



ADUR & WORTHING  
COUNCILS

Joint Strategic Committee  
13 July 2021  
Agenda Item 13

Key Decision: Yes

Ward(s) Affected: All

## **Bike share - progressing an Adur & Worthing scheme**

### **Report by the Director for Digital Sustainability and Resources**

#### **Executive Summary**

##### **1. Purpose**

- 1.1. Progress has been made on the strategic opportunity for Adur District and Worthing Borough Councils to introduce a large scale bike and e-bike share scheme to Adur and Worthing through Brighton & Hove City Council's new BTN Bikeshare Procurement Framework.
- 1.2. This presents the opportunity to benefit from one of the most successful bike share schemes in the UK outside London, which could transform the way local people travel; open cycling to a wider audience; help reduce congestion, air pollution and carbon emissions; improve the health of local communities; benefit the visitor economy and increase connectivity across our places.
- 1.3. Adur & Worthing Councils and Brighton & Hove City Council (BHCC) have worked closely together on procurement specifications and governance arrangements since the approval by Joint Strategic Committee in February 2021 to become party to the BTN Bikeshare Framework.

- 1.4. Brighton & Hove City Council are exploring options to build flexibility into the BTN Bikeshare Operator Framework to facilitate future e-scooter integration into the contract. This could provide some local control of the safety and sustainability of e-scooter rental if integrated into the bike share scheme, while maintaining scheme viability (see Section 7).
- 1.5. This report brings detail of the options appraisal, and funding strategy that have been produced and requests approval to progress to the procurement stage to seek an Operator for an Adur and Worthing scheme in parallel with the Brighton & Hove scheme.

## **2. Recommendations**

That Members

- 2.1. Approve that Adur District and Worthing Borough Council proceed to procure a bike share Operator for an Adur and Worthing scheme, using call off contracts from the Brighton & Hove City Council Framework; noting that a report will be brought back to Joint Strategic Committee in December following the outcome of the procurement process to approve the award to the successful operator.
- 2.2. Note the proposed finance strategy for funding bike share, subject to final approval at Committee in December 2021; and note the indicative map of hub locations.
- 2.3. Delegate authority to the Director of Digital, Sustainability & Resources in consultation with the relevant Executive Members from Adur District and Worthing Borough Councils to approve the inclusion of e-scooters in the call off BTN Bikeshare contract for Adur & Worthing should B&HCC include this option within their Framework.

## **3. Background**

- 3.1. A report on joining the City Region Bikeshare Operator Procurement - Framework was taken to the Joint Strategic Committee in February 2021. Members approved:

- 3.1.1. Adur District and Worthing Borough Council becoming party to the BTN Bikeshare Operator Procurement Framework to investigate the delivery of a new bike share scheme; and
  - 3.1.2. noted that officers will undertake a full appraisal of all options for delivery; and explore opportunities to secure funding to support the operation of a scheme; bringing proposals to JSC in Autumn 2021 for approval.
- 3.2. Officers have since investigated funding opportunities for the scheme (see Section 9 Financial Implications) and appointed consultants Steer (authors of the [Bike hare City Region Feasibility Report](#)) to develop two pieces of work:
  - 3.2.1. *Adur & Worthing Bike Share: Review of Operating Area, Size, Usage and Financials* (see Appendix 3 and summarised at Section 5);
  - 3.2.2. *Adur and Worthing potential bike share hub network* (see Appendix 4 and summarised at Section 4).
- 3.3. Joining BTN Bikeshare helps the councils towards its Vision from the Local Cycling & Walking Action plan: *to create a place where walking and cycling becomes the preferred way of moving around Adur and Worthing*. The delivery of improved infrastructure for cycling is well supported through Platforms for our Places and SustainableAW.

#### **4. Adur and Worthing bike share: Indicative hub network**

- 4.1. Work to develop a map of potential hub locations has been undertaken. The map produced forms an indicative set of locations and will be firmed up once an operator has been appointed. The councils will own all infrastructure including bikes and hubs, and will be responsible for any planning applications and obtaining relevant permissions for the hubs. Further engagement with stakeholders will finetune these locations on appointment of a BTN Bikeshare Operator (planned at the end of 2021) and in discussion with them.
- 4.2. The indicative hub network includes 38 hubs to be delivered in Phase 1 of the scheme, and an additional 13 potential hub locations to be delivered in Phase 2 (or over time) in line with expected growth in bike share demand due to increase in cycle infrastructure provision, and new developments coming up in the area.
- 4.3. The operating area of the proposed scheme has been extended as part of this additional work to include the north of the A27 in Findon Valley and North

Lancing, but it is proposed the scheme be extended to these areas in Phase 2 when safe cycling provision is available.

- 4.4. Based on success of schemes nationally and the existing Brighton Bikeshare scheme the network design has considered the distance between hubs, key trip origins and destinations and the potential size of the hubs. The following hub sizes have recommended for Adur and Worthing:
  - Small approx. 10 spaces (10 metres, or 2-3 car parking spaces)
  - Medium approx. 20 spaces (20 metres, or 4-5 car parking spaces)
  - Large approx. 30 spaces (30 metres, or 6-7 car parking spaces)
- 4.5. Based on standard industry practice 322 bikes would require about 650 parking spaces (twice the number of bikes in the scheme); with an average 15 spaces in each hub. Site locations and hub sizes were reviewed as a part of a site visit to each location.
- 4.6. The methodology to create the hub map aimed for a well spaced network followed the principles of :
  - 4.6.1. high concentration of hubs in key trip generating locations (such as Worthing town centre) and a lower density of hubs in areas with less potential demand (such as lower density residential areas)
  - 4.6.2. ideally is one that has a hub within 10-min walking distance from each other
  - 4.6.3. planned LCWIP cycle infrastructure
- 4.7. The preliminary network identified the following key locations:
  - 4.7.1. The Worthing town centre and seafront are the main trip attractor locations; and a number of hubs should be concentrated in the area between the Worthing station and the seafront all within a 5-min walking distance;
  - 4.7.2. All railway stations within the scheme area should have a hub at the station or in close proximity, being key trip origin and destination points for residents and tourists;
  - 4.7.3. Shoreham town centre is another attractive location, with good population density, cycling opportunities, shops and restaurants;
  - 4.7.4. Leisure parks such as Brooklands Pleasure Park, Buckingham Park and Playground, etc. have been identified for leisure trips;
  - 4.7.5. Hospitals and areas around parades of shops or streets with higher levels of pedestrian activity.

4.8. On completion of a preliminary network design, engagement sessions were held (see Section 8) which informed revisions based on local knowledge and plans. Site visits were undertaken by Steer to review factors such as:

- 4.8.1. Visibility of site
- 4.8.2. Physical availability of space
- 4.8.3. Potential size of the hubs
- 4.8.4. Safety (avoiding busy crossings, high traffic flow, etc.)
- 4.8.5. Whether to put them on carriageway or footway
- 4.8.6. Trees or utilities affected (e.g. manholes, signage, etc.)
- 4.8.7. If there are cycle parking spaces nearby/adjacent to the location
- 4.8.8. Proximity to the planned LCWIP cycle routes
- 4.8.9. Council or other ownership; private or public land (some locations identified might need permissions from land owners)

### **Shortlisted Locations and hub sizes**

4.9. Based on the conclusions of the options appraisal referred to above, and the engagement referred to in Section X: the proposed network identifies hub 38 locations for Phase 1 including 644 bike parking spaces; and 13 additional potential locations for Phase 2. These are illustrated in appendices:

**Appendix 1** presents a list of the shortlisted hub locations for Phase 1 & 2. **Appendix 2** provides a map of the Combined Adur and Worthing Indicative Hub locations and LCWIP routes; and Adur and a Worthing map separately.

## **5. Options Appraisal: Review of Operating Area, Size, Usage & Financials**

5.1. A review has been undertaken on the Adur and Worthing bike share scheme operating area, size (number of bikes and hubs), estimated scheme usage and project financials (see Steer report, appendix 3)

### **Review of Scheme Operating Area and Size**

5.2. An optimum scheme area at scheme launch has been created. Key indicators considered in the analysis were: Population density; Employment density; Mode of commute to work; Mosaic Classification of population with propensity to cycle; Key points of interest (employment, retail, hospitals, etc.)

5.3. The operating area was reviewed to include areas north of the A27, in particular, Findon Valley and North Lancing. Site visits resulted in recommendations from Steer that any expansion to these areas are included in a potential Phase 2 bike share scheme expansion subject to improved cycle infrastructure and scheme success.

- 5.4. The 2 bikes per 1,000 is consistent with the provision provided in Brighton with the initial launch of the BTN Bikeshare scheme. With a slightly expanded operating area, to maintain this provision, a further 20 bikes (10 standard, 10 e-bikes) would be required at the time Phase 2 is delivered.

### **Review of Estimated Demand**

- 5.5. Data from Brighton and Hove's scheme users collected by CoMoUK Bike Share Surveys in 2019 and 2020 has been used to predict bike share use trends in the Adur and Worthing area.
- 5.6. In Brighton and Hove, the age profile of bike share users was older than the British average. There is a greater proportion of female users than male (49% and 47% respectively). Typically, cycling is male dominated, (the national average shows 53% male users over 45% female). Therefore, there is also a good gender diversity for cycling in the area. Together, these charts show a better-than-average take-up of cycling across demographics locally. Some other key findings were as follows:
- 5.6.1. Of the top five reasons people used the bike share, 2 were for enjoyment and health, and three were for convenience. Fun and fresh air was the number one reason, with exercise in third place. This aligns with user's purposes for using the bike share, where cycling for leisure was the dominant answer, almost half of trips.
  - 5.6.2. When it came to convenience, users appreciated that the bikes made their journeys quicker and easier. Users also found the bike share to remove the worries of owning their own bike.
  - 5.6.3. A quarter of people cycled for environmental reasons compared to just 18% of users avoiding the cost of their own bike and 15% who found it cheaper than other modes of transport. T
  - 5.6.4. Those who used the scheme weekly did so most often for leisure, commuting or personal errands. A third of users had commuted to work on the bikes.
  - 5.6.5. When asked about their last journey, users said 19% of trips replaced one that would have been made by car.
  - 5.6.6. Users were also asked their preferred transport mode, including electric scooters, with a mostly positive response towards the idea. 44% were receptive to e-scooters, though most would prefer a mix of scooters and bikes.
  - 5.6.7. On the impact of the Covid pandemic, demand for the schemes stayed strong throughout 2020, and the pandemic may have been the cause for an increase in scheme use.

- 5.7. On Comparison of demographics:
- 5.7.1. a larger population of older people indicates demand would be moderately lower in Adur and Worthing though the demographic is becoming younger as more families move into Adur & Worthing.
  - 5.7.2. Due to the slightly higher employment levels in Adur and Worthing, and the propensity of its wage bracket to cycle, a good uptake of cycling can be expected.
- 5.8. Data suggests an uptake in cycling of about 74% compared to Brighton and Hove, justifying an assumption that demand for a bike share in A&W will be about 75% of that in B&H. Based on all the above, the assumed demand for Adur and Worthing has not been changed: it is expected to be around 1.6 trips per standard bike per day and 2.0 trips per e-bike per day. Overall, the average expected number of trips per bike per day is 1.8, giving an annual number of potential trips of about 208,250. The scheme density and assumptions of usage in the financial model reflect these findings.

**Revision of Financial Model**

- 5.9. The finances of the project have been reviewed following the revision of the number of hubs to be provided, and the financial model has been updated to reflect this. The number of bikes and the estimated demand have remained the same.
- 5.10. As indicated in the above sections, the number of bikes and potential scheme usage (number of trips) has not been changed therefore, there will be no change in the estimated operating costs and revenue. The estimated annual operating cost (£233,419) and revenue (£225,617) for the scheme remains the same as estimated earlier (see Section 9 Financial Implications, paragraph 3.2 below). This means that there are no expected changes to scheme’s financial performance or profit/subsidy requirements.
- 5.11. The scheme capital costs exclude additional hubs or bikes as part of a Phase 2 expansion. Costs for any Phase 2 expansion will depend on the confirmed number of hubs, which may differ depending on timelines for completion of new developments.

**6. Next Steps**

|                                   |  |
|-----------------------------------|--|
| <b>Procurement and engagement</b> |  |
| 2021 August                       | August - BHCC publish invitation to Tender for the Operator for BHCC & AWC |

|   |   |
|---|---|
| 2021 Autumn                             | <ul style="list-style-type: none"> <li>• Soft Market Engagement (this will be light touch ahead of engagement &amp; promotion by Operator)</li> <li>• Secure Sponsorship</li> <li>• Conclude Procurement of BTN Bikeshare Operator</li> </ul>   |
| 2021 November                           | <ul style="list-style-type: none"> <li>• Report to JSC - seeking approval to award contract, for finances on confirmation with operator of costs</li> <li>• Award the BTN Bikeshare Operator contract</li> </ul>  |
| <b>Mobilisation Nov 2021 - Dec 2022</b> |   |
|   | <ul style="list-style-type: none"> <li>• Operator finalises hub locations with A&amp;WC</li> <li>• Operator undertakes engagement programme and promotes scheme</li> <li>• Secure relevant Planning approvals and permissions for hubs, working closely with WSCC</li> <li>• Installation of hubs</li> <li>• Purchase of bikes, service vehicles, create a servicing hub in A&amp;W etc</li> <li>• Soft market testing summer 22 onwards</li> </ul> |
| <b>Scheme launch Spring 2023</b>        |   |

## 7. Issues for consideration

7.1. Governance arrangements with B&HCC will be finalised in an *Access Agreement*. Currently A&WC are in close collaboration with B&HCC on all aspects of the bike share reorganisation and procurement. AWC officers are represented at the *Bikeshare Reorganisation Strategic Board*, and regular Tactical Groups on *Data and IT*, and *Infrastructure*. All plans are being jointly developed.

### **E-Scooters**

7.2. E-scooters are currently legal for use on the public highway only where the Government has issued temporary licenses for pilot trials to assess risks and benefits in over 50 areas across England. Trials have been extended to June 2022, and a decision on permitting their use more widely will not be made until Summer 2022. Legislation, therefore, may not come into effect until mid-2023. Trials have shown a large uptake, but are identifying some safety risks.

7.3. A specification has been developed for inclusion in the Draft BTN Bikeshare Operator Contract based on the specification of the government trials. This has been developed on the basis that if other e-scooter operators come into the area it could impact negatively on the bike share scheme. An e-scooter scheme integrated into the bike share contract on the other hand, could

complement bike share and provide the councils with some controls over safety, sustainability, range, accessibility and street clutter. This element of the contract would not be activated unless e-scooter legalisation is approved by the government.

- 7.4. The [Bikeshare Feasibility Study](#) produced by Steer November 2020, Paragraph 7.73), noted that a separate, council awarded concession contract to an e-scooter operator would impact negatively on bike share hires (but not necessarily revenues) by around 9-10%. In the event a different operator introduced e-scooters to the area, a negative revenue impact could be greater. Conversely, their integration was welcomed by 44% of Current BTN Bikeshare users if a mix of bikes, e-bikes and e-scooters was offered under the new scheme.
- 7.5. If BHCC decides to proceed with a contract variation on e-scooters, it is recommended that Adur & Worthing also include an e-scooter variation within the call off contract advertised for the Adur & Worthing areas.

