



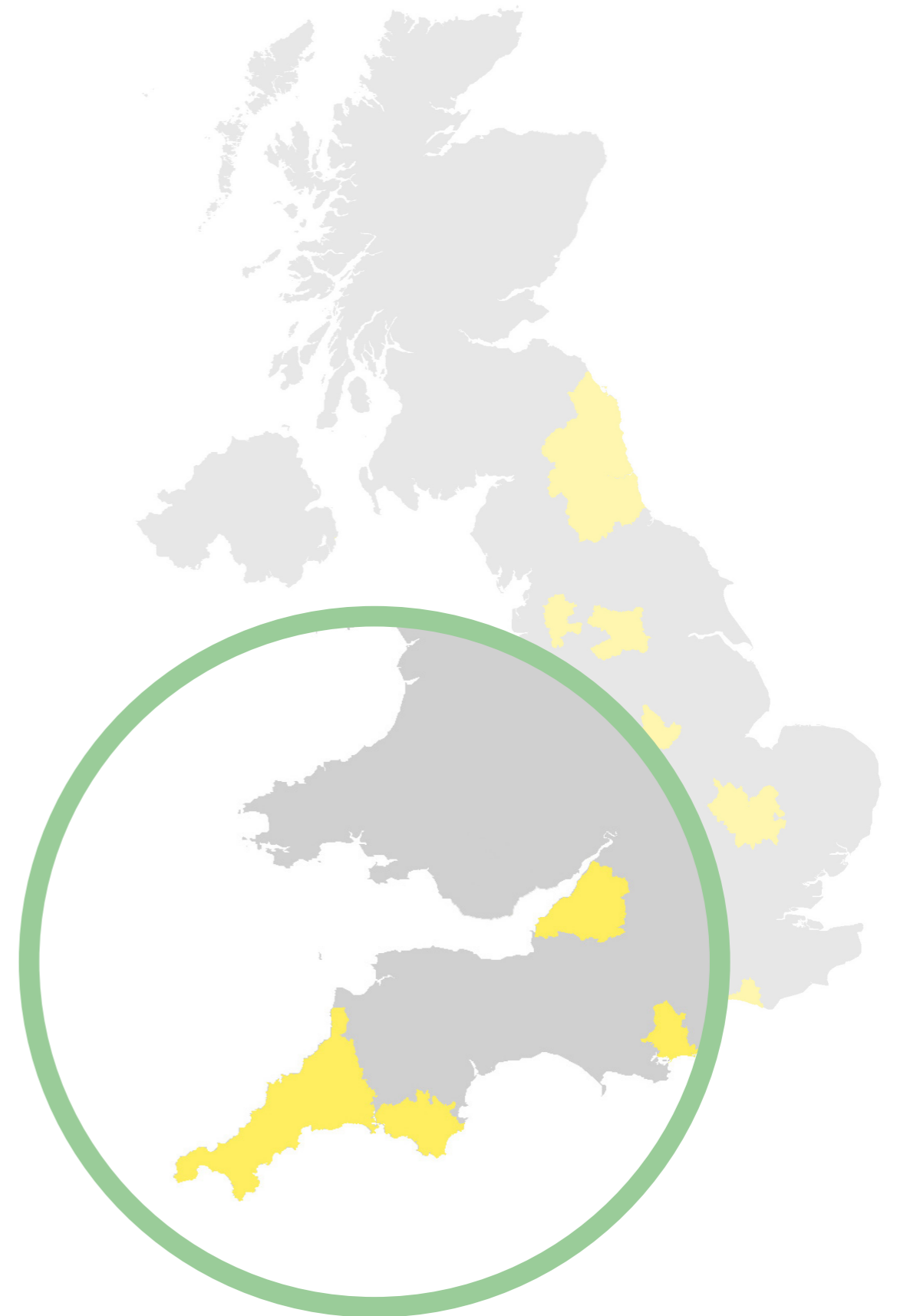
RTPI

mediation of space · making of place



The location of development

Mapping planning permissions for housing in three South West city-regions



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1. Introduction

In Spring 2016, the RTPI and Bilfinger GVA published the overarching results of a major study into the location of recent planning permissions in twelve city-regions across England. This research provided much-needed evidence on spatial patterns of housing growth across cities, towns and rural areas, and sought to widen the debate around how we monitor the effectiveness of the planning system.

This report for the RTPI South West region presents full range of data, mapping and analysis for the city-regions of Bournemouth, Bristol and Plymouth. These are complemented with notes from a roundtable discussion held in the South West, where RTPI members and other stakeholders discussed the research methodology and commented on the findings of the analysis.

Why was this research commissioned?

There is a critical need for new housing in England, with studies showing a need for between 220,000 and 300,000 additional houses per year^{1,2}. While demand is greatest in London and the South East, all regions are likely to need significant additional housing³.

Increasing the supply of housing is a national political priority, and one that exerts a strong influence on the shape of English planning policy⁴. In 2012 the NPPF introduced the presumption in favour of sustainable development, and required Local Plans to meet their own objectively assessed housing need by identifying a minimum five-year supply of land. The Government has more recently proposed further changes including measures to speed up the preparation of Local Plans, grant 'permission in principle' to housing on brownfield sites, and exempt certain types of development from making financial contributions to infrastructure provision.

Statistics are regularly published on the number of planning permissions granted and housing units completed. These are increasingly being used to debate the effectiveness and efficiency of the planning system. However these debates must not rest on quantity alone – spatial qualities of location and scale are of equal importance.

Location in planning policy

In England, planning and containment policies are regarded as having been generally successful in achieving relatively compact settlement patterns and avoiding sprawl⁵. The current NPPF remains clear on the importance of location to sustainability, and states that "...sufficient land of the right type is available in the **right places**"⁶ [emphasis added]. These are described as places which support growth, innovation and the efficient provision of infrastructure, are accessible to a range of local services, encourage the use of public transport, walking and cycling, and help

tackle climate change⁷. Local Planning Authorities are required to consider these sustainability criteria when allocating sites within a Local Plan.

A lack of spatial analysis

While there is good evidence on the quantity of planning permissions being granted for housing, there is a lack of consistent monitoring and analysis on the location and scale of new developments. For example, there is no way of telling whether a significant proportion of new housing in England is:

- Located in places which are far from jobs and services, and accessible only by car
- Spread across multiple small sites which are harder to provide with infrastructure

This makes it hard to evaluate whether changes to planning policy are impacting on the aggregate location and scale of new development. This concern was raised in a 2014 report from the CLG Select Committee, which noted that efforts to assess the performance of the NPPF were hindered by "...an absence of reliable, up-to-date data", which made it difficult to determine "...how successful the Government's policies have been and how they may need to change"⁸

In response to these concerns, the RTPI commissioned Bilfinger GVA to conduct an exploratory study into the location and scale of recent planning permissions in twelve English city-regions. It looked at their distribution across urban, peripheral and rural areas, and analysed the relationship to major employment clusters and railway stations.

What were the initial findings?

The study mapped the location of planning permissions granted for schemes of 50 or more housing units, between 2012 and 2015, across the

twelve English city-regions. It covered **704 major housing schemes**, which represented planning permission for **over 165,000 units**.

The spatial analysis found that:

- Almost 75% of the units granted planning permission were located within 10km of a major employment cluster
- Almost 13% were located within walking distance of a railway, light rail or metro station
- 50% were being delivered on very large schemes of 450 units and above
- 46% were located within an existing built-up area

Adding local expert opinion

The overarching report recognised that the spatial dimensions of sustainability are complex, and could not be neatly captured by any single method of analysis. It recommended that the research be viewed as a stepping stone towards a broader and more informed debate on the effectiveness of planning policy, and the spatial dimensions of growth in England.

This report represents a further step in this direction, presenting the mapping and analysis for the South West with the notes from a roundtable discussion held in Bristol during July 2016. At this roundtable, planning professionals from the three city-regions discussed the validity of the research findings, and the factors which influence the location of development in their area. These expert opinions help to set the broad findings of the overarching report within a local context.

The green text boxes in this report contain the notes of the roundtable discussion. A list of roundtable delegates is provided on page 31.

2. Methodology

This section describes how the three city-regions were selected and defined, and the approach to mapping planning permissions, major employment clusters and railway stations. It then explains how the planning permissions were analysed based on location and scale.

Selecting the city-regions

The three city-regions analysed in this report were selected in order to provide a balance of different settlement patterns from across the South East region. Each recorded positive employment growth on the Centre for Cities index of towns and cities⁹.

Defining the city-region boundaries

The city-region is a useful scale at which to consider the relationship between a city and surrounding areas. While there is no fixed methodology for defining a city-region, there are a number of terms which help to understand the concept:

Primary Urban Area (PUA): A PUA is a city level-definition first used in Department for Communities and Local Government's "State of the Cities Report". It refers to the continuous built-up area of a town/city with a population over 125,000, and can include multiple local authorities¹⁰.

Strategic Housing Market Assessment Area (SHMA): These draw on a range of housing market indicators to define a relevant Housing Market Area (HMA), including migration patterns, house moves, labour flows and market performance/trends. They offer an understanding of sub-regional housing markets and are used to predict the levels and mix of future housing provision.

Local Enterprise Partnership (LEP) boundaries: LEPs are voluntary partnerships between local authorities and businesses set up in 2011. Their geographical remit tends to include a wide range

of local authorities, based on a combination of economic and political factors¹¹.

Travel to Work Areas (TTWAs): These are areas with a working population of at least 3,500, within which at least 75% of the resident workforce work in the area, and at least 75% of the people who work in the area also live in the area. They are helpful in defining a wider economic geography based on labour markets.

PUAs are based on the physical built up form of a given area, and do not necessarily capture the complex dynamics of wider job and labour market movements. SHMA boundaries capture the functional relationship between employment, transport, leisure and retail offer of the PUA, and a much wider surrounding area.

However TTWAs represent commuting patterns (or travel to work flows) between local authorities, and this directly captures the link between households (origin) and employment (destination). TTWAs were therefore selected to define the city-region boundaries.

To identify meaningful flows of inward commuting, this methodology defines a city-region as including any local authority in which 3.5% or more its employed resident population travel into the main city for employment. The 3.5% threshold was chosen as it displays a significant overlap with PUA and SHMA boundaries, and highlights the surrounding local authorities which have a functional economic relationship with the main city (see Table 1).

This provides a consistent approach for data collection and analysis, although the city-region boundaries presented in this report will differ from existing political or administrative city-region boundaries and should not be interpreted as such.

Table 1: City-regions as defined by local authorities within the 3.5% commuting threshold

City-region	Local authorities
Bournemouth	Bournemouth, Poole, East Dorset, Christchurch
Bristol	Bristol, South Gloucestershire, North Somerset, Bath and North East Somerset
Plymouth	Plymouth, Cornwall and the Isles of Scilly, South Hams

Mapping the location of recent planning permissions, major employment clusters and rail stations

For each city-region, data was collected on:

- The location and scale of planning permissions granted for housing schemes of over 50 units between 1 January 2012 and 18 September 2015. Each scheme was then categorised based on size and mapped using GIS.
- Significant employment clusters, defined as Middle Layer Super Output Areas* (MSOAs) with 10,000 jobs and over.
- Areas of specialist sector job growth, defined as MSOAs with higher than average concentrations of employment in the knowledge economy and manufacturing sectors
- Rail stations including all forms of rail transport, such as inter-city rail, light-rail, metro and tram

Planning permission data was sourced from EGi, the Estates Gazette database. It is a live data source, and the data was extracted at a given point in time.

The data comprises outline planning permissions, permissions, and reserved matter applications. It should be noted that:

- Duplication of data was avoided. For example if there was more than one reserved matter application for the same phase of a development, then it was counted as a single planning permission.
- If a development had an outline planning permission and a reserved matter application between 2012 and 2015, then only the outline planning was considered to avoid duplication of numbers.
- The data does not include appeal information.

Measuring the proximity of planning permissions to major employment clusters and rail stations

The distance was then calculated between each scheme and the nearest major employment cluster and railway station. This distance was calculated as a straight line (as the crow flies), and each scheme was ranked according to the following categories:

Distance to major employment cluster	Distance to railway station
Under 10km	Under 800m
10 to 20km	800m to 2km
Over 20km	Over 2km

The analysis also recorded the number of schemes located within a MSOAs with a specialism in the knowledge economy or manufacturing sectors.

Categorising the location of planning permissions

Using GIS mapping, each scheme was categorised based on its location within either:

- The existing built-up areas
- Land designated as green belt, including previously developed sites in the green belt
- Other locations, including those on the edge of built-up areas, those beyond the green belt, and those in rural locations

Measuring the scale of planning permissions by the number of housing units

Each scheme was also categorised by the number of housing units that it represents, using the following nine categories:

- 50-99 units
- 100-149 units
- 150-199 units
- 200-249 units
- 250-299 units
- 300-349 units
- 350-399 units
- 400-449 units
- 450+ units

* Super output areas (SOAs) were designed to improve the reporting of small area statistics and are built up from groups of output areas (OA). MSOAs are geography with minimum population of 5,000 and maximum of 15,000.

3. Explaining the analysis

The metrics used in this report present several ways to explore the relationship between housing, jobs and infrastructure. This helps to consider methods of analysis that might support strategic planning at a city-region level and the effective monitoring of planning policy. It should be noted that the analysis in this report does not represent a judgment on the overall sustainability of a site or the effectiveness of planning across a city-region - the spatial dimensions of sustainability are complex, and issues of location and scale are influenced by factors beyond the planning system.

This section describes why each method of analysis was chosen, and provides caveats on how results should be interpreted.

Measuring proximity to major employment clusters

A central aim of the government's economic development policy is to devolve powers and freedoms to the city-region level, creating a more flexible and decentralised system in which cities drive economic growth¹². Through the mechanisms of growth, city and devolution deals, local authorities are now working collaboratively across borders and sectors to develop ambitious economic development strategies.

The success of this approach depends on the ability of city-regions to maximise the effects of agglomeration: the benefits to productivity, innovation and economic growth achieved by the clustering and networking of knowledge-intensive industries in urban areas¹³. This can be achieved by coordinating economic development strategies with plans to improve connectivity and deliver associated housing growth at the city-region scale¹⁴. This is because major employment clusters attract commuters

from a wide geographical area - however with the exception of London, these commuting journeys are predominantly made by car¹⁵. With limited road capacity, fast-growing areas can suffer from problems of peak congestion, road pollution and strain on infrastructure¹⁶. These negative externalities can undermine agglomeration benefits if not addressed¹⁷.

Successful economies also create a demand for new housing, which needs to be located in places which are accessible by active and low-carbon public transport modes to a range of jobs and services. The coordination and distribution of sufficient new housing across the city-region is also critical to sustainable economic development, and avoiding the problems mentioned above¹⁸.

By measuring the proximity of each new housing scheme to the nearest major employment cluster, this analysis offers one way to explore this relationship between housing and jobs at the city-region scale.

For the purposes of this analysis, major employment clusters have been defined as those with 10,000 jobs or above. This threshold was selected to highlight areas of high employment density - those which are likely to influence commuting patterns in relation to new housing across a city-region.

However it is important to recognise that patterns of commuting are heavily influenced by the distribution of existing housing in relation to employment, and by rates of churn within housing and employment markets. Employment will also be distributed across a city-region at a much finer grain than shown in this analysis, with lower density employment sites shaping commuting patterns. It should also be recognised that commuting patterns are more complex than the traditional 'in-out' model suggested here¹⁹.

Mapping the overlap between planning permissions and areas of specialist sector job growth

This research also considers the location of planning permissions in terms of their relation to areas of specialism in the knowledge economy and manufacturing sectors. This complements the measurement of proximity to major employment clusters by demonstrating areas of potential future growth, and showing how these correspond with the patterns of housing development across the city-region.

While manufacturing reflects more traditional job forms and has seen decline in the recent years, it remains a key source of employment and economic activity for a number of English towns and cities. Parts of the sector have also continued to strengthen, for example in 'value added' or 'advanced manufacturing' activities.

The knowledge economy has played a key role in the economic resurgence of city-regions in recent years, creating a more balanced

economy following reliance on the financial and business service sectors. The agglomerative nature of the knowledge economy has led to a proliferation of clusters, enterprise zones and innovation and business centres in the economic policy interventions of local visions, masterplans and economic development strategies.

For the purposes of this research, the knowledge economy is defined as comprising of the following sub-sectors²⁰:

Table 2: Knowledge economy sectors

Sector	Sub-sector
Science	<ul style="list-style-type: none"> • Biotech and pharmaceuticals • Medical • Life sciences • Clinical Science • Research and development • Some forms of advanced manufacturing
Computer programming, consultancy and related activities	<ul style="list-style-type: none"> • Software • Computer games • Computer programming • Information Service
Telecoms	<ul style="list-style-type: none"> • Telecoms and communications

The strength of these sectors was mapped in each city-region using Locational Quotient (LQ) analysis, which measures the industrial specialisation of a MSOA relative to the entire region. For example, an LQ of 1.0 in manufacturing means that the MSOA and the region are equally specialised in manufacturing, while an LQ of 1.8 means that the MSOA has a higher concentration in manufacturing than the regional average.

Measuring proximity to rail stations

In measuring the distance between housing schemes and rail or metro stations, this research suggests one way to understand the potential for sustainable commuting in a city-region. While living near a station does not guarantee use for commuting or other travel purposes, this simple measurement of proximity implies access to a key mode of low-carbon public transport. At the time of publication, the government is proposing to amend national planning policy to increase development densities around commuter hubs, defined as a rail, tube or tram interchange²¹. Meanwhile several reports have proposed that land close to a railway station could be loosely considered as a 'sustainable' location²².

However it is important to note that this research does not consider proximity to dedicated bus or cycle routes, despite the important role that these play in enabling sustainable commuting patterns. However these are relatively flexible forms of public transport infrastructure which can more easily be adapted to connect with new developments.

Measuring proximity based on straight line distances

The analysis measures the distance between schemes, jobs and rail stations as a straight line rather than actual travel distances. It was not possible to measure actual travel distances for research of this scale, as these are complex and dependent on a wide range of external factors such as traffic, route choices and mode of transport. They are also subject to change over time as new infrastructure and development is delivered.

The distance categories for proximity to employment are based on the assumption that 10km represents a 15 minute drive under average

conditions. The category for proximity to rail is based on the assumption that an 800m distance represents an 8 to 10 minute walk.

Measuring the size of schemes by the number of housing units

Categorising planning permissions by the number of housing units they represent helps to explore the relationship between location, scale and the provision of infrastructure.

Within a city-region, a proliferation of small-scale developments in peripheral locations, such as villages or on the edges of towns and cities, might indicate that housing demand is being met through a shift towards a more sprawling or dispersed settlement pattern²³. Such developments are generally more costly and less efficient to service with infrastructure when compared to higher density large-scale urban extensions or new settlements²⁴. Conversely, a proliferation of small-scale developments in existing built-up areas might indicate a city-region where brownfield sites are playing a bigger role in meeting housing demand.

Regardless of location, careful planning is needed to prevent an accumulation of smaller schemes from gradually overwhelming local infrastructure capacity. Large-scale developments often provide a direct financial contribution to infrastructure and affordable housing provision through a Section 106 agreement, whereas an effective Community Infrastructure Levy (CIL), coupled with an Infrastructure Delivery Plan, is needed to ensure that smaller developments make a sufficient contribution to infrastructure provision. For this reason, it is important to understand the general size distribution of planning permissions across a city-region.

Notes from the roundtable: is the methodology appropriate?

