

GeoVation entry – CycleStreets: “Helping Campaigners Campaign”

11th February 2011

This is an entry for the GeoVation Challenge 2011 competition (theme 2, “How Can We Improve Transport in Britain?” from CycleStreets. We have consulted with cycling groups and their support for our bid is shown in section 10.

The present proposal is to improve the effectiveness of cycling campaign groups by the creation of a user-friendly, web-based toolkit that will enable groups and their members to gather, discuss and make best use of dispersed geographical knowledge about the problems faced by cyclists. This will be done by the extension of the existing CycleStreets photomap (and journey planner) with a whole range of new tools and facilities which would be made available free to any cycle campaign group that mentions it.

The proposal is ambitious and so the full amount of £30,000 is sought. This would cover development, design and ongoing hosting. Implementation within a three-month period following approval of funds is projected.

The ideas here are written from the perspective of both a service user (us as campaigners) as well as service provider (us as developers of CycleStreets).

The bid has the support of both of the national cycle campaigning organisations as well as a number of the most active local groups, including London.

1. Context.....	2
2. Geography’s key role in cycle campaigning.....	2
3. CycleStreets: background.....	3
4. Example: solving cycle parking shortages	3
5. How will it work, in detail?	6
6. Hosting	10
7. Development plan.....	10
8. Does this proposal duplicate other work going on?.....	11
9. Data.....	12
10. Cycling community support	12
11. Research aspect	14
12. Outcomes	14

1. Context

Cycling has great potential for solving many of the transport problems we face. It is an efficient form of transport, requiring little space. It is environmentally-sound and improves health, and offers an inexpensive transport accessible to a wide variety of people.

However, cycling rates are very low in the UK by continental standards, with few areas reaching into double-figure percentages, and none approaching the 40% levels seen in some parts of the Netherlands for instance.

The barriers preventing higher cycling rates are several. As well as cultural factors, the paucity and low quality of cycle-friendly infrastructure is a key problem. Cyclists often have no option but to use congested roads, shared with fast and hostile traffic. The legal environment often fails to protect cyclists and pedestrians. Furthermore, cycle theft is rife, often due to lack of secure cycle parking.

A range of government, commercial and third-sector initiatives exist to campaign on these issues and effect change on the ground.

Key amongst these is the large number of cycle campaign groups around the UK and Ireland, who work to improve conditions for cycling by a variety of campaigning means. Well over 100 groups exist, as part of Cyclenation, the CTC and London Cycling Campaign.

Local cycle campaign groups often face typical problems experienced by many local campaigning organisations. As well as having limited funding and being subject to shortages in volunteer time, they lack IT knowledge which could help enormously in managing information about the local cycle network and its problems.

With cutbacks to national budgets, with transport expected to be particularly badly hit, there will be renewed emphasis by Local Authorities on smaller-scale solutions and resolution of smaller infrastructure problems rather than 'grand schemes'. As such, better tools for campaigners to campaign on these more localised issues will be needed in this new funding environment.

2. Geography's key role in cycle campaigning

Geography, and people's interaction with it, is at the heart of cycle campaigning. Indeed, virtually any issue in cycle campaigning involves geospatial information. For instance,

- Lack of cycle parking involves the need to improve a large number of geographically-dispersed areas.
- Hostile roads need audits that involve geographical techniques.
- Poor quality cycle routes, or lack of them, need people who pass through an area to know what the problems are and to share this knowledge.
- Scrutinising planning applications require an understanding of the area and its spatial context.

The present proposal aims to provide a user-friendly, web-based toolkit that will enable cycle campaigners to gather, discuss and make best use of dispersed geographical knowledge within the specific context of local campaign groups. It will help facilitate their work, enable much simpler information sharing, and provide a range of tools that make clearer the problems that cyclists face, all in a delegated manner that respects both geographical boundaries as well as personal privacy.

Bringing together a whole range of geographical data will make cycle campaigning much more effective. Knowing where planning applications are, or collision hotspots, and clusters of development issues are but brief examples, expanded on below.