## **8. Engagement and Communication**

- 8.1. AWC officers involved in the development of the AW bike share scheme include Finance, Legal, Procurement, Planning, Economy & Place, Environmental Health, Sustainability, Parking.
- 8.2. On completion of the preliminary network design, sessions were held with stakeholder groups, including AW Walking and Cycling Action Group, West Sussex County Council and an AWC Officers Working Group where the indicative network design was shared to obtain feedback on the indicative locations. Additional locations were added to the list, many of which are around upcoming new housing and mixed-use developments such as New Monks Farm, Holmbush Retail Park; planned cycle routes; and along the seafront in Adur. Some of these additional sites have been recommended for consideration in a potential Phase 2 of the scheme. Inputs from the stakeholders were contributed to a revised network design confirming about 43 locations for Phase 1; which were then reviewed through a site visit.
- 8.3. Soft market testing will be undertaken by the councils to promote the forthcoming bike share scheme and establish support. Further engagement on the proposed indicative hub locations can also be taken with further stakeholders.

- 8.4. The main promotion and engagement for the scheme will be led by the incoming Bikeshare operator once appointed, using the scheme branding and promoting scheme specifics. The Invitation to Tender includes the following information on this: (tb added by BHCC)
- 8.5. AWC officers will work closely with West Sussex County Council on any applications for Traffic Regulation Orders or Footway Licensing needed through them.
- 8.6. Engagement with landowners will be undertaken where needed and leases will need to be established, e.g. for Network Rail sites ahead of the installation of hub infrastructure. A methodology will be developed between AWC and BHCC to ensure a consistent approach across the area.

## 9. Financial Implications

- 9.1. The earlier report presented in February identified that to progress the scheme the Councils would need to potentially fund a small annual operating deficit of £7,800 for the Adur & Worthing scheme and that the councils will also need to procure the bikes and infrastructure at an initial cost of £830,350.
- 9.2. The final impact on the Councils revenue budgets will depend on the level of external funding, establishing the full costs of providing the cycle hub infrastructure and the outcome of the procurement exercise. However, to ensure that there is sufficient financial capacity to take the scheme forward the following amounts have been built into the Medium Term Financial Plan.

| Total revenue costs        | 2022/23       | 2023/24<br>(full year) |
|----------------------------|---------------|------------------------|
|                            | £             | £                      |
| Net annual subsidy         | 5,200         | 7,800                  |
| Annual debt charges        | 0             | 141,290                |
| Mobilisation costs         | 80,700        | 0                      |
| <b>Total revenue costs</b> | <b>85,900</b> | <b>149,090</b>         |
| Split as follows:          |               |                        |
| Adur                       | 34,360        | 59,640                 |
| Worthing                   | 51,540        | 89,450                 |

- 9.3. The associated revenue and capital budgets will need to be formally approved as part of the budget process, and there may be a need to release mobilisation costs earlier in 2021/22. This will be addressed more fully in the report to be considered by members later in the year following the outcome of the procurement exercise and a fuller assessment of the cost of the cycle hub infrastructure when the Councils will have certainty about the level of investment required and the level of external funding available.
- 9.4. In the interim, work is continuing to identify external funding to offset the costs to the Council. To date:
- 9.4.1. Developer Contributions held by Worthing Borough Council towards Sustainable Transport Provision have been identified totalling £35,750.30. The County Council has approved these being spent on bike share Infrastructure. Further S106 held by the County Council are also being explored to contribute to the CAPEX for the Adur & Worthing bike share scheme. Currently no contributions for transport have been identified for Adur District Council held either by the District or County Council.
  - 9.4.2. BHCC and AWC are jointly seeking a commercial sponsor to provide a sponsorship deal over 3 years to the combined B&H expanded scheme and the new A&W bike share scheme. It is proposed that this revenue will be shared according to the proportion of the total combined fleet owned by each authority. A specialist Sponsor recruitment agency has been appointed to this task. Preliminary discussions with the agency indicate the market is likely to deliver sponsorship revenue which will ensure a healthy revenue surplus for the A&W scheme from year 1. The agency agrees that a Local Authority commitment to reinvesting 100% of its share of any surplus back into the scheme will reassure potential sponsors that their contributions are being used to support the scheme's development and are not being used on other projects which don't feature their branding
  - 9.4.3. Government has published a letter to Highways Authorities indicating eligible costs under Round 3 of the Active Travel Fund. It is possible that Bikeshare Hub infrastructure costs along new cycle routes delivered could be eligible. Transport colleagues at the County are investigating this, particularly in relation to the proposed Adur scheme around the A270.

## **10. Legal Implications**

- 10.1. Under Section 111 of the Local Government Act 1972, the Council has the power to do anything that is calculated to facilitate, or which is conducive or incidental to, the discharge of any of their functions.
- 10.2. The Council has a wide general power of competence under Section 1 of the Localism Act 2011 to do anything an individual can do apart from that which is specifically prohibited by pre-existing legislation.
- 10.3. Section 3(1) of the Local Government Act 1999 (LGA 1999) contains a general duty on a best value authority to make arrangements to secure continuous improvement in the way in which its functions are exercised, having regard to a combination of economy, efficiency and effectiveness.
- 10.4. Section 1 Local Government (Contracts) Act 1997 confers power on the local authority to enter into a contract for the provision of making available assets or services for the purposes of, or in connection with, the discharge of the function by the local authority.
- 10.5. Under the Public Contract Regulations 2015 where a Public Authority is to enter into a contract for the supply of goods and services, and the value of those goods and services exceeds a financial limit of £189,330 any procurement exercise to contract for those goods and services must be conducted in accordance with the Regulations and any failure to do so may be declared anti-competitive and in breach of the Regulations.
- 10.6. In enabling BHCC to procure for the new BTN Bikeshare scheme on its behalf, the Councils must ensure that the procurement is compliant with the Public Contract Regulations 2016 as well as their own Contract Standing Orders.

## **Background Papers**

- [City Region Bikesare - transforming travel through collaborating on a pedal and e-bike rental scheme 9th February 2021](#) report to the Joint Strategic Committee
- [Adur & Worthing Local Cycling & Walking Infrastructure Plan 2020](#)
- [Gear change: a bold vision for cycling and walking, DFT 2020](#)
- [BHCC Item 49 Brighton Bikesare Reorganisation - Environment Transport & Sustainability Committee \(Nov 2020\)](#),
- [BHCC Item 104 Brighton Bikesare Reorganisation Policy & Resources Committee](#) (Dec 2020)

## **Officer Contact Details:-**

Francesca Iliffe, Strategic Sustainability Manager

[francesca.iliffe@adur-worthing.go.uk](mailto:francesca.iliffe@adur-worthing.go.uk)

07771381385

## **Sustainability & Risk Assessment**

### **1. Economic**

- The bike share scheme could support the modal shift intended to improve transport connectivity while reducing associated congestion which is predicted to increase by 51% by 2050. To maintain a vibrant economy it is crucial to maintain good transport flows; transport infrastructure will need to provide alternatives to car travel for business travel; commuting; visitor movement; leisure & utility trips.

### **Social Value**

- Improved cycling and walking infrastructure can increase safety and accessibility; helping more communities to make cycling and walking their first choice for shorter journeys and as part of longer ones. Cycling and walking provides the cheapest form of transport compared with car travel and public transport. It also brings health benefits through active travel.

### **2.2 Equality Issues**

- A full Equalities Impact Assessment will be undertaken for the City Region Bikeshare scheme.
- Recent research suggests the availability of Electric assist pedal bikes increases distances travelled and participation in cycling by both older cyclists (over 55s) and females generally. Both demographics are currently under represented in UK cycling according to the most recent Sport England Active Lives Survey

### **2.3 Community Safety Issues (Section 17)**

- A risk register will be developed for Adur & Worthing bike share scheme and safety audits undertaken for the Hub locations.

### **2.4 Human Rights Issues**

- Matter considered and no issues identified

### **Environmental**

- Transport emissions account for over a third of carbon emissions in Adur & Worthing. Unlike other sectors, transport emissions locally have been rising since 2013. Cycling and Walking are both zero carbon forms of transport. Greater use of these forms help reduce poor air quality.

### **Governance**

- Development of a bike share scheme for Adur and Worthing is well supported by council policy (see para 3.3).

## Adur and Worthing Bike Share Proposed Hub Locations

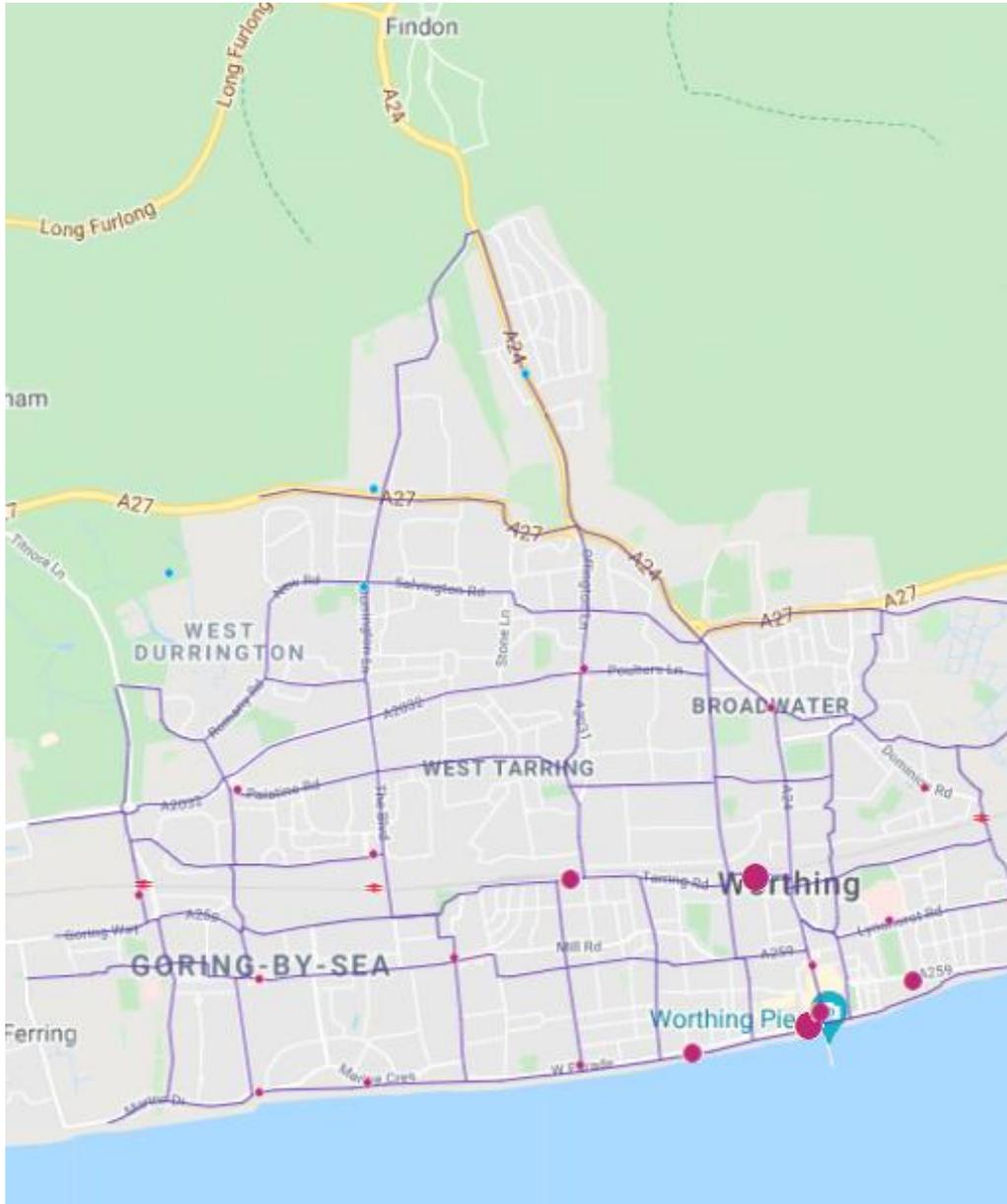
| Ref Number | Location   | Hub Size | Phase | District |
|------------|--|----------|-------|----------|
| 1          | Sea Lane Café                                    | S        | 1     | Worthing |
| 2          | George V Avenue                                  | S        | 1     | Worthing |
| 3          | Worthing Pier/Montague Place                     | L        | 1     | Worthing |
| 4          | Splashpoint Leisure Centre                       | M        | 1     | Worthing |
| 5          | Chapel Road (KFC) Worthing                       | S        | 1     | Worthing |
| 6          | Poulters Lane Car Park                           | S        | 1     | Worthing |
| 7          | Worthing Hospital                                | S        | 1     | Worthing |
| 8          | Worthing Station                                 | L        | 1     | Worthing |
| 9          | Brooklands Pleasure Park                         | S        | 1     | Worthing |
| 10         | Ham Road   | S        | 1     | Worthing |
| 11         | Sussex Yeoman, Palatine Road                     | S        | 1     | Worthing |
| 12         | Goring Road (PO)                                 | S        | 1     | Worthing |
| 13         | Goring-By-Sea Station                            | S        | 1     | Worthing |
| 14         | West Worthing Station                            | M        | 1     | Worthing |
| 15         | Dominion Road Post Office                        | S        | 1     | Worthing |
| 16         | The Burlington                                   | M        | 1     | Worthing |
| 17         | Grand Avenue                                     | S        | 1     | Worthing |
| 18         | Goring beach front                               | S        | 1     | Worthing |
| 19         | Worthing Town Centre/ Royal Arcade Shopping Mall | M        | 1     | Worthing |
| 20         | Strand Parade                                    | S        | 1     | Worthing |
| 21         | Lancing Beach Car Park                           | S        | 1     | Adur     |
| 22         | Broadwater Cricketer's Parade                    | S        | 1     | Adur     |
| 23         | Monks Recreation Ground                          | S        | 1     | Adur     |
| 24         | Cokeham Road                                     | S        | 1     | Adur     |
| 25         | Shoreham-By-Sea Station                          | M        | 1     | Adur     |
| 26         | Shoreham Football Club                           | M        | 1     | Adur     |
| 27         | Southlands Hospital                              | S        | 1     | Adur     |
| 28         | Londis, Old Shoreham Road                        | S        | 1     | Adur     |
| 29         | Lancing Station                                  | M        | 1     | Adur     |
| 30         | Southwick Station                                | S        | 1     | Adur     |

| Ref Number | Location                                       | Hub Size | Phase | District |
|------------|--|----------|-------|----------|
| 31         | Ferry Road                                     | S        | 1     | Adur     |
| 32         | South Lancing (The Broadway)                   | S        | 1     | Adur     |
| 33         | Ropetackle Arts Centre                         | S        | 1     | Adur     |
| 34         | Southwick Square                               | M        | 1     | Adur     |
| 35         | Old Shoreham Toll Bridge                       | M        | 1     | Adur     |
| 36         | Buckingham Park and Playground                 | M        | 1     | Adur     |
| 37         | Co-op Upper Shoreham Road                      | S        | 1     | Adur     |
| 38         | Shoreham Town Centre by La Patisserie          | L        | 1     | Adur     |
| 39         | Pond Lane Recreation Ground                    | S        | 2     | Worthing |
| 40         | Sussex Partnership Foundation Trust/Arundel Rd | S        | 2     | Worthing |
| 41         | Worthing Findon Road Express                   | S        | 2     | Worthing |
| 42         | West Durrington Development                    | S        | 2     | Worthing |
| 43         | Brighton City Airport                          | S        | 2     | Adur     |
| 44         | Fishersgate Station                            | S        | 2     | Adur     |
| 45         | Ricardo, Old Shoreham Road                     | S        | 2     | Adur     |
| 46         | Manor Rd, North Lancing                        | S        | 2     | Adur     |
| 47         | LIDL Shoreham                                  | S        | 2     | Adur     |
| 48         | IKEA Development                               | S        | 2     | Adur     |
| 49         | New Monks Park                                 | S        | 2     | Adur     |
| 50         | Sompting Development                           | S        | 2     | Adur     |
| 51         | Holmbush Retail Park                           | S        | 2     | Adur     |