Delegates at the roundtable began by discussing the methodology for defining the city-region boundaries, mapping permissions, and calculating proximity to employment clusters and railway stations. They were asked whether this methodology had produced results which matched with their understanding of local development patterns.

The use of Travel-to-Work Areas (TTWAs) was regarded as a valid approach to defining city-region boundaries in a consistent manner. The 3.5% inward commuting threshold had also resulted in the correct local authorities being included within the study areas for the Bristol and Bournemouth city-regions.

However delegates noted that this methodology had resulted in the entirety of Cornwall being included in the study area for the Plymouth city-region. While some permissions in east Cornwall did have a functional relationship to Plymouth (those in Liskeard, St Ives and St Mellion), it was recognised that those further west would not. The exclusion of West Devon from the study area also meant that permissions granted in nearby Tavistock were not included in the analysis. This meant that the analysis of permissions in the Plymouth city-region would be skewed by the study area chosen.

It was recommended that any repeat of this study include West Devon, so as to monitor the impacts of the upcoming Joint Local Plan (see page 30). At a broader level, delegates agreed that the study area boundaries would have to be re-modelled in future studies in order to capture the dynamic relationships between housing, infrastructure and employment at the city-region scale (see page 29 for more details).

Delegates then looked at the distribution of major schemes (for 50+ units) between the existing built-up area, green belt, and other peripheral or rural locations. These were again seen as consistent with their understanding of where permissions were being located.

The number of permissions was also considered to be broadly accurate for the Bristol and Plymouth city-regions, although in Bournemouth these numbers seemed significantly lower than the local authority records. It was suggested that the commercial database of planning permissions used for the research might miss out some permissions which have been recorded by the local authority. However delegates noted that local authority records, while very accurate, are more difficult to collect and analyse in a consistent manner at the national level.

Delegates then discussed the methodology for calculating the proximity of permissions to employment clusters and railway stations. This was again seen as producing results which were broadly consistent with their understanding of these spatial relationships within each city-region.

While the modelling of proximity between permissions and railway stations produced detailed results, delegates found that the mapping of employment clusters by Medium Super Output Area (MSOAs) did not show where employment sites were actually located. The calculation of proximity between permissions and employment clusters was therefore seen as useful for showing general trends, whereas the calculation of proximity to railway stations offered a detailed level of analysis. Alternative methods for mapping employment were then discussed, but delegates recognised that each presented its own challenges in terms of the reliability and availability of the data (see page 31 for examples).

Summary: Despite raising some important caveats, delegates generally agreed that the methodology provided results which were in keeping with their understanding of development patterns in each city-region, in terms of the location and scale of permissions, and their relationship to employment clusters and railway stations.

4. Focusing on the South West

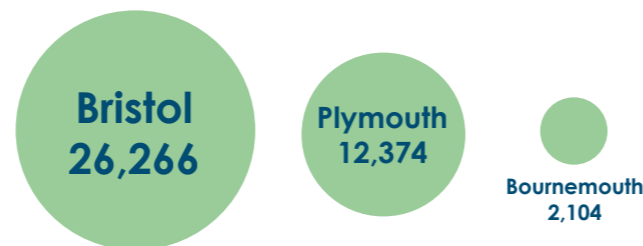
This report presents a series of maps which show the location of planning permissions granted for schemes of 50 or more housing units, between 2012 and 2015, across three city-regions in the South West of England. This covers the location of 123 major housing schemes, which represent planning permission for over 40,700 units.

The report then analyses the relationship between planning permissions, employment clusters and railway stations in each city-region, along with commentary from the roundtables on the findings shown.

The three city-regions

1. Bournemouth
2. Bristol
3. Plymouth

Number of housing units mapped in this report*



*numbers based on EGi data

Statistics for the three city-regions

Their combined population was **2.45 million** in 2015, up by 0.1% since 2012.

Between 2012 and 2015, planning permission was granted for almost **50,000 new housing units**, divided across 552 different schemes. This is equivalent to one new house for every 49 people.

To place these numbers in context, recent housing projections indicate that **at least 220,000 additional households** will be formed each year across England until 2022. Between September 2013 and September 2014 **117,070 houses** were completed²⁵.

These city-regions contained over **1.1 million jobs** in 2014. Private sector employment increased in these city-regions by an average of **0.9%** between 2011 and 2014, adding over **57,000 new jobs**. The South West had the fastest employment growth of any region in 2015, and has seen the fastest business growth since 2010 outside London²⁶.

Between 2012 and 2015, 29% of the housing units granted planning permission in these city-regions were on minor schemes of 50 units or less. The remaining **71% of housing units were on larger schemes of over 50 units**, representing 40,700 housing units. These are the subject of the mapping and analysis in this report.

Demographic and
employment trends

Bournemouth

Total population (Dec 2015)	476,200	
Population growth (2012-2015)	+17,100	3.7%
Total jobs (2014)	208,512	
Total jobs change (2011-2014)	+14,654	7.63%
Total private sector jobs (2014)	176,120	
Total private sector jobs change (2011-2014)	+18,795	11.9%

Bristol

Total population (Dec 2015)	1,086,900	
Population growth (2012-2015)	+33,800	3.2%
Total jobs (2014)	559,262	
Total jobs change (2011-2014)	+30,397	5.7%
Total private sector jobs (2014)	461,500	
Total private sector jobs change (2011-2014)	+50,199	12.2%

Plymouth

Total population (Dec 2015)	882,400	
Population growth (2012-2015)	+23,200	2.7%
Total jobs (2014)	338,235	
Total jobs change (2011-2014)	+12,215	3.7%
Total private sector jobs (2014)	281,538	
Total private sector jobs change (2011-2014)	+28,651	11.3%

Core strategy and other
plan progress

Bournemouth	Core Strategy adopted Oct 2012 Town Centre Area Action Plan adopted March 2013
Poole	Core Strategy adopted Feb 2009 Site specific allocations and Infrastructure Plan adopted April 2012
East Dorset	Joint Core Strategy with Christchurch adopted April 2014
Christchurch	Joint Core Strategy with East Dorset adopted April 2014

Bristol	Core Strategy adopted June 2011 Site allocation adopted July 2014, Central Area plan adopted March 2015
South Gloucestershire	Core Strategy adopted Dec 2013 Policies, sites and places plan published May 2015
North Somerset	Core Strategy adopted April 2012
Bath and North East Somerset	Core Strategy adopted July 2014 Place-making plan submitted April 2016
Further developments	The Joint Spatial Plan for the West of England is currently in preparation. See page 30 for details.

Plymouth	Core Strategy adopted April 2007 Area Action Plans adopted between 2007-2010
Cornwall, Isles of Scilly	Core Strategy submitted Feb 2015
South Hams	Core Strategy adopted Dec 2006, new Core Strategy in development
Further developments	The Plymouth and South West Devon Joint Local Plan is currently in preparation, covering Plymouth, South Hams and West Devon local authorities. See page 30 for details.

Plan progress information from DCLG, 2016 ²⁷

5. Mapping the permissions

This section shows the location and scale of permissions in each city-region

Bournemouth

Commuting flows in the city-region

Local authorities	No. of inward commuters	% of total commuters
Bournemouth	39,184	61%
Poole	10,852	17%
East Dorset	4,106	6%
Christchurch	4,062	6%

Number of schemes* and associated housing units



*includes only those of 50 units or above

In relation to the twelve city-regions included in the full study, Bournemouth is delivering relatively higher numbers of new residential units compared to its population size.

Distribution of units by local authority

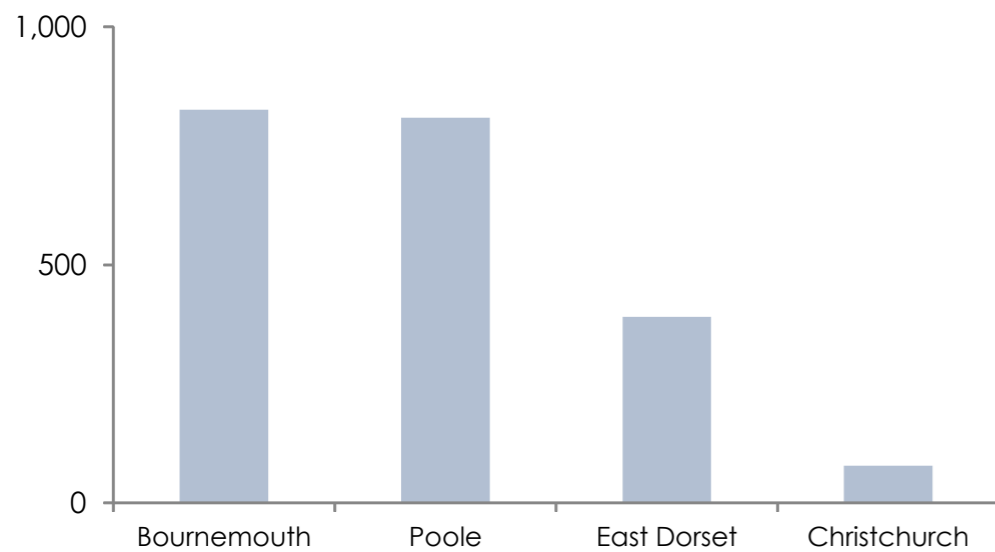
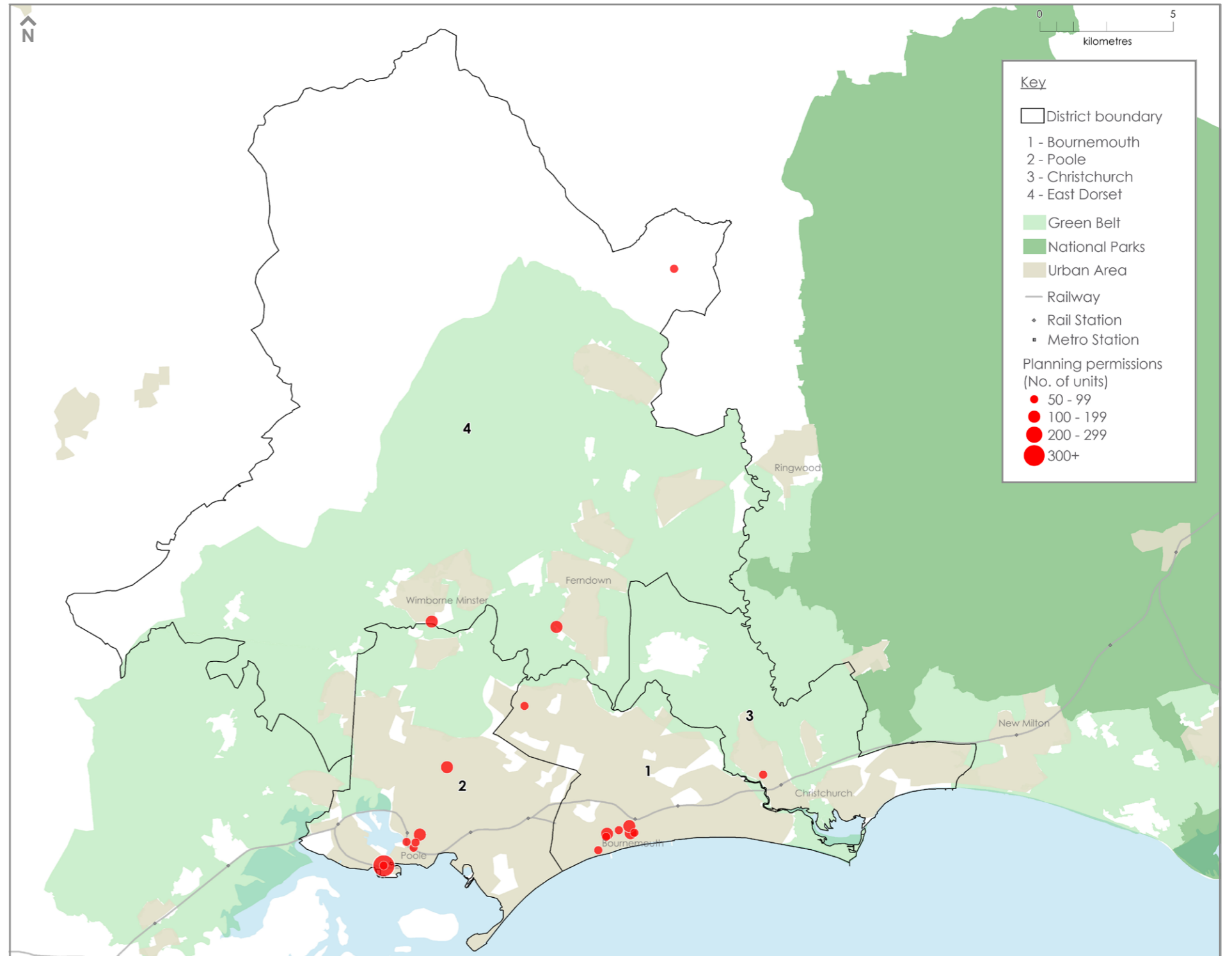
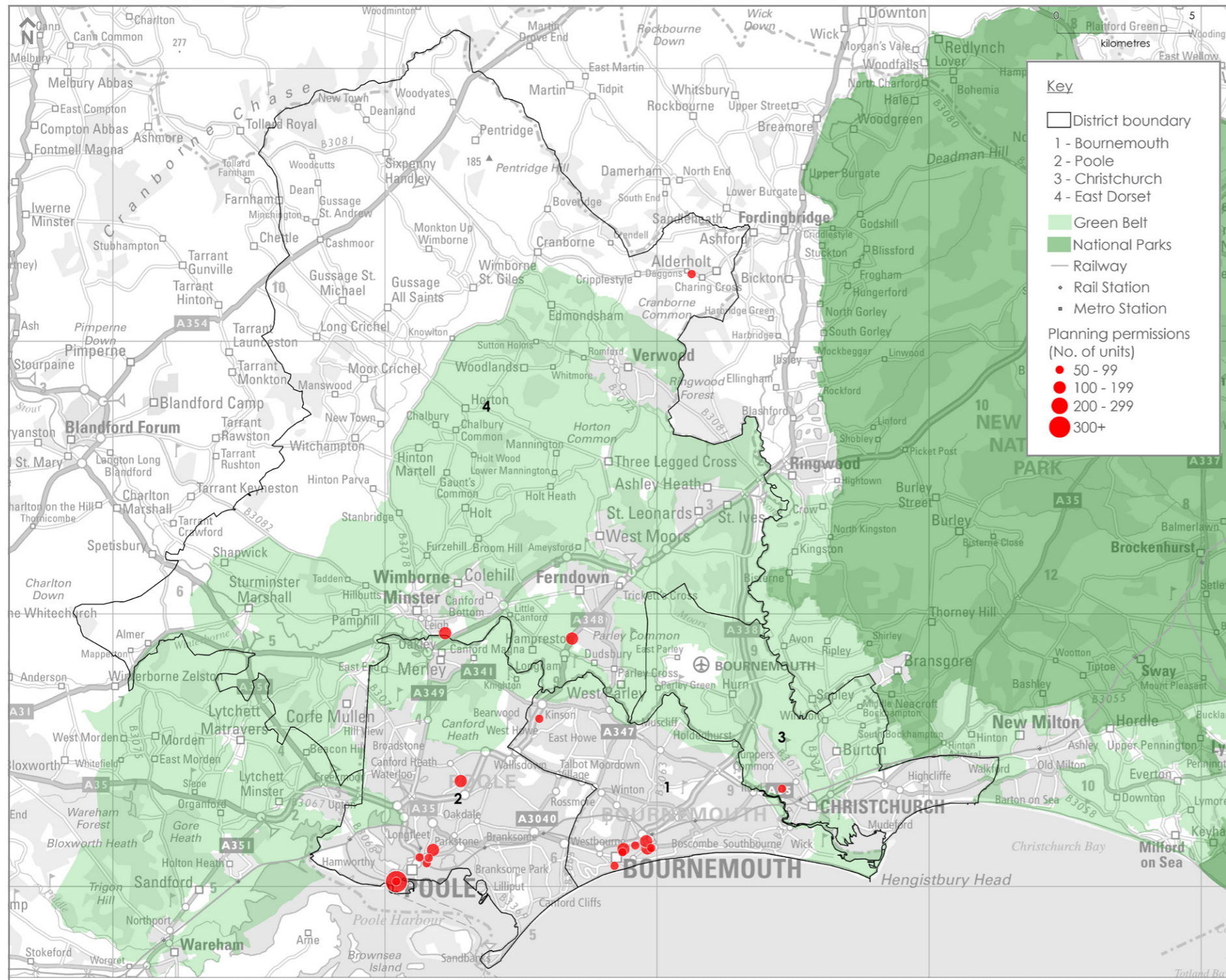


Fig 1. Simplified map of planning permissions for schemes with over 50 housing units (2012-2015)



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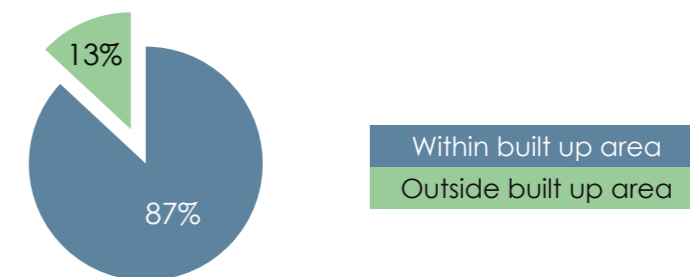
Fig 2. Detailed map of planning permissions



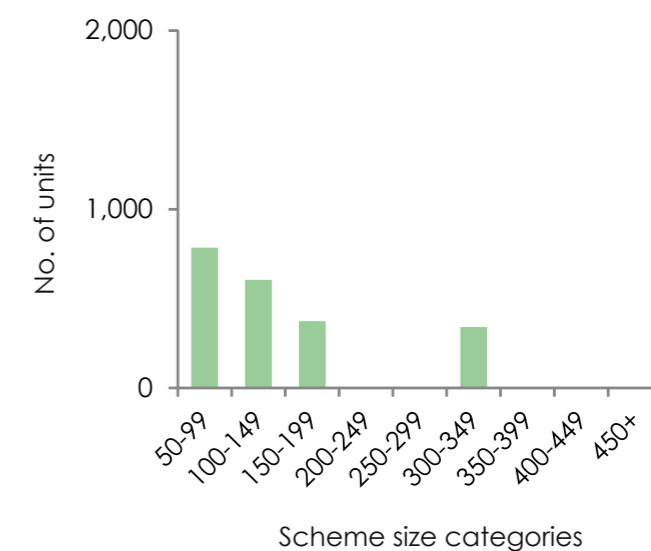
Figures 1 and 2 map the location of planning permissions for schemes of over 50 housing units, which account for only 44% of the total number of units granted planning permission between 2012 and 2015. This is lower than other city-regions covered by this study, and indicates a pattern of planning permissions for smaller schemes. The average number of units per planning permission is 39, which is also lower than the average for the other city-regions in this study.

The mapping also shows that 87% of the housing units granted planning permission are located within existing built up areas, while the remaining 13% will be located in areas that fall outside the built up area or green belt.

% of housing units in existing built-up areas



Distribution of housing units by scheme size



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Bristol

Commuting flows in the city-region

Local authorities	No. of inward commuters	% of total commuters
Bristol	121,585	60%
South Gloucestershire	34,636	17%
North Somerset	17,457	9%
Bath and North East Somerset	8,409	4%

Number of schemes* and associated housing units



*includes only those of 50 units of above

In relation to the twelve city-regions included in the full study, Bristol is delivering relatively higher numbers of new residential units compared to its population size.

