

CycleStreets – cycle routing

Service definition



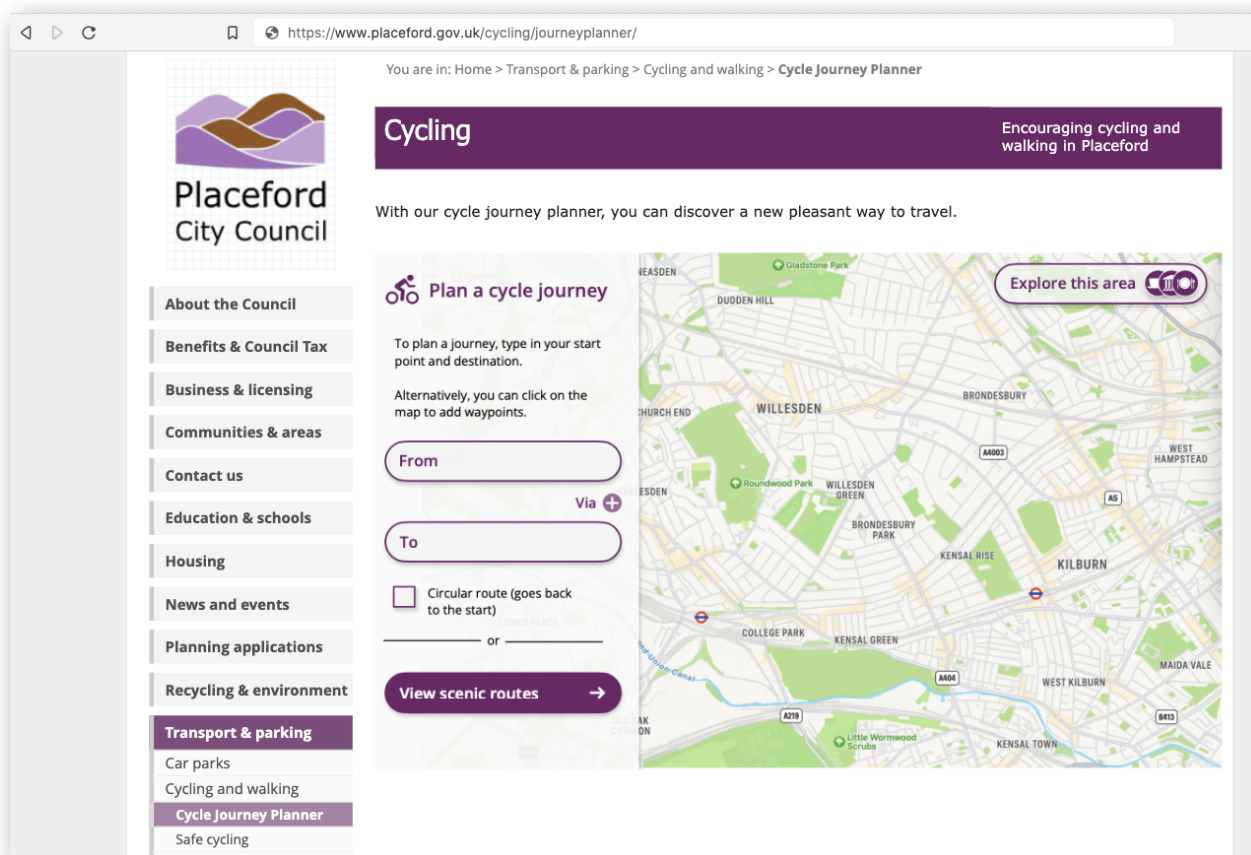
www.cyclestreets.org

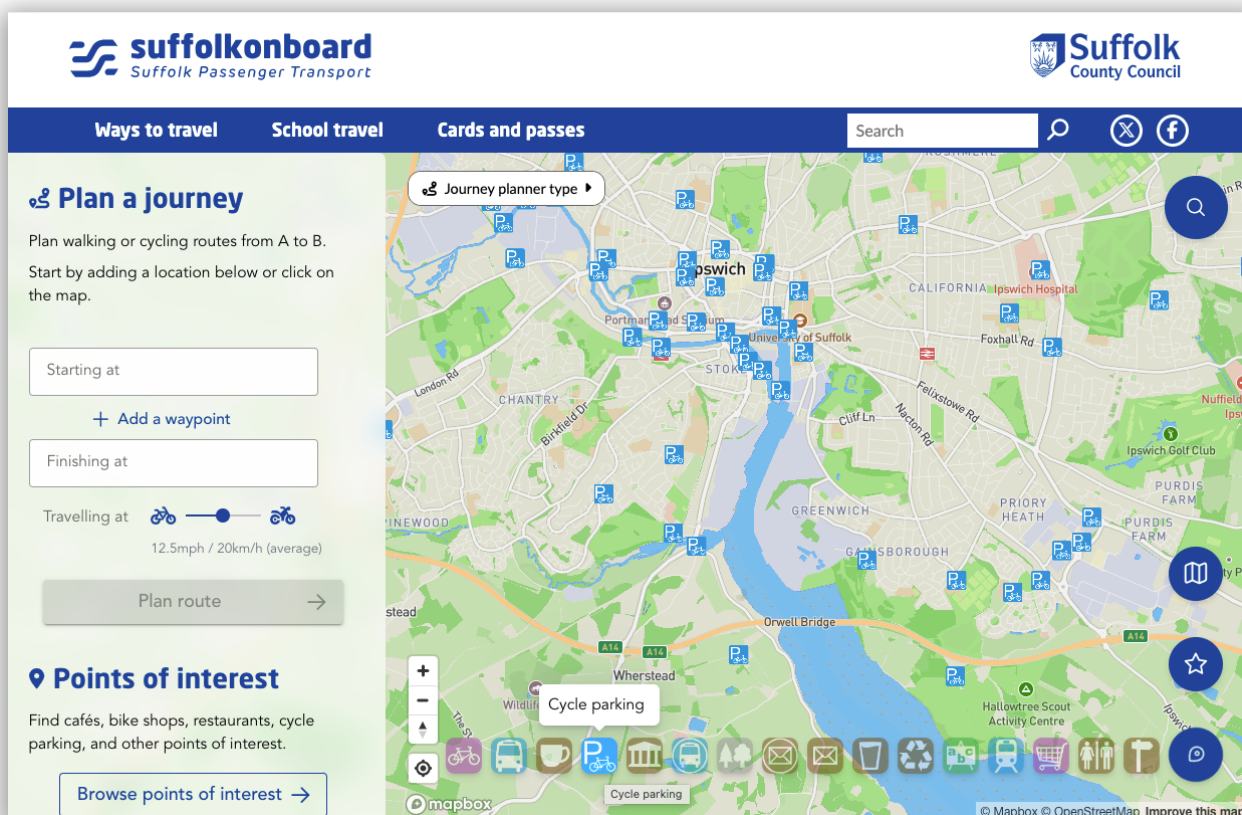
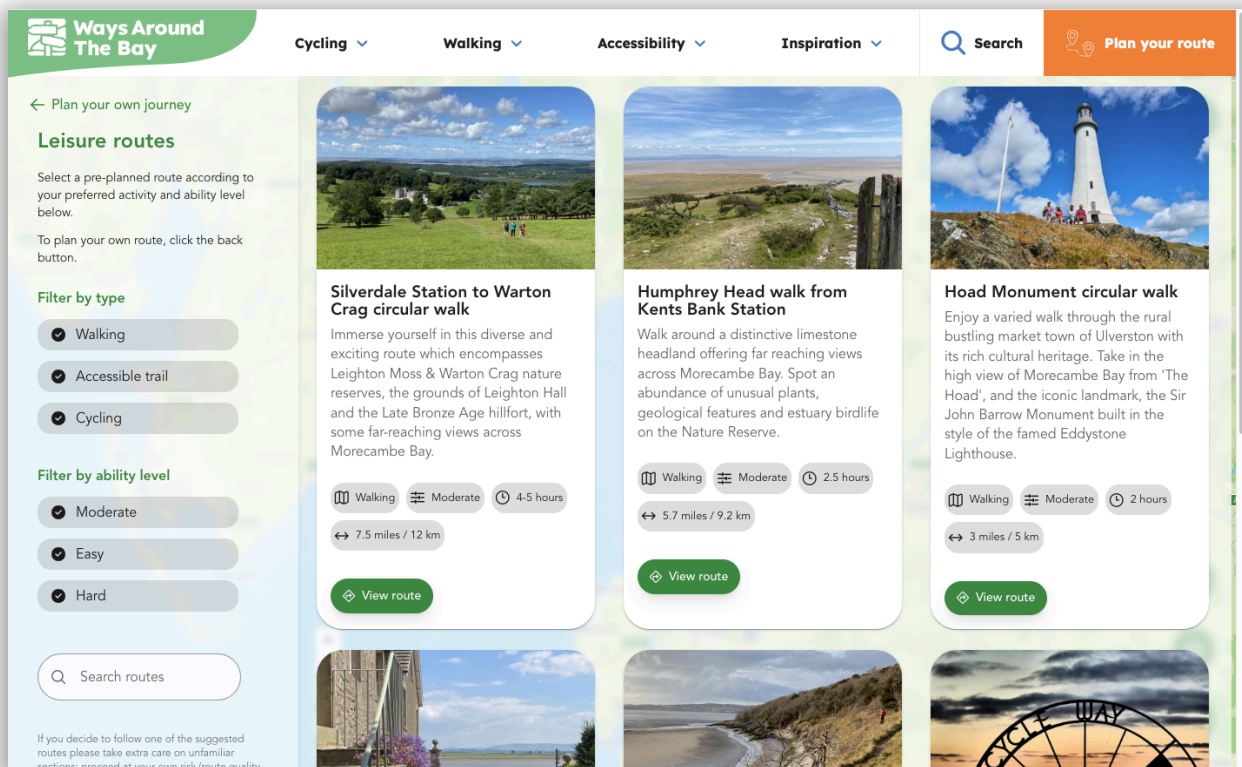
1. About us

CycleStreets Ltd is a social enterprise working to get more people cycling, through the provision of online cycle journey planning – giving information on where people can best cycle, and through tools for local authorities and cycling advocates to improve cycle infrastructure planning.

We believe that cycling is a form of transport which offers so many benefits – to the environment, to health, to liveable cities, to facilitate access to employment, and much more. Cycling is a human-scale activity that is accessible to almost everyone, and helps form the basis for modern towns and cities that are pleasant and happy places to live.

We aim to produce the best cycle routing in the world, using our advanced understanding of how cyclists navigate through varied kinds of on-street infrastructure.





We also create tools that enable local authorities and cycling advocates to work more effectively, providing data and visualisations that help make the case for better cycle infrastructure. These include street rating data, Low Traffic Neighbourhoods data, and a range of other unique datasets.

We are based in Cambridge, UK, home to the highest level of cycling in the country.

CycleStreets Ltd (company no. 06948959) was established in 2009.

Our skills and experience

We have a wide range of skills, which we deploy flexibly and at a low cost, with all of the following at expert level:

- Cycle routing expertise
- OpenStreetMap training and consultancy
- Open data
- Web mapping (Leaflet / MapboxGL)
- Web development
- Crowdsourcing
- Cycling advocacy / planning system knowledge
- Data liberation

2. Our cycle routing

Our cycle routing provides details of optimal cycle routes from A-B, with a choice of route types.