# Adur and Worthing Bike Share Hub Network Maps

## Worthing

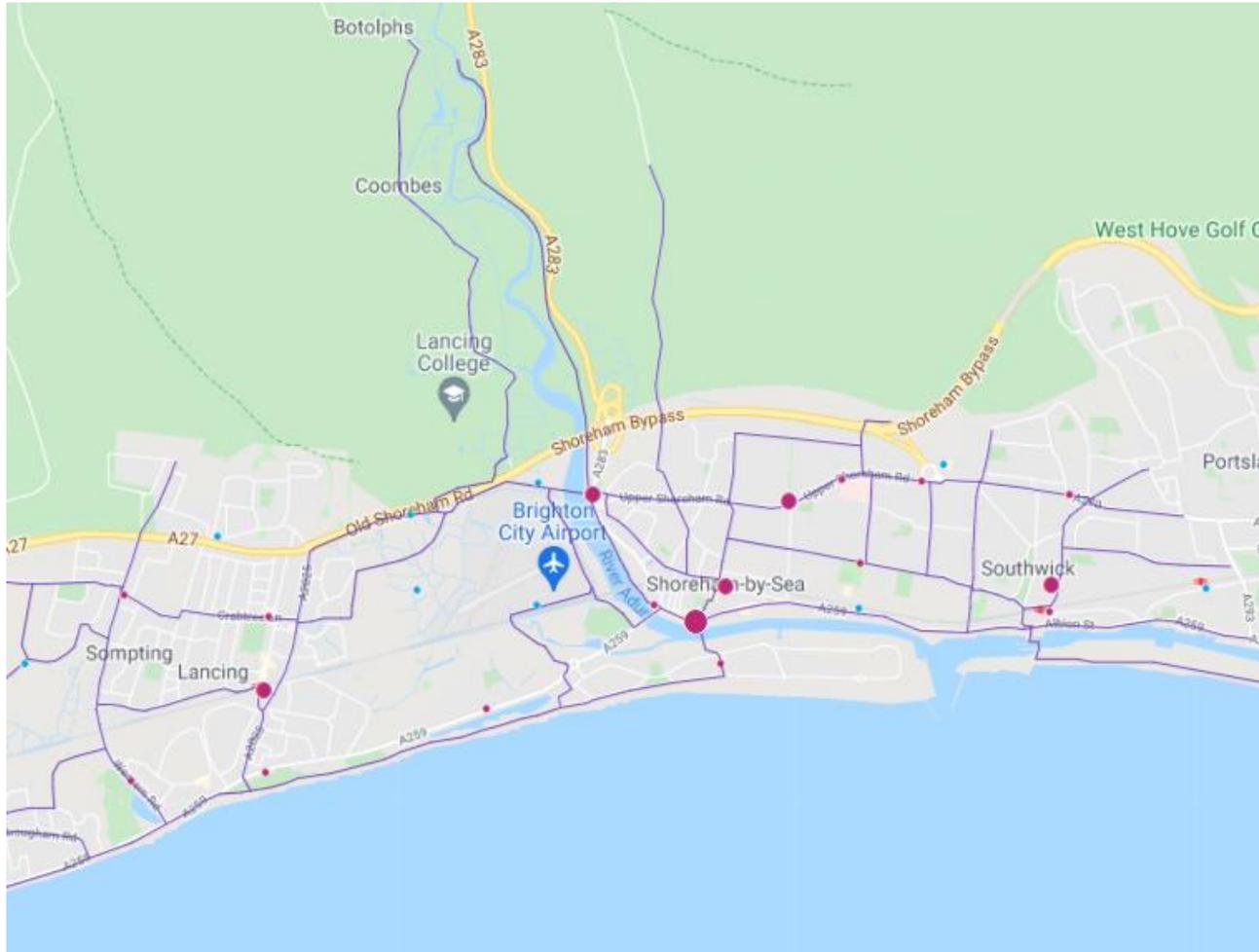
Figure 1: Worthing Bike Share Hub Network Map (with Planned LCWIP routes in purple)



Source: Steer GIS layers on Google My Maps

## Adur

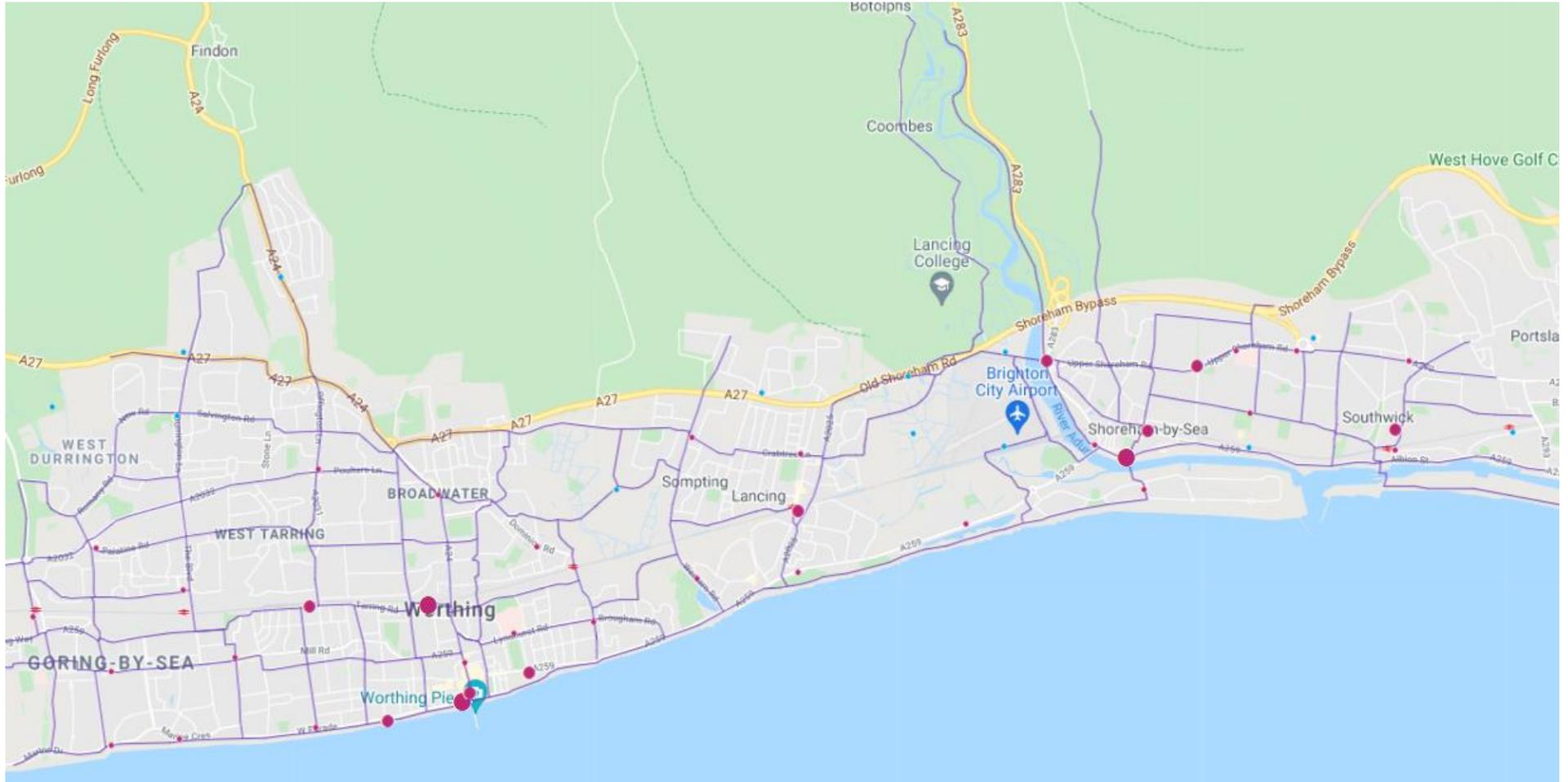
Figure 2: Adur Bike Share Hub Network Map (with Planned LCWIP routes in purple)



Source: Steer GIS layers on Google My Maps

## Adur and Worthing

Figure 3: Adur and Worthing Bike Share Hub Network Map (with Planned LCWIP routes in purple)



Source: Steer GIS layers on Google My Maps

**Legend:**

 Phase 1 Location       Phase 2 Location

**Hub-size:**

● Small (approx. 10 spaces)    ● Medium (approx. 20 spaces)    ● Large (approx. 30 spaces)

To Francesca Iliffe; Andy Willems

## Technical Note

Cc Matthew Clark

From Steer

Date 17 June 2021

Project Adur & Worthing Bike Share Hub Location Analysis Project No. 24018501

---

# Adur & Worthing Bike Share: Review of Operating Area, Size, Usage and Financials

## Introduction

1. The following technical note presents the work undertaken to review the Adur and Worthing bike share scheme operating area, size (number of bikes and hubs), estimated scheme usage and project financials. This document covers tasks 4, 5 and 6, as described in the proposal for additional work (25 March 2021). The updates provided are on the following:

### Review of Scheme Operating Area and Size

1. Following Steer's initial recommendations for the Adur and Worthing bike share scheme, at the request of officers we have reviewed the proposed operating area. The areas of Findon Valley and North Lancing have been included in the new maps and the number of hubs required to support these have been added. In order to investigate the potential of reducing the scheme, established bike share schemes in other locations were reviewed to analyse the correlation between scheme density and number of trips per bike per day. As a result of site visits we recommend that any expansion to the areas of Findon Valley and North Lancing are included in a potential Phase 2 bike share scheme expansion.

### Review of Estimated Demand

1. Data from Brighton and Hove's scheme users collected by CoMoUK Bike Share Surveys in 2019 and 2020 has been used to review bike share use trends in the area. This information has been compared to Adur and Worthing by considering similarities in demographics between the two areas. The evidence has been used to review initial assumptions on estimated bike share use in Adur and Worthing and support the previous recommendations which have been made.

### Revision of Financial Model

1. The finances of the project have been reviewed following the revision of the number of hubs to be provided, and the financial model has been updated to reflect this. The number of bikes and the estimated demand have remained the same.

## Structure of this Document

1. The document will describe Steer's recommendation for a bike share scheme in Adur and Worthing and the expected use of the scheme. Subsequent sections will explain the data collected to create and justify these recommendations. This document contains the following sections:
  - Review of Scheme Operating Area and Size
  - CoMoUK Bike Share User's Survey Analysis (Brighton bike share users, including effect of COVID-19)
  - Comparison of Demographics
  - Revision of Financial Model

## Review of Scheme Operating Area and Size

1. Underlying relative demand for a bike share scheme was mapped across Adur and Worthing using GIS analysis by Hex Cells to determine an optimum scheme area at scheme launch. Key indicators considered in the analysis were:
  - Population density
  - Employment density
  - Mode of commute to work (public transport and cycling)
  - Mosaic Classification<sup>1</sup> of population with propensity to cycle (using CoMoUK 2020 bike share survey findings)
  - Key points of interest (employment, retail, hospitals, etc.)
2. The heat maps below show areas most likely to take up bike share, relative to the Adur and Worthing authorities (purple is most likely, to yellow being least likely and areas left blank are those with zero population). The operating area originally suggested as part of the Joint City Region Bike Share Scheme Business Case (developed for the expansion of the BTN Bikeshare in Brighton & Hove) is shown in Figure 1 with the revised area, based on inputs from stakeholders at Adur and Worthing Councils is shown in Figure 2.
3. As could be expected, the cells with the highest bike share potential were around Worthing town centre where there are higher opportunities for trip origins and destinations. Moving away from the town and residential centres, potential decreases. This data allowed for the scoping of the initial scheme area, which included the areas south of A27. However, the initial scheme area has been expanded to include residential neighbourhoods such as High Salvington, Findon Valley and North Lancing. This increases the population able to access the scheme from 89% to almost 98%.

---

<sup>1</sup> Mosaic is a postcode level customer segmentation product produced by Experian. It splits the UK population into 15 groups and 66 types, all of which have unique motives and needs for different services.