The authors of the proposal are both heavily involved with the campaign work of Cambridge Cycling Campaign. They have personal experience of dealing with the geographically-dispersed and numerous nature of cycle campaigning objectives. They are well aware of the need for a system which combines principles of ticket-management, geography and campaigning. We believe strongly that such a tool would see strong uptake from groups around the country.

3. CycleStreets: background

CycleStreets is the UK-wide cycle journey planner and photomap website, run 'by cyclists for cyclists'.

Both of its key developers are active cycle campaigners in Cambridge and have links with local groups around the country as well as strong links with the three main umbrella cycling groups mentioned above.

Facilities on the CycleStreets website are modelled around two core ideas: (i) journey planning from user-specified points (whether arbitrary or based on existing locations), and (ii) marking of locations on a map for campaigning and utility uses. Combined together these are making an increasingly powerful set of tools.

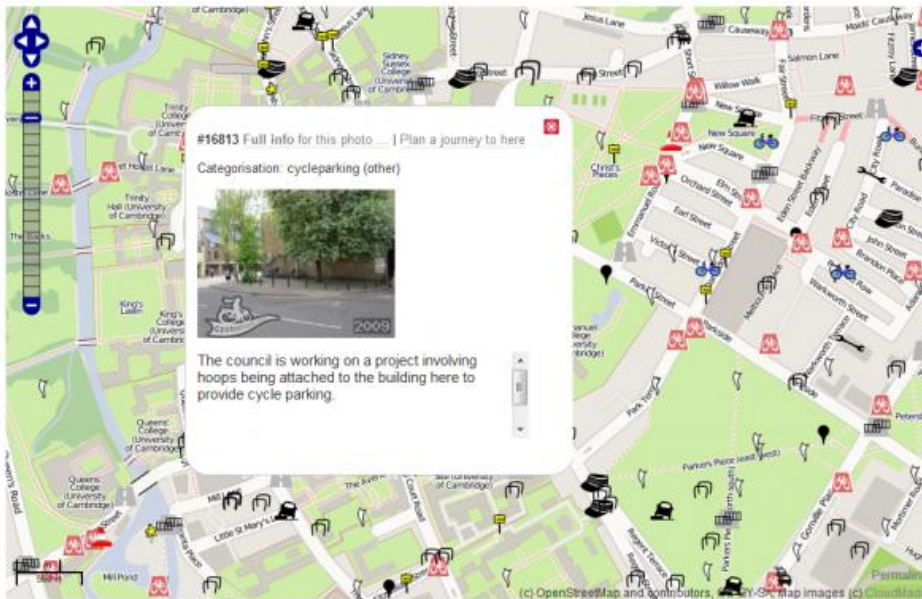
We have long wanted to develop the Photomap side of the system into a more useful set of tools so that we can fully realise its original vision of being a useful campaigning tool, and the present proposal aims to do just that.

4. Example: solving cycle parking shortages

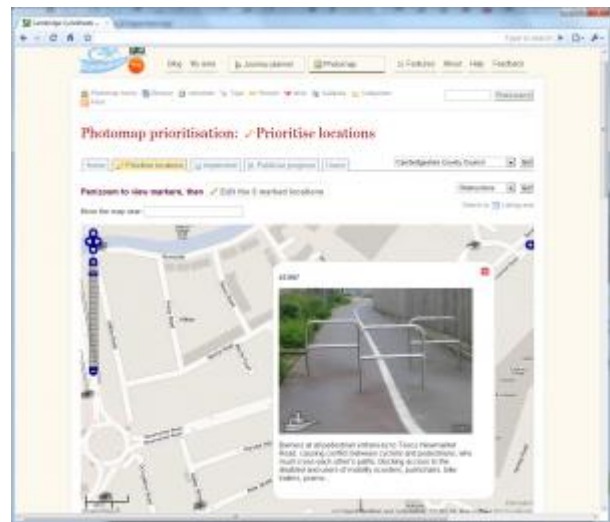
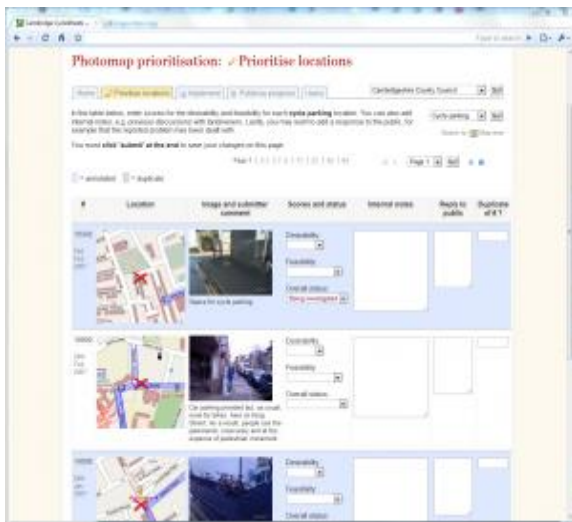
Hundreds of cycle parking problem locations have been submitted via the Photomap facility in the Cambridge area, resulting in a database of such locations formed by crowd-sourced effort.

