/21
9	254	Parcel B, Veterinary Laboratory Site	Land South of Leigh Close, Rowtown	160	2	0	2021/22 - 2025/26
10	255	Parcel B, Chertsey Bittams	Woodside Farm, Bittams Lane, Chertsey	130	2	0	2026/27 - 2030/31
11	255	Parcel C, Chertsey Bittams	Land East of Woodside Farm, Bittams Lane, Chertsey	40	1	0	2026/27 - 2030/31
12	255	Parcel D, Chertsey Bittams	Parklands, Bittams Lane, Chertsey	200	0	0	2016/17 - 2020/21
13	255	Parcel E, Chertsey Bittams	Land West of Wheelers Green, Bittams Lane, Chertsey	100	0	0	2016/17 - 2020/21
14	256	Thorpe Lea Road North	Thorpe Lea Manor & Glenville Farm, Thorpe Lea Road, Egham	100	0-11	0	2026/27 - 2030/31

INA Site Ref	SLAA Site Ref	Site Name	Site Address	Housing Capacity	Gypsy / Traveller Pitches	Commercial Floorspace (m^2)	Phasing Period
15	257	Thorpe Lea Road West	Land at Mayflower Nurseries, Thorpe Lea Road, Egham	190	5	0	2021/22 - 2025/26
16	258	Gorse Hill House, Virginia Water North	Land at Gorse Hill House, Hollow Lane, Virginia Water	20	0	0	2026/27 - 2030/31
17	258	Kenwolde, Virginia Water North	Land at Kenwolde, Hollow Lane, Virginia Water	35	0	0	2026/27 - 2030/31
18	258	Merlewood, Virginia Water North	Land at Merlewood Nursing Home, Hollow Lane, Virginia Water	100	0	0	2021/22 - 2025/26
19	261	Virginia Water South	Land at Trumps Green Road, Virginia Water	120	5	0	2021/22 - 2025/26
20	60	Chilsey Green Farm	Land at Chilsey Green Farm, Pyrcroft Road, Chertsey	175	5	0	2021/22 - 2025/26