Figure 1: Initial Adur and Worthing Operating Area

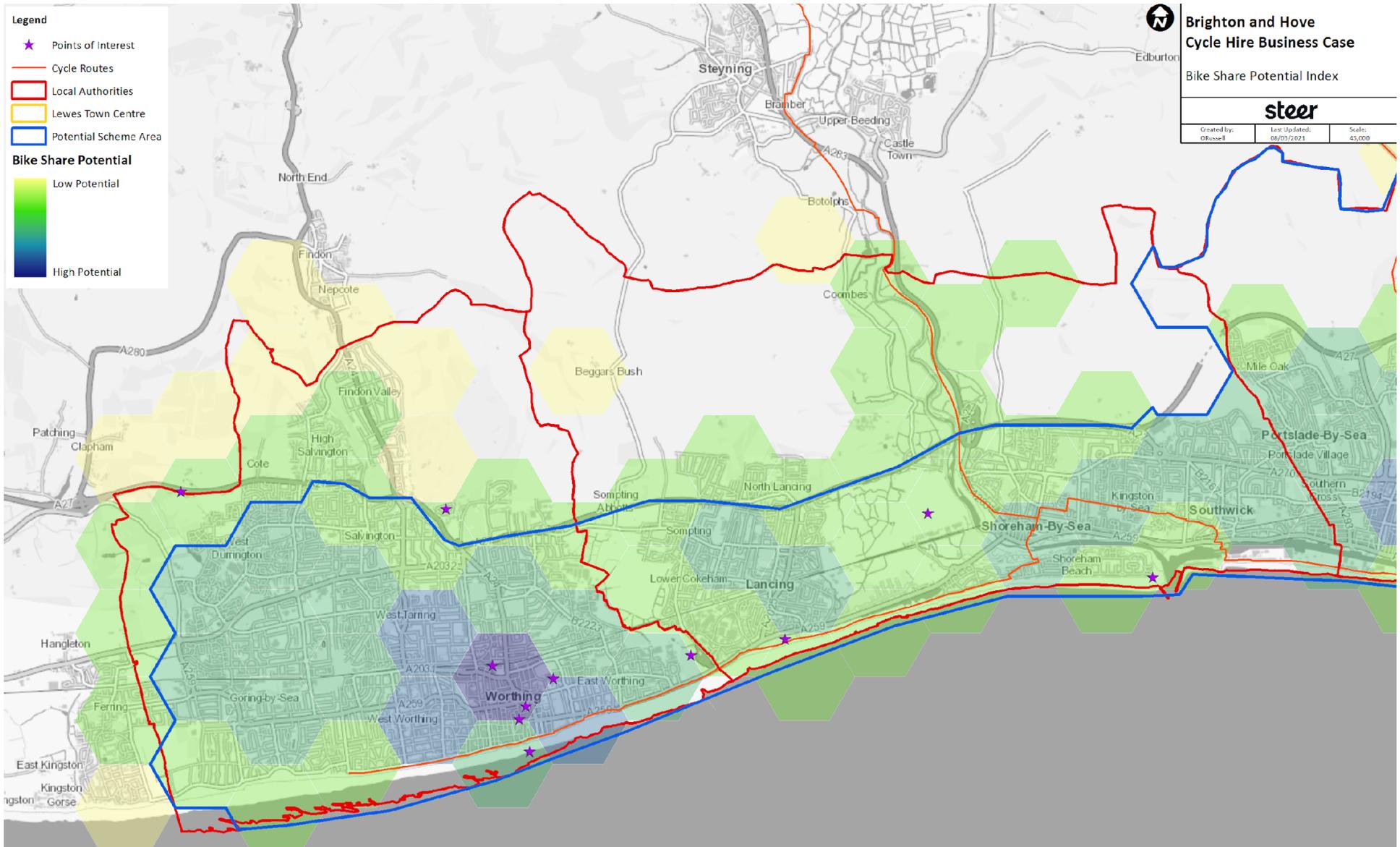
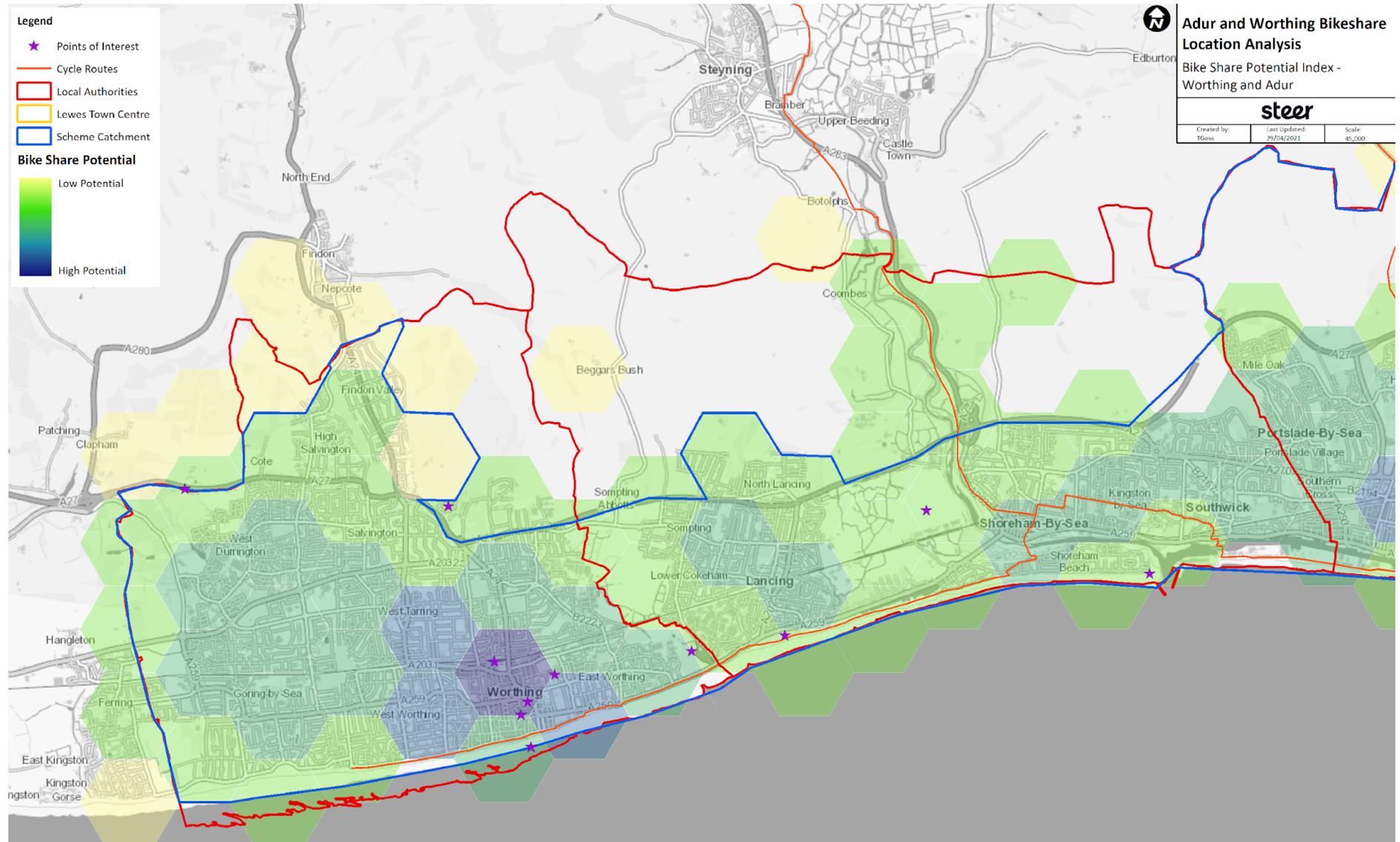


Figure 2: Expanded Adur and Worthing Operating Area



- Table 1 compares the sizes of the initial and expanded schemes. The proposed expansion retains the same number of bike and adds 4 hubs to cover the larger area. This reduces the density of bikes to 1.9 per 1,000 residents, which is slightly below the recommended provision. To maintain a provision of 2 bikes per 1,000, a further 20 bikes (10 standard, 10 e-bikes) would be required.

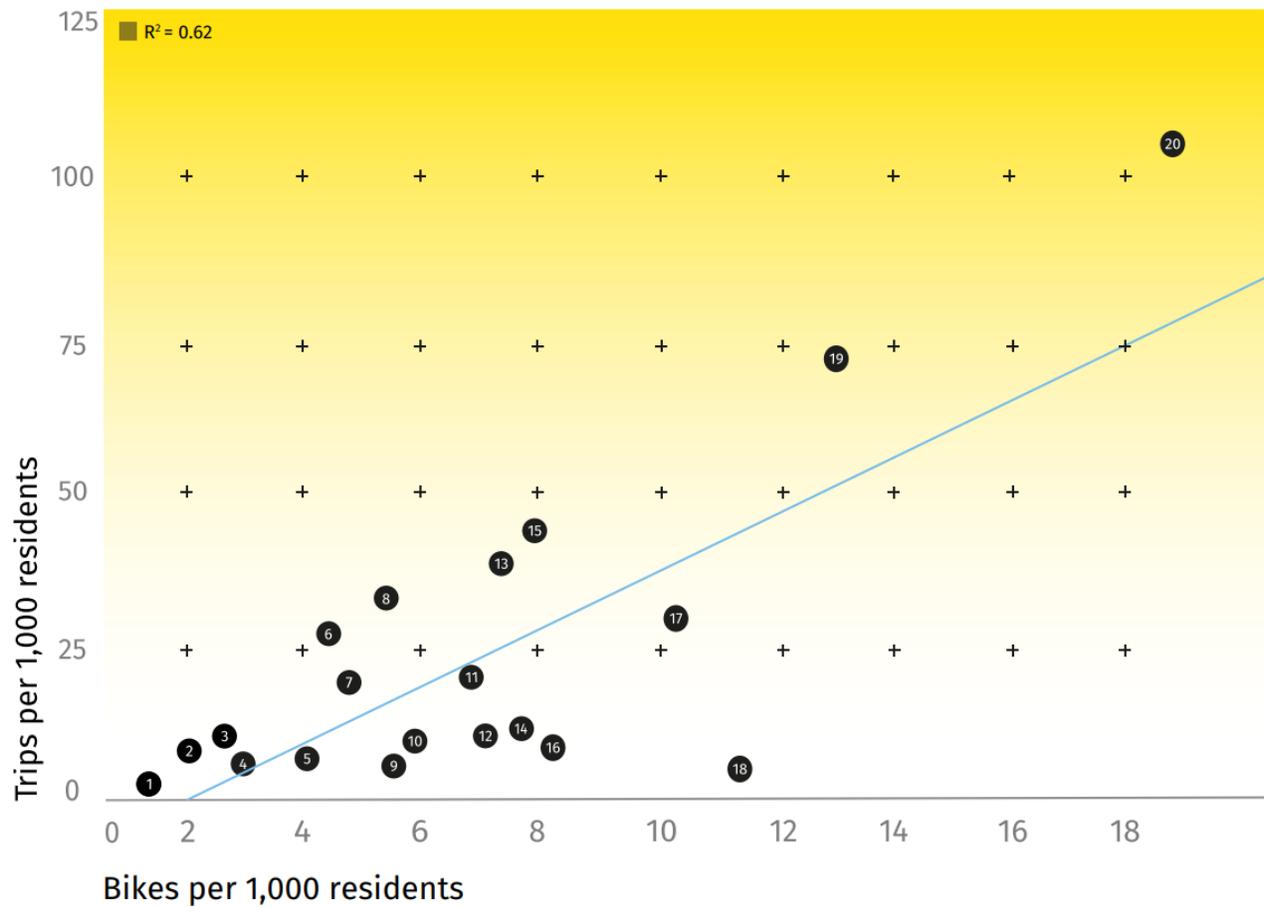
**Table 1: Comparison of Initial and Expanded Scheme Areas**

|   | Brighton & Hove | Adur and Worthing initial scheme area | Adur and Worthing expanded scheme area (more hubs) |
|---|-----------------|---------------------------------------|--|
| <b>In-scope Population</b>                                    | 287,900         | 160,600                               | 171,442  |
| <b>In-scope Employment</b>                                    | 133,700         | 64,000                                | 72,800   |
| <b>In-scope Sq. km</b>  | 104             | 47                                    | 50   |
| <b>Bikes per 1,000 population</b>                             | 2.7             | 2.0                                   | 1.9  |
| <b>Total bikes</b>  | <b>780</b>      | <b>322</b>                            | <b>322</b>   |
| <b>Standard bikes (50%)</b>                                   | 390             | 161                                   | 161  |
| <b>e-bikes (50%)</b>  | 390             | 161                                   | 161  |
| <b>Total hubs</b>   | <b>86</b>       | <b>43</b>                             | <b>47 (+4)</b>                                     |
| <b>Bikes per sq. km.</b>                                      | 7.5             | 6.8                                   | 6.4  |
| <b>% Local Authority population with access to bike share</b> | 100%            | 89%                                   | 98%  |

#### Relationship between bike density and potential usage

- We have also reviewed the correlation between bike density and potential trips. Across established bike share schemes, there is a positive correlation between bike density and the number of trips taken. Cologne, with 1 bike per 1,000 population had a very small number of trips. This is because a sufficient density of bikes increases the visibility and reliability of the scheme, thereby increasing usage. Therefore, to achieve a viable level of demand, a minimum number of 2 bikes per 1,000 residents is suggested. Any less, and the low number of trips may result in an unsustainable scheme revenue. It is also recommended to increase the number of hubs to maintain the density of coverage across the area. Reducing the number of bikes or hubs will reduce journey opportunities as bike share schemes require a continuous network covering all key origin and destination locations to work effectively.
- Figure 3 presents the ratio of bike share trips corresponding to scheme density as suggested in the ITDP's Bike Share Planning Guide (2018).

**Figure 3: Bike Share Trips Against Density (Source: ITDP Bike Share Planning Guide 2018)**



- 1 Cologne
- 2 Rio de Janeiro
- 3 Boston
- 4 Buenos Aires
- 5 Chicago
- 6 Barcelona
- 7 Washington, DC
- 8 New York City
- 9 Atlanta
- 10 Madison
- 11 Vancouver
- 12 Portland
- 13 Paris
- 14 Minneapolis
- 15 Montreal
- 16 Boulder
- 17 London
- 18 Seattle
- 19 Dublin
- 20 Mexico City

# CoMoUK Bike Share User's Survey

## Overview

1. Data on bike share use in Brighton and Hove was taken from the CoMoUK Bike Share User's Survey 2020. The bike share users were asked questions about their demographic, reasons for using the scheme, and frequency and types of journeys taken. There was a good sample size, with a total of 1,189 respondents from Brighton and Hove. The data has been used to benchmark the expected uptake of a similar scheme if extended to Adur and Worthing (Adur and Worthing), and as an indicator for the types and lengths of journeys that may be taken by the population.
2. The survey also asked users how COVID-19 had (or had not) affected the types of journeys they take on the bikes and how often they take these journeys. Further to this, data could be compared to the 2019 survey to check for any differences in reported usage, allowing for the assessment of any changes in expected demand because of the pandemic.

## Demographic of Bike Share Users

### Age and Gender

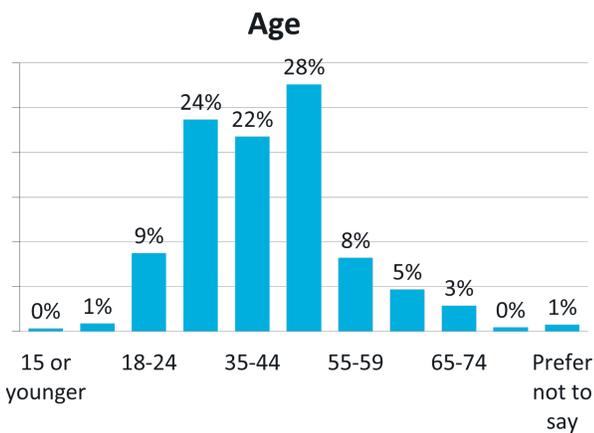


Figure 4: Age of Brighton Users

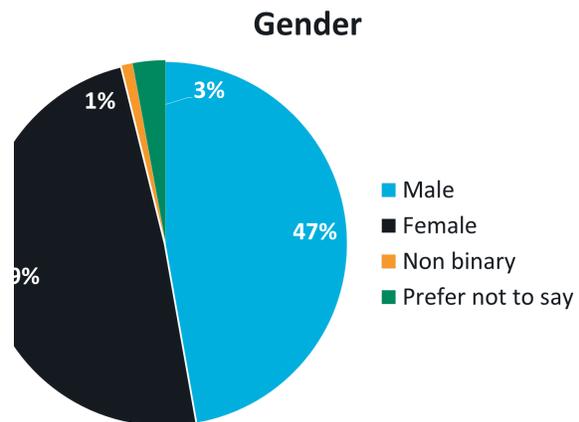


Figure 5: Gender of Brighton Users

1. In Brighton and Hove, the age profile of bike share users was older than the British average<sup>2</sup>. Three quarters of users were between the ages of 25 and 54, with the highest number of cyclists between the ages of 45 and 54 (28% of users) (Figure 4). The most common group nationally was 25 to 34 year olds. There were also more cyclists over the age of 55 than the average of 12%, contributing to 16% of users in Brighton and Hove. There is an increased propensity in the area for the elderly to cycle, and a diverse age group is being engaged by the BTN scheme.
2. A further encouraging statistic from Brighton and Hove is the gender split of users ( Figure 5). There is a greater proportion of female users than male (49% and 47% respectively). Typically, cycling is male dominated, with the national average showing 53% male users over 45% female users. Therefore, there is also a good gender diversity for cycling in the area. Together, these charts show a better-than-average take-up of cycling across demographics in the Brighton area.

<sup>2</sup> Based on the mean average user across all respondents to the CoMoUK 2020 survey.