This enables you to incorporate high-quality cycle routing into websites for promotion of cycling and journey choices, in particular journey planner systems, for promoting sustainable and healthy choices. We provide good but realistic information on where cycling is best undertaken, reflecting the reality of cycling conditions in an area.

Our cycle routing is part of the broader CycleStreets data suite, providing a range of interfaces for obtaining other kinds of cycling-related data, such as infrastructure images, collision data, traffic count data, LTNs and modal filters, street ratings, planning applications UK-wide, and more.

Our cycle routing is aimed at practical utility journeys, anywhere in the UK. We aim to emulate as closely as possible how a knowledgeable cyclist would choose their route.

A range of routing types is available, reflecting the differing preferences and abilities of different people cycling: fastest, quietest, balanced (the default), and e-bike.

We additionally have a leisure routing option, enabling people to plan circular routes for leisure purposes, starting and ending at a particular location, based on a specified time or distance. This is an optional module which carries an additional cost.

In our routing, we take into account the following (and more), where data is available:

- Road/street type
- Lengths of streets/paths
- Hills and inclines
- Cycle infrastructure
- Path widths/quality
- Barriers, obstructions
- Land ownership
- Surface type and quality
- Route legibility
- Delays caused by traffic signals
- Crossings and junctions
- Barriers
- Kerbs
- National signed routes
- Local Authority signage
- Lighting (partial support)
- Turn delays (initial implementation)

Journey planning is based on OpenStreetMap data, widely considered the best available national source of cycling data, together with other data sources such as elevation data.

Our API is used in a range of mobile apps, websites, and research tools. Example client users have included: Citymapper; Halfords; various local authority websites; the Propensity to Cycle Tool and CyIPT (recommended by the Department for Transport).

We provide a means for end users to submit feedback on the routing results, which we receive and handle. All feedback is looked at, but cannot always result in changes to the routing, as cycle routing choice is naturally a subjective matter. Where the feedback is identified as resulting from a data error, we undertake best efforts to update this in the source data, OpenStreetMap.

We do not normally provide detailed customisations to the routing algorithm, because it is a finely-balanced set of conditions and rules. However, we are able to provide quotations for consultancy work to implement customised routing rules or even new routing types, at our standard daily rate.

3. Our services

We offer the following services:

- a. **Embedded cycle journey planner (white label site)**, providing an off-the-shelf journey planner interface included within your website, styled to the surrounding house style. Details are provided below in section 4a.
- b. **Cycle routing API**, enabling your developer to incorporate our routing into a system you have developed, providing you with complete control over the interface and design. Details are provided below in section 4b.

We can additionally provide training in editing of OpenStreetMap, the data source which underpins our routing. Details are provided below in section 4c.

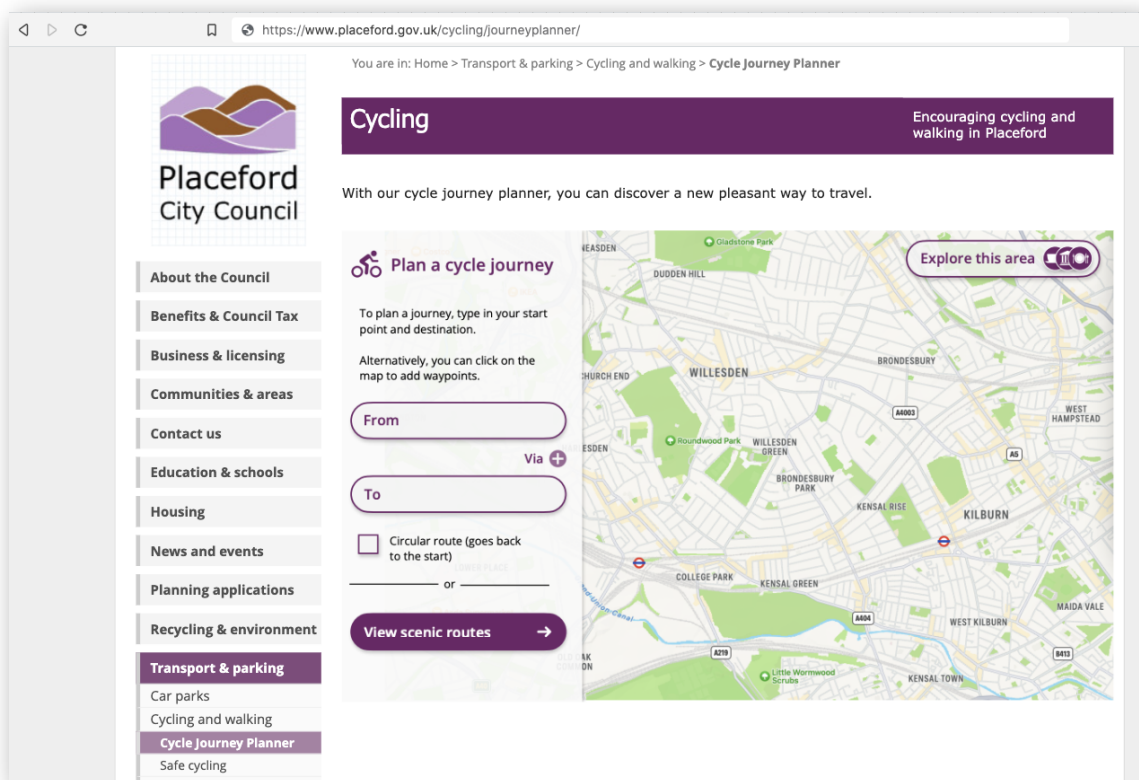
We can also undertake consultancy work at our standard daily rate, if specific non-standard requirements (e.g. for interface development or customised routing algorithm work) are required.