Distribution of units by local authority

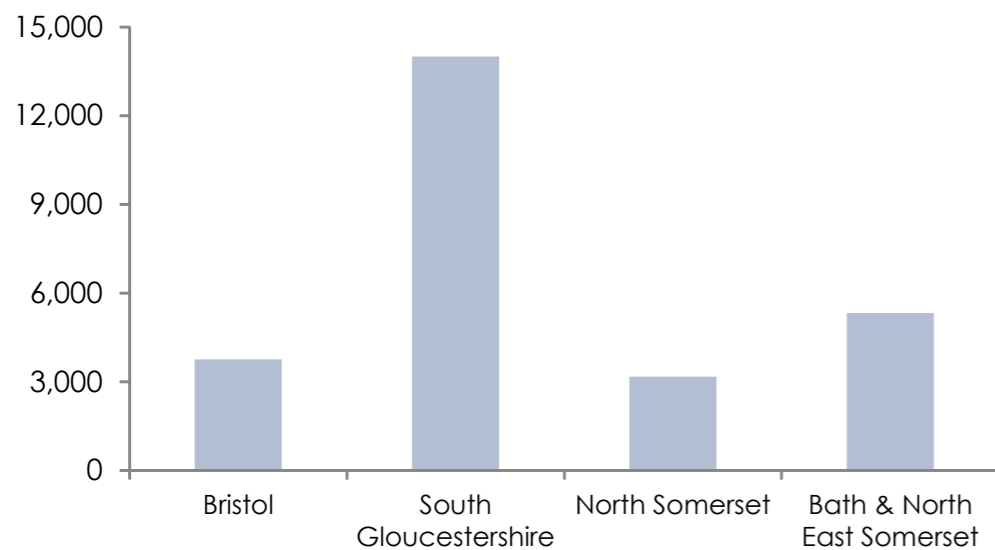
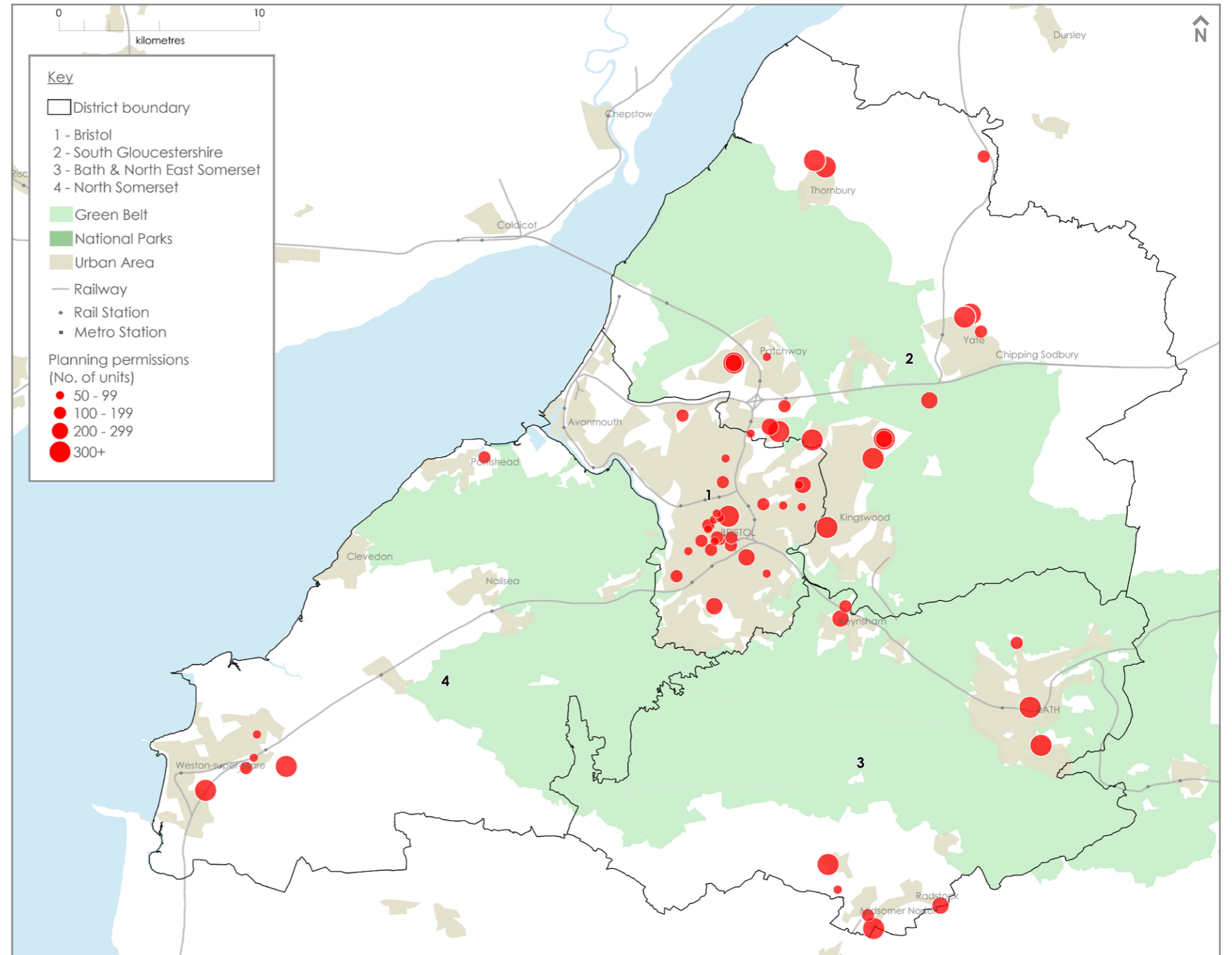
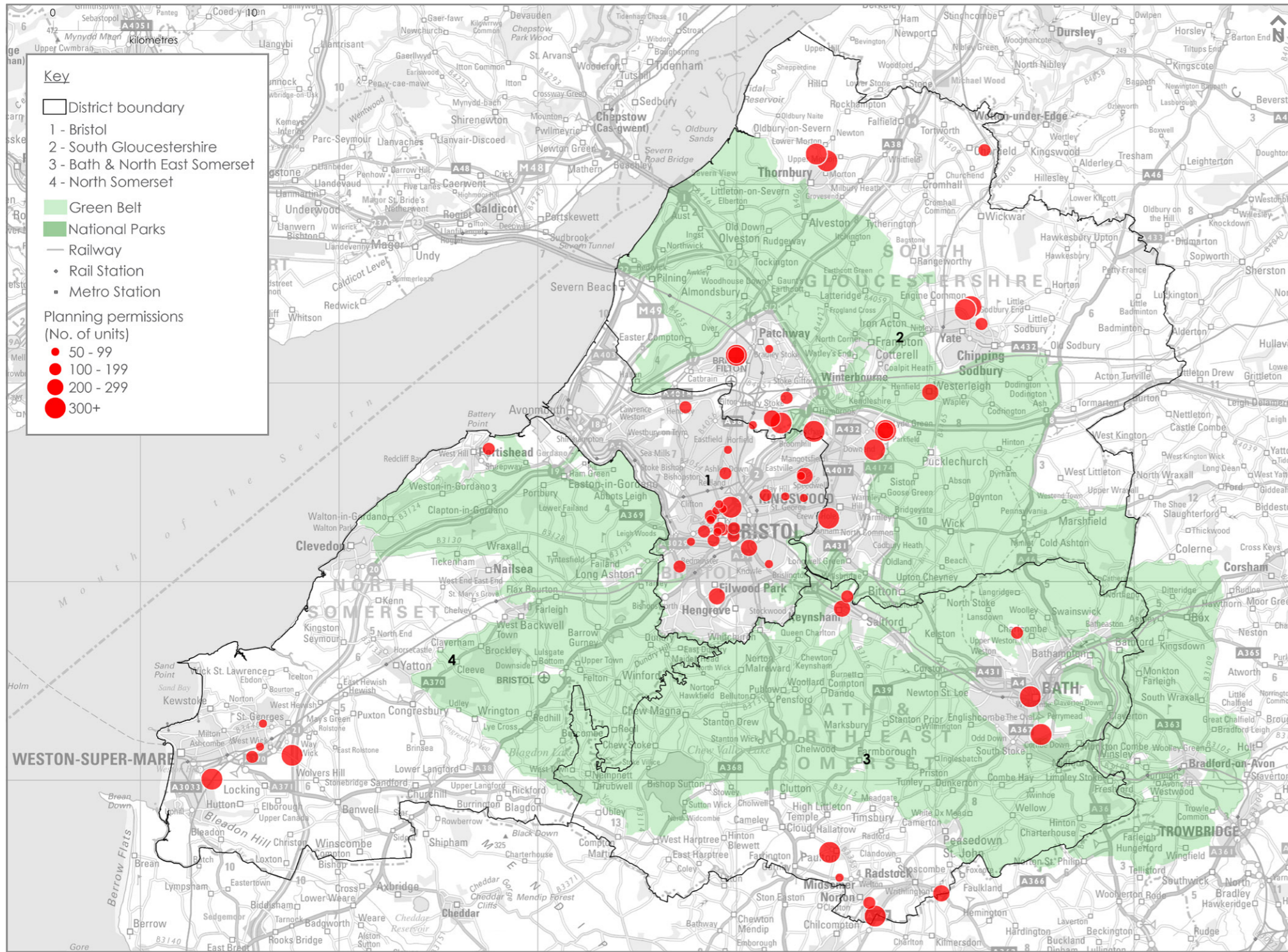


Fig 3. Simplified map of planning permissions for schemes with over 50 housing units (2012-2015)



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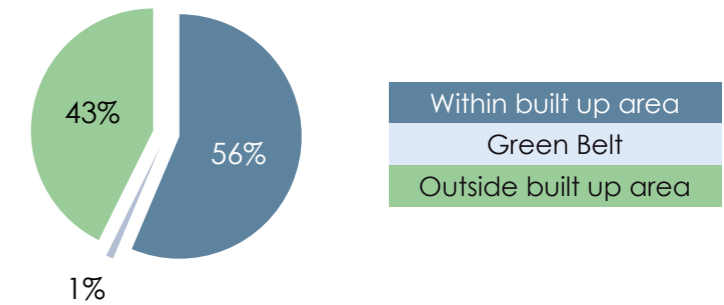
Fig 4. Detailed map of planning permissions



Figures 3 and 4 map the location of planning permissions for schemes of over 50 housing units, which account for 87% of the total number of units granted planning permission between 2012 and 2015. The average number of units per planning permission is 112, which is higher than the average for the other city-regions in this study.

The mapping also shows that 56% of the housing units granted planning permission are located within existing built up areas, 1% within the green belt, and the remaining 43% in areas that fall outside the built up area or green belt.

% of housing units in existing built-up areas



Distribution of housing units by scheme size



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Plymouth

Commuting flows in the city-region

Local authorities	No. of inward commuters	% of total commuters
Plymouth	79,440	75%
Cornwall, Isles of Scilly	9,427	9%
South Hams	6,995	7%

Number of schemes* and associated housing units



*includes only those of 50 units or above

In relation to the city-regions included in this study, Plymouth is delivering relatively higher numbers of new residential units compared to its population size.

Distribution of units by local authority

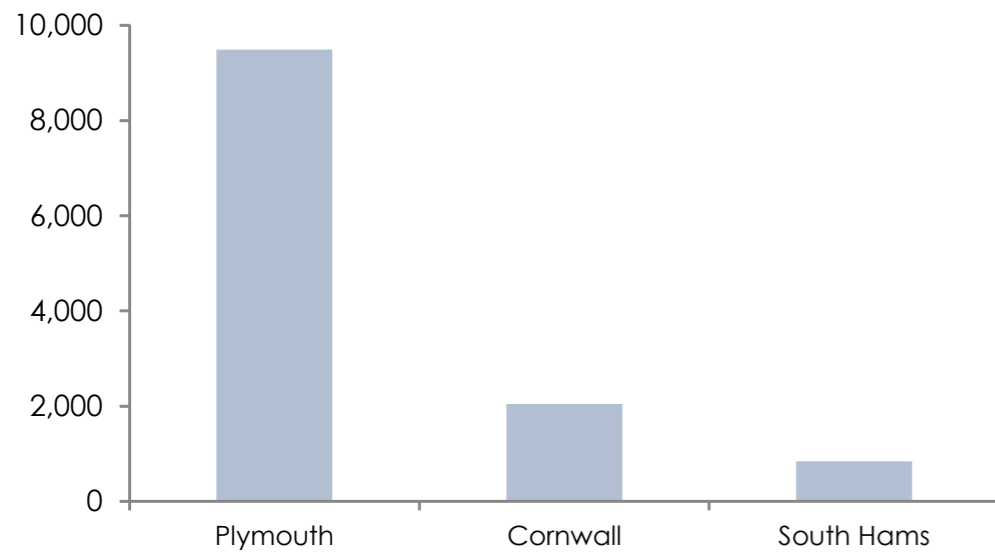
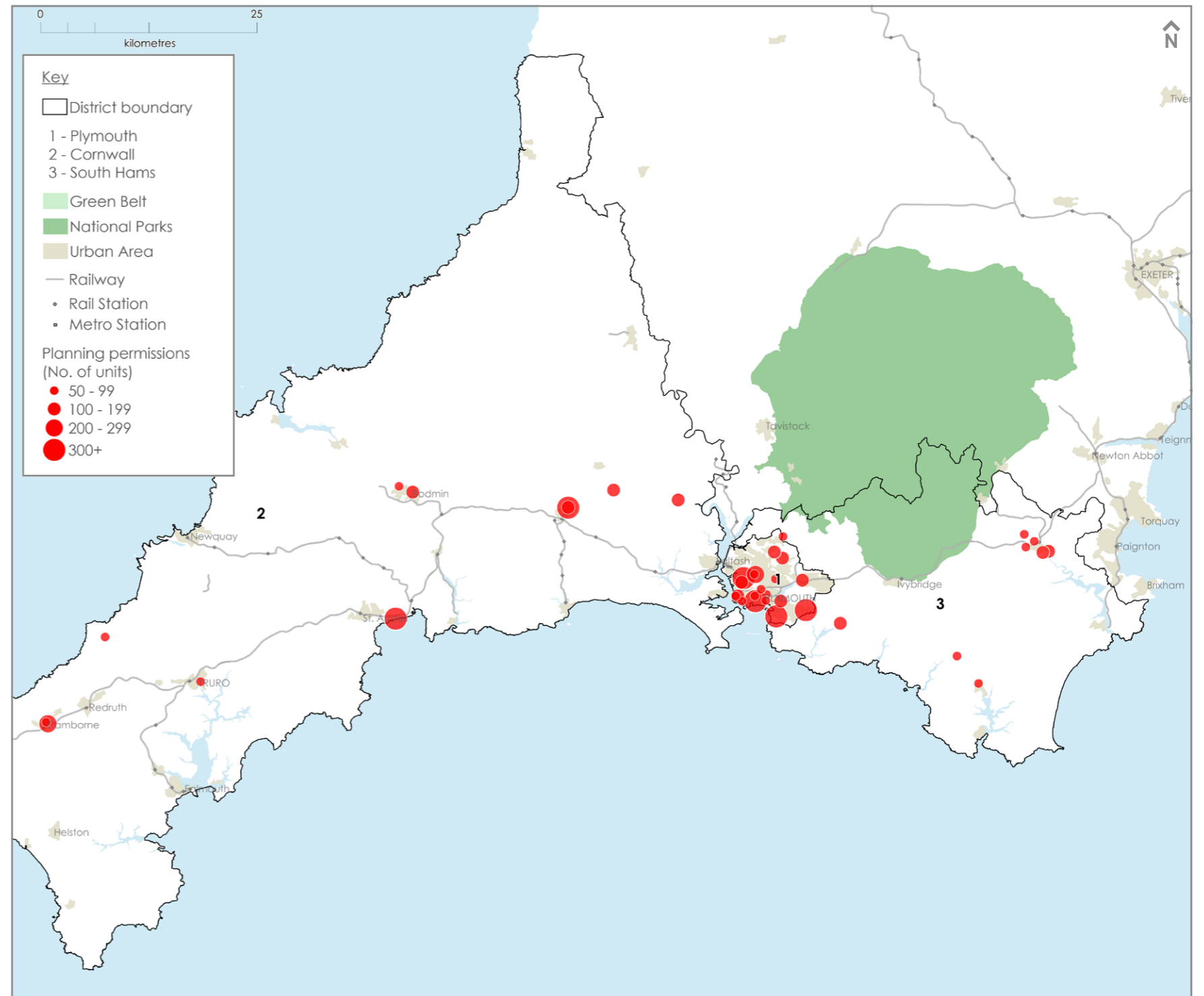
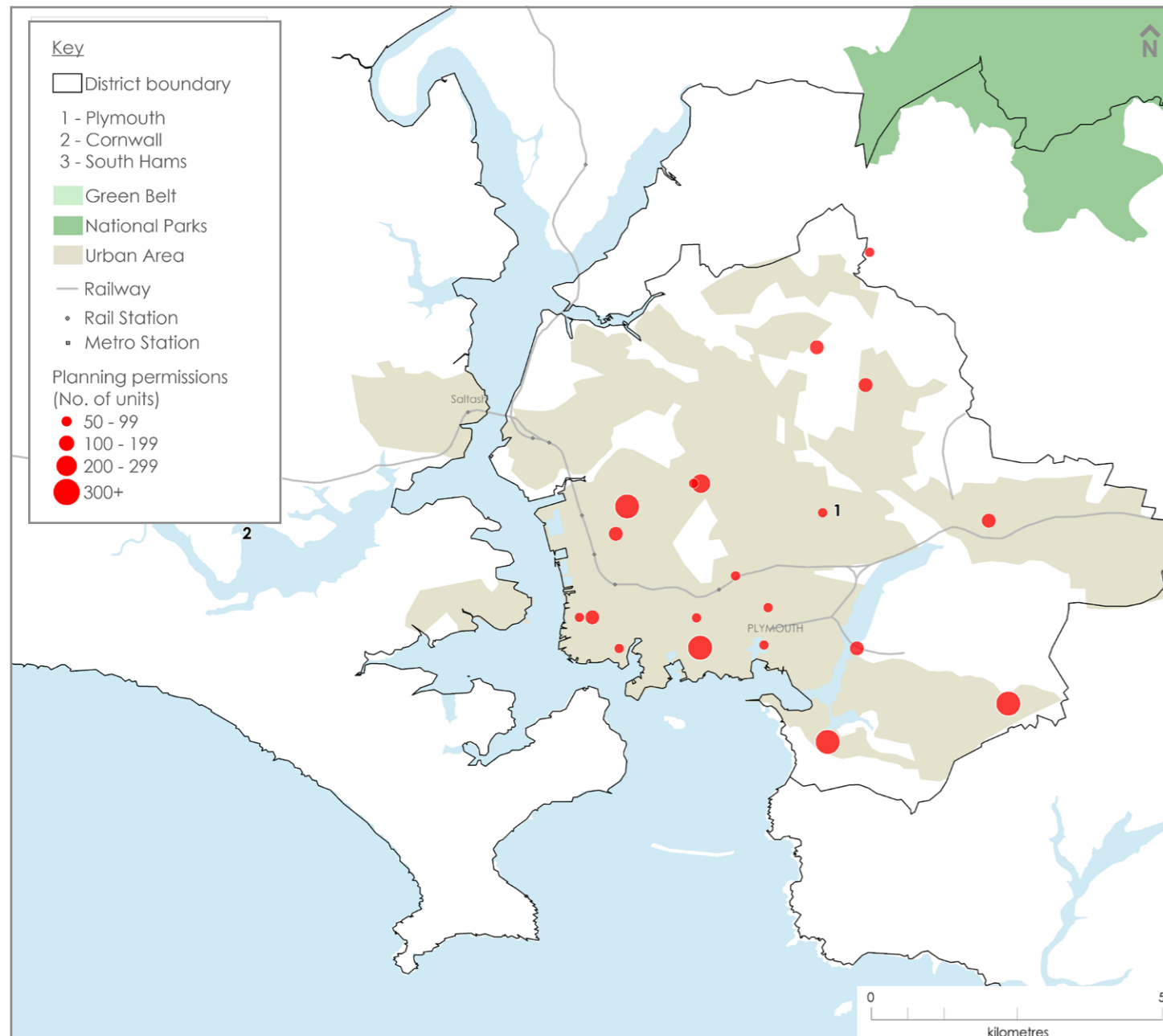