### Employment

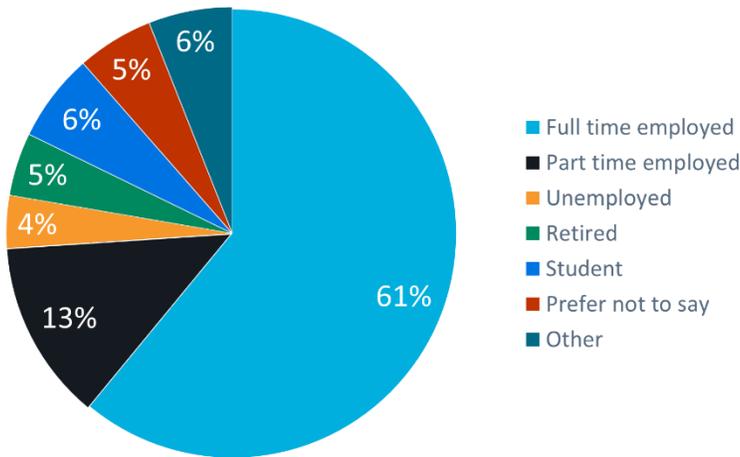


Figure 6: Employment profile of Brighton bike share users

### Income

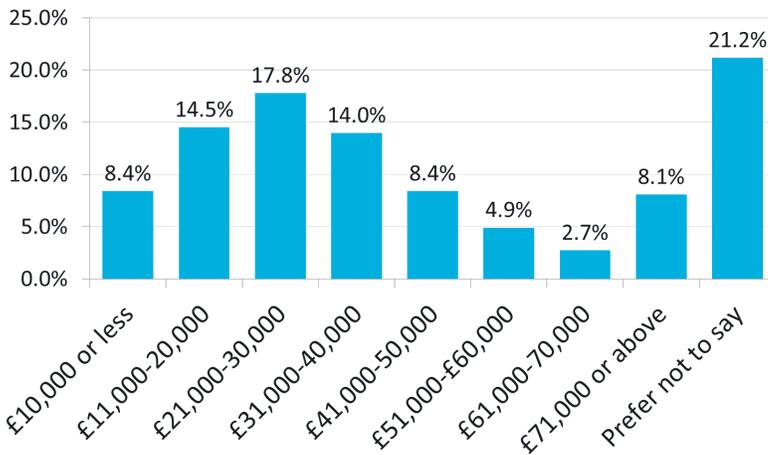


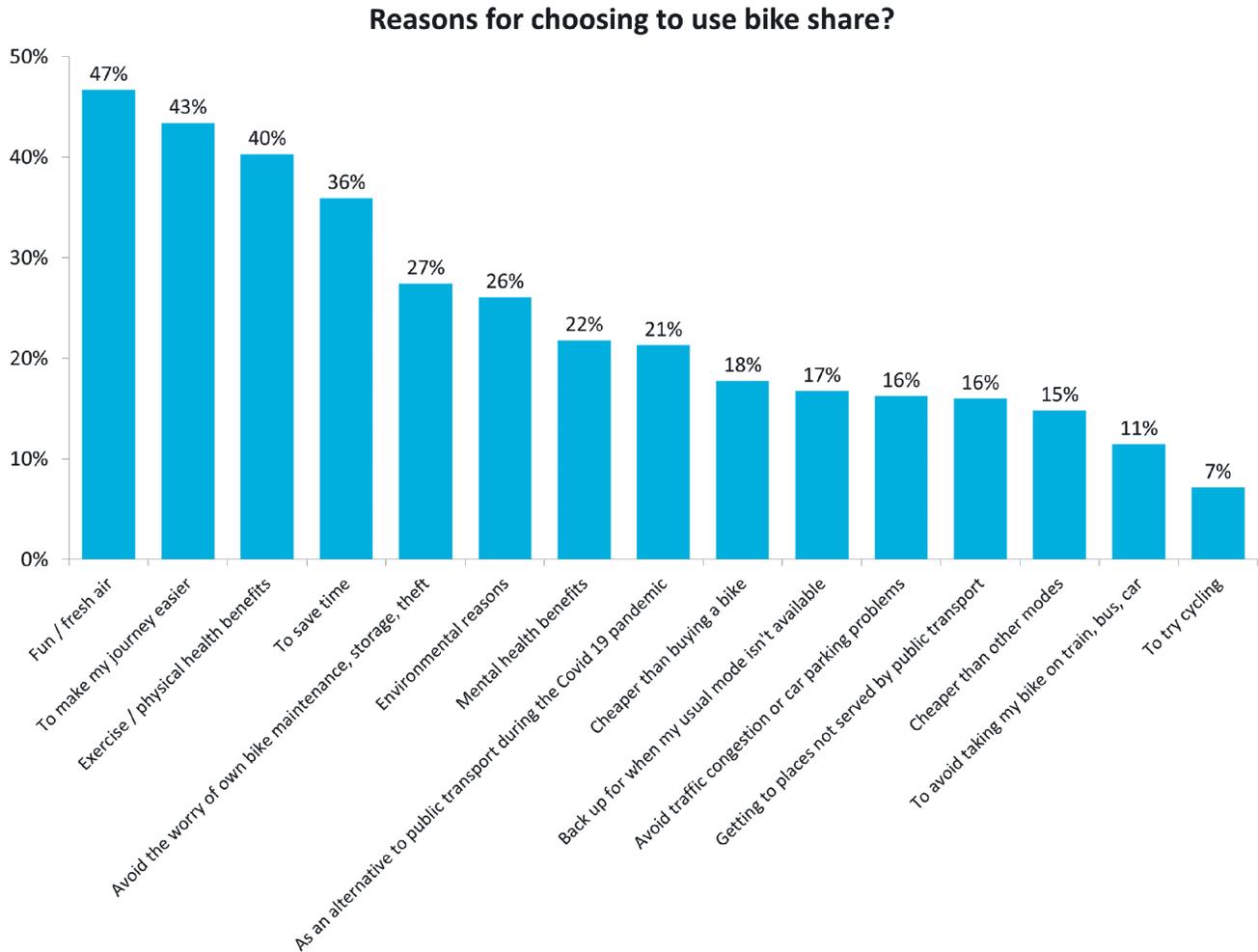
Figure 7: Individual income of Brighton bike share users

- Around three quarters of Brighton share scheme users were employed, and most of these users were employed full time (Figure 6). The unemployed were the group cycling the least. Students comprised 6.3% of users in Brighton and Hove, and retirees 4.5%. The personal income of bike share users fell on a bell curve, peaking at £21-30,000 annually. Of those who declared their income, around half earned £31k or more with a second peak of users earning £71k or higher (Figure 7).

## Bike Share Usage

### Reasons for Use

Figure 8: Reasons for choosing to use bike share (tick all that apply)



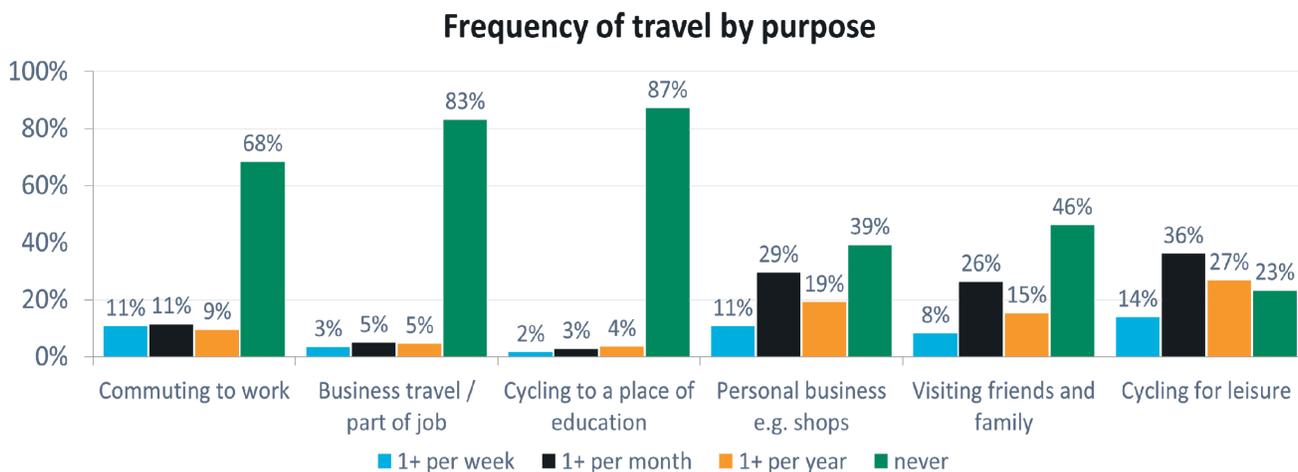
1. Of the top five reasons people used the bike share, two were for enjoyment and health, and three were for convenience (Figure 8). Fun and fresh air was the number one reason, with exercise in third place. This aligns with user's purposes for using the bike share, where cycling for leisure was the dominant answer, almost half of trips (Figure 11). When it came to convenience, users appreciated that the bikes made their journeys quicker and easier. Users also found the bike share to remove the worries of owning their own bike.
2. Users were more concerned about social and environmental reasons than economic, though this could be indicative of the high-income profile of Brighton and Hove users. A quarter of people cycled for environmental reasons compared to just 18% of users avoiding the cost of their own bike and 15% who found it cheaper than other modes of transport.

### Frequency and Length of Journeys

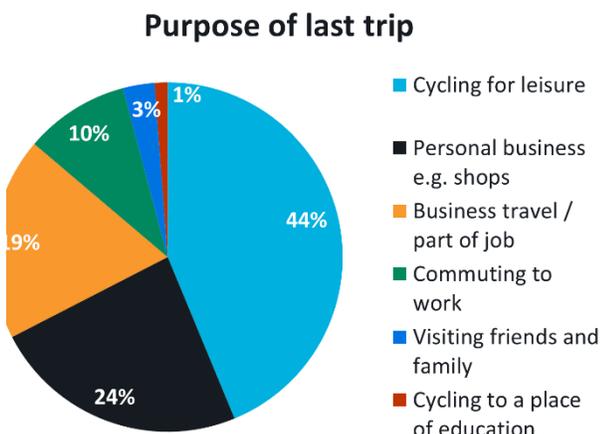
3. Users were asked how often they used the bike share scheme for different purposes (Figure 9). Across all types of journeys, people used the bikes most commonly on a monthly basis: for occasional trips. Those who used the scheme weekly did so most often for leisure, commuting or personal errands. Overall, leisure was the

most common reason to use Brighton and Hove's bike scheme, 77% of users took a leisure trip at least once per year on the bikes. The least popular reason was cycling to a place of education, a trip not taken by 87% of users, an expected statistic as students were a small proportion of users. Around a third of users had commuted to work on the bikes.

Figure 9: Frequency of journeys taken by Brighton bike share users



- Purpose of last trip supports the trend seen in journey frequencies (Figure 10). By far, Leisure was the most popular reason followed by personal business. Using the bikes for business travel and commuting to work was more popular than journey frequencies had suggested. A finding of 29% of work related trips is a positive indicator that the use of bikes for commuting will recover to the levels of use seen pre-pandemic.
- The median trip length was 15-30 minutes (Figure 11), which is consistent with the polled use for errand trips such as shopping, visiting, or commuting. However, 43% of people took a journey longer than this, 17% over an hour, likely for leisure purposes. BTN Bike Share charges users per minute, rather than per 30-minutes like some larger schemes (for example, London's Santander Bikes). Therefore, there is no pressure on a user to return the bike before the 30-minute mark, and users may be more likely to use the bikes for longer trips as a result.



10: Purpose of most recent bike share trip

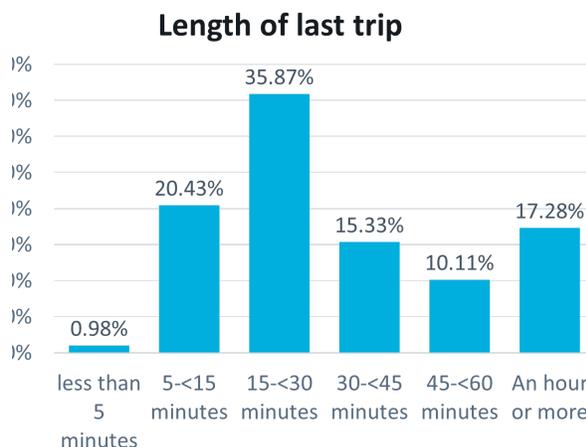
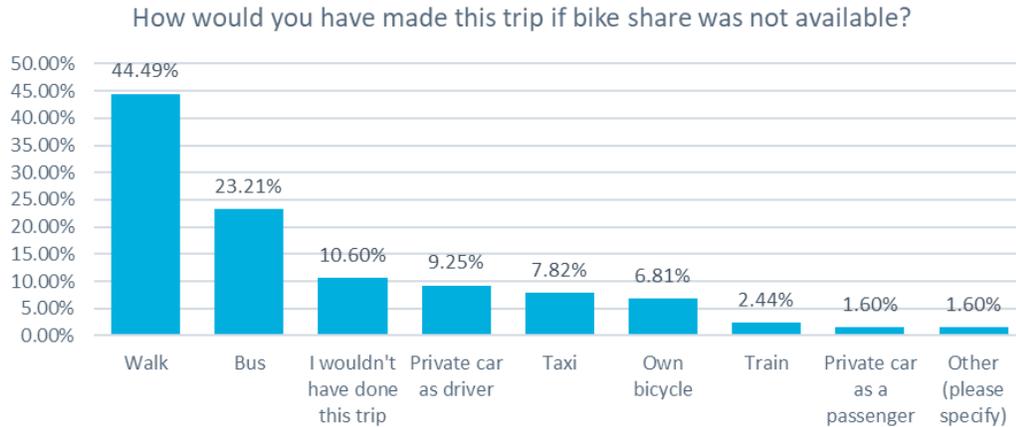


Figure 11: Length of users last trip by bike share

## Modes of Transport

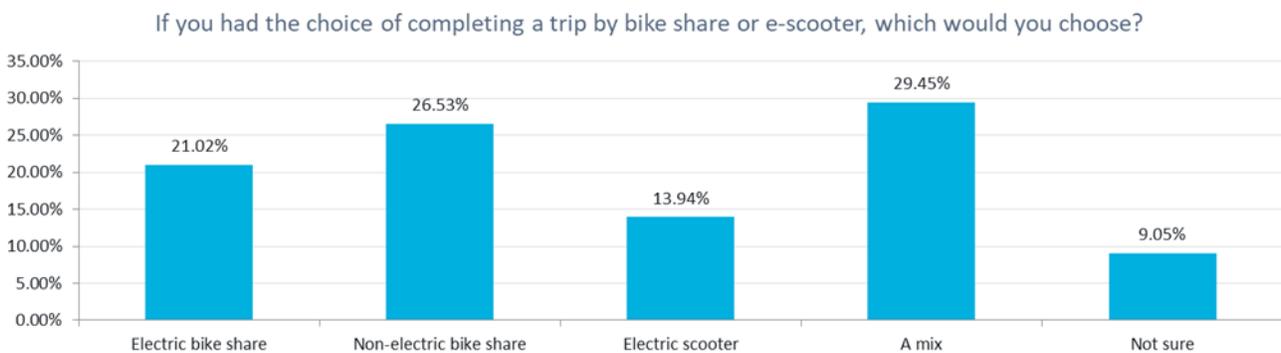
6. The bikes were used mostly in the place of walking; however, many trips also replaced a motorised vehicle (Figure 12). 19% of trips replaced one that would have been made by car. 26% of trips were a replacement for public transport, though this number may have been exaggerated in 2020 due to the danger of COVID-19 leading to the avoidance of buses and trains. The bike share was also successful in encouraging exercise, with 11% of users taking a journey they would not have otherwise.