Move the map near:

Show key / Filter by type



In order to make more effective use of this, CycleStreets created a website 'Cycling Sorted' which provides the Local Authority with additional data (submitted into the same database) and a means to prioritise the submitted locations, in terms of feasibility and desirability.



These locations are now being worked through by the County Council as funding permits. However, additionally they form a useful basis for campaigning as well as providing evidence of demand in terms of seeking funding from national government.

A similar system has been set up for London Cycling Campaign.



The same principle could be applied nation-wide for campaigner use but in a much-expanded format. Campaign groups could encourage their members to submit locations where cycle parking is needed (or other problems exist), and then prioritise these problems as a focus for campaigning resources.

The toolkit will build upon the existing facilities provided by CycleStreets and take these much, much further.

5. How will it work, in detail?

The toolkit will gather together information from three main groups of people:

- Cycle campaign group Committee members, i.e. actively-involved members;
- Cycle campaign group members;
- The general public, who will be encouraged by cycle campaign groups to submit information via user-friendly forms with an option to register.

Campaigners and members of the public will be encouraged to register and submit two types of data:

- 1. Point-source locations pinpointed on a map, representing locations of existing problems they know of. These submissions can include photographs where available, or fall back to Google Street View if not. This will make use of the existing CycleStreets Photomap infrastructure (including API/mobile uses) but Photomap interface will be overhauled to make it more user-friendly (it has long been in need of usability work).
- 2. Linear problems, i.e. lines drawn on a map where a desired cycle route could be created where it does not currently exist. This could be a single line (e.g. cycle lane needed on road) or a set of related lines forming one entity (e.g. a missing route through an area).

This data is then available on an ongoing basis to campaign groups, as discussed below. Data availability will be structured in direct relation to the cycle campaign group(s) in the area:

- Each area will be separate so that data from other areas does not pollute views of information.
- It will be possible for more than one campaign group to register for an area. This is not a problem and reflects the current situation in some places. The system will be available equally to any group so it should not change any politics concerned. If anything, the system will hopefully encourage closer working.
- Where a set of campaign groups in an area are working together, both logos would be shown.
- Campaign groups will manage their own Committee lists, i.e. the system is fully-delegated.

- Groups could choose to join a federation, i.e. enable wider sharing beyond their geographical area.

Registration would use the existing CycleStreets sign-in infrastructure. (An additional option run using OAuth or OpenID would be available so that people with existing accounts on the relevant cycle campaign websites could use that account to log in, where those systems have been OAuth/OpenID-enabled.)

Registered users:

- Would be encouraged to enter their home postcode, and places of work and leisure. (As a nice extra, users could get automatic 'cycle from/to here' route links based on these submitted key places.)
- Having entered these, routes would automatically be created by the CycleStreets journey planner. The user would be encouraged to adjust the generated routes against their actual, undertaken journeys (data which, in itself, could be used to improve routing quality), or upload a GPX file. This means that, should a point-source or linear problem be submitted by another user, such problems can be linked to people who actually would stand to benefit, and who would therefore have an incentive to comment and get involved in the issue.
- Potentially groups might also be able to add known journeys of their members who are not (yet) registered. However, this might have data protection implications so would need further consideration.