Fig 5. Simplified map of planning permissions for schemes with over 50 housing units (2012-2015)



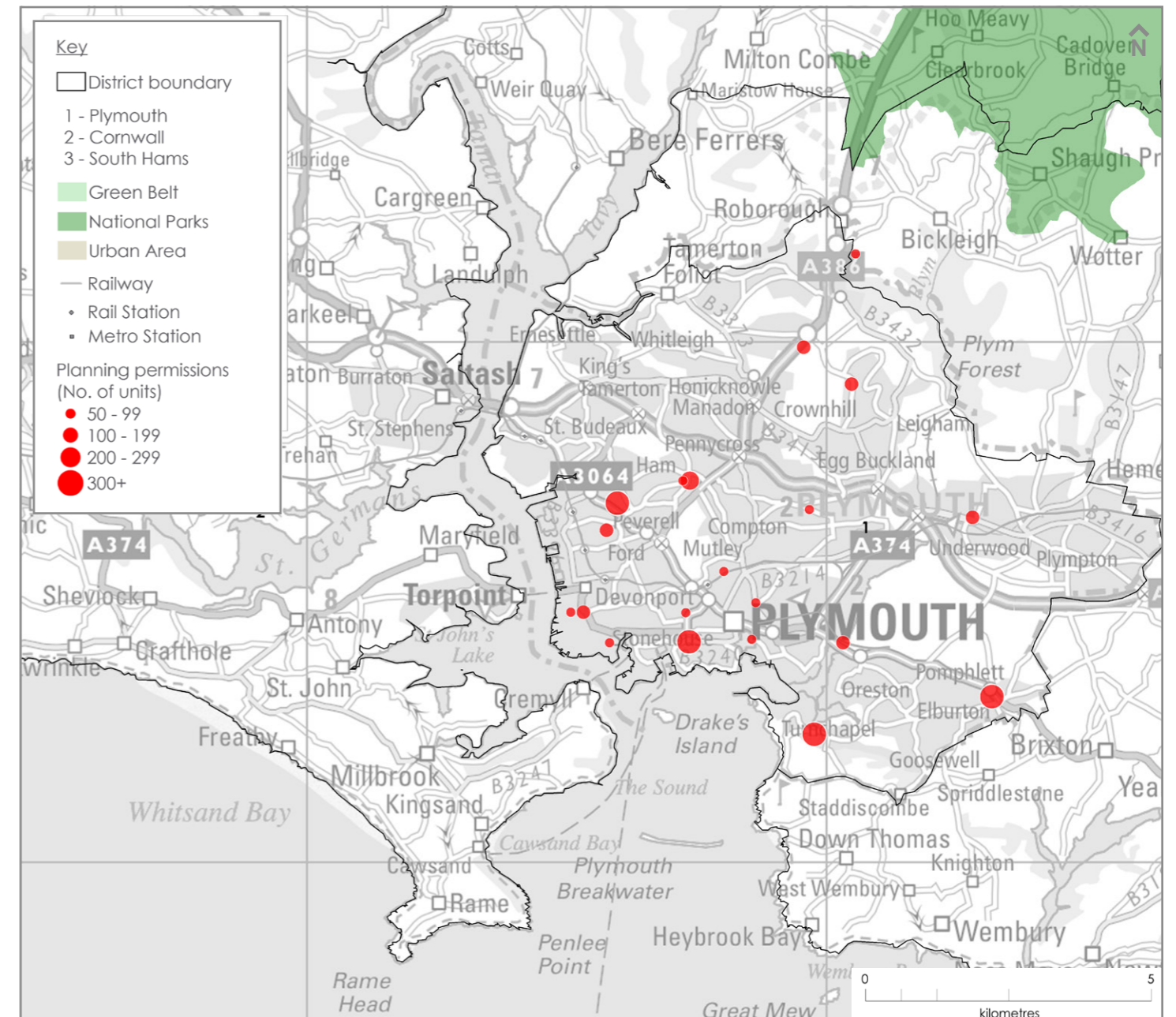
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Fig 6. Simplified map a with focus on Plymouth



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Fig 7. Detailed map a with focus on Plymouth



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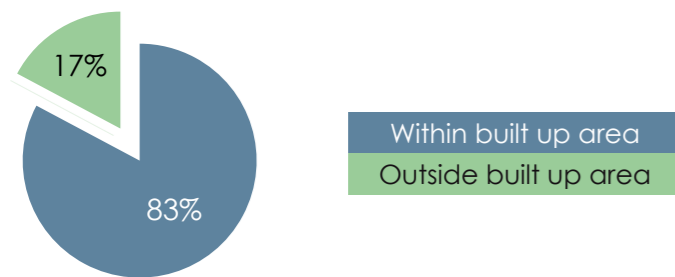
Figures 6 and 7 show the distribution of planning permissions within the Plymouth built-up area, providing an additional level of detail which is missing from Figure 5 due to the inclusion of Cornwall in the city-region boundary.

Additional maps which include Cornwall are available to download at: rtpi.org.uk/knowledge/research/projects/location-of-development

Figures 5, 6, and 7 map the location of planning permissions for schemes of over 50 housing units, which account for 83% of the total number of units granted planning permission between 2012 and 2015. The average number of units per planning permission is 95, which is slightly higher than the average for the other city-regions in this study.

The mapping also shows that 83% of the housing units granted planning permission are located within existing built up areas, while the remaining 17% in areas that fall outside the built up area or green belt.

% of housing units in existing built-up areas



Distribution of housing units by scheme size



Notes from the roundtable: what is shaping these patterns?

During the roundtable, delegates considered which key factors were shaping patterns of site allocations and planning permissions in each city-region.

The presence of protected and environmentally-designated land was viewed as a key factor shaping the location of permissions. In the Bristol city-region, the Green Belt was viewed as the most significant factor, along with protected flood plains along the River Avon and Bristol Channel. However in the Bournemouth city-region, a more important constraint was the Dorset Heaths Special Protection Area and its 400m buffer zone, along with the Avon River Valley.

Delegates from Bristol and Plymouth then explained that the location of permissions in their city-regions were also attributable to decision-making and broader development trends which pre-dated the National Planning Policy Framework (NPPF).

The recent permissions mapped in the centre of Bristol were described as occurring on sites which had been allocated for development for several decades. However development on these strategically located sites was delayed by the expansion of the city between the 1950s and 1990s. During this period housing growth was directed outwards, driven first by an expansion of local authority housebuilding into semi-peripheral locations around Bristol, then by private sector development along rail routes towards places like Weston Super Mare and Chipping Sodbury, and finally by the development of the Bradley Stoke new town.

However these greenfield sites have now been largely built out, and a combination of rising property prices and new infrastructure capacity is encouraging development back into centrally located brownfield sites.

Similarly, delegates from the Plymouth city-region commented that the distribution of permissions in the city centre were also the result of long-term planning and regeneration efforts that took place prior to 2012. Under-delivery in the South Hams District Council had also strengthened the market in neighbouring Plymouth.

However the location of housing permissions in the Bournemouth city-region were seen as resulting from more recent factors. This included the conversion of large hotels which had become redundant, and an increase in office-to-residential conversions under Permitted Development Rights. Delegates also noted that the tight boundaries of the Bournemouth local authority, coupled with strong containment policies, had worked well in focusing development in brownfield sites near the railway station as the council looked to meet its housing need.

Summary: Although our research maps permissions granted after 2012, delegates explained that those located in larger brownfield sites often represented many years of prior planning to make them viable. In some cases this work dated back to the draft Regional Spatial Strategy for the South West, and even the Structural Plans that preceded them. In the Bristol and Plymouth city-regions especially, some of these larger schemes should therefore be regarded as historic permissions which predate the NPPF.

The discussion also emphasised how the development of strategic sites can be delayed by broader trends of urban expansion, becoming viable only when other greenfield sites have been built out, property prices rise, and upfront investment is made in infrastructure and land remediation.

6. Analysing the permissions

This section describes the relationship between permissions, employment clusters and railway stations in each city-region

Bournemouth

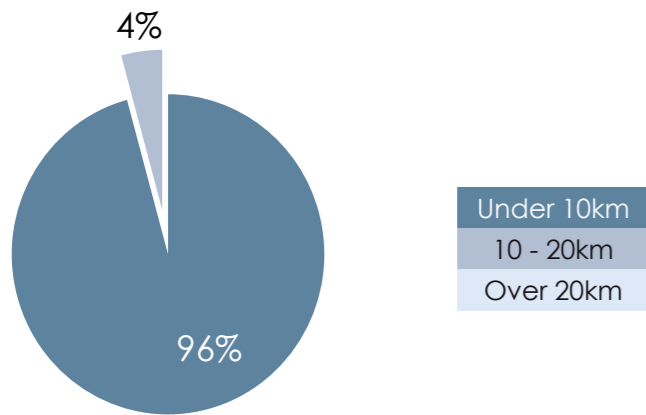
Proximity to major employment clusters

Bournemouth is a relatively high growth city-region for private sector jobs when compared to the twelve city-regions included in the study. Between 2011 and 2014 there was an increase of 11.9% in private sector jobs, which off-set the loss of public sector jobs as shown by the overall growth rate of 7.6% for both the public and private sectors.

Figure 8 shows employment clusters in the centres of Bournemouth and Poole. Other notable employment areas with over 10,000 jobs include the cluster of finance, health and retail related jobs to the north of Littledown in Bournemouth.

When schemes of 50+ units were mapped against major employment clusters with over 10,000 jobs, it was found that 96% of housing units were located within 10km of significant employment locations.

Percentage of housing units by proximity to major employment clusters



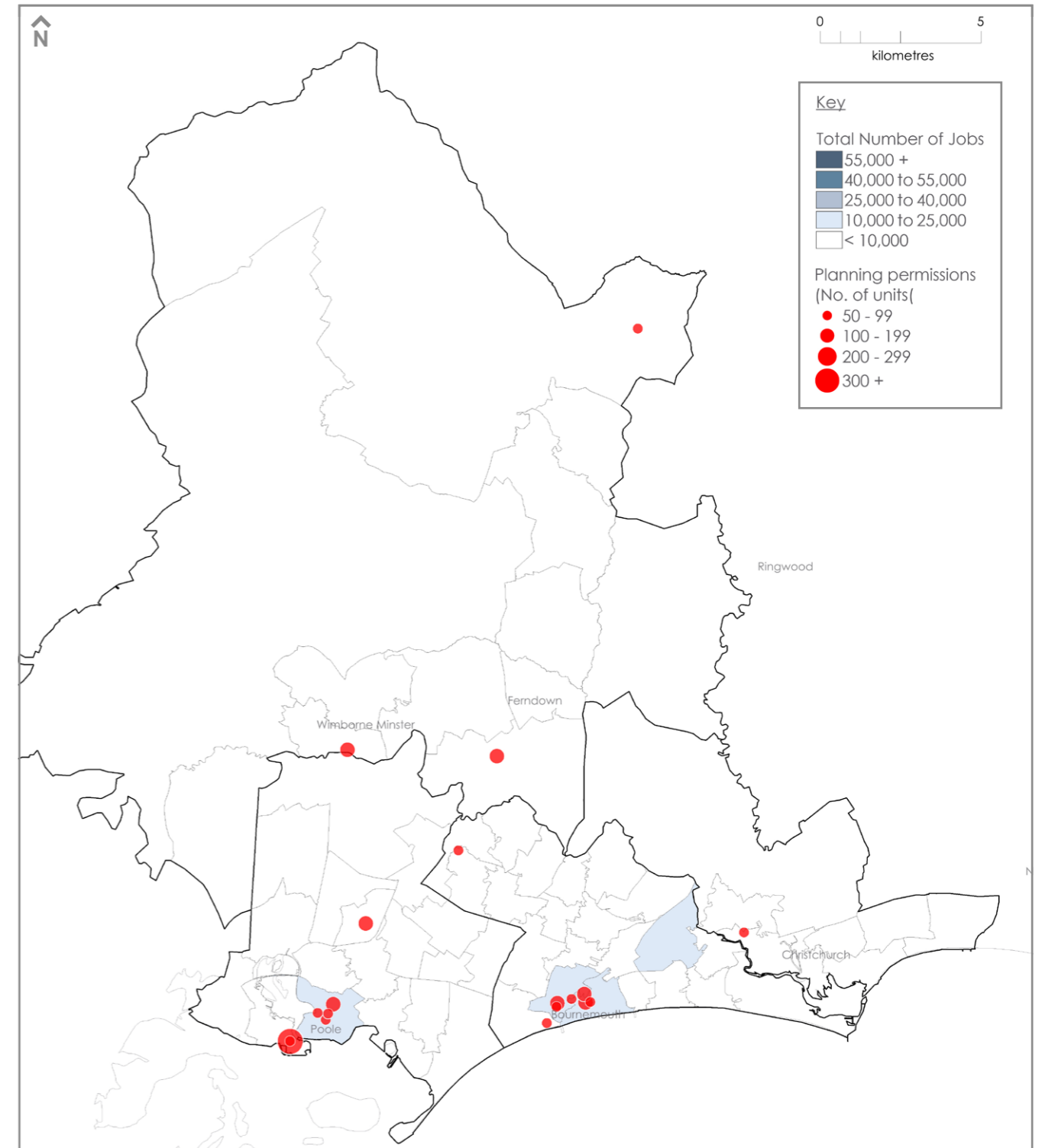
Overlap with specialist employment clusters

Figures 9-12 show Medium Super Output Areas (MSOAs) in the Bournemouth city-region with concentrations of employment in four specialist sectors which are above the average levels in the South West. These maps indicate areas of potential employment growth in relation to the location of planning permissions.

% of schemes located within MSOAs with specialist sector job growth

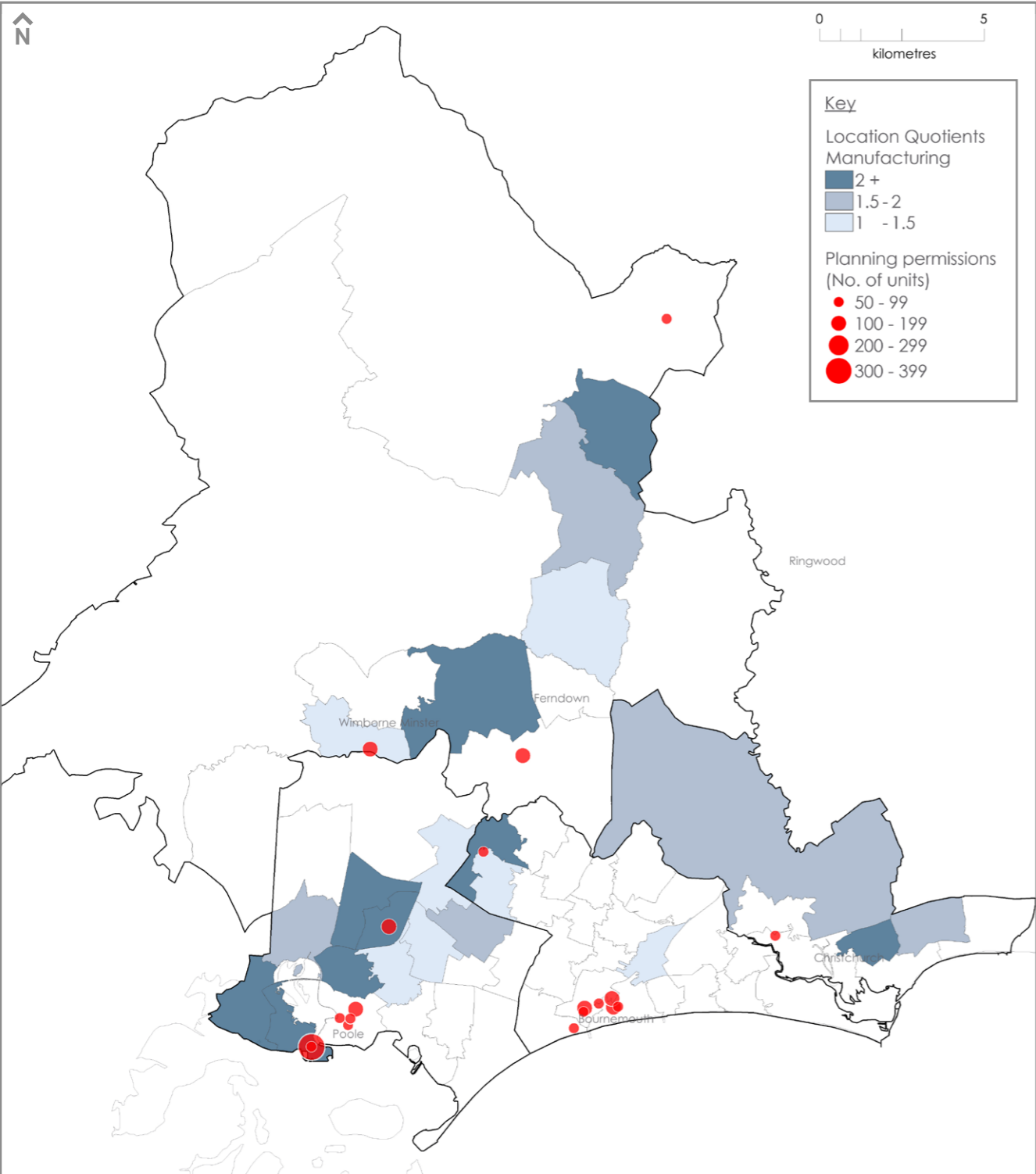
Manufacturing	15%
Computer programming	50%
Science and R&D	0%
Telecommunications	10%

Fig 8. Map of planning permissions and major employment clusters (2012-2015)