**Figure 12: How users would have made their most recent trip if they had not cycled**



7. Users were also asked their preferred transport mode, including electric scooters, with a mostly positive response towards the idea (Figure 13). 44% were receptive to e-scooters, though most would prefer a mix of scooters and bikes. A further 9% of people were unsure, suggesting they could be open to the idea with the chance to try one. Of those who rejected the idea of a scooter, there was a preference to standard bikes over e-bikes: appearing to contradict the higher trips per day on e-bikes in Brighton and Hove. However, overall, only a quarter of people chose an option that excluded electric transport, so there is a strong propensity e-bikes and e-scooters in the area. The preference to standard bikes could be due to the strong preference of use towards bikes for leisure purposes where a traditional bicycle may be more enjoyable or a better workout.

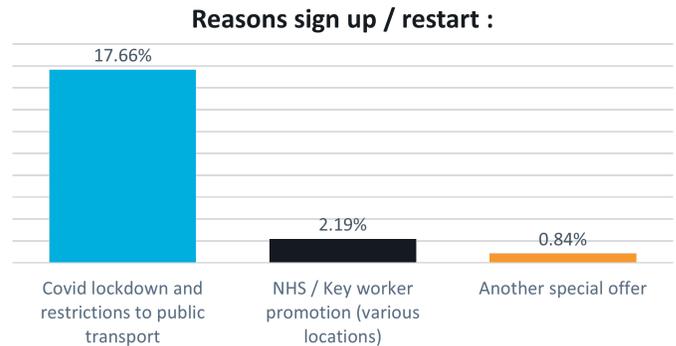
**Figure 13: Preferred mode of transport for bike share users in Brighton**



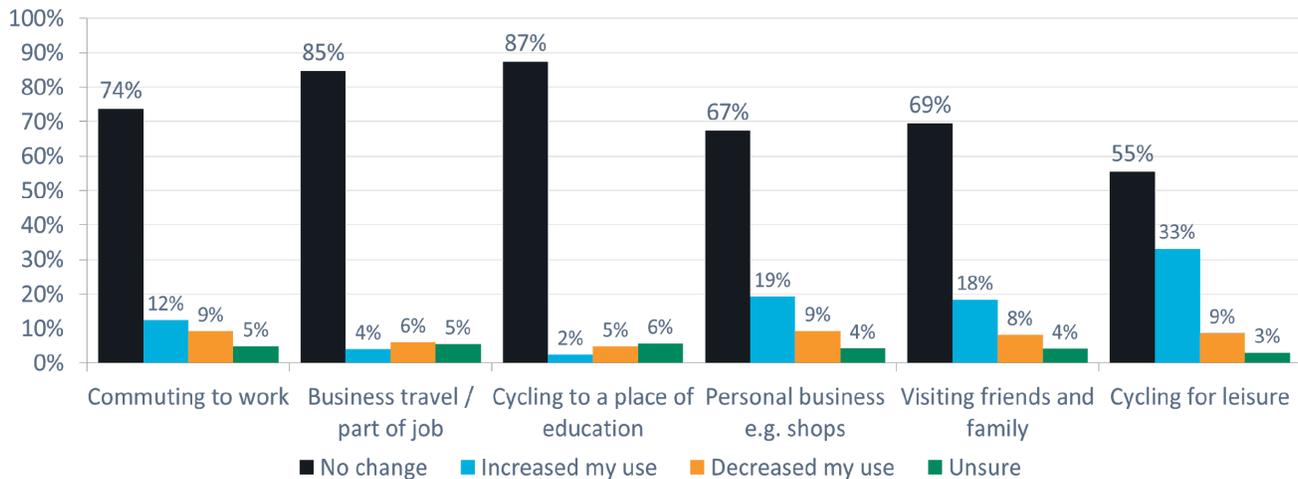
## COVID-19 Impact

### 2020 Users Impact

- Overall, demand for the schemes stayed strong throughout 2020, and the pandemic may have been the cause for an increase in scheme use. Of current scheme users, 20% signed up or restarted using the scheme because of COVID-19 (Figure 14). Most cited lockdowns and public restrictions to be the reason, with others taking advantage of offers such as the NHS discount. As public transport returns to a more normal level of use, there could be a reduction in cycle scheme users. However, it is possible that some will continue to be long term users of the scheme.
- Users were asked how COVID-19 had changed the way they used the bikes (Figure 15). For all reasons, the most common answer was 'no change', showing a strong retention of demand for the scheme despite many places of business being closed throughout the year. The most significant differences were found when using the bikes for personal reasons. Uses for leisure, shopping and visiting friends all saw a net increase, the largest of which was leisure with 24% more use overall. There was an uptake in outdoor hobbies and exercise during lockdown which explains this increase in use.



### Change of use during COVID-19

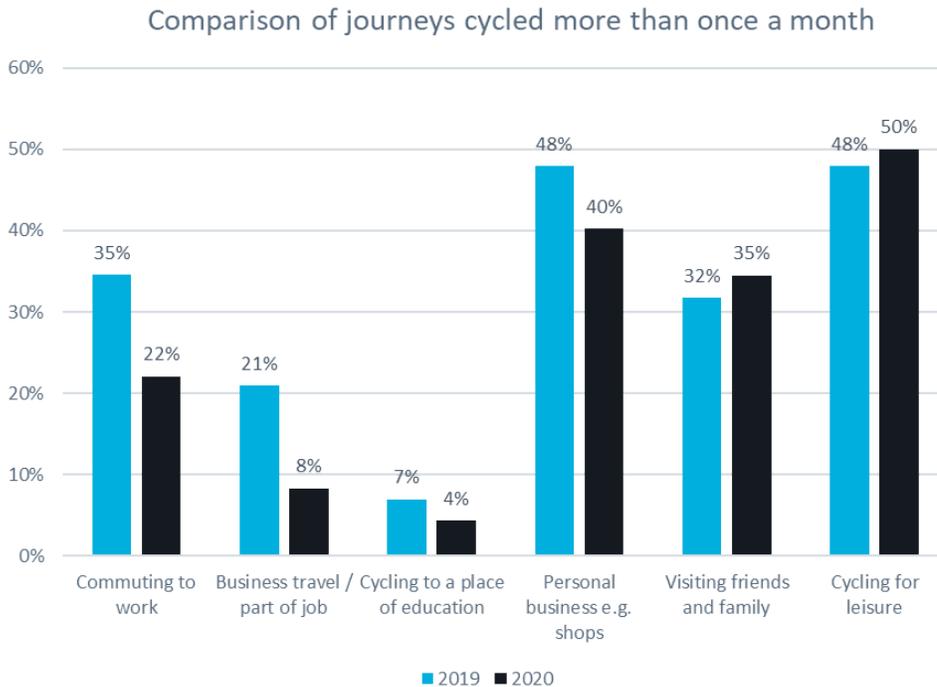


- For work related reasons (commuting, business travel and education), cycling use remained largely unchanged. There was a slight increase in commuting, and a slight decrease for business and education. This reflects expected use, where places of education were closed and in person business decreased. However, there is a positive indication that demand for cycling schemes have very much remained and there should be little or no negative impact on bike share use going forward. Furthermore, if the new momentum for cycling journeys is maintained as people return to usual work and shopping habits, typical usage could see an increase.

## Comparison to 2019 Survey

1. Data was compared between the CoMoUK 2019 and 2020 surveys where users were asked how often they had used the scheme for different activities. Data for journeys taken once a month or more were combined and compared. Reflecting the self-reported usage change, leisure and family visits were taken more often in 2020, and business and education travel taken less often. However, the order of popularity of uses is the same in 2020 as 2019. Also consistent is the propensity to use the bikes most often on a monthly basis.

Figure 16: Data compared between 2019 and 2020 CoMoUK surveys on scheme use frequency



2. There is a discrepancy when comparing commuting to work and shopping to self-reported use, both significantly decreased between 2019 and 2020 surveys. When self-assessing, users said they had cycled more for these purposes, whereas the comparison shows this to be significantly less. It is likely that users did cycle more when able, but due to repeated closures of shops and workplaces, got the chance to do so less. This shows an increased willingness to cycle for these activities.

## Comparison of Demographics

### Population Overview

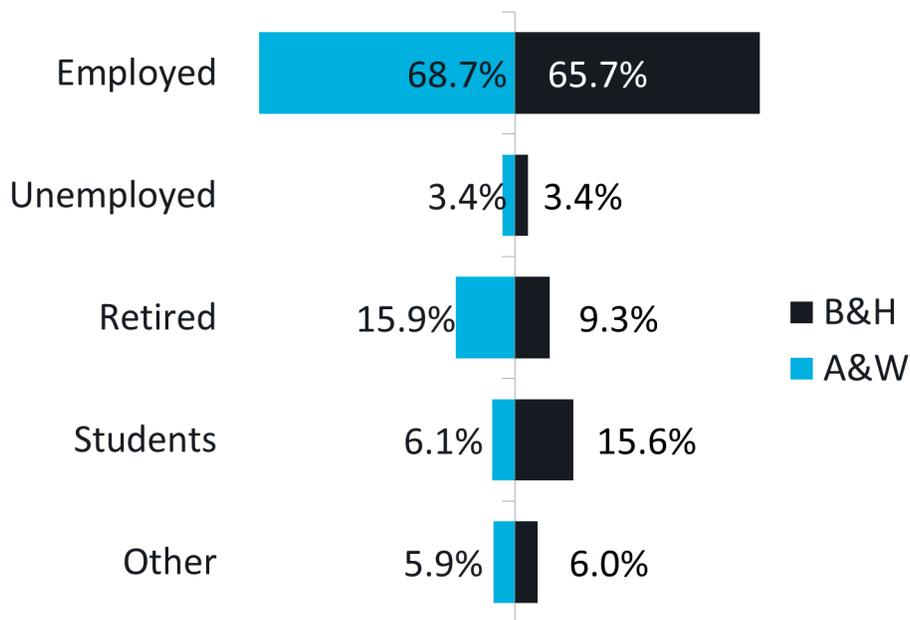
1. Some basic demographic data for Adur and Worthing and Brighton and Hove is summarised in the table below (Figure 17). A more granular breakdown of age and employment is shown in Figure 18 and Figure 19 respectively. The results of the CoMoUK survey have been used in conjunction with the demographic profiles of the two local authorities to support the expected use of an Adur and Worthing scheme compared to Brighton and Hove. The results also allowed for cycling propensity to be determined for each of the mosaic groups presented later in this section.
2. As a general observation, the population of Adur and Worthing is smaller and less dense than Brighton and Hove. While population density of Worthing is close to that of Brighton and Hove, Adur's is less than half. Overall, this puts the average density of Adur and Worthing at around 2/3 of that in Brighton and Hove. Areas with a higher population density are more likely to make use of a cycle share scheme. In Brighton and Hove, there are 2.7 bikes provided per 1,000 residents, further supporting the minimum suggested figure of 2 bikes per 1,000 for Adur and Worthing.
3. The estimated population growth is larger in Adur and Worthing, perhaps due to the large number of aspiring homemakers (Figure 20). A large proportion of under 15s in Adur and Worthing supports the observation of a high number of young families. By comparison, Brighton and Hove has more student renters and professionals who are less likely to start a family in the area.
4. Levels of employment and income are comparable between the two areas. Most of those outside employment in Adur and Worthing are retired, whereas in Brighton and Hove they are mostly students. The age profile of the two areas reflects this, where Adur and Worthing have a greater number of over 55s, and Brighton having a greater number of 15-25 year olds. Overall, Adur and Worthing has an older population.

Figure 17: Demographic Comparison between the two combined areas (Source: Nomis)

|  | Adur and Worthing                 |       | Brighton & Hove                   |       |
|--|-----------------------------------|-------|-----------------------------------|-------|
| <b>Total Population</b>                                  | 174,871                           |       | 290,885                           |       |
| <b>Population Density</b>                                | 2,357 People/km <sup>2</sup>      |       | 3,514 People/km <sup>2</sup>      |       |
| <b>Population Forecast (% growth per year from 2021)</b> | 5 year:                           | 0.74% | 5 year:                           | 0.58% |
|  | 10 year:                          | 0.57% | 10 year:                          | 0.47% |
| <b>Gender Split</b>                                      | Male:                             | 48.4% | Male:                             | 50.2% |
|  | Female:                           | 51.6% | Female:                           | 49.8% |
| <b>Age Profile</b>                                       | <25:                              | 26.2% | <25:                              | 32.2% |
|  | 25-54:                            | 38.1% | 25-54:                            | 44.3% |
|  | 55+:                              | 35.7% | 55+:                              | 23.5% |
| <b>Employment</b>  | Employed:                         | 51.6% | Employed:                         | 55.1% |
|  | Unemployed:                       | 2.1%  | Unemployed:                       | 3.2%  |
| <b>Income</b>  | Average full time income: £28,280 |       | Average full time income: £32,474 |       |



Figure 19: Employment Demographic of Population (Source: Nomis)



- The above-average age of bike share users in Brighton and Hove supports the case for a scheme in Adur and Worthing where there is a large population of older people (Figure 18). Brighton has an abundance of young people, particularly in the student age group, whereas Adur and Worthing's population has a greater proportion of residents above the age of 45. Comparing the population against the key cycling group of 25-54 year olds (as identified in Figure 4), 38% fall into this group in Adur and Worthing and 44% in Brighton and Hove. Furthermore, whilst there is a large student population of Brighton and Hove (15.6% of residents), they were under-represented in cycle scheme users (6% of scheme users). It is therefore expected that the demand would be moderately lower in Adur and Worthing.
- Employment numbers in Brighton and Hove and Adur and Worthing are similar, but Adur and Worthing earning less on average. Adur and Worthing's income falls into highest cycling category (£28.2k), and Brighton and Hove's average of £32.4k falling into the third most popular. Due to the slightly higher employment levels in Adur and Worthing, and the propensity of its wage bracket to cycle, a good uptake of cycling can be expected.

#### **Bike share propensity of Adur and Worthing users**

- Mosaic Groups were used to categorise the population of both areas (Figure 20). Each group is assigned with a propensity to cycle score based on CoMoUK 2020 bike share survey findings, which is then averaged across the groups for each area. A score of 100 is the average.
- Adur and Worthing's most common groups (more than 25% population) were 'Senior Security' and 'Aspiring Home-makers', who have about average cycle propensity (100 being average). This is much lower compared to the most common groups in Brighton and Hove including 'Rental Hubs' (largely students) and 'City Prosperity' who have almost double the propensity to cycle compared to average population. With Brighton and Hove having more upcoming professionals, it could have a more active or forward-thinking population than Adur and Worthing who are more likely to cycle, as demonstrated by the cycling propensity rating.
- Overall, Adur and Worthing scored 101, and Brighton and Hove scored 136. This shows, that demand for bike share in Adur and Worthing is not likely to be far off from Brighton and Hove. The data also suggests an uptake in cycling of about 74% compared to Brighton and Hove, hence justifying our assumption that demand for a bike share in Adur and Worthing will be about 75% of that in Brighton and Hove.