A map forms the public-facing heart of the data. In respect of this map view:

- Locations already submitted will be shown, to avoid visual crowding otherwise caused by duplication of locations.
- Locations will be coloured differently so that a 'heat map' of more/less important locations starts to develop.
- People will also be able to add public comments on existing locations or give a thumbs up/down indication.
- Locations will have different icons depending on the type of issue, e.g. cycle parking, obstructions, etc.)
- Users who are registered will be able to 'watch' certain areas of the map for changes, either upon login, or via e-mail updates, or via RSS.
- Filters can be applied, e.g. to show only cycle parking problems or logical groupings (see below).
- Registered users can opt to receive notifications about the progress of locations they have submitted.
- Additional static layers can also be switched on for information purposes, e.g. collision locations (subject to availability and licensing compatibility by area), potentially transport-related crime (if available) and London Cycle Hire locations.

For each location (whether point–source or linear), cycle campaign committee members can then supplement the submitted data by adding/manipulating further data on a private basis:

- Firstly, give each issue a name if this is not supplied by the initial issue submitter.
- Use a drag–and–drop (or perhaps tagging) style interface to add issues into logical groupings that they understand. For instance, a range of issues relating to the construction of a shopping centre could be pushed into a new ‘cloud’ of issues grouping these together. Each issue or cloud then becomes one entity in terms of discussions and commentary, and divergence of discussion between several entries is avoided.
- Issues or clouds of issues can have files and e–mails attached to them so that related documents can be easily referenced. E–mails relating to the issue/cloud can be bounced/forwarded to the system via a mail–to–web gateway. Blog postings on the site of the campaign group or elsewhere can also be highlighted, by way of featuring main public resources on an issue.
- Campaigners can pull in examples of best practice related to the particular issue, from the best practice examples on the Photomap (see: <http://www.cyclestreets.net/photos/categories/>). A quick and direct search will be available to make these locatable easily. For instance, if an issue regarded the need for cycle parking in a tight space, best–practice examples of solutions to that problem from elsewhere could be directly referenced by attaching that to the item, reducing the ability for decision–makers to claim “it can’t done”.
- Use a drag–and–drop style interface to prioritise the issues (whether a cloud of issues or individual items, or both) according to importance and feasibility and/or any other local criteria.
- Issues and clouds (grouped issues) effectively become discussion forum entries to complement the map view. This helps make the system become a structured point of focus for discussions rather than just be an adjunct to ad–hoc e–mails elsewhere. The forum view and the map view form the key interaction methods with the system by campaigners. The forum mode could have a StackOverflow–style reputation system so that unproductive users do not drain enthusiasm of others.
- Forums would have a mail–to–web gateway with proper thread support so that users who want to use it in mailing list form could do so.
- Add private comments (e.g. known issues relating to landowners or strategic issues with the council which would not be productive to broadcast)
- Add in other individuals with Committee–like rights but only for the particular location concerned (e.g. someone who has extensive local knowledge should be ‘invited in’ to join discussions)
- Publish and export lists in a variety of formats, e.g. GeoRSS, RSS, KML.
- Groups can publish ‘What we’re working on’ pages based on the prioritised issues, using a variety of preset templates, and generated dynamically.

- Invite Local Authority contacts to augment the data with their knowledge, in particular to add information about feasibility.
- Contact people whose journeys (as submitted in their user profile, or calculated by likely origin–destination route analysis) pass through the area, or who are ‘watching’ a geographical area, to ask for views on proposals or issues, where such people have consented to being approached. For instance, if, after pressure from a campaign group, the local council proposes a new cycle lane, the group could easily contact anyone whose journey goes through the current road and therefore would be encouraged to submit comments to the Council.

Effectively this data from privileged users simply references (hooks on top of), rather than disrupts, the initial submissions made by the public.