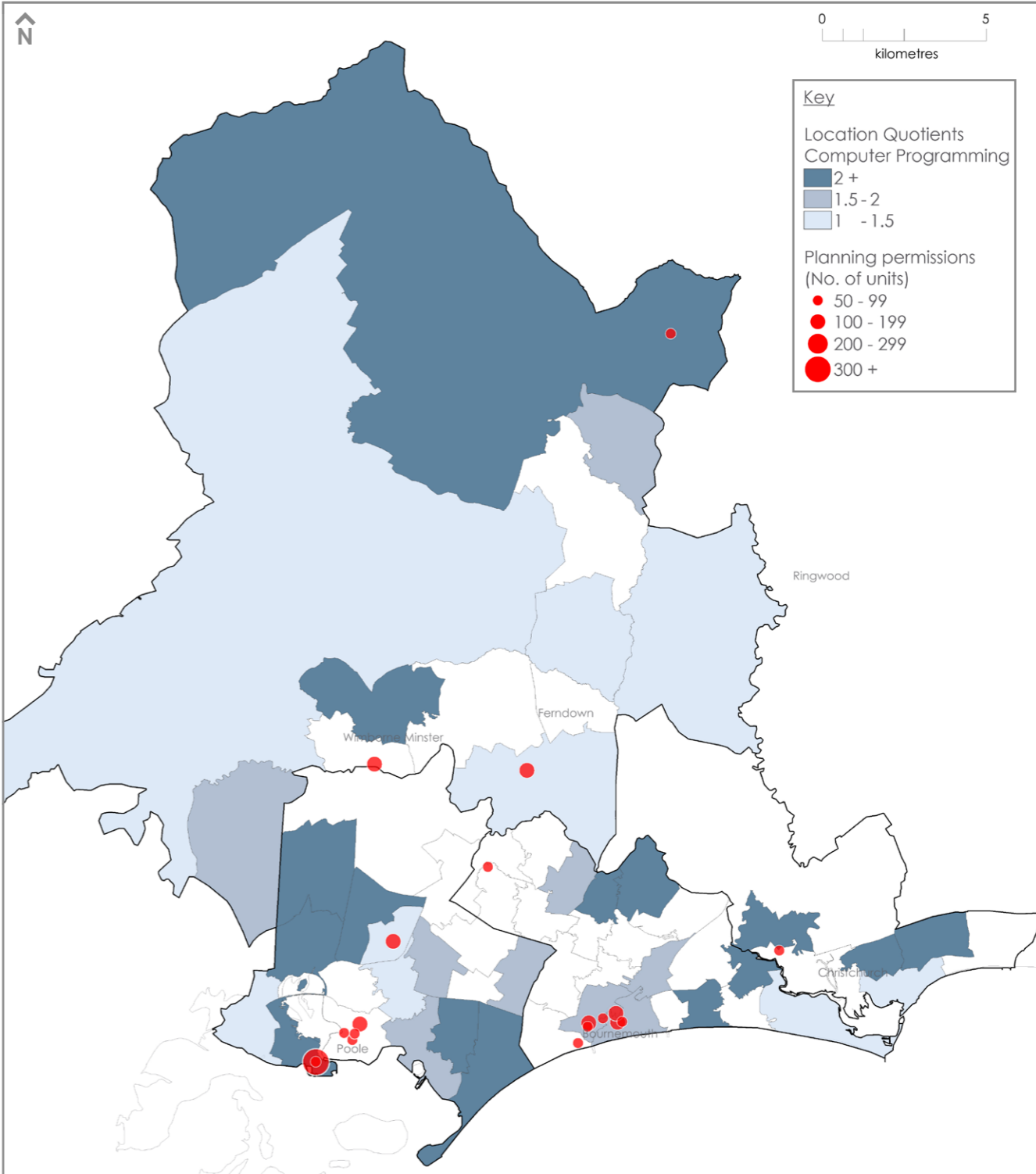
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Fig 9. Map of planning permissions and manufacturing clusters (2012-2015)



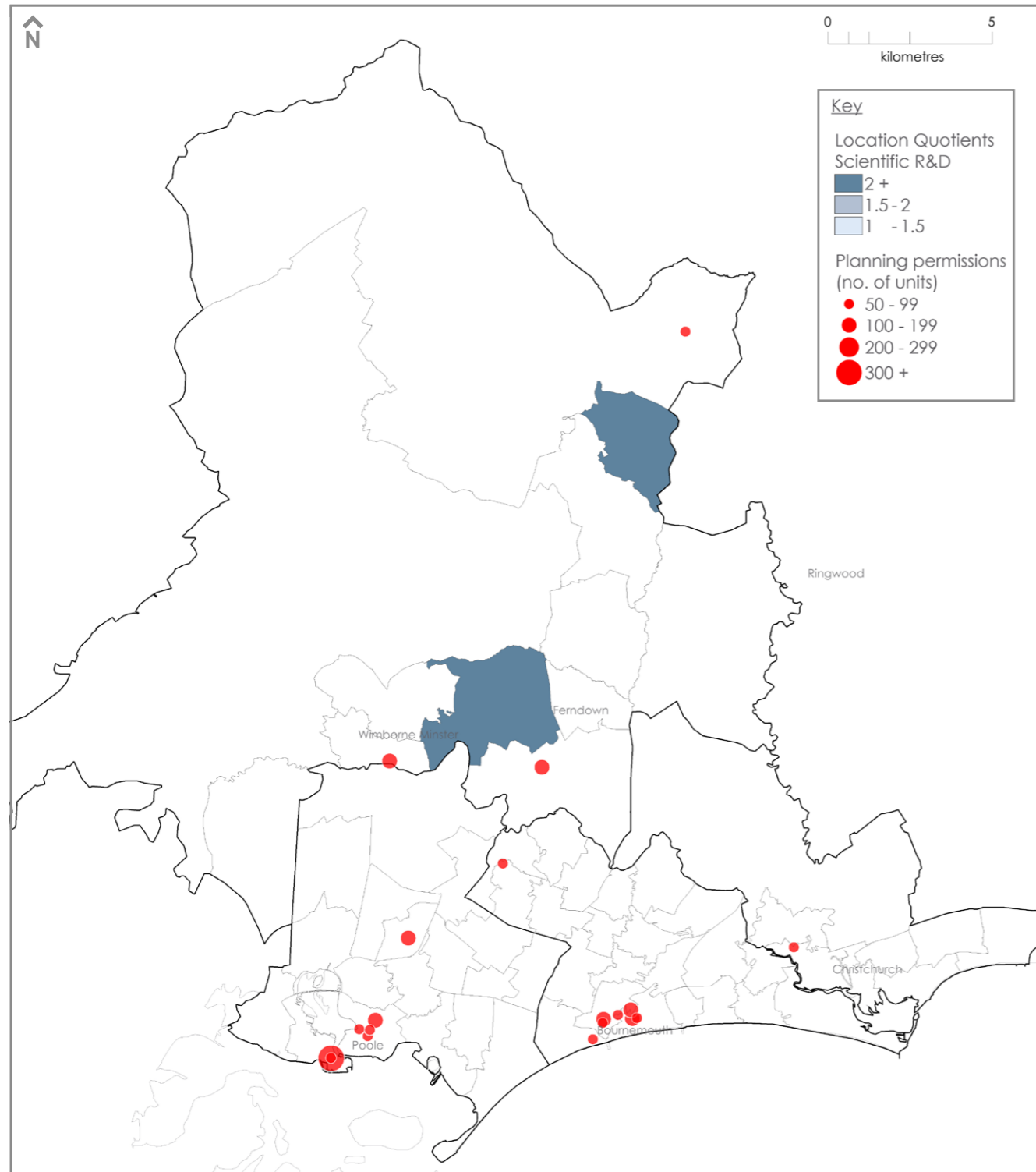
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Fig 10. Map of planning permissions and computer programming (2012-2015)



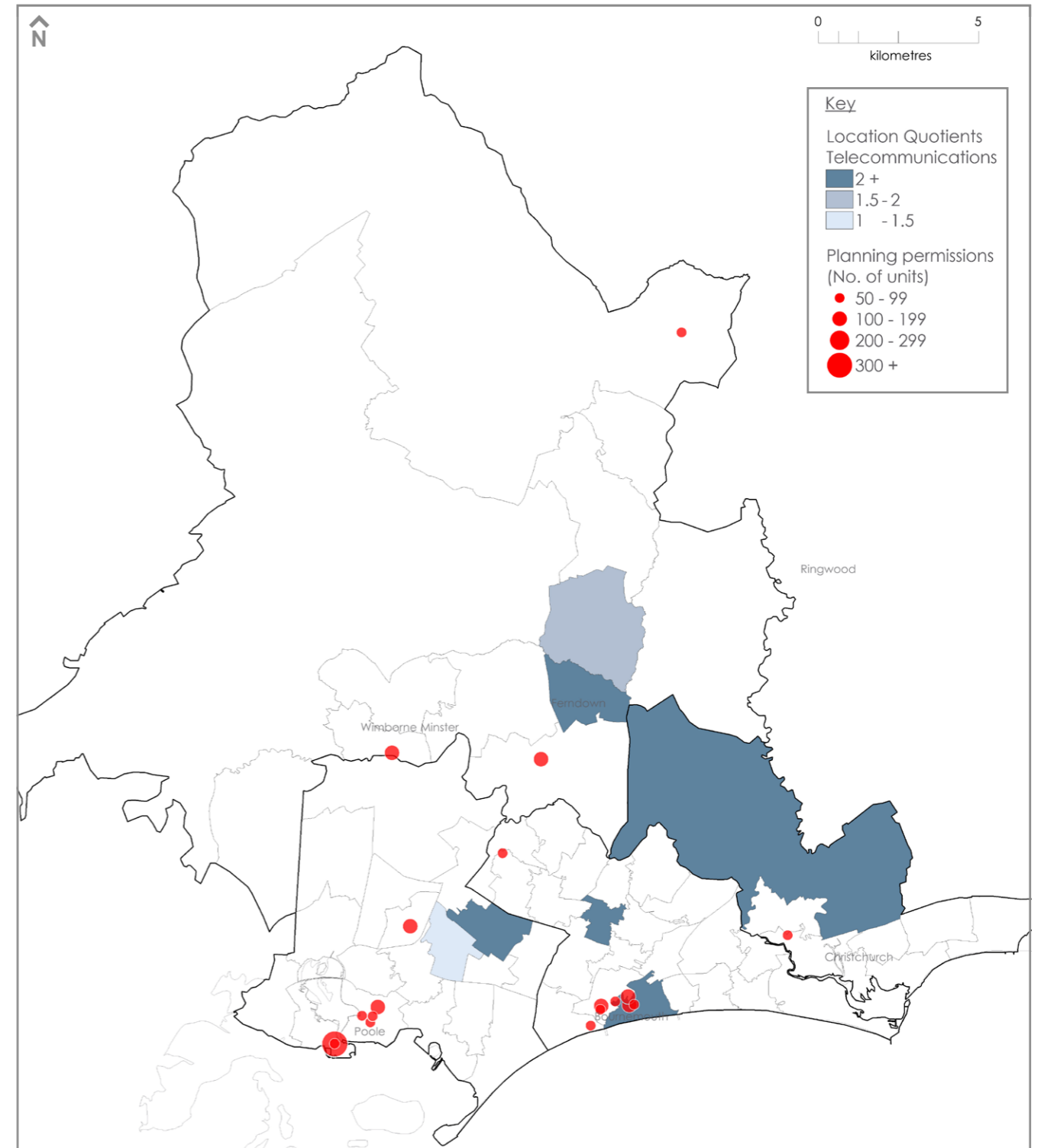
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Fig 11. Map of planning permissions and science/R&D clusters (2012-2015)



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Fig 12. Map of planning permissions and telecommunications clusters (2012-2015)



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Proximity to railway stations

Figure 13 shows the location of the South Western Main Line, which runs east-west throughout the city-region and connects Christchurch, Bournemouth city centre and Poole. The South Western Main Line connects London Waterloo and Weymouth, and was electrified in the 1960s.

The relationship between planning permissions and rail stations shows that 43% of units are within a 10 minute walk of a rail station.

Percentage of housing units by proximity to railway stations

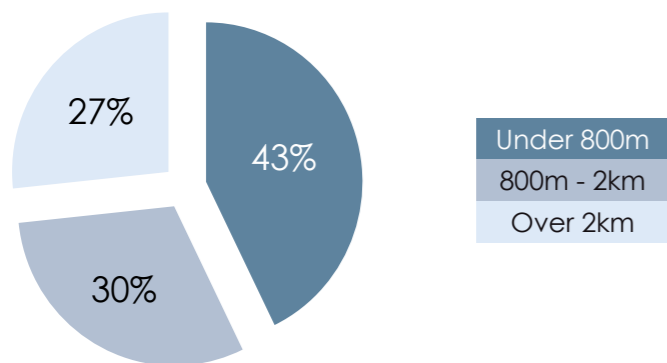
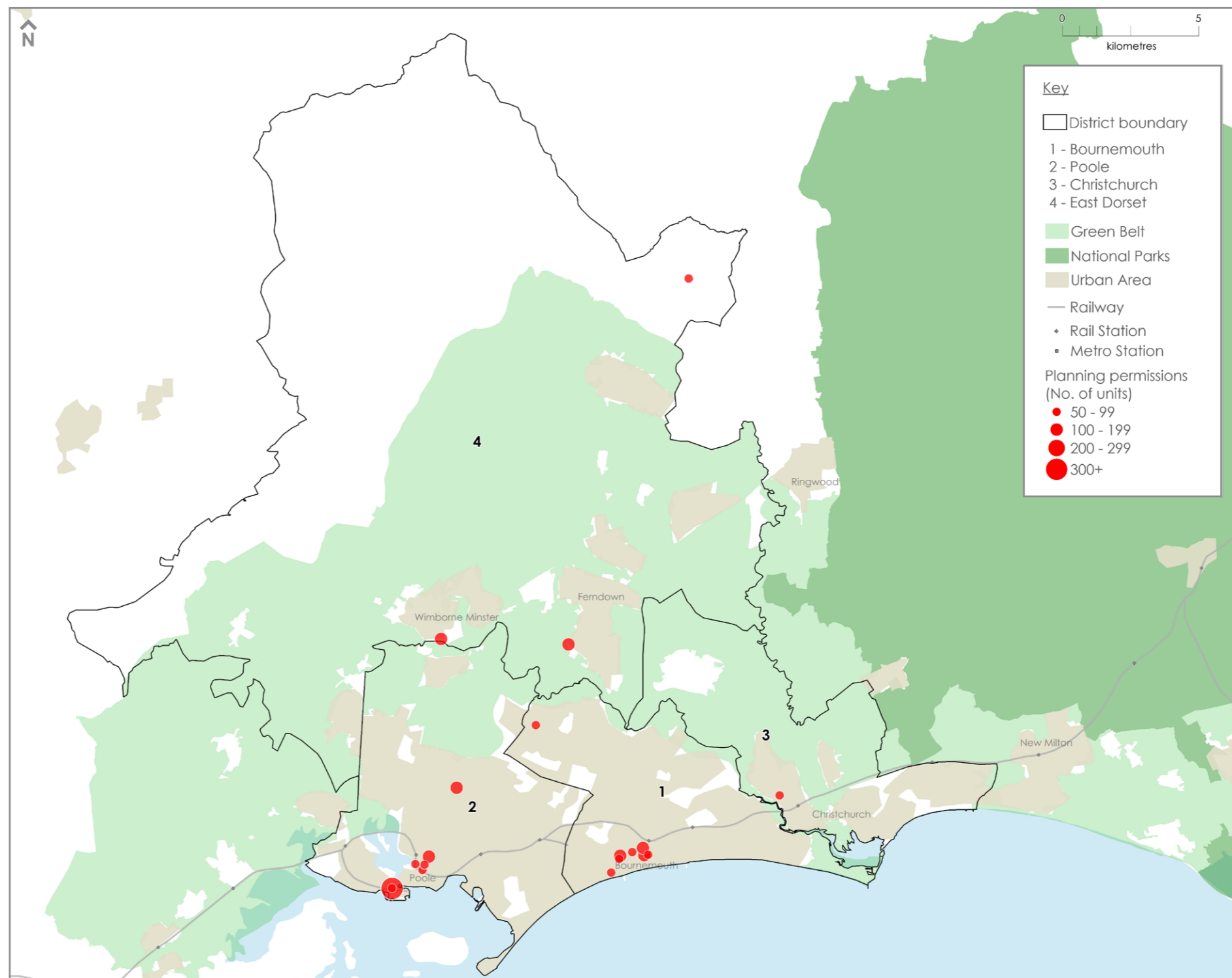


Fig 13. Map of planning permissions and railway stations



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Bristol

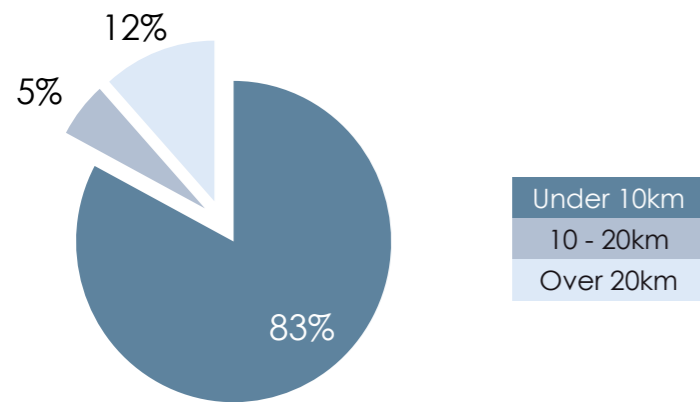
Proximity to major employment clusters

Bristol is a relatively high growth city-region for private sector jobs when compared to the twelve city-regions included in this study. Between 2011 and 2014 there was an increase of 12.2% in private sector jobs, which off-set the loss of public sector jobs as shown by the overall growth rate of 5.7% for both the public and private sectors.

Figure 14 shows that employment is concentrated in the centre of the city of Bristol. Other notable employment areas with over 10,000 jobs include Southmead in Bristol and areas in South Gloucestershire along the border with Bristol. This includes industrial estates and business parks south of the M5 corridor.

When schemes of 50+ units were mapped against major employment clusters with over 10,000 jobs, it was found that 83% of housing units were located within 10km of significant employment locations.

Percentage of housing units by proximity to major employment clusters



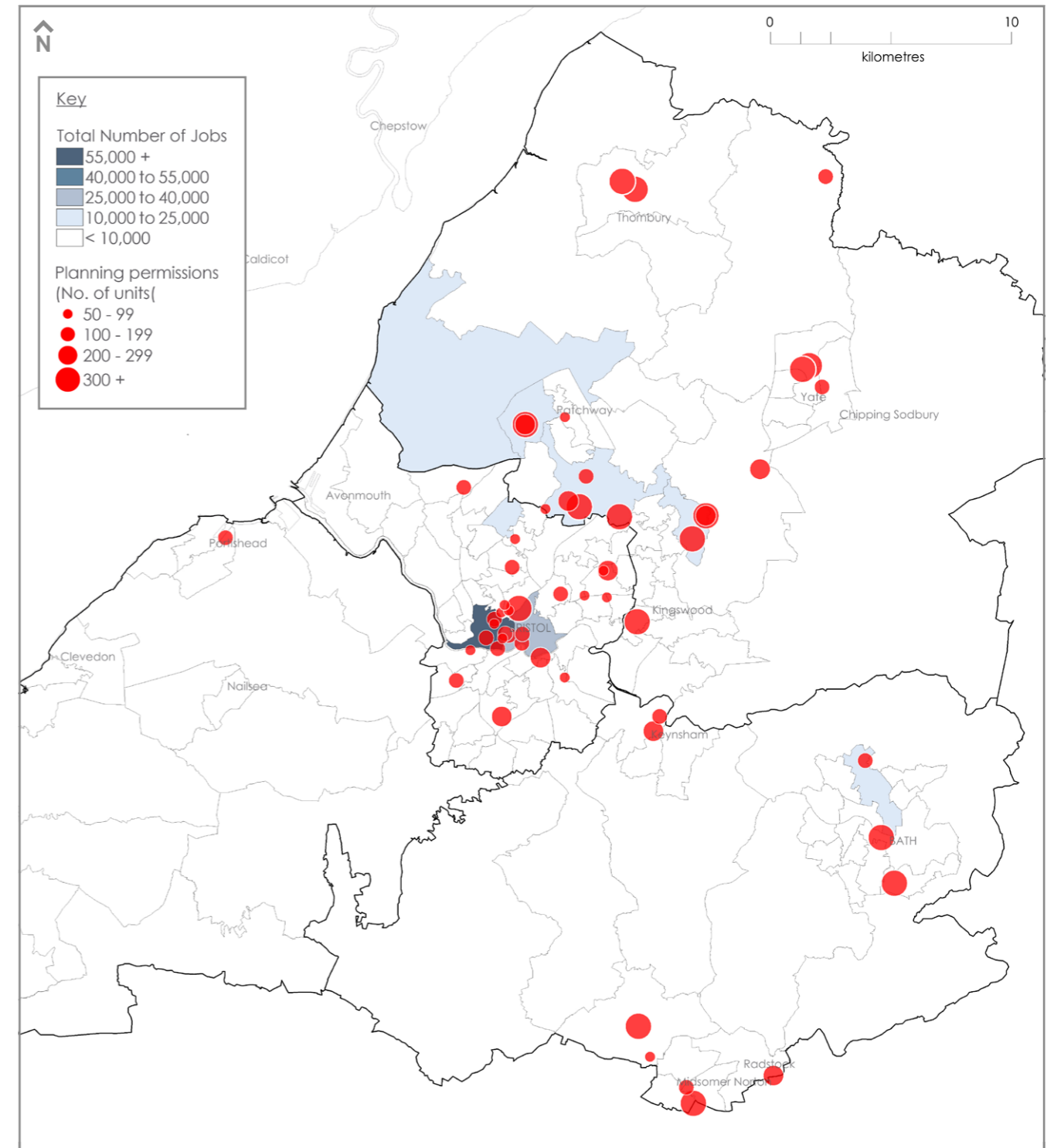
Overlap with specialist employment clusters

Figures 15-18 show Medium Super Output Areas (MSOAs) in the Bristol city-region with concentrations of employment in four specialist sectors which are above the average levels in the South West. These maps indicate areas of potential employment growth in relation to the location of planning permissions.