The cycling propensity rating was also factored into the relative demand analysis used to determine scheme operating areas (Figure 1 and

| Rank           | Adur and Worthing           | Propensity to Cycle | Brighton & Hove          | Propensity to Cycle |
|----------------|-----------------------------|---------------------|--------------------------|---------------------|
| 1              | Senior Security (19.5%)     | 93                  | Rental Hubs (26.6%)      | 144                 |
| 2              | Aspiring Homemakers (17.1%) | 101                 | City Prosperity (15.9%)  | 261                 |
| 3              | Rental Hubs (11.3%)         | 144                 | Domestic Success (11.5%) | 89                  |
| 4              | Domestic Success (11.3%)    | 89                  | Urban Cohesion (10.4%)   | 102                 |
| 5              | Family Basics (7.5%)        | 104                 | Family Basics (8.5%)     | 104                 |
| <b>Overall</b> |                             | <b>101</b>          |                          | <b>136</b>          |

- Figure 2).

## Summary

- Based on all the above, the assumed demand for bike share in Adur and Worthing has not been changed: it is expected to be around 1.6 trips per standard bike per day and 2.0 trips per e-bike per day (Figure 21). Overall, the average expected number of trips per bike per day is 1.8, giving an annual number of potential trips of about 208,250. These estimated figures are placed at 25% less than the use which has been expected for Brighton and Hove, directly supported by the population's propensity to cycle and use a bike share scheme.

Figure 21: Actual trips taken in Brighton and Hove and expected number of trips in Adur and Worthing

| Average annual demand estimate |                |                |
|--------------------------------|----------------|----------------|
|                                | B&H            | A&W            |
| Number of standard bikes       | 390            | 161            |
| Trips per standard bike/ day   | 2.1            | 1.6            |
| Number of e-bikes              | 390            | 161            |
| Trips per e-bike/ day          | 2.6            | 2.0            |
| <b>Annual number of trips</b>  | <b>672,604</b> | <b>208,248</b> |

## Revision of Financial Model

- As indicated in the above sections, the number of bikes and potential scheme usage (number of trips) has not been changed therefore, there will be no change in the estimated operating costs and revenue. Therefore, the estimated annual operating cost (£233,419) and revenue (£225,617) for the scheme remains the same as estimated earlier (documented in 'Adur & Worthing\_Costs and Revenue Estimates' shared separately). This means that there are no expected changes to scheme's financial performance or profit/subsidy requirements.
- The only potential change will be in the scheme capital (set-up) costs if the councils decide to add additional 4 hubs to cater to the expanded scheme operating area (Table 1). The addition of 4 hubs to the network will increase the capital costs by £6,100 (£1,525 x 4), increasing the overall capital costs from £792,214 to £798,314.

Table 2: Financial summary

|                  | Original Costs Estimates | Revised Costs Estimates (+4 hubs) |
|------------------|--------------------------|-----------------------------------|
| Operating Costs  | £233,419                 | £233,419                          |
| Capital Costs    | £792,214                 | £798,314                          |
| Total O&M Costs  | £1,025,633               | £1,031,733                        |
| Annual Revenue   | £225,617                 | £225,617                          |
| Operating Margin | £19,016                  | £19,016                           |



To Francesca Iliffe; Andy Willems

## Technical Note

Cc Matthew Clark

From Susmita Das

Date 21 June 2021

Project Adur & Worthing Bike Share Hub Location Analysis Project No. 24018501

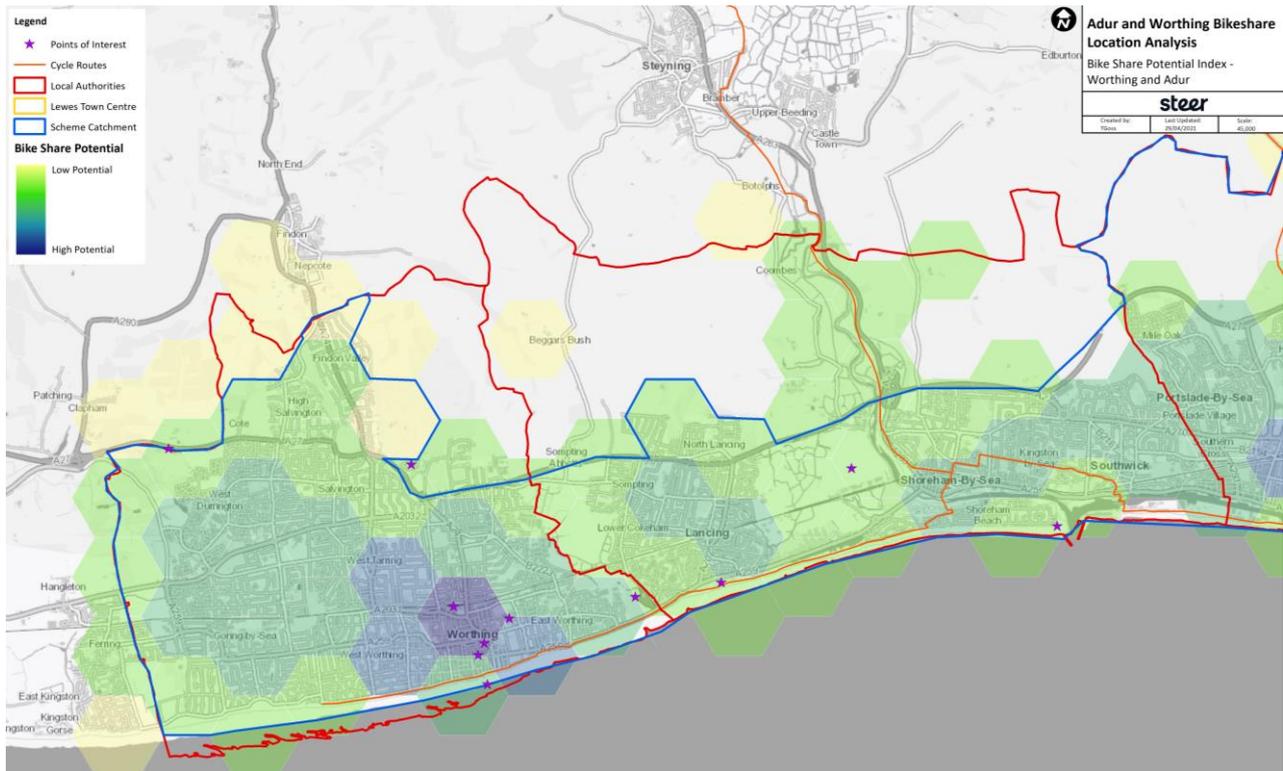
---

# Summary of methodology and findings on Adur and Worthing potential bike share hub network

## Introduction

1. This technical note provides a summary of our methodology and findings on the potential locations of bike share hubs in Adur and Worthing, should they choose to join Brighton and Hove's BTN BikeShare Expansion Framework.
2. Prior to undertaking the network development work, we have identified the potential scheme operating area and agreed on the number of hubs required to develop a continuous network essential to the success of a bike share scheme.
3. On further discussions with the council, and taking into account the findings of our site visits we have developed a bike share hub network with approximately 43 hubs to be delivered in Phase 1 of the scheme, and an additional 10-12 potential hub locations to be delivered in Phase 2 (or over time) in line with expected growth in bike share demand due to increase in cycle infrastructure provision, and new developments coming up in the area.
4. The bike share network is developed in consideration of the potential operating area for the scheme, as presented in Figure 1 below (blue line), this covers both Phase 1 and Phase 2. Our recommendation is that Phase 1 locations exclude the additional locations proposed to the north of the A27 in Findon Valley and North Lancing.

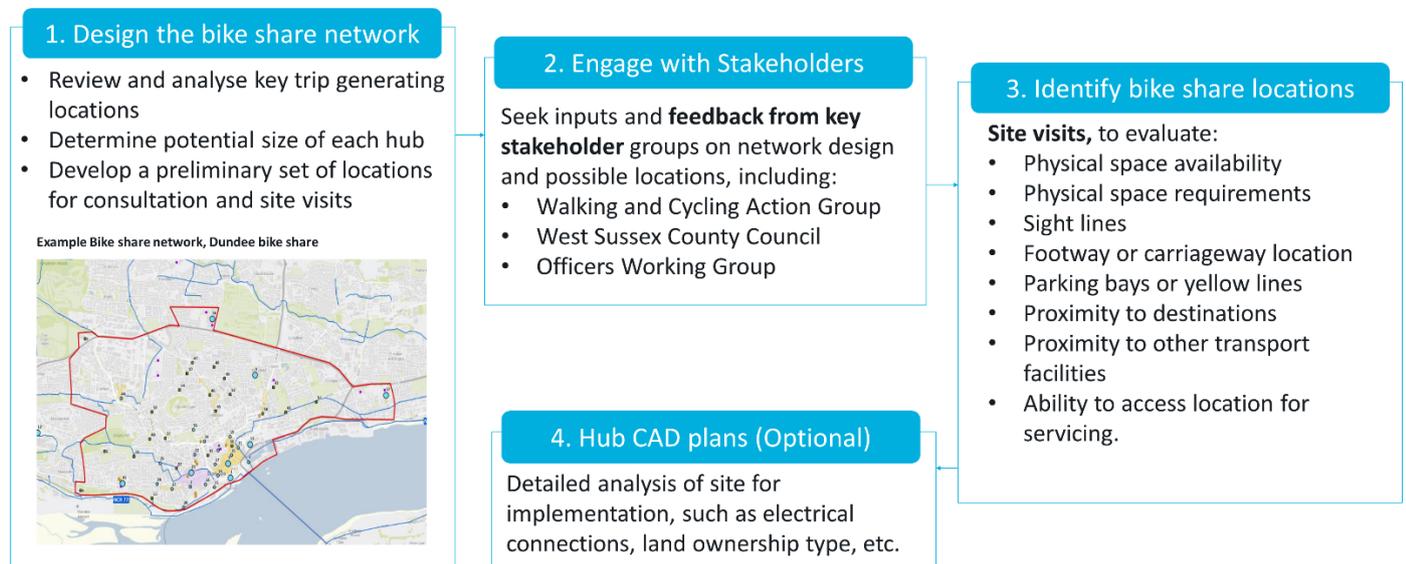
Figure 1: Adur and Worthing Bike Share Operating area



## Methodology

5. The key tasks undertaken to develop the network design is summarised in Figure 2 below.

Figure 2: Hub Location Analysis Methodology



6. The optional task 4. Hub CAD plan development is not been included in the scope of this work.

## 1. Design the bike share network

7. Using a combination of mapping software and GIS we developed a preliminary network identifying indicative 'pin point' locations for the hubs such that they are suitably placed across the scheme operating

area to maximise the usage of the scheme. This considered the key trip origin and destination locations, such as railway stations, town centres/ employment sites, tourist sites/sea front, hospitals, and shopping areas.

8. A well-spaced bike share network ideally is one that has a hub within 10-min walking distance from each other, however, this density can be achieved over time as the scheme becomes more viable. For the start of the scheme, we have designed the network to provide high concentration of hubs in key trip generating locations (such as Worthing town centre) and a lower density of hubs in areas with less potential demand (such as lower density residential areas).
9. The planned LCWIP cycle infrastructure (shared by Adur and Worthing Councils) has been considered to develop the network, as improved cycle infrastructure will be important to encourage new users to the scheme.
10. The network design also considered the potential size of the hubs, whether small (10-12 parking spaces), medium (15-18 parking spaces) and large (20-30 parking spaces) depending on the relative demand achievable in the location (which was confirmed/reviewed on site visit). As a rule of thumb, 322 bikes would require about 650 parking spaces (twice the number of bikes in the scheme); with an average 15 spaces in each hub (considering 43 hubs).
11. The preliminary network identified the following key locations:
  - The Worthing town centre and seafront are the main trip attractor locations; and a number of hubs should be concentrated in the area between the Worthing station and the seafront all within a 5-min walking distance;
  - All railway stations within the scheme area should have a hub at the station or in close proximity, being key trip origin and destination points for residents and tourists;
  - Shoreham town centre is another attractive location, with good population density, cycling opportunities and shops and restaurants;
  - Leisure parks such as Brooklands Pleasure Park, Buckingham Park and Playground, etc. have been identified for leisure trips;
  - Hospitals and areas around parades of shops or streets with higher levels of pedestrian activity.

## 2. Engage with Stakeholders

12. On completion of the preliminary network design, we arranged two sessions with stakeholder groups in Adur and Worthing, including Walking and Cycling Action Group, West Sussex County Council and Officers Working Group where we shared and presented the indicative network design (via google map) and obtained their feedback on the indicative locations based on their local experience and knowledge.
13. The inputs from the stakeholders were considered to develop a revised network design confirming about 43 locations for Phase 1; which were then reviewed through a site visit. Additional locations were added to the list, many of which are around upcoming new housing and mixed-use developments such as New Monks Farm, Holmbush Retail Park; planned cycle routes; and along the seafront in Adur. Some of these additional sites we have recommended for consideration in a potential Phase 2 of the scheme.

## 3. Identify Bike Share Hub Locations

14. Upon finalising the potential locations of the hubs after stakeholder engagement, we visited each of the approximately 43 locations to physically review the space and identify the exact location where the hubs can be placed. Some of the factors we considered during site visit includes:
  - Visibility of site

- Physical availability of space
- Potential size of the hubs
- Safety (avoiding busy crossings, high traffic flow, etc.)
- Whether to put them on carriageway or footway
- Trees or utilities affected (e.g. manholes, signage, etc.)
- If there are cycle parking spaces nearby/adjacent to the location
- Proximity to the planned LCWIP cycle routes
- Private or public land (some locations identified might need permissions from land owners)

#### Hub sizes and space requirements

In the TfL Cycle Hire scheme, the distance between the centre points of two adjacent docks/ parking spaces is approximately 0.75 metres<sup>1</sup>. Therefore, total space requirements for a hub (or docking station considering the scheme is dock-based) is as following:

- Small hub with 10 spaces – min. 7.5 metres
- Medium hub with 20 spaces – min. 15 metres
- Large hub with 30 spaces – min. 22.5 metres

The BTN BikeShare (the Brighton & Hove scheme) is a hub-based system, where hubs consists of bike parking stands (similar to Sheffield stands) to which the bikes are parked/ locked to. Typically, the recommended distance between two Sheffield stands is approximately 1 metre<sup>2</sup>.

And, the range of hub sizes for the Brighton Bike Share scheme is:

- Minimum approximately 9 spaces
- Maximum approximately 28 spaces

Therefore, for the Adur and Worthing scheme expansion, we have assumed the following hub sizes while reviewing the space availability during the site visits:

- Small approximately 10 spaces – 10 metres, or 2-3 car parking spaces (average car parking space is 4.8 metres)
- Medium approximately 20 spaces – 20 metres, or 4-5 car parking spaces
- Large approximately 30 spaces – 30 metres, or 6-7 car parking spaces

15. While majority of the locations are recommended for use based on site visit, a couple of them were found unsuitable for hub placement. An example includes a proposed hub near the Centenary House (on A2032) which was removed as the current road network has high speed traffic with insufficient current provision for cyclists leading to safety concerns for users. Also, the location does not appear to be a current key trip start or end point. Another location was Durrington-On-Sea station, which does not have enough space or is not a very visible location, so the hub was moved to Strand Parade which is a shopping parade with more mixed pedestrian activity and journey potential.