Deadline management: A key issue for an effective campaign group is ensuring that deadlines, both for transport scheme consultations and planning applications are dealt with in time. Groups will be able to add key dates and schedule reminders (either as e-mails or as a visual indication when logged-in) to help them focus on important issues that are also urgent.

Dealing with planning applications can often be an important part of cycle campaigning. New developments, whether small localised changes, or major new developments, affect travel patterns for decades. In this regard:

- Planning applications will be available as a layer that can be switched on, so that campaigners browsing the map view will see these and turn them into issues like any other issue (or whitelist them to hide them from view). This depends on availability of data from sites such as PlanningAlerts.com
- Where deadline information relating to a Planning Application is available, this would automatically be set in the deadline management controls noted above.

Engagement with Local Authorities will be crucial in many cases:

- Groups will also be able to make compiled data available to Local Authorities. This will ‘close the loop’ from submission of material, through campaigning, to action.
- Data would be assembled and then ‘pushed out’ in the desired format to the Local Authority, who could then log in to see that which has been made available to them. Alternatively/additionally, data could be made available via notifications.
- Councillors could be contacted directly, using the Goveval database that underpins WriteToThem.com

As issues are resolved:

- The campaign group would mark it as resolved, either successfully (giving themselves some credit) and adding a new photo superseding the issue, or unsuccessfully (giving reasons why – as that will help the public understand why the problem remains and will thus be less likely to complain in future).

- The CycleStreets journey planner has a Photos-en-route feature, whereby journeys planned along the route show photographs submitted by users. Where a successfully-resolved issue is on such a route, a message along the lines of “Cycle infrastructure here has been improved thanks to campaigning work by <groupname>” together with a logo.
- Markers on the map change colour.
- A variety of attractive views of the resolved locations would be available, so that campaign groups can easily point people to the effect of their work, i.e. the outcomes that result when people join and get involved in their group, thus helping increase membership.

Information sharing between groups is important:

- Groups will be able to mark an issue as being of particular interest to other groups elsewhere in the country, using a tagging system. For instance, a campaign involving a successful set of tactics (e.g. allowing cycling in a previously banned area, as happened in Cambridge for instance) could be shared with other groups.

Export will be available for groups to export the entire dataset, including discussions, to avoid accusations of lock-in. In practice though this would hopefully never need to be used.

6. Hosting

Local groups could choose either:

- To host the toolkit on their website (via iframe, subdomain or proxying methods). This would appear fully in the brand/styling of the rest of the site.
- Simply to use the national version (which would still be divided into area-specific partitions). This would feature the logo of the group(s) and potentially other branding.

7. Development plan

The toolkit would be developed by adapting (considerably) the existing CycleStreets Photomap infrastructure. The benefit of using this is that:

- There is a substantial body of reasonably mature code running an existing set of services and infrastructure
- An API already exists for submission of material
- There is a legal body (CycleStreets Ltd) already in place to manage the project, with a proven record of delivery.
- There is a database of 25,000+ photos already in the system, which are licensed to CycleStreets

- Putting this within the CycleStreets 'ecosystem' also means that users and campaign groups can benefit from associated spin-off benefits, e.g. the crediting of campaign groups when an area has been improved within a planned route.

The work would be undertaken as grant-funded development under the legal auspices of CycleStreets Ltd, operated on a not-for-profit basis.

An additional developer would be taken on, with the aim of having two full-time developers working for a three-month period to implement the work. Assuming approval of funds by end-March, this would mean final delivery by 30th June 2011.

A designer (with particular understanding of user interface design) would be commissioned. JQuery knowledge would be specifically sought so that a fluid but still accessible interface could be implemented.

A mobile-friendly version of the location submission page at least will be included, to facilitate upload for those without the CycleStreets iPhone app or Android app (forthcoming).

Work would be undertaken using a strict API/Interface boundary.

Full consideration would be given to data protection issues. User profiles need contain no more than username, postcode and routes where supplied by the user, plus association with a campaign. No membership or financial data would be needed and indeed these would be undesirable to store. User data, especially real-life routes, would not be shared with other users except if the user chose to do so.