% of schemes located within MSOAs with specialist sector job growth

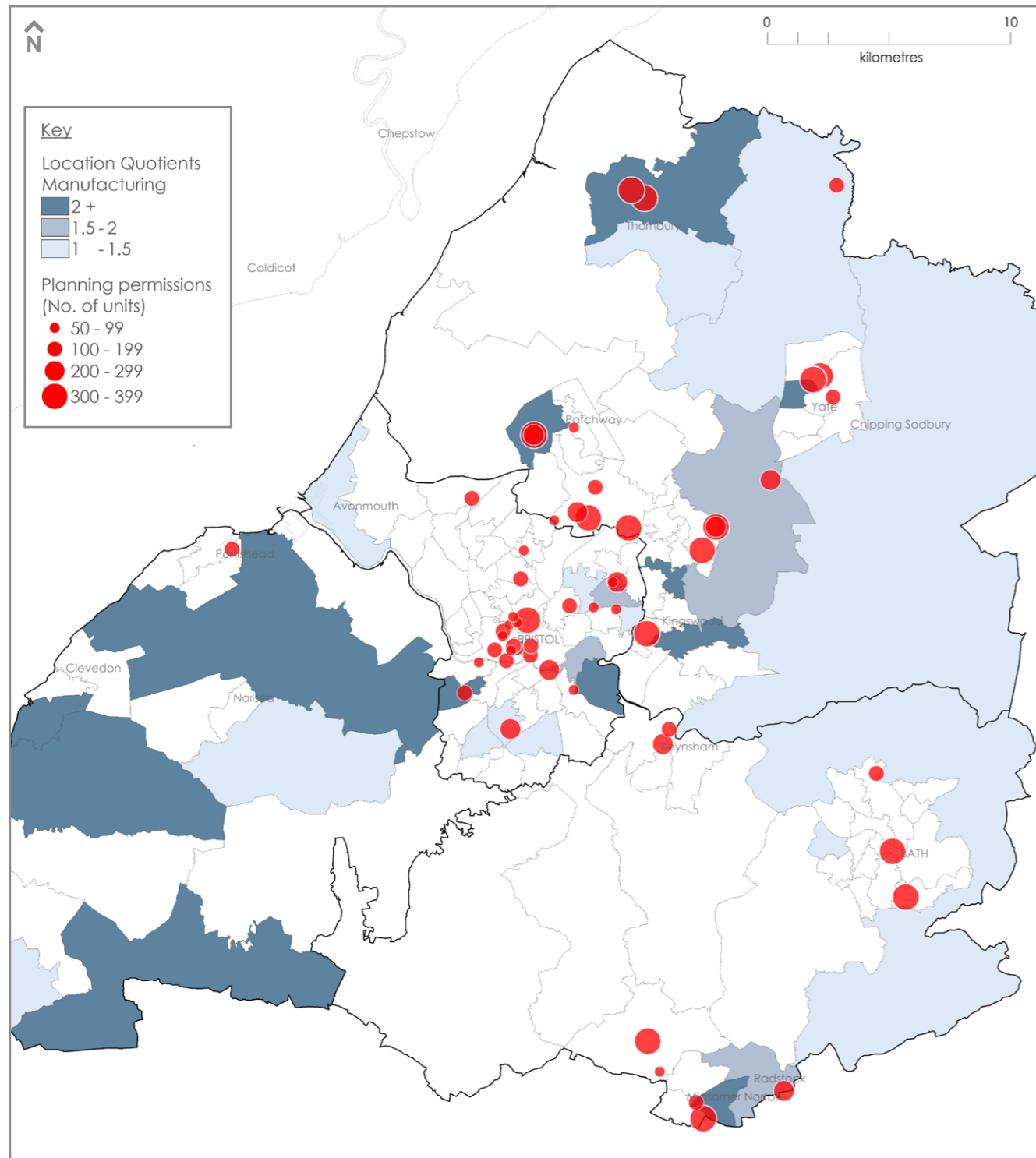
Manufacturing	17%
Computer programming	44%
Science and R&D	21%
Telecommunications	16%

Fig 14. Map of planning permissions and major employment clusters (2012-2015)



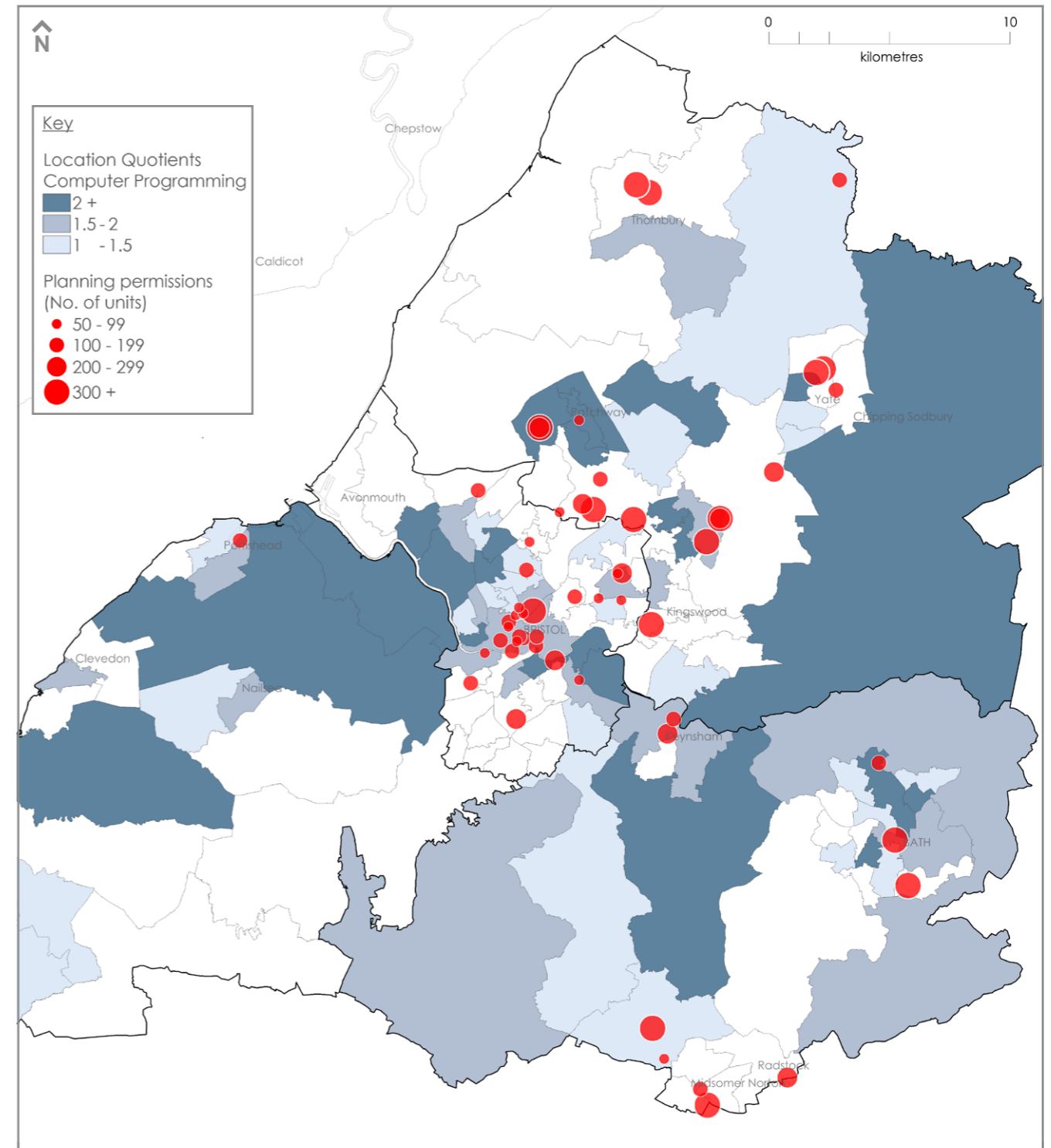
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Fig 15. Map of planning permissions and manufacturing clusters (2012-2015)



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Fig 16. Map of planning permissions and computer programming (2012-2015)



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Fig 17. Map of planning permissions and science/R&D clusters (2012-2015)

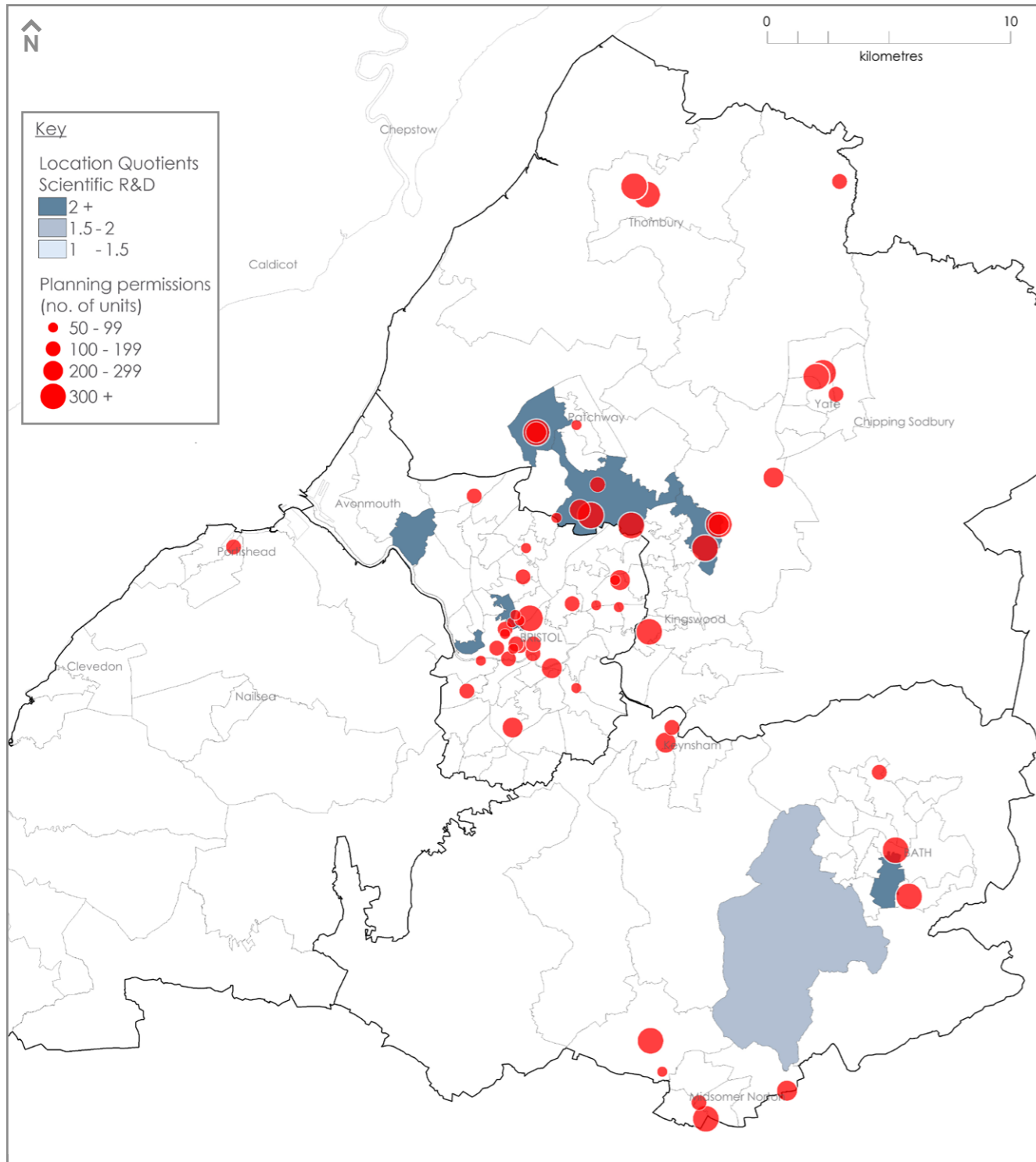
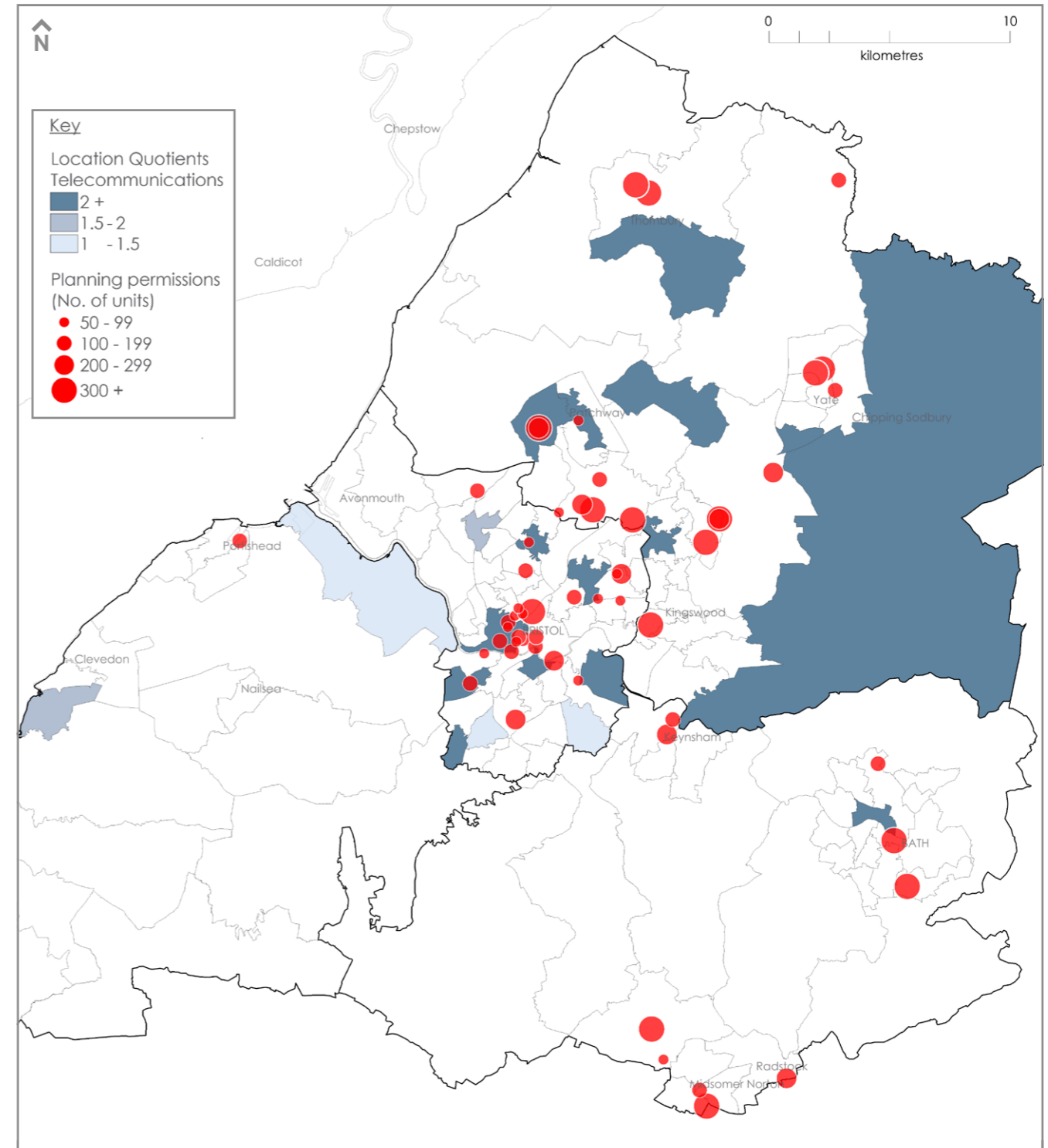


Fig 18. Map of planning permissions and telecommunications clusters (2012-2015)



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Proximity to railway stations

Figure 19 shows the railway network in the Bristol city-region. There are a range of local stations within the Bristol built-up area, with Bristol Temple Meads station as the principle hub, and routes between Bristol, Bath, Weston-super-Mare and Yate. A number of regional lines connect the city-region to other major conurbations of London, Cardiff, Birmingham, Manchester, and Exeter.

The relationship between planning permissions and rail stations shows that 16% of units are within a 10 minute walk of a rail station.