#### Shortlisted Locations

16. Table 1 presents a summary of the shortlisted hub locations for Phase 1 and Phase 2. We have identified 39 locations for Phase 1 and 12 additional locations for Phase 2.

<sup>1</sup> <https://www.rbkc.gov.uk/idoxWAM/doc/Other-1556711.pdf?extension=.pdf&id=1556711&location=Volume2&contentType=application/pdf&pageCount=1>

<sup>2</sup> <http://content.tfl.gov.uk/lcds-chapter8-cycleparking.pdf>

**Table 1: Summary of Bike Share Hub Locations**

| Ref Number | Location   | Hub Size | Phase | District |
|------------|--|----------|-------|----------|
| 1          | Sea Lane Café                                    | S        | 1     | Worthing |
| 2          | George V Avenue                                  | S        | 1     | Worthing |
| 3          | Worthing Pier/ Montague Place                    | L        | 1     | Worthing |
| 4          | Splashpoint Leisure Centre                       | M        | 1     | Worthing |
| 5          | Chapel Road (KFC) Worthing                       | S        | 1     | Worthing |
| 6          | Poulters Lane Car Park                           | S        | 1     | Worthing |
| 7          | Worthing Hospital                                | S        | 1     | Worthing |
| 8          | Worthing Station                                 | L        | 1     | Worthing |
| 9          | Brooklands Pleasure Park                         | S        | 1     | Worthing |
| 10         | Ham Road   | S        | 1     | Worthing |
| 11         | Sussex Yeoman, Palatine Road                     | S        | 1     | Worthing |
| 12         | Goring Road (PO)                                 | S        | 1     | Worthing |
| 13         | Goring-By-Sea Station                            | S        | 1     | Worthing |
| 14         | West Worthing Station                            | M        | 1     | Worthing |
| 15         | Dominion Road Post Office                        | S        | 1     | Worthing |
| 16         | The Burlington                                   | M        | 1     | Worthing |
| 17         | Grand Avenue                                     | S        | 1     | Worthing |
| 18         | Goring Beach Front                               | S        | 1     | Worthing |
| 19         | Worthing Town Centre/ Royal Arcade Shopping Mall | M        | 1     | Worthing |
| 20         | Strand Parade                                    | S        | 1     | Worthing |
| 21         | Lancing Beach Car Park                           | S        | 1     | Adur     |
| 22         | Broadwater Cricketer's Parade                    | S        | 1     | Adur     |
| 23         | Monks Recreation Ground                          | S        | 1     | Adur     |
| 24         | Cokeham Road                                     | S        | 1     | Adur     |
| 25         | Shoreham-By-Sea Station                          | M        | 1     | Adur     |
| 26         | Shoreham Football Club                           | M        | 1     | Adur     |
| 27         | Southlands Hospital                              | S        | 1     | Adur     |
| 28         | Londis, Old Shoreham Road                        | S        | 1     | Adur     |
| 29         | Lancing Station                                  | M        | 1     | Adur     |
| 30         | Southwick Station                                | S        | 1     | Adur     |
| 31         | Ferry Road                                       | S        | 1     | Adur     |
| 32         | South Lancing (The Broadway)                     | S        | 1     | Adur     |
| 33         | Ropetackle Arts Centre                           | S        | 1     | Adur     |
| 34         | Southwick Square                                 | M        | 1     | Adur     |
| 35         | Old Shoreham Toll Bridge                         | M        | 1     | Adur     |
| 36         | Buckingham Park and Playground                   | M        | 1     | Adur     |
| 37         | Co-op Upper Shoreham Road                        | S        | 1     | Adur     |
| 38         | Shoreham Town Centre by La Patisserie            | L        | 1     | Adur     |
| 39         | Pond Lane Recreation Ground                      | S        | 2     | Worthing |
| 40         | Sussex Partnership Foundation Trust/ Arundel Rd  | S        | 2     | Worthing |
| 41         | Worthing Findon Road Express                     | S        | 2     | Worthing |
| 42         | West Durrington Development                      | S        | 2     | Worthing |

| Ref Number | Location                   | Hub Size | Phase | District |
|------------|----------------------------|----------|-------|----------|
| 43         | Brighton City Airport      | S        | 2     | Adur     |
| 44         | Fishersgate Station        | S        | 2     | Adur     |
| 45         | Ricardo, Old Shoreham Road | S        | 2     | Adur     |
| 46         | Manor Rd, North Lancing    | S        | 2     | Adur     |
| 47         | LIDL Shoreham              | S        | 2     | Adur     |
| 48         | IKEA Development           | S        | 2     | Adur     |
| 49         | New Monks Park             | S        | 2     | Adur     |
| 50         | Sompting Development       | S        | 2     | Adur     |
| 51         | Holmbush Retail Park       | S        | 2     | Adur     |

### Network Map

17. Figure 3 and Figure 4 present a snapshot of the proposed locations of the hubs. An interactive map on Google My Maps can be accessed [here](#).
18. The interactive map includes the following layers:
  - Phase 1 locations (in Pink)
  - Phase 2 locations (in Blue)
  - Planned LCWIP cycle routes (Purple lines)
  - 5-Walk buffer around each hub (Pink and Blue circles)
  - Existing Donkey Bike Locations

Figure 3: Bike Share Hub Network Map

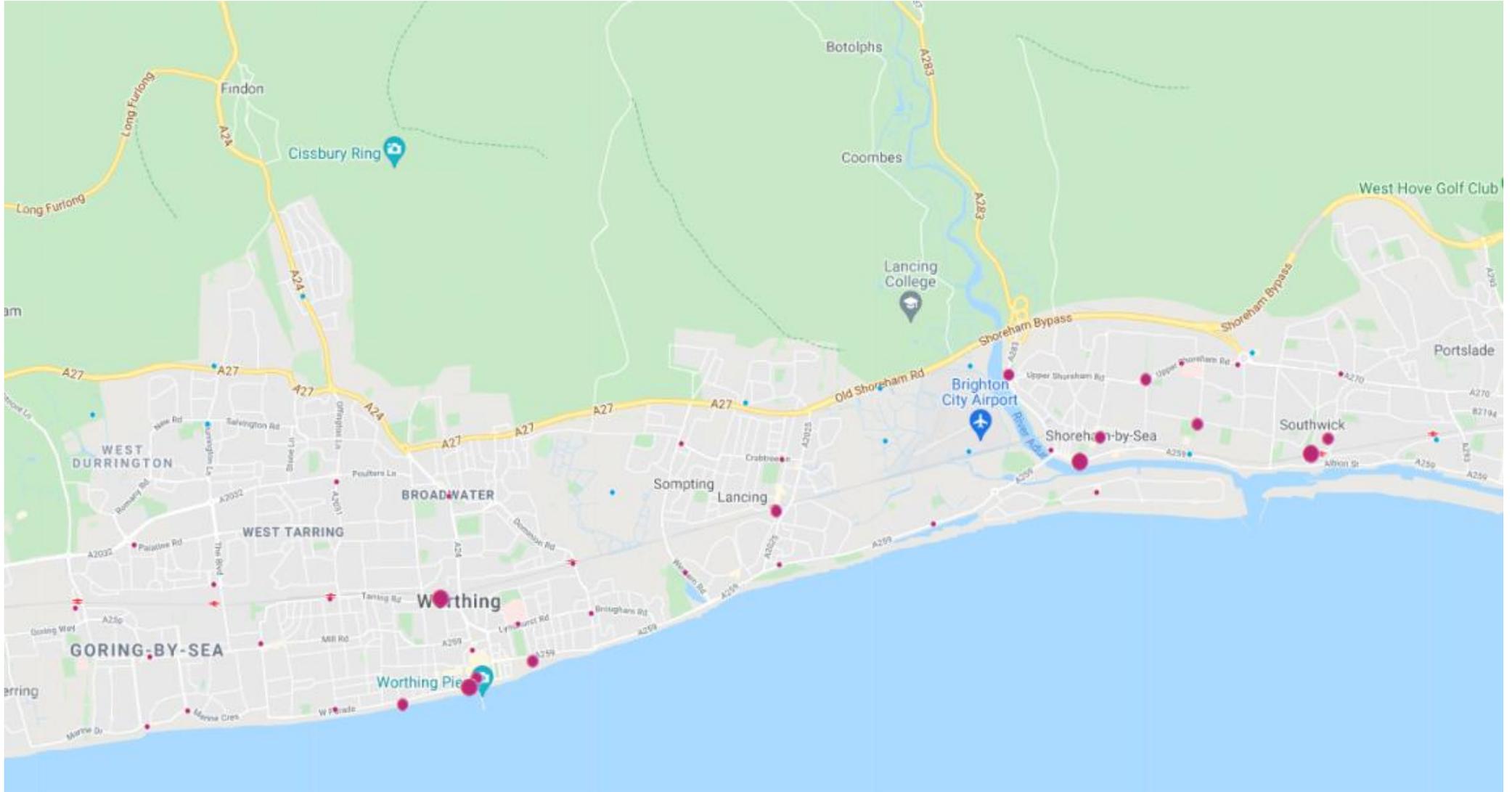
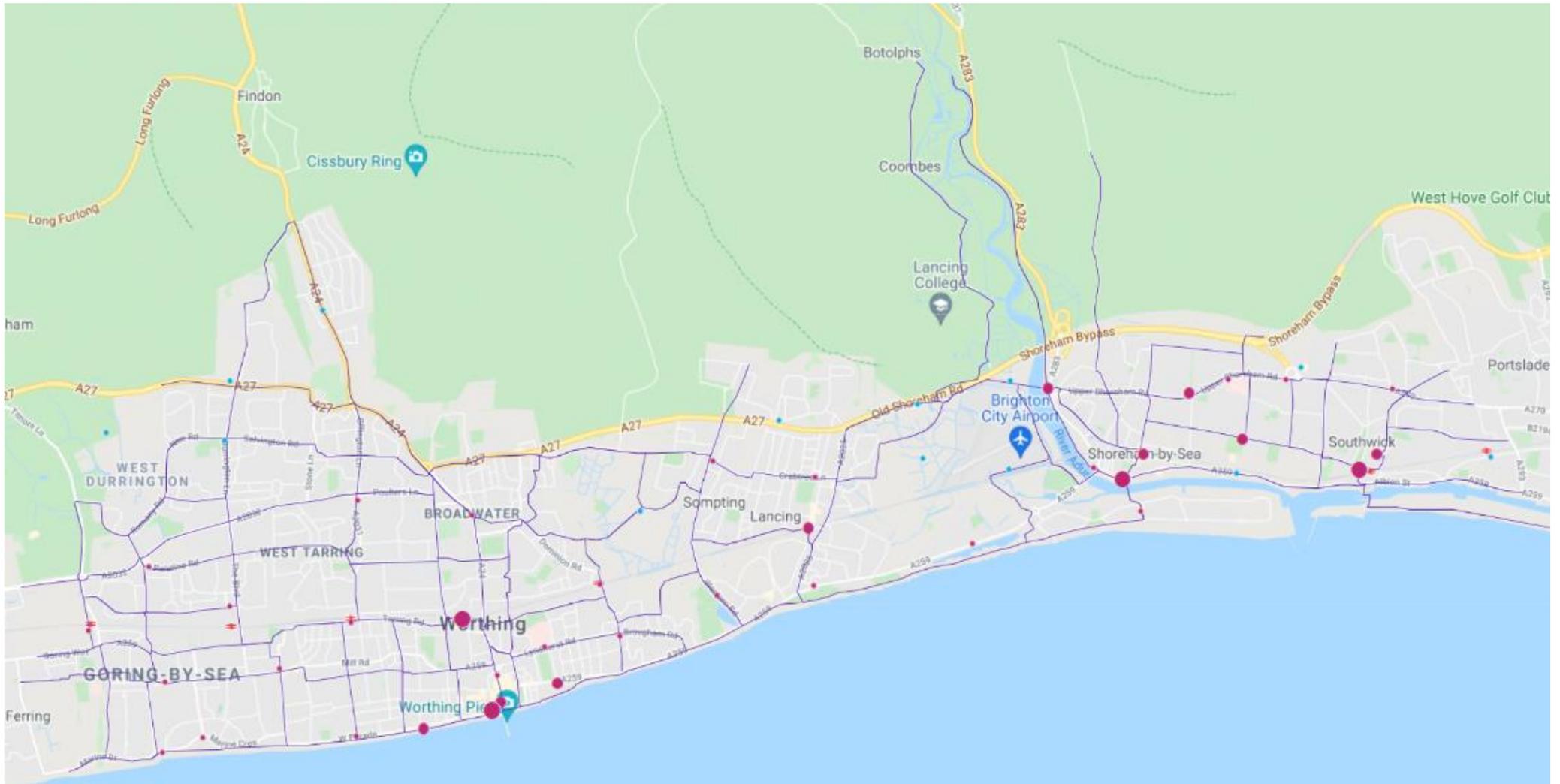


Figure 4: Bike Share Hub Network Map (with planned LCWIP cycle routes in purple lines)



## Appendix A – Site summary

19. A detailed spreadsheet with summary on each location (Phase 1 and some Phase 2 locations only), including site photos have been added separately to this note.
20. Figure 5 below presents information for an example location (Worthing Pier/ Montague Place) collected during the site visit.

Figure 5: Example information collected for each location

| ADUR AND WORTHING BIKE SHARE LOCATIONS<br>Site Checklist |   |                               |                               |                       |                              |
|--|---|-------------------------------|-------------------------------|-----------------------|------------------------------|
| District:  | Worthing  | Site Ref No:                  | 3                             | Site Location:        | Worthing Pier/Montague Place |
| Date of Site Visit:                                      | 02/06/2021  |                               |                               |                       |                              |
| Nearest LCWIP route                                      | 200   | Distance from the LCWIP route | within 50 metres              |                       |                              |
| Location Rating  | A   | Co-ordinates                  | 50.80948, -0.37136            |                       |                              |
| Size of Docks:   | Medium to Large   | Dock Configuration:           | Duplex                        |                       |                              |
| Dock Location:   | Footway   | Adjacent Frontage:            | Leisure                       |                       |                              |
| Footway Width Reduced to <2m:                            | No  | Comments:                     |                               |                       |                              |
| Loss of Parking:   | No  | No. & Type:                   |                               |                       |                              |
| Trees Affected:  | No  | No. & Type:                   |                               |                       |                              |
| Cycle Parking Adjacent to Site:                          | Yes   | No. & Type:                   | 8                             | 4 x Sheffield stands  |                              |
| Street Furniture Affected:                               | Yes   | No. & Type:                   | 3                             | 2x flower box 1 x bin |                              |
| Kerb Works Required to Accommodate Dock:                 | Yes   | Details:                      | Flower planters to be removed |                       |                              |
| Civils Works Required to Access Station:                 | No  | Details:                      |                               |                       |                              |
| Utilities Affected:                                      | Yes   | No. & Type:                   | 1                             | 1 x Telephone box     |                              |
| Space for Service Vehicles:                              | Yes   | Details:                      |                               |                       |                              |
| Comments:  | Recommended location is the wide pavement area, on Montague Place across the street from the beach/pier. It is a highly accessible, and visible location. |                               |                               |                       |                              |
| Recommendation:  | Site to be used   |                               |                               |                       |                              |
| Site Photo:  |   |                               |                               |                       |                              |