Full consideration would be given to intellectual property issues. It is believed that extension of the CycleStreets photomap towards this wider-ranging system would be acceptable use given existing submissions.

A range of options exist with regards to governance of the system, though with several key cycling organisations behind it there will be much experience to draw upon. Guidelines on dispute resolution will be needed, since every cyclist has their own opinion and debate must be kept productive.

8. Does this proposal duplicate other work going on?

No. Although there are a number of websites currently exist which accept submission of point-source problems, none of them cover the use-case which the present proposal aims to provide for, namely management and prioritisation of dispersed cases of absent/inadequate infrastructure around a city by cycle campaign groups.

They are:

- The CycleStreets website as it currently stands, which includes an API for use by mobile apps such as CycleStreets' own app. The proposal above will develop this from being a 'sink' for problems to a much more useful utility that will make much better use of the data.

- MySociety's FixMyStreet, including its iPhone app. This is really for maintenance issues of a more general nature (i.e. not just transport) rather than provision of absent infrastructure.
- MySociety's forthcoming FixMyTransport. A discussion with a key individual at MySociety has confirmed that this will focus more on the process of building a public, high-profile campaign around solving a particular larger issue such as making a station disabled accessible, or similar issues, rather than trying to deal with management of the sum of dispersed issues around a city.
- The CTC's FillThatHole, for reporting of potholes, which also has an iPhone app. This deals with maintenance issues rather than than improvement of absent/inadequate infrastructure.

As can be seen, there is potential for some link-ups, but these try to solve different problems for different audiences.

9. Data

A variety of data sources would be used:

- OpenStreetMap would form the map base
- OS Boundary-Line Open, used to ensure that the campaign group gets only material relevant to the Local Authority/Authorities they exist within.
- OS CodePoint Open, combined with OSM Nominatim, to form the Gazeteer
- Database of local campaign groups (LCC, CTC, Cyclenation, etc.) subject to their interest and data protection considerations. (This would not involve any member details.)
- The existing CycleStreets Photomap database.
- Database of political representatives, e.g. Goveval (would incur licensing costs)

10. Cycling community support

Both of the national campaigning organisations, and a number of the most active local groups have expressed support:

- **Cyclenation, the national federation of cycle campaign groups:** "Cyclenation welcomes this bid. Cyclenation groups will play a key role in ensuring the proposal is a success. This will be a valuable tool, helping local campaigners focus on barriers to cycling and ultimately generating extra cycling trips. The Cyclestreets system was originally launched at one of the Cyclenation conferences, and has grown to be without doubt the best web based cycle mapping system. With the added functions it will become a more powerful tool for the campaigner and as well as the everyday cyclist."

- **CTC, the national cyclists' organisation:** "The present Government is strongly encouraging local authorities to boost cycle use, for very good health, environmental and other reasons. However many local authorities have little understanding of how to do good cycle-friendly planning and design. Too often money is spent on facilities which are unnecessary, poorly designed or even downright dangerous, while neglecting locations where improvements are most seriously needed. A web-tool for cyclists to help local councils spend their cycling budgets cost-effectively would be a wonderful 'big society' venture, that could yield huge benefits for our health and that of our streets, communities and the environment."
- **London Cycling Campaign:** "London Cycling Campaign backs CycleStreets' bid for the user-friendly campaigner toolkit proposed. It would help our campaigners in each borough enormously, by fulfilling the long-standing need for more effective ways of collecting, prioritising and managing the massive number of problem spots in London where cycling needs to be improved. Crucially, by making these better tools available to campaigners, it would help more people get involved in our work, generating bigger momentum for improvements to the cycling infrastructure deficit."
- **Richmond Cycling Campaign:** "In the modern world, it is difficult for people to give up time, to attend meetings or to arrange audits of cycle facilities and poor road infrastructure that they pass on a daily basis. Equally, it is difficult and time consuming for campaigners to develop and maintain an 'issues list' and then convert it into a format that engages councils and other relevant stakeholders. The CycleStreets photomap has the potential to resolve both these challenges for Richmond Cycling Campaign, turning our 400 members into our eyes on the ground, revolutionising our campaigning efforts."
- **Bristol:** "On behalf of Sustrans Volunteer Rangers in Bristol (and CTC Right to Ride Bristol and Bristol Cycling Campaign) we would like to add our support to the CycleStreets GeoVation Challenge bid. The proposals tick all the boxes for us – we have made efforts to produce such a system ourselves for dealing with local issues, but volunteers doing things in their spare time mean that we never quite get there. Given the success of CycleStreets developments so far, this would be an excellent way to solving what is a problem for cycling volunteers and campaigners across the country. Good luck with your bid."
- **Pedals (Nottingham Cycling Campaign):** "I would like on behalf of Pedals to write and express our strong support for this bid. As you know, Pedals has been very supportive of your excellent work on the Cyclestreets website and think that this experience, together with your wider experience with the Cambridge Cycling Campaign, provides an excellent basis for the much more ambitious proposals you now wish to develop. If you can secure the funding to do this, this would provide a very useful tool for cycle campaigners throughout the UK, making the most of new technologies and software, and help us all to work on a more consistent and co-operative basis to campaign for good practice in the promotion of higher levels of cycling in both urban and rural areas. We therefore very much hope that you will be