Percentage of housing units by proximity to railway stations

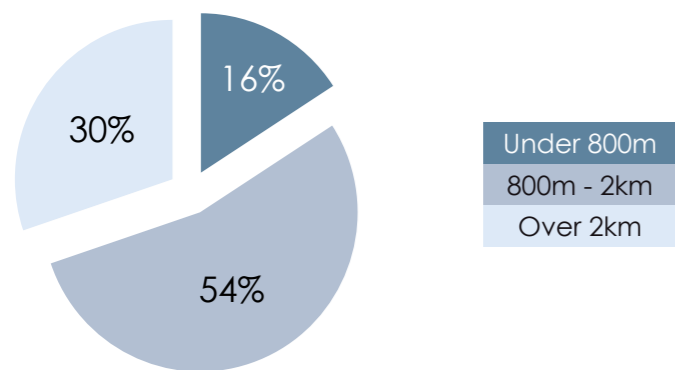
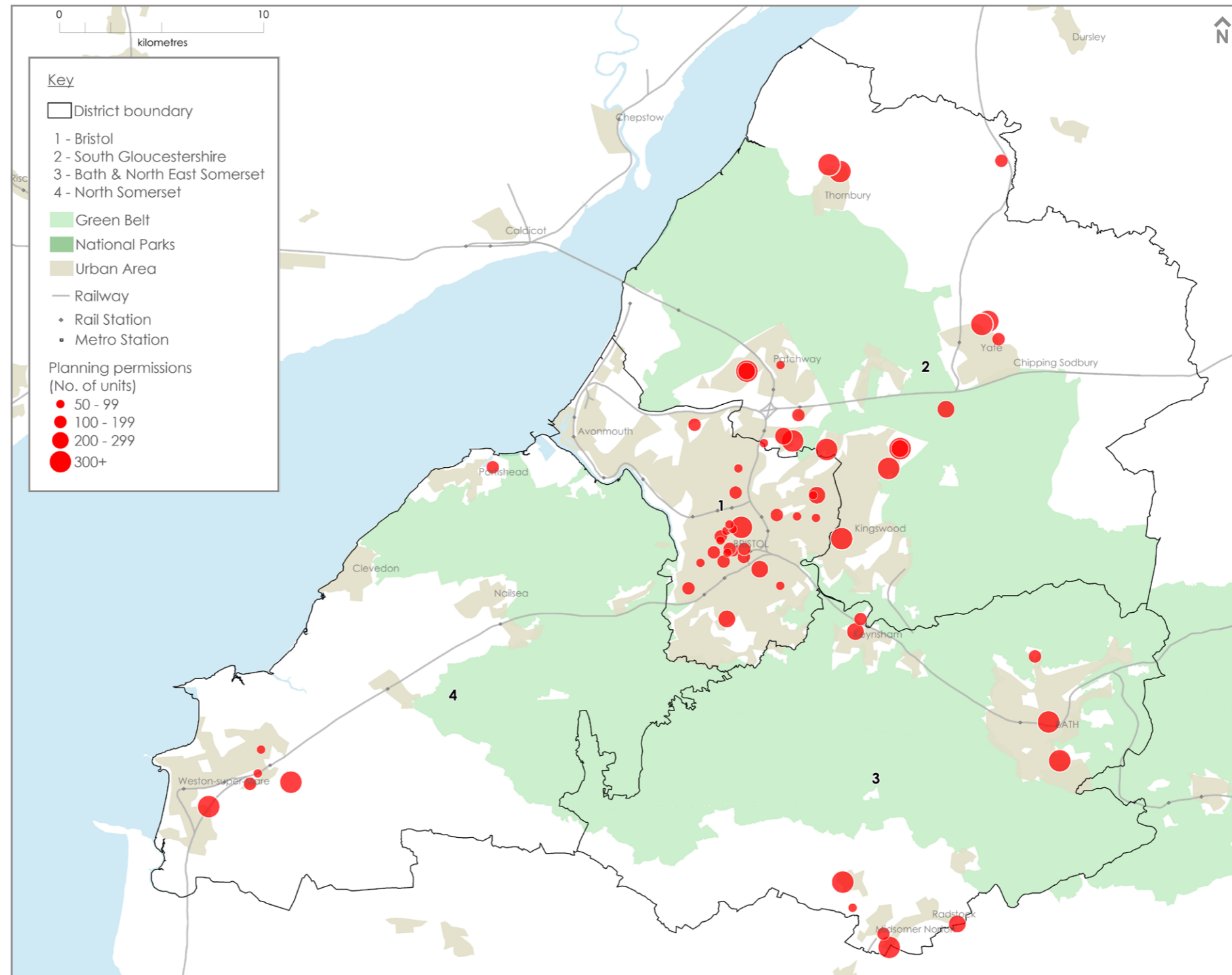


Fig 19. Map of planning permissions and railway stations



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Plymouth

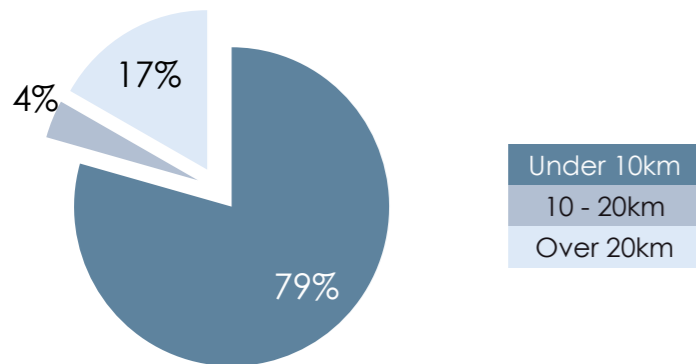
Proximity to major employment clusters

Plymouth is a relatively high growth city-region for private sector jobs when compared to the twelve city-regions included in this study. Between 2011 and 2014 there was an increase of 11.3% in private sector jobs, which off-set the loss of public sector jobs as shown by the overall growth rate of 3.7% for both the public and private sectors.

Figure 20 shows major employment clusters in the city centre, and in the Estover area to the north east, which contains a number of industrial and business parks.

When schemes of 50+ units were mapped against major employment clusters with over 10,000 jobs, it was found that 79% of housing units were located within 10km of significant employment locations.

Percentage of housing units by proximity to major employment clusters



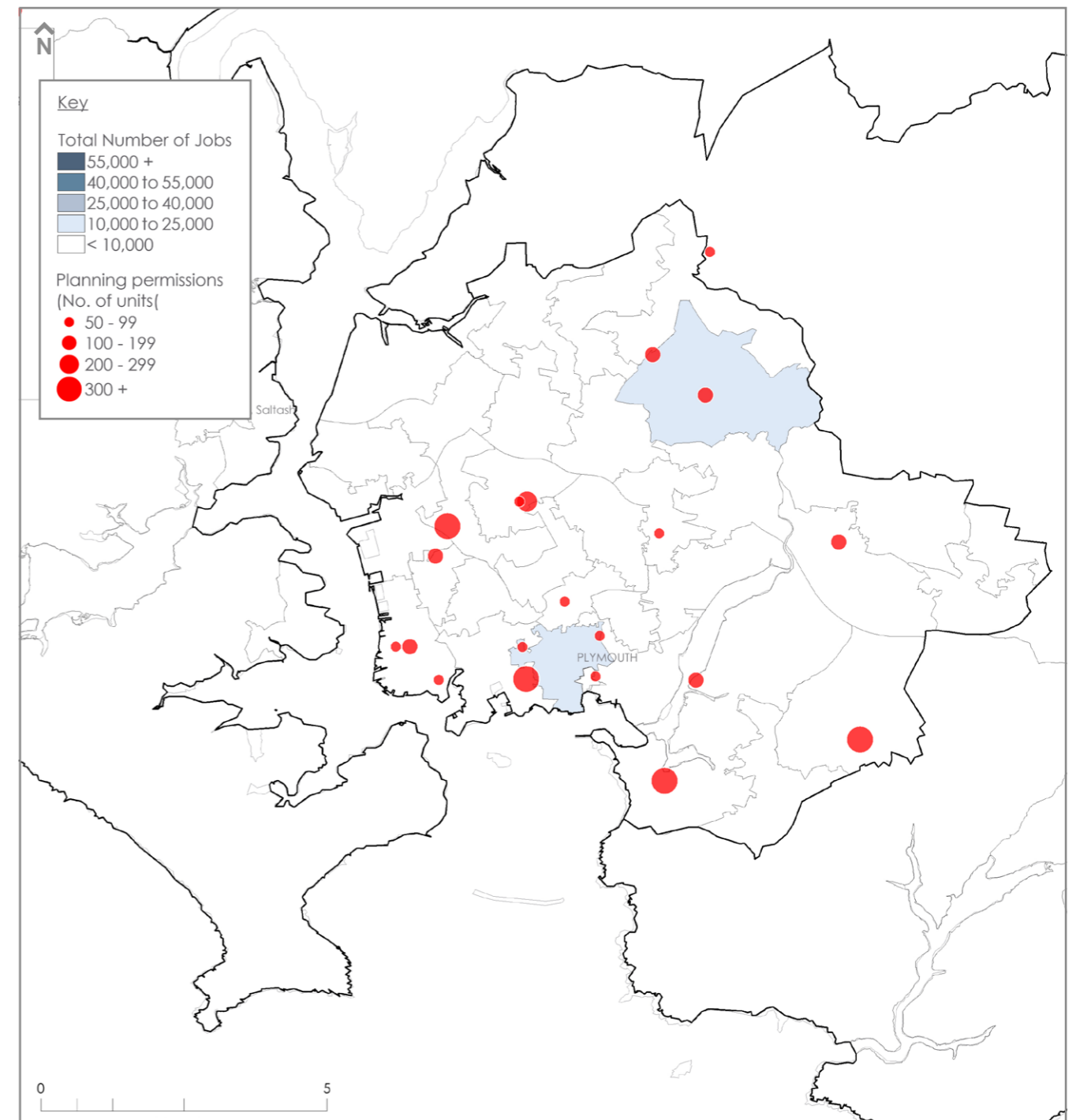
Overlap with specialist employment clusters

Figures 21-24 show Medium Super Output Areas (MSOAs) in the Plymouth city-region with concentrations of employment in four specialist sectors which are above the average levels in the South West. These maps indicate areas of potential employment growth in relation to the location of planning permissions.

% of schemes located within MSOAs with specialist sector job growth

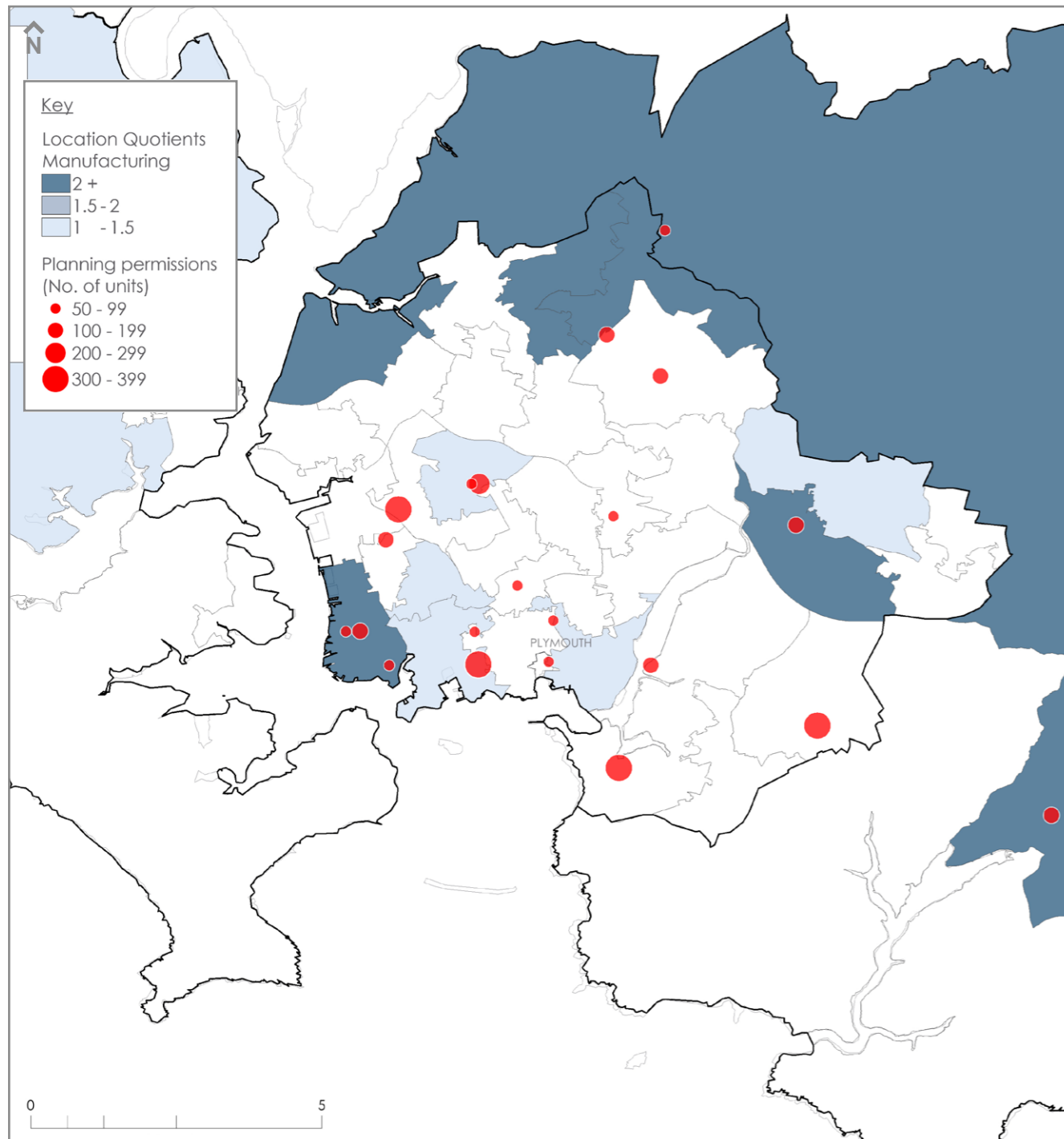
Manufacturing	20%
Computer programming	3%
Science and R&D	3%
Telecommunications	8%

Fig 20. Map of planning permissions and major employment clusters (2012-2015)



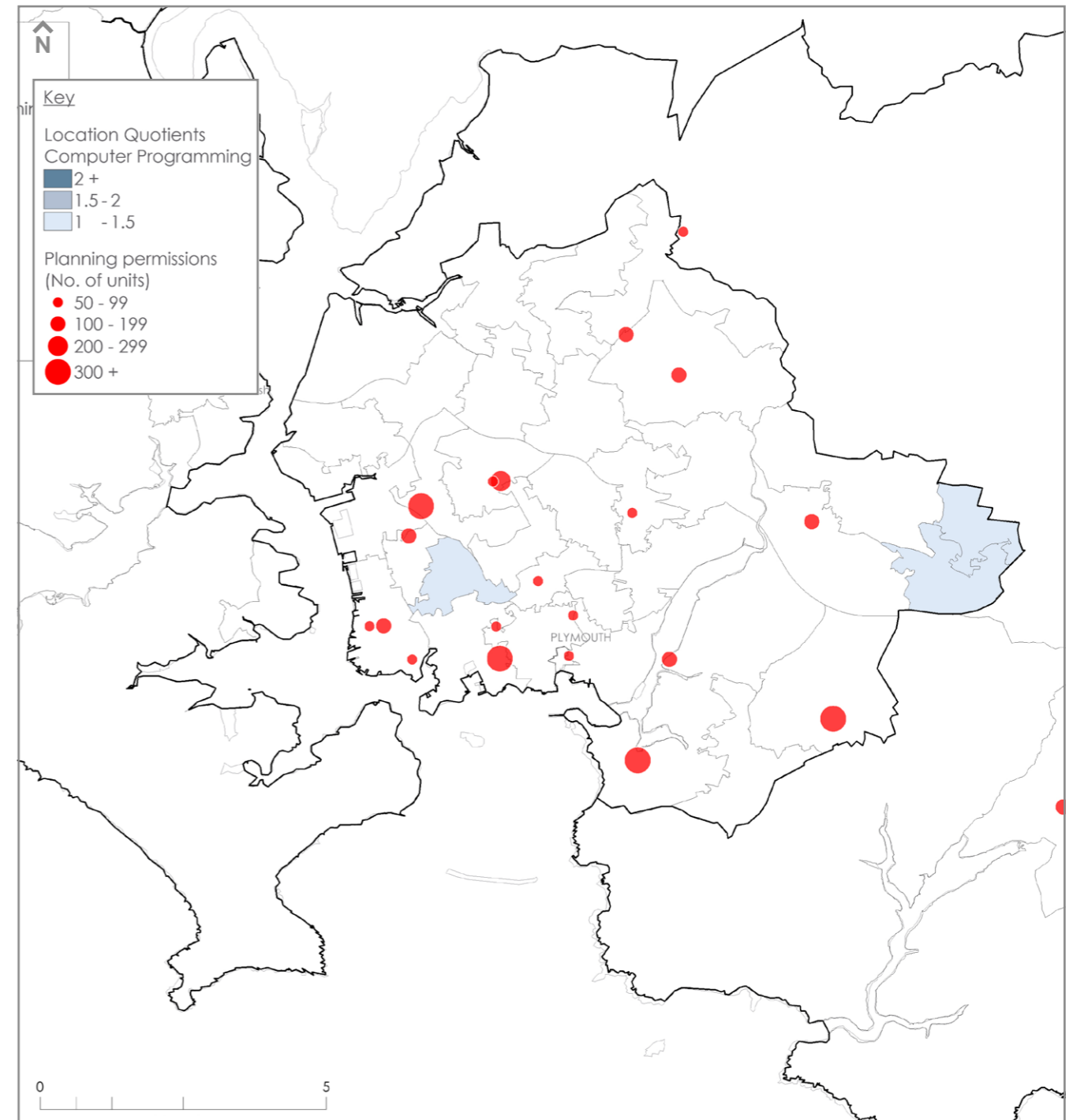
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Fig 21. Map of planning permissions and manufacturing clusters (2012-2015)



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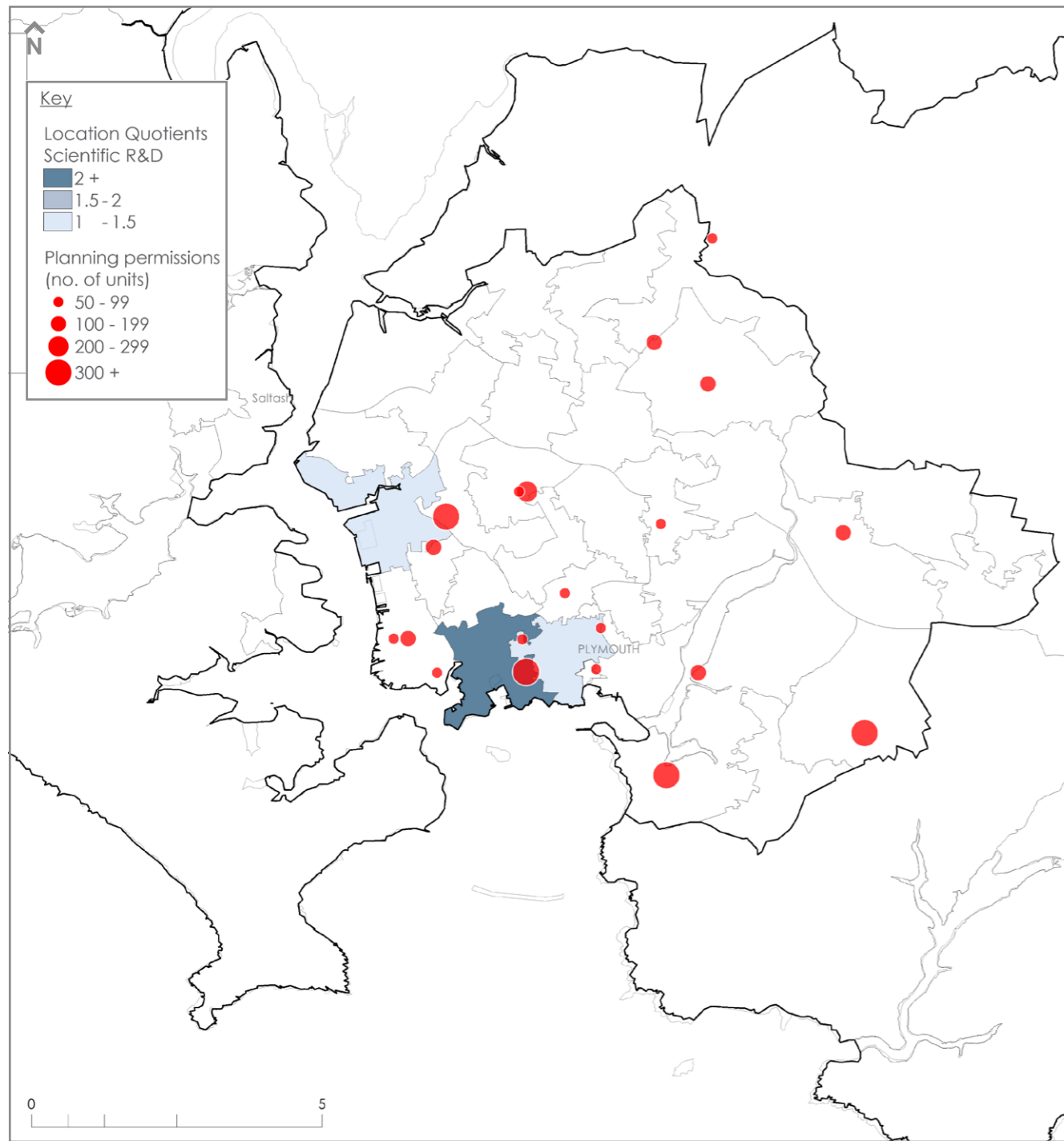
Fig 22. Map of planning permissions and computer programming (2012-2015)