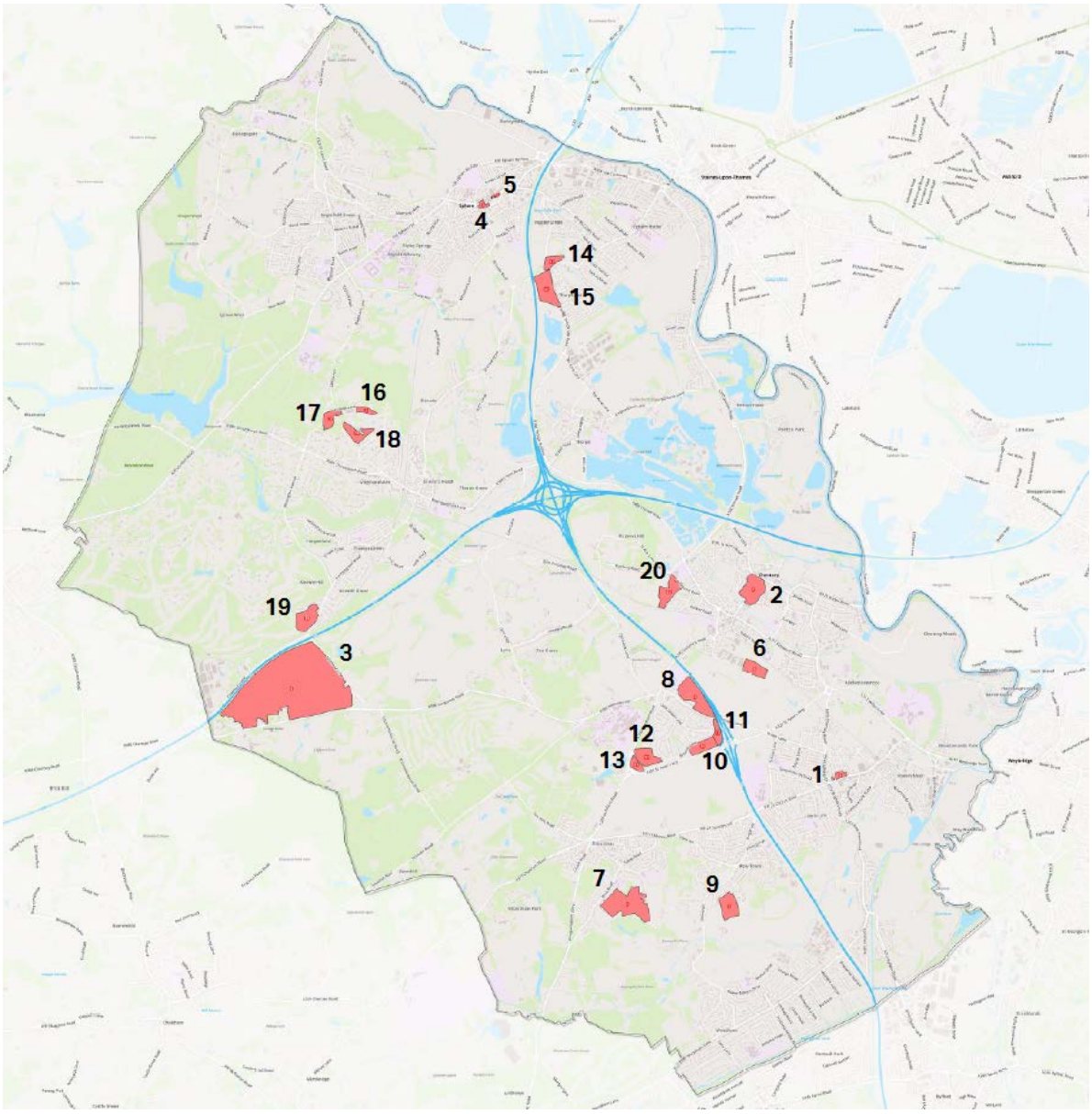

Figure 51. Map of Site Allocations

Source: RBC

Appendix B – Benchmarks for Modelling

Table 78. Benchmarks for Modelling

Infrastructure Type		Benchmark Standard	Assumption/ Source
Education			
Early Years Education	% of 0-4 year olds attending early years education	50%	Previous project Experience (Milton Keynes, Swindon, Exeter, East Hampshire, Huntingdonshire, Fareham)
Early Years Education	Places per nursery	50	Previous project Experience (Milton Keynes, Swindon, Exeter, East Hampshire, Huntingdonshire, Fareham)
Early Years Education	Sq.m per 50 place nursery	150	AECOM Cost Consultants - January 2016
Early Years Education	Cost per Sq.m	£5,333	AECOM Cost Consultants - January 2016
Early Years Education	Cost per facility	£800,000	AECOM Cost Consultants - January 2016
Primary Education	% of 4-10 year olds attending primary education	80%	Surrey County Council Schools Organisation Plan 2015-16
Primary Education	Primary School Pupils in 1 FoE	210	DfE
Primary Education	Per Pupil Cost	£13,980	Previous project experience (SIS)
Secondary Education & FE	% of 11-15 year olds attending secondary education	80%	Surrey County Council Schools Organisation Plan 2015-16
Secondary Education & FE	% of 16-17 year olds attending secondary education or FE course	80%	Previous project experience
Secondary Education & FE	Secondary School Pupils in 1 FoE	210	DfE
Secondary Education & FE	Per Pupil Cost	£21,064	Previous project experience (SIS)
Further Education		Included within secondary.	
Adult Education	% of the population attending adult education	2%	Previous project experience (e.g. Oxfordshire) indicates 1-3% of adult pop
Adult education	Per Student Cost	£8,645.67	Essex County Council
Adult education	Sq.m space per student	2.33	Essex County CounciL

Infrastructure Type		Benchmark Standard	Assumption/ Source
Healthcare			
Primary healthcare	% of the population registering with a GP	100%	Previous project experience
Primary healthcare	Number of registered patients per FTE GP	1,800	Dept. of Health
Primary healthcare	Average sq.m floorspace per FTE GP	165	NHS Healthy Urban Development Model
Primary healthcare	Cost per sq.m floorspace for a new GP surgery	£2,500	AECOM Cost Consultants - 2015
Primary healthcare	% of the population registering with a dentist	100%	Previous project experience
Primary healthcare	Number of registered patients per FTE dentist	2,000	General Dental Council
Primary healthcare	Average sq.m floorspace per FTE dentist	50	AECOM Standard from Comparable UK Infrastructure projects
Primary healthcare	Cost per sq.m floorspace for a new dental surgery	£1,518	AECOM Cost Consultants - 2015
Acute healthcare	Hospital beds per 1,000 population	1.96	Information received from CCG (consistent with SIS figure)
Acute healthcare	Sq.m per Acute Bed	160	AECOM Cost Consultants benchmark data (consistent with information received from CCG)
Acute healthcare	Cost per Sq.m	£3,200	AECOM Cost Consultants - 2015 (consistent with information received from CCG)
Acute healthcare	Mental health beds per 1,000 population	1.96	Information received from CCG (consistent with SIS figure)
Acute healthcare	Sq.m per Mental Health Bed	85	AECOM Cost Consultant Benchmark data (consistent with information received from CCG)
Acute healthcare	Cost per Sq.m	£2,850	AECOM Cost Consultant Benchmark data (consistent with information received from CCG)
Older age accommodation	Nursing Home places per 1000 persons over 75	45	The Housing Learning and Improvement Network (LIN) SHOP TOOL - Demand levels based prevalence rates from "More Choice,