4. Technical specifications

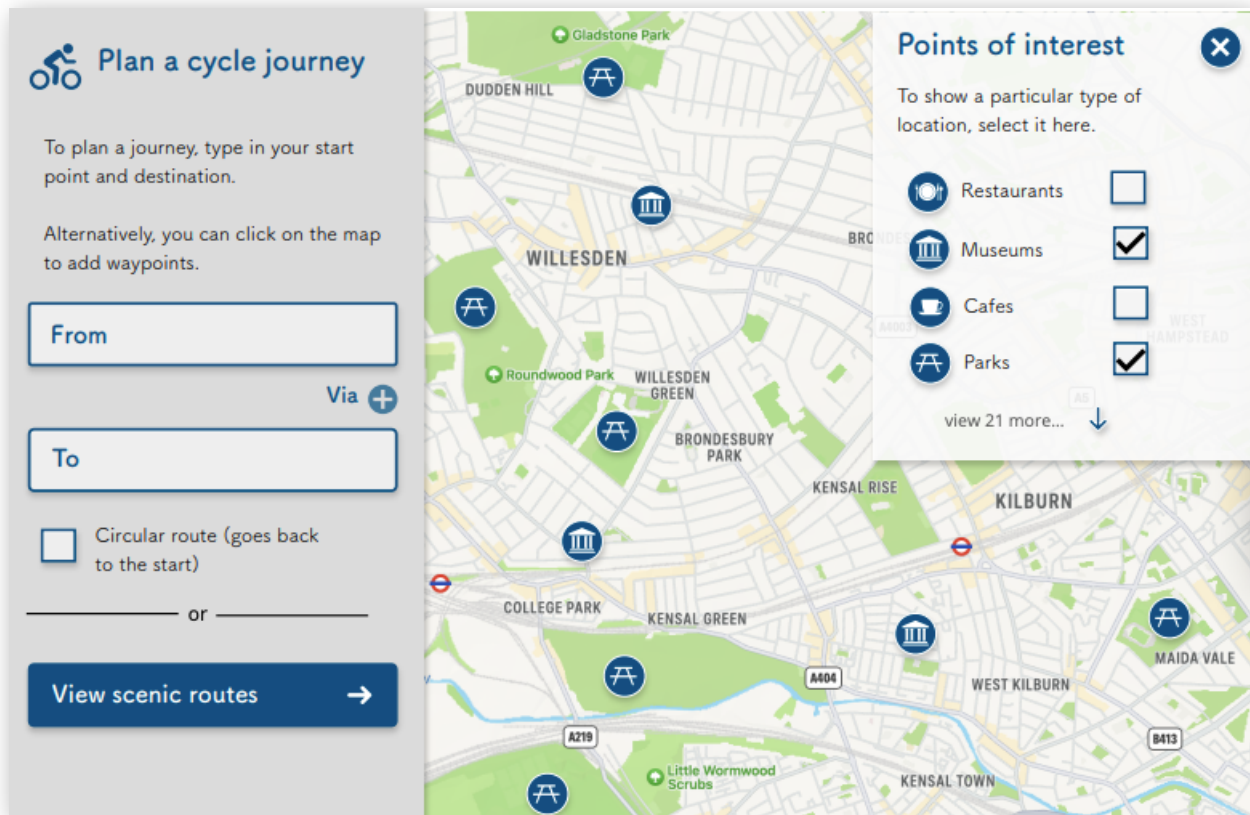
4a. Embedded cycle journey planner (white label site)

We can create 'white label' sites which blend our journey planner seamlessly into your website, encouraging people in your area to consider cycling as a mode of transport.

Example site, 'Placeford City Council':



Our white label sites are designed to match your website's look and feel, picking up your colours, fonts, and other details:

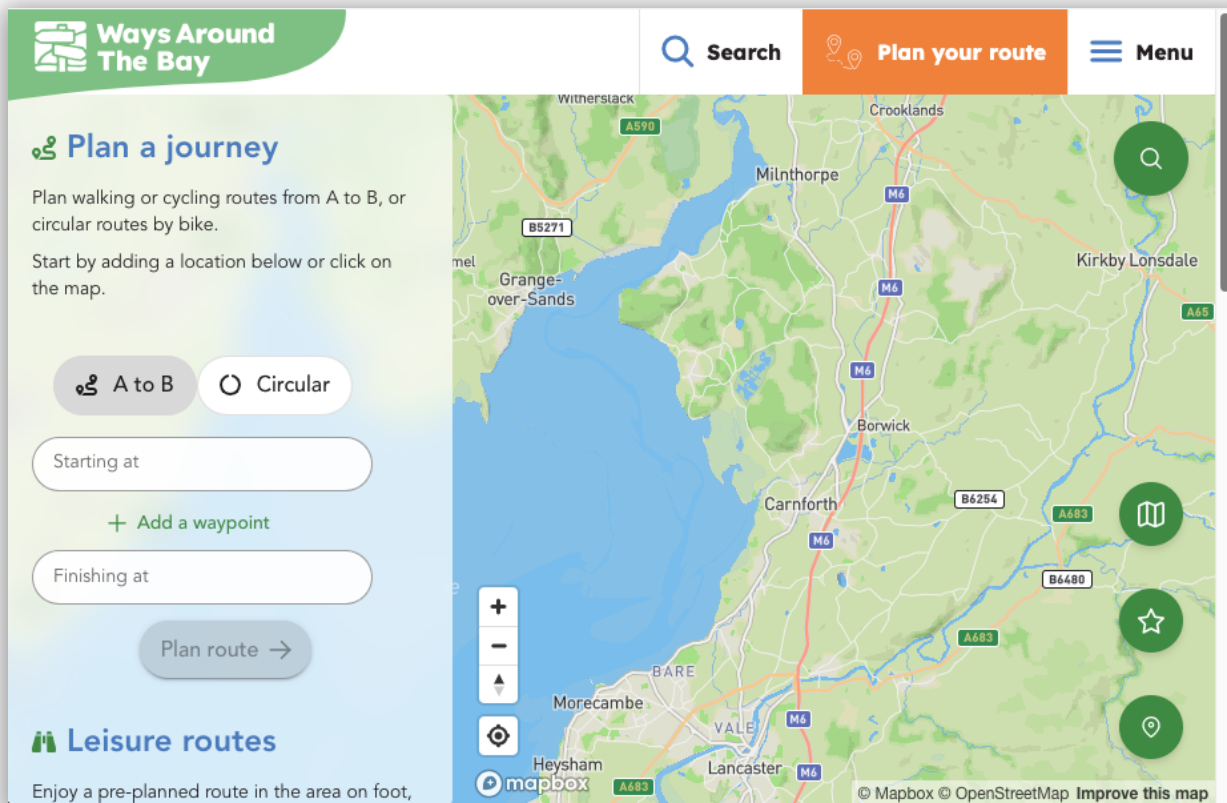


You can also supply particular points of interest you want to promote, e.g. local tourist destinations, and/or you can include off-the-shelf categories, as shown above.

Clients have included Halfords, county councils such as West Sussex, the Bicycle Association, Cycling UK, Morecambe Bay Partnership; London Cycling Campaign, and many more.

Example sites (currently using our older solution) can be seen at:

<https://www.cyclestreets.net/services/whitelabelsites/>

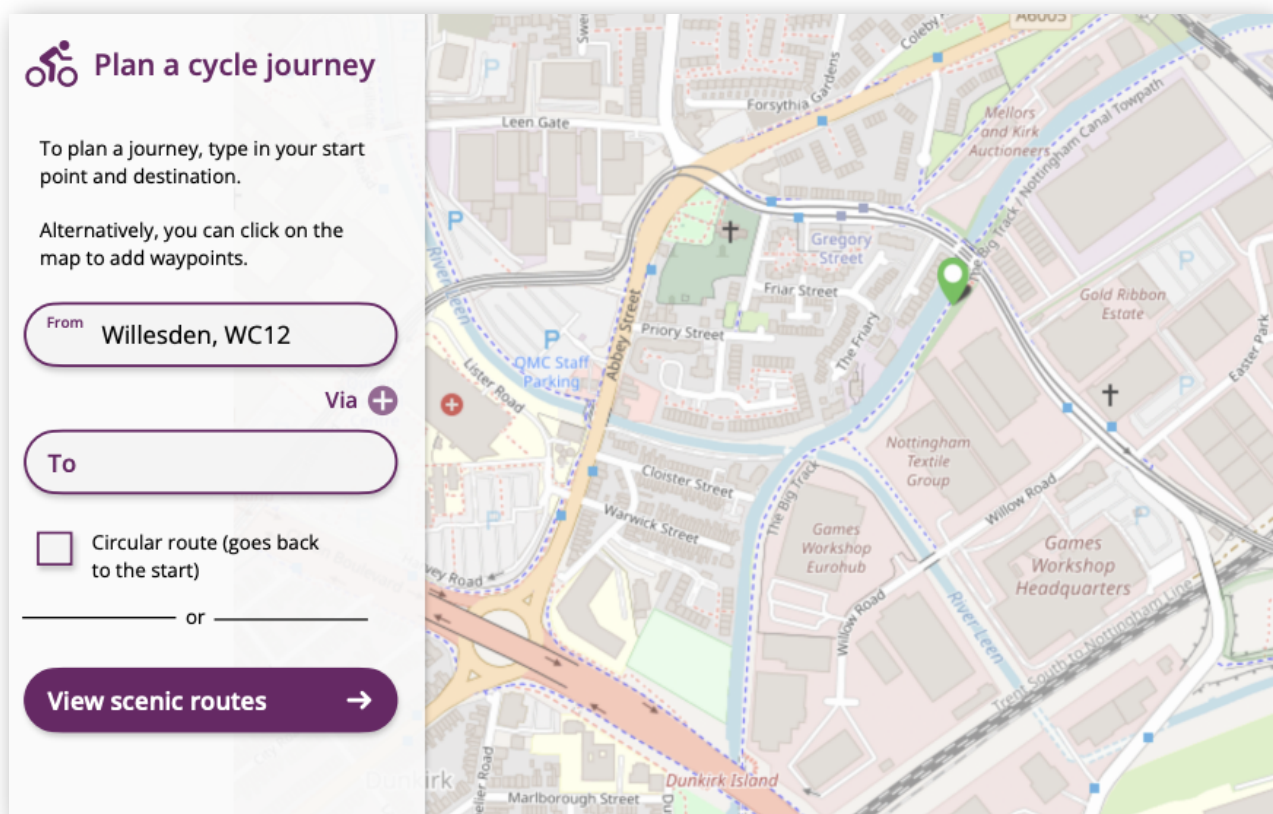


Our white-label journey planner solution, shown above and newly upgraded for 2023, is a web interface which:

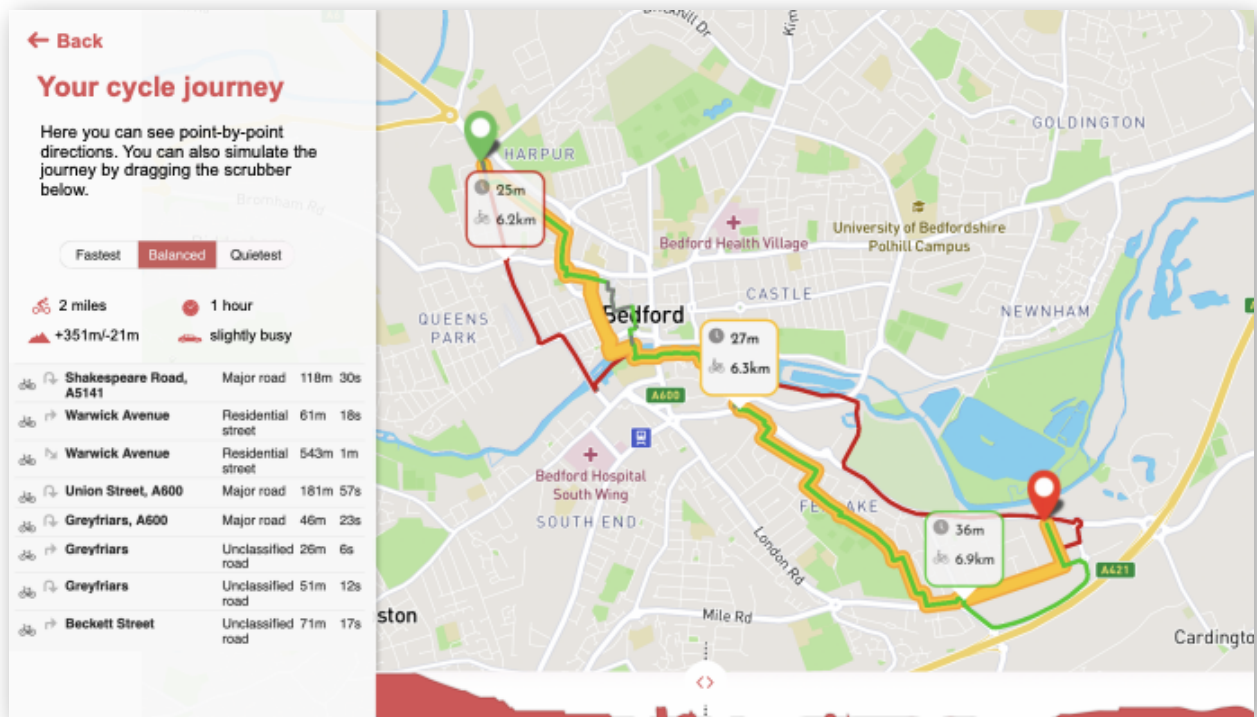
- Plans journeys from A-B with a choice of routes: quietest, fastest, a balanced route (offering the best of both), and e-bike. Walk routing is also integrated.
- Circular leisure routing is also available as an option, giving users an A-A route suggestion based on their supplied time or distance.
- Gives full route details: stage-by-stage instructions, calorie saving, CO2 saving, time and distance, and GPX output.
- Takes account of: street/road/path types, cycle infrastructure, signed routes (including Sustrans NCN), apparent legal status, surface types, cycle lane widths, obstructions, and much more, where these exist in the surveyed data.
- Avoids hills where suitable alternative routes exist.
- Has a customisable 'Quick zoom' link panel, to enable people to zoom straight into particular cities/towns/areas.
- Shows cycle parking, signed cycle routes, hills, bike shops, etc., as part of the background map.
- Offers a simple interface: select points by clicking on the map or type for a name, then click 'plan route'

- Routes have a permalink that can be e-mailed to friends and colleagues easily
- Mobile-compatible layout, so you don't need to spend money on mobile development
- Includes access to a statistics dashboard, giving the daily numbers of routes planned, average distance, and overall totals.
- Is under continual development - adding improvements all the time.
- Uses OpenStreetMap, with many areas having very detailed active travel data.

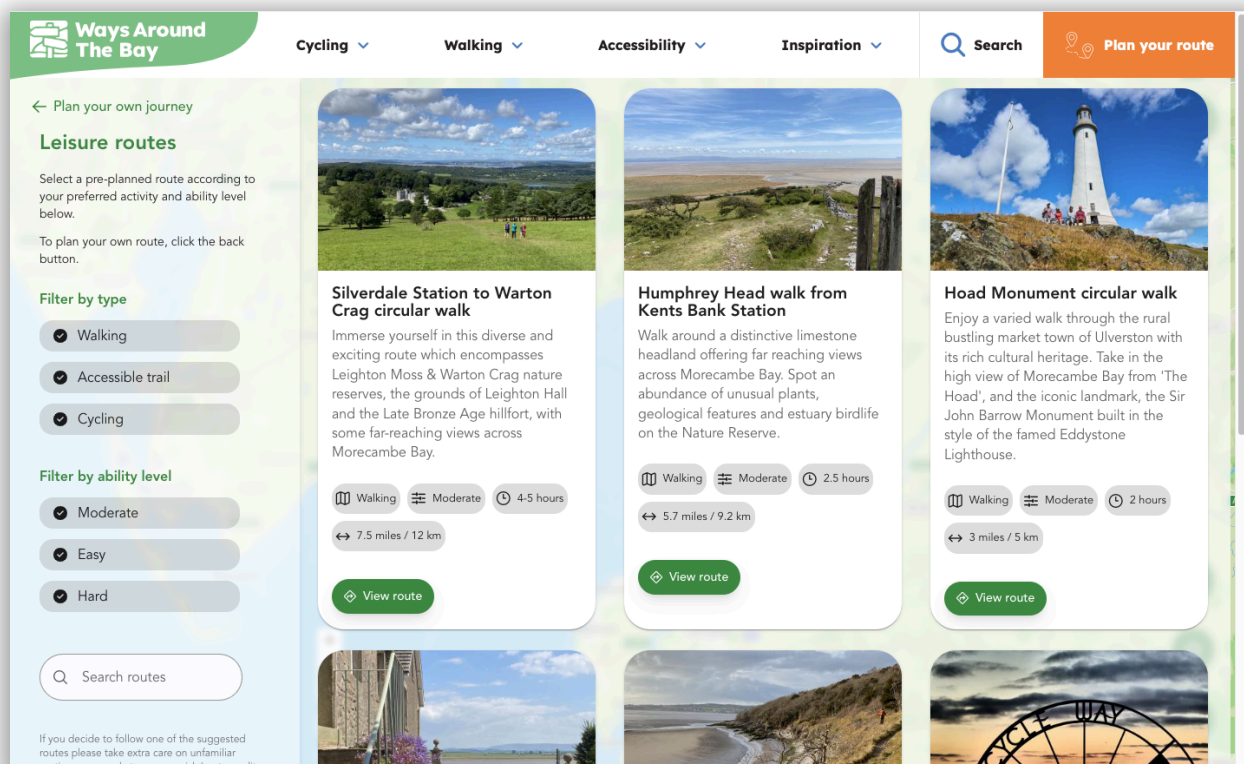
Our system offers a modern, user-friendly site, meeting modern user expectations, and using maps designed to show cycling and walking infrastructure clearly:

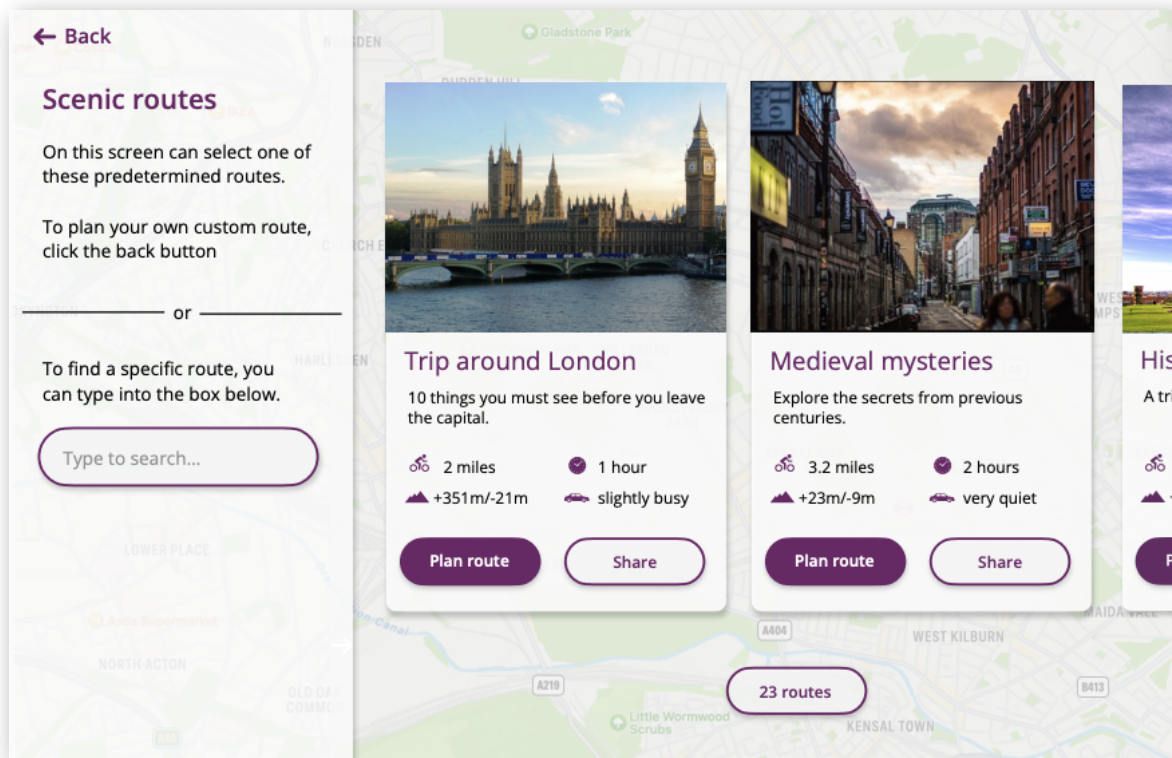


The routing results include a range of route choices, e.g. a quiet route for those newer to cycling, a faster route, and a balanced route that will suit most people:

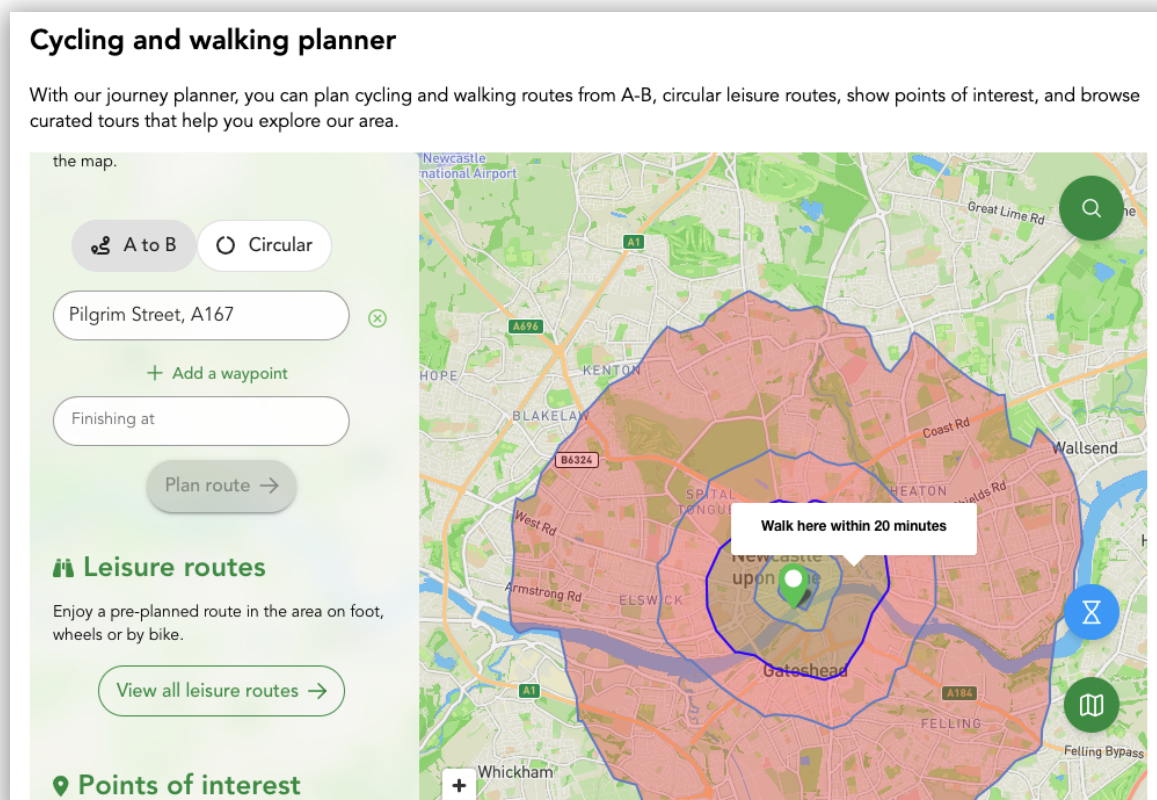


As well as planning routes from A-B, you can include curated routes you already promote:





A travel times (isochrones) facility is also available as an option, showing travel time possibilities from a specified location.



Embedding the map is simple and can be done directly within your content management system without needing any special support from your IT team. We supply a simple block of HTML to paste in.

4b. API specification – embed our routing data in your app / system

The API is a modern JSON REST API.

Full documentation on the request and response format is available on our website, at:
<https://www.cyclestreets.net/api/>

The calling application is required to send a set of itinerary points (e.g. start, finish), and a route type (e.g. balanced route), together with the API key.

The response includes a whole range of information including:

- The co-ordinates of the route;
- Overall distance and time;
- An assessment of the ‘quietness’ level of the overall route, giving indication of pleasantness and safety;
- Details of elevation changes;
- Saving in CO₂ compared to an equivalent car journey;
- Estimated calorie requirement for the route;
- Which sections (if any) require dismounting from the bicycle;
- Delays caused by junctions, crossings and other hurdles;
- The type of provision (e.g. major road, cycleway, residential street, etc.) for each part of the route.

Some elements of customisation in the route request are available:

- The maximum speed of the rider;
- Whether to output detailed turn-by-turn directions (enabled by default), as this is not always required. This gives a slight reduction in response time if omitted.

Use of related APIs, such as the feedback, geocoder and points of interest APIs, is also included.

The API can also be called via our batch routing interface, which enables a large matrix of route combinations to be planned at once.

4c. OpenStreetMap training

The data for our journey planner comes from OpenStreetMap (OSM), a flexible international data source that includes extensive information on cycling and walking.

We can provide your staff with training on how to update OSM. This enables new or updated cycling/walking infrastructure to be used by our journey planner, and shown on the background mapping, within a few weeks of it being constructed on the ground or entered into OSM.

The training includes:

- How to add new active travel infrastructure to the map;
- Discussion of objective vs. subjective cycling data;
- Considerations about accuracy and quality of metadata;
- Use of Quality Assurance tools;
- Consideration of licensing and copyright issues, e.g. the requirement not to copy from other copyrighted sources;
- Understanding of how we interpret the data to create cycle routing;
- Opportunities for Q&A on related topics by participants.

The training is an afternoon session of around 3 hours, to include a comfort break.

Training takes place as in-person training at your site. Whilst we can undertake training via video-conferencing, this is inevitably not as effective, due to the highly interactive nature of the training.

You must provide IT facilities in the form of a PC or laptop for each participant, with a modern, standards-compliant web browser (not Internet Explorer).

The training session is for a maximum of 6 participants. For a video-conferencing alternative, 2-3 participants are recommended instead.

More detailed multi-day intensive sessions covering very detailed topics can also be run.

A set of slides is provided to participants.

5. Support and onboarding

We work with your developer and/or IT team to provide any information they require on implementation, providing any clarifications beyond the provided public documentation.

We require you to sign up for an API key, which we will activate upon signing of the contract.

When using our developer API product, you are required to provide attribution to both CycleStreets and OpenStreetMap within your interface.

6. Hosting, uptime and security

Our standard SLA contract offers 99.5% uptime. In practice, we have consistently achieved above 99.9%. In the event of not meeting the uptime requirement, customers have the option to be refunded for time lost, at a twice pro-rata rate.

We are proud to use hosting based in the UK only.

Multiple data centres are used geographically to provide additional redundancy.

Uptime monitoring by an external service, and internal API format monitoring, are both in place.

No personal data is processed or requested by the system.

No user monitoring technologies such as use of tracking cookies are used.

The server logs have standard IP default logging enabled for the purposes only of site security. These are subject to our privacy policy and checked only retrospectively in the event of a security issue requiring investigation.

Support is provided during standard office hours. This is primarily by e-mail, but we are happy to be contacted by phone or video call also.

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Background map data in screenshots:
OpenStreetMap / Apple Maps / Mapbox