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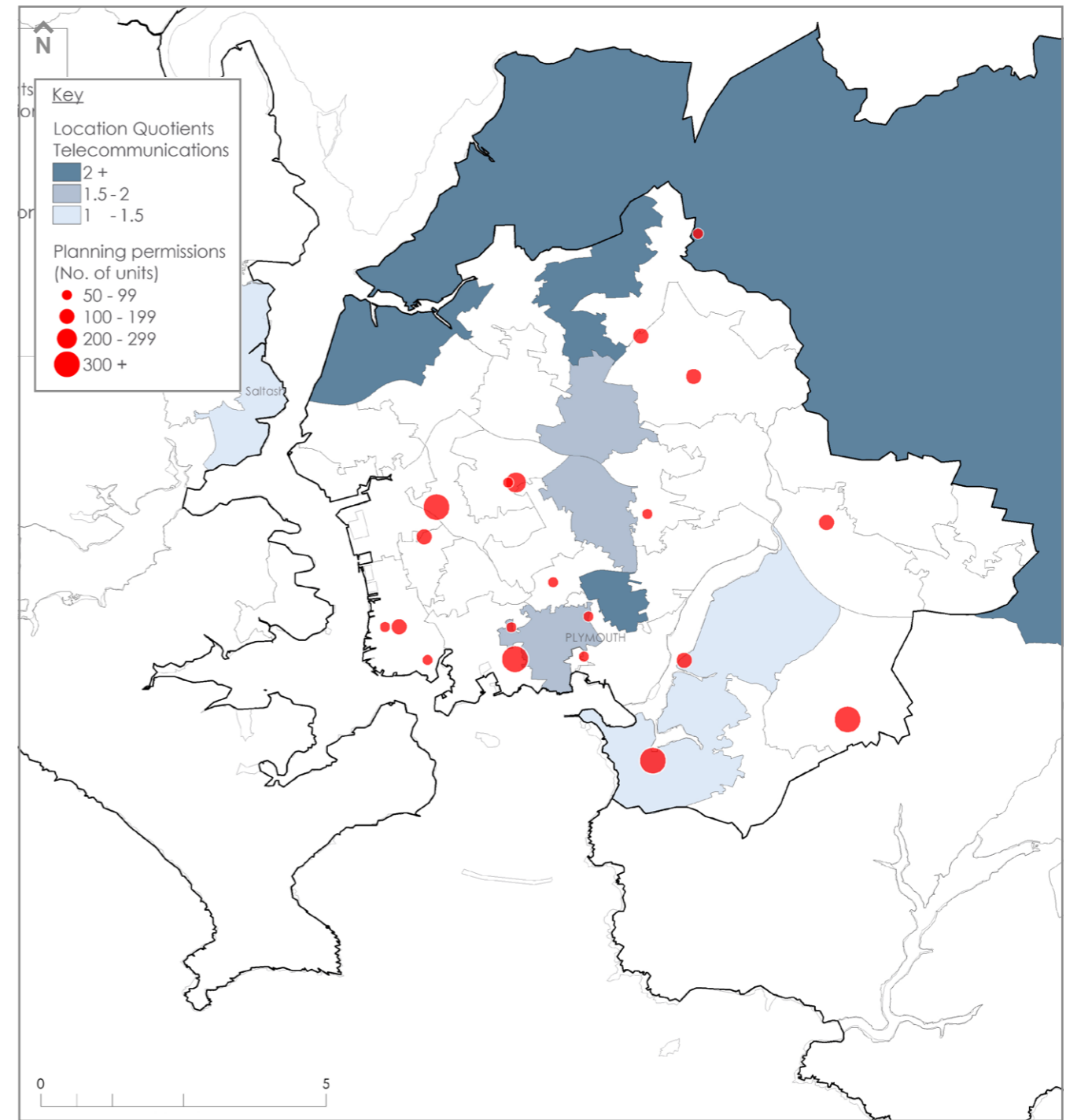
Additional maps which include Cornwall are available to download at:
rtpi.org.uk/knowledge/research/projects/location-of-development

Fig 23. Map of planning permissions and science/R&D clusters (2012-2015)



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Fig 24. Map of planning permissions and telecommunications (2012-2015)



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Additional maps which include Cornwall are available to download at:
rtpi.org.uk/knowledge/research/projects/location-of-development

Proximity to railway stations

Figure 25 shows the location of the South Devon Main Line. This is a major branch of the Great Western Main Line which connects to London Paddington, while the Cornish Main Line connects Plymouth to Penzance in Cornwall. There are several railway stations within the Plymouth built-up area, and connecting stations in Ivybridge to the east and Saltash to the west.

The relationship between planning permissions and rail stations shows that 5% of units are within a 10 minute walk of a rail station.

Percentage of housing units by proximity to railway stations

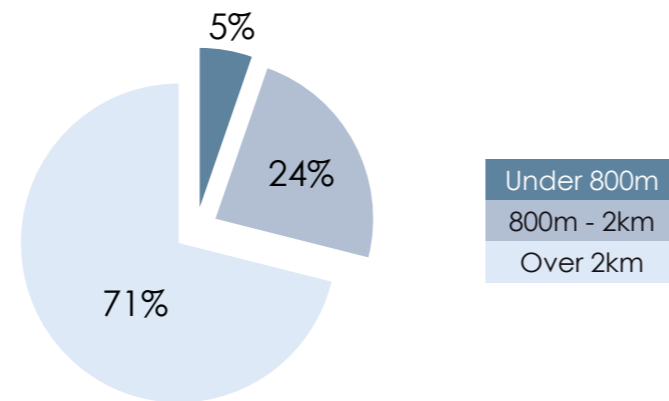
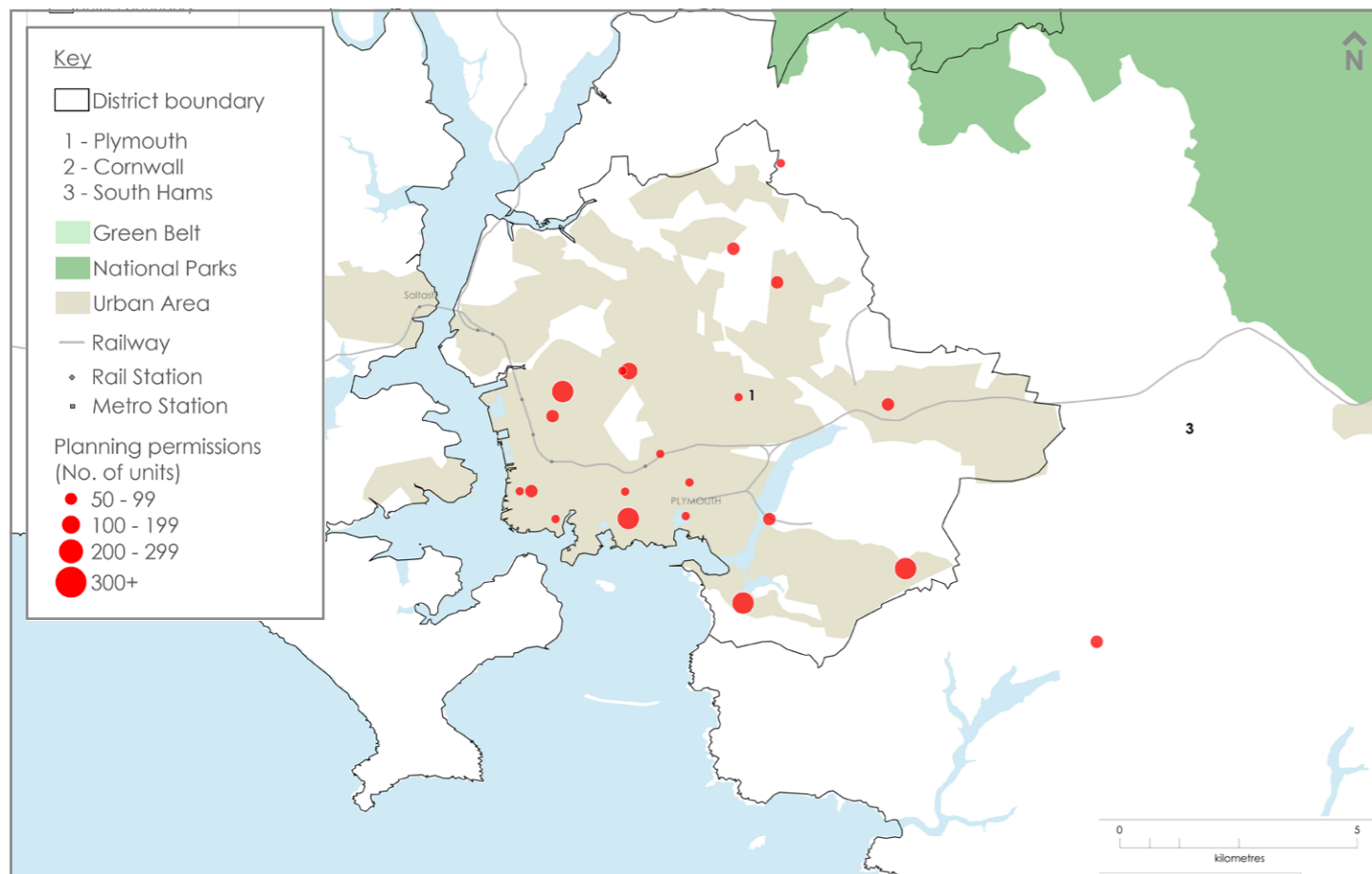


Fig 25. Simplified map a with focus on Plymouth



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Notes from the roundtable: what does this analysis suggest?

The analysis of proximity between permissions and railway stations was viewed as an important indicator of sustainability by delegates from the Bristol and Bournemouth city-regions, where commuting by rail is fairly common. This relationship was considered to be less important in the Plymouth city-region, where the cost, frequency and routing of rail services mean that they are more commonly used for inter-city travel.

Delegates from all three city-regions also noted that bus and cycling networks were making a growing contribution to sustainable travel patterns, and needed to be considered alongside the analysis of proximity to railway stations.

However delegates agreed that the car remained the primary mode of transport for those commuting into the city centres from further afield, especially from the villages surrounding Bournemouth and Plymouth. Some concern was also raised about the location of planned employment growth in the Bournemouth and Plymouth city-regions, as driven by their respective Local Enterprise Partnerships (LEPs). This included locations around Bournemouth airport, the science park to north of Plymouth city centre, and at Langage to the east. These peripheral sites lack public transport connectivity, and employment growth could therefore increase car usage. It was also noted that a higher rental costs and permitted development rights were leading to a loss of office space in central locations, with businesses again relocating to more peripheral locations.

Proper alignment between Local Plans and LEP Strategic Economic Plans was seen as essential to maintaining a sustainable relationship between housing and employment. Delegates from the Bristol city-region spoke of their progress on this front, where the LEP is closely involved in the preparation of their statutory Joint Spatial Plan and Joint Transport Plan for the West of England.

They described how these documents will provide a policy framework up to 2036, one which will be used to identify housing requirements across multiple local authorities, and to determine the broad spatial distribution of development. Delegates agreed that this type of long-term cooperative planning was critical to securing the next round of strategic sites for housing – which are urgently needed – while ensuring that they are in sustainable locations (see page 30 for more details).

Delegates from Plymouth also suggested that changing technologies and the uptake of remote working might have an impact on the sustainability of the city-region, helping to overcome physical connectivity challenges in the future.

At a broader level, delegates agreed that the sustainability of a location cannot be fully evaluated by a study which looks at a single point in time. The spatial relationships between housing, employment and infrastructure are dynamic and complex - changing in response to the delivery of new infrastructure, economic investment, environmental pressures, demographic shifts and the uptake of new technology. However by repeating this study over time, delegates believed that it would be possible to capture the impact of some of these dynamic processes. This might be reflected in different city-region boundaries being used in future studies, as new transport infrastructure strengthens commuting patterns between local authorities, or as completed housing developments increase the number of commuters in a given area.

7. Looking ahead

This final section of the South West report looks at recent developments in strategic planning and infrastructure investment that are likely to influence decisions over the location of development. It also provides final comments from the roundtable discussion, and links to relevant data sources which can help to inform the debate around location.

Strategic planning in the Bristol city-region

The West of England Joint Spatial Plan

Estimates suggest that the four local authorities in the Bristol city-region will need 85,000 new homes by 2036 - 29,000 more than are currently planned for. To support this ambitious target, they are now working together to prepare a Joint Spatial Plan for the West of England. This will set out high-level planning policy for the delivery of housing, employment and infrastructure across the area, and a framework against which individual Core Strategies can be aligned over time.

The Joint Spatial Plan will set a housing target for the entire West of England, and identify broad locations for housing, employment and infrastructure. This more strategic approach will help to coordinate growth in sustainable locations, support the local authorities in demonstrating a five-year land supply, and provide a stronger basis for resisting speculative development.

Following its adoption, currently scheduled for autumn 2017, the local authorities will produce a Joint Transport Plan and a Strategic Infrastructure Delivery Plan. These documents will identify the infrastructure needs of the West of England, and set out clear plans for addressing deficits and accommodating the growth locations identified in the Joint Spatial Plan.

The government is supporting these ambitions through a proposed devolution deal for the West of England. In addition to strategic planning powers, this deal would include:

- Control of £900m investment fund over 30 years
- Responsibility for a consolidated, devolved local transport budget, with a multi-year settlement
- The ability to franchise bus services and deliver smart and integrated ticketing
- Responsibility to manage and maintain a new Key Route Network of local authority roads

Click on the links below for further information about the West of England Joint Spatial Plan:

[The website for the Joint Spatial Plan](#)

[The West of England devolution agreement](#)

Infrastructure investments

Announcements from the 2016 budget

The Government's 2016 budget allocated funding infrastructure in the South West region. This includes £3m to improve rail stations, £5m for the Dawlish railway line between Exeter and Plymouth, and a £0.5m study into a new motorway junction on the M4 to the north-east of Bristol, to link it with the Avon ring road (A4174). £4.5m has also been allocated for superfast broadband across the South West²⁸.

Strategic planning in the Plymouth city-region

The Joint Local Plan

The local authorities of Plymouth, South Hams and West Devon are now working together to develop a Joint Local Plan which looks ahead to 2031 and beyond. The Plan will bring together existing work which has been carried out separately by each local authority: the award-winning *Plymouth Plan*, West Devon's *Our Plan*, and South Hams *Our Plan*. A separate plan exists for Dartmoor National Park, which covers both West Devon and South Hams.

This Joint Local Plan will allow for the better coordination of housing, employment and infrastructure between the city of Plymouth and its surrounding, more rural areas. They hope to adopt the plan by autumn 2017, subject to approval from the Planning Inspectorate (PINS).

NB: Dartmoor National Park and West Devon were not included in the study area for the Plymouth city-region as each contributed fewer than 3.5% of its resident working age population to Plymouth.

Click on the links below for further information about the Joint Local Plan:

[The website for the Plymouth Plan](#)

[The website for the West Devon Plan](#)

[The website for the South Hams Plan](#)

[The website for the Joint Local Plan](#)

Notes from the roundtable: what other data would be useful?

While the Location of Development research focused on the spatial relationships between permissions, employment clusters and railway stations, delegates at the roundtable saw plenty of opportunities for combining these maps with other data sources. The following criteria were suggested, against which the sustainability of permissions could be explored in more detail:

- Mapping to show whether a permission was located in a site which had been allocated in a Local Plan
- Mapping to show whether a permission had been granted at appeal
- Mapping to show whether a permission was part of a mixed-use development, or residential only
- An additional size category for the mapped permissions, to show the largest schemes of 1,000 units and above

Delegates also suggested that the mapping could be overlaid with more fine-grain spatial data on environmental constraints, employment locations and travel to work patterns. Examples include the following:

- The Environment Agency Flood Risk Maps, which show land designated as Flood Zones 2 and 3. See maps.environment-agency.gov.uk for more information
- The DataShine Commute website, developed by UCL CASA, which uses travel-to-work data from the 2011 census to visualise commuting patterns between households and workplaces. See commute.datashine.org.uk for more information
- The Luminocity 3D website, developed by UCL CASA, which uses 2011 census data to create an interactive map of demographic, employment, housing, transport and economic data. See <http://luminocity3d.org> for more information

Who was at the roundtable?

Andrew England: *Assistant Director of Strategic Planning & Infrastructure, Bournemouth City Council*

Joanna Lee: *Associate Planner, Peter Brett Associates*

Mary Elkington: *Town Planning Services and Analysis, Figura Planning*

Oliver Gibbins: *Planning Officer, Plymouth City Council*

Sarah O'Driscoll: *Service Manager, Strategic City Planning, Bristol City Council*

James Harris: *Policy and Networks Manager, RTPI*

Richard Blyth: *Head of Policy, RTPI*

Geoff Walker: *Policy Project Officer, RTPI South West*

Richard Williamson: *Regional Activities Committee Member, RTPI South West*

Jo Davis: *Regional Senior Director South West, Bilfinger GVA*

Pete Stockall: *Director, Planning Development & Regeneration, Bilfinger GVA*

Richa Joshi: *Consultant, Bilfinger GVA*

Charlotte Taylor: *Graduate Planner, Bilfinger GVA*

Further information

This research programme is kindly sponsored by the RTPI South West, South East and North West regions.

These regional reports will be followed by a final report on the spatial dimensions of sustainability. This will continue to look beyond the simple metrics of proximity to employment and rail to consider the much broader range of factors which contribute to our notion of a 'sustainable location'.

In the meantime we encourage our members and other organisations to use our maps and analysis to explore the spatial dimensions of other significant issues. This could include, for example, a comparison of our maps against the location of major bus and cycle routes, patterns of housing affordability, smaller clusters of employment, or areas of current and future environmental risk.

You can stay informed with all the developments in this work programme, and download high-resolution of the maps, by visiting our website:

www.rtpi.org.uk/knowledge/research/projects/location-of-development

Credits

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Contact details

RTPI - Royal Town Planning Institute

Email: research@rtpi.org.uk

Tel: 020 7929 9494

Royal Town Planning Institute, 41 Botolph Lane, London, EC3R 8DL

Registered Charity in England (262865) & Scotland (SC037841)

Bilfinger GVA project team

- Jo Davis
- Martyn Saunders
- Hannah Baines
- Richa Joshi

Special thanks to GVA's internal expert advisory group: Jo Davis, Christopher Hall, James Kingdom, Pete Stockall, Matthew Morris, Nicola Rigby, Michael Nelson, Tom Baker, Charlotte Taylor, Hollie Bryant

Bilfinger GVA, 65 Gresham Street, London, EC2V 7NQ
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