Infrastructure Type		Benchmark Standard	Assumption/ Source
			Greater Voice".
Older age accommodation	Residential Care places per 1000 persons over 75	65	The Housing Learning and Improvement Network (LIN) SHOP TOOL - Demand levels based prevalence rates from "More Choice, Greater Voice".
Older age accommodation	Extra Care places per 1000 persons over 75	25	The Housing Learning and Improvement Network (LIN) SHOP TOOL - Demand levels based prevalence rates from "More Choice, Greater Voice".
Older age accommodation	Typical Nursing Care Unit Bed Number per facility	72	Kent and Medway Social Care Research - Estuary View Medical Centre Plans for Expansion
Older age accommodation	Typical Residential Care Unit Bed Number per facility	72	Kent and Medway Social Care Research - Estuary View Medical Centre Plans for Expansion
Older age accommodation	Typical Extra Care Unit Bed Number per facility	77	AECOM Cost Consultants Extra Care Facility Planning Guidelines 2015
Older age accommodation	60 Bed Nursing Care Unit Build Cost	£5,400,000	AECOM Cost Consultants - 2015
Older age accommodation	60 Bed Residential Care Unit Build Cost	£3,600,000	AECOM Cost Consultants - 2015
Recreation			
Outdoor sports, recreation and parks	Outdoor sports inc playing pitches and parks - total ha per 1,000 pop	1.6	RBC Open Space Study 2016 (NPFA / Fields in Trust)
Outdoor sports, recreation and parks	Playing pitches - ha per 1,000 pop	1.2	RBC Open Space Study 2016 / Surrey Infra Study / Fields in Trust
Outdoor sports, recreation and parks	Parks - ha per 1,000 pop	0.4	RBC Open Space Study 2016 / Surrey Infra Study / Fields in Trust
Outdoor sports, recreation and parks	Cost per ha. (playing fields)	£348,315	AECOM Cost Consultants - 2016 (Essex GIF) - based on 'Outdoor Sports; assuming playing fields'
Outdoor sports, recreation and parks	Cost per ha (parks)	£232,210	AECOM Cost Consultants - 2016 (Essex GIF) - based on 'Local Open Space'
Play Space	Ha. per 1,000 pop. informal play space	0.55	RBC Open Space Study 2016

Infrastructure Type		Benchmark Standard	Assumption/ Source
Play Space	Ha. Per 1,000 pop designated equipped playing space	0.25	RBC Open Space Study 2016
Play Space	Cost per Sq.m informal play space (assuming parks)	£23	AECOM Cost Consultants - 2016 - based on 'Local Open Space' (Essex GIF)
Play Space	Cost per Sq.m designated equipped playing space)	£348	AECOM Cost Consultants - 2016 - based on 'Children's play area; hardstanding and rubber mats to play areas only' (Essex GIF)
Community Facilities			
Community Centres	Community Space (Flexible standard spec) - m^2 per 1,000 pop	65	Previous project Experience (Milton Keynes, Swindon, Exeter, East Hampshire). (Standard used in SIS).
	Cost per Sq.m	£1,428	AECOM Cost Consultants - 2016 (Essex GIF)
Green Infrastructure			
Amenity Green Space	ha. per 1,000 people	0.6	Fields in Trust
Amenity Green Space	Cost per ha	£116,105	AECOM Cost Consultants - 2016 - based on 'Semi Natural Open Space'
Allotments	Allotments per household (no.):	0.02	NSALG, RBC Open Space Study 2016
Allotments	Allotments per household (ha.):	0.0005	Fields in Trust, RBC Open Space Study 2016
Allotments	Cost per ha	£232,210	AECOM Cost Consultants - 2016 - based on 'Semi Natural Open Space'
Parks and Gardens	ha. per 1,000 people	0.8	Fields in Trust, RBC Open Space Study 2016
Parks and Gardens	Cost per ha	£232,210	AECOM Cost Consultants - 2016 - based on 'Local Open Space'

Source: AECOM research

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