successful in your bid for funding to develop this to its full potential, and wish you the best of luck in doing this.”

- **Dublin Cycling Campaign:** “As Chair of Dublin Cycling Campaign, I'm really impressed with the ideas of CycleStreets in their GeoVation bid. Encouraging cyclists to use the Web to pin-point hostile conditions is a great idea and deserves support. Cyclists, advocates and local authorities throughout the UK would be greatly facilitated by the system, and we in Ireland would be glad to see something similar here.”
- **Cambridge Cycling Campaign:** “Cambridge Cycling Campaign fully supports this bid. A large proportion of our time is spent discovering problems reported by members, discussing how to solve them, and working with the local authority to implement solutions. All these tasks require mapping information. This proposal would solve most of our problems with collating geographically-based data.”
- **Spokes (East Kent Cycle Campaign):** “Spokes are excited about CycleStreets’ bid for GeoVation funding to develop a tool to aid cycle campaigners nationwide. We have ambitions for developing tools for the best siting of new cycle parking and receiving proposals for new cycle routes from our members. CycleStreets’ proposal will achieve this and much more. Plus it has the benefit that it’ll be available for all cycle campaigners to use nationwide, not just where we’re based in East Kent. We hope that CycleStreets win their bid and look forward to using the system together with our members and local community in the future.”
- **Loughborough & District Cycle Users' Campaign:** “We would very much welcome the introduction of the Campaigning Tool kit to help us in our work.”
- **Push Bikes, the Birmingham Cycling Campaign:** “Push Bikes’ wishes to express its support for the 'Helping Campaigners Campaign' project.”
- **CycleSheffield:** “CycleSheffield would like to support your ‘Helping campaigners campaign’ bid, which we think has potential for creating some really useful tools for campaigners, and therefore for Local Authorities as well since they will get a clearer idea of the issues for cyclists in their area.”

11. Research aspect

There seems to be little research done on the effectiveness of cycle campaigns in the UK and how they can best work, though lots of evidence that they do achieve results – reading the Newsletters of many groups makes this clear. We would be interested to link this work with research-based activity, possibly also in connection with the journey planner and how people use that.

12. Outcomes

- Fundamentally, increased resolution of network problems

- Improved and better-organised working practices by local groups around the country through access to a new tool to help them manage the deluge of cycling problems that they get told about or wish to see resolved
- Increased reporting of network deficiencies, i.e. increased involvement of local people
- Increased awareness of problems faced by cyclists
- Improved working relationships between campaign groups and Local Authorities (a common problem)
- Increased ability for Local Authorities to justify central government investment
- Increased demonstration of partnership working between Local Authorities and local people
- Potentially, consolidation of existing facilities, reducing the need for groups to maintain custom-written and highly-specific systems.