

APPLICANT DETAILS	
Full Name (Your name)	Hannah Lacey
Role on project	Principle Investigator / Project Manager
Position or Company	Freelance Public Engagement Professional
Project start date	10 th January 2020
Project end date	31 st March 2020

PROPOSED PROJECT PARTNER (if relevant)	
Full Name	Liz Shearer
Role on project	Co-Principle Investigator
Position or Company	Head of People Engagement, Berkshire, Buckinghamshire, Oxfordshire Wildlife Trust (BBOWT)

A. BACKGROUND TO THE PROBLEM (max. 300 words)
<p>Please state the problem – scientific, cultural or technical (or combination) that the project seeks to address and why it needs to be addressed, who does it affect and why?</p> <p>With growing global population, it is increasingly important that we ensure housing needs are met in an equitable way (United Nations, 2020) not only with nature but also the mental wellbeing of society. The links between the built environment and mental health may not be immediately direct but the outcomes from the built environment surrounding individuals can impact upon mental health. (Evans, G. 2003)</p> <p>There are numerous aspects within this topic that require our focus and “Image: 1000 Words” aims to address these:</p> <p>Problem One: Difficulty in collecting specific location data regarding land use in and around urban areas in order to best inform future land use needs. Although products such as Land Cover Map (UK Centre for Ecology & Hydrology 2020) can provide some information, details like specific usage and impact, quality of life, property prices etc. are near impossible to get without local knowledge and direct data input. This is not financially viable to source from science researchers. This data is vital in ensuring decisions relating to urban planning affecting local stakeholders are made with a valid process, interpretation and transparent integration. (Kilvington, M., & Saunders, W. 2019).</p> <p>Problem Two: Encouraging and enabling members of the public to use science research in their lives. Research conducted for The Natural Environment Research Council (NERC) shows that the public understand the importance of scientific research and want to apply it to their everyday lives (NERC, 2020). Educating members of specified and identified public groups can empower them to make real changes in their local area, and use science research to their benefit (Maynard, 2016).</p> <p>Problem Three: The cost to National Health Service (NHS) of mental health care, is something that requires an interdisciplinary approach. Although NHS spending on this aspect is being increased (NHS, 2020) there is strong research to indicate that the use of green space can complement other mental health provisions (Bagnall et al 2019). The use of the natural environment, especially in relation to carefully designed built environments can have a</p>

significant impact upon the mental health and wellbeing of that community. Overall, informing how the built environment can help mental wellbeing is something to be explored.

B. PROJECT OVERVIEW (max. 400 words)

Please outline your project

The money being requested will cover the costs of 4 workshop meetings for the project team. The detail below outlines the vision for the final project which will be funded from alternative resources; (see Appendix 1).

Project Detail:

Citizen scientists, with the support of identified project partners, will take photos of their local environments, record what they were doing at the time and their emotions using relevant hashtags (see example post upload in Appendix 2). These posts will be uploaded to a popular social media platform, which for this project will be Instagram (Ghani et al 2019).

The use of hashtags allows citizen scientists to identify and apply their own formal and informal classification of data (Malik, 2018). It also allows for ease of data mining through platforms such as Brand24 (2020) by searching hashtags or locations. This enables the project to look at the bigger picture of social media posts and the wider landscape this data sits within.

The citizen science posts are uploaded to Instagram (2020) via the IRecord App (2020). Details captured will include Geolocation data, time and date. This approach allows for scientific data capture that accurately reflects the land use location, and allows the user to post their image to Instagram for their own pleasure.

Using artificial intelligence (AI) (and building upon similar projects; August et al, 2019) the data collected will be analysed to identify land use in the images and use hashtags to 'opinion mine' and gauge emotional responses (Gangrade et al, 2019). There will be elements of human checking built into the process, as there are challenges associated with using multiple user generated data, including the concept of data being 'ununiform' for processing (Ghani et al, 2019) which a human element will help resolve.

The scientific data collected can then be used to generate evidence-based reports on the mental wellbeing impact of spaces in identified areas. The "**Image: 1000 Words**" project aims to then utilise this evidence to influence land use within local authorities (Reading Borough Council, 2020). This project will be tested within Reading, Berkshire due to its expansion and increasing links to London, (Reading Borough Council, 2019) with the desire to be rolled out nationally.

"**Image: 1000 Words**" will be co-developed with project partners to ensure it is fit for purpose and meets the needs of all parties (see Appendix 3). The co-development method, which falls under the quadruple helix approach, brings together members from society, academic, industry and government groups to tackle a shared challenge (Vandae et al, 2018). "**Image: 1000 Words**" takes this approach to public engagement due to the benefits that can be gained, including the concept that bringing together the quadruple helix in the team allowing the processes and outputs of the project to bring societal, economic, scientific and political benefits (Hecker et al 2018).

C. ETHICAL IMPLICATIONS AND RISKS (max. 300 words)

Please outline any ethical implications and risks (for practitioner, researcher and public participants) associated with your proposed project.

"Image: 1000 Words" brings various stakeholders together to work in new ways. Although this has numerous benefits there are also various ethical implications that need to be taken into consideration, these are outlined below:

Consideration one: Citizen scientists cannot simply be used as a replacement workforce for researchers, it is vital they are valued, respected and credited for their contributions (Tweddle et al, 2010). This can involve training, feedback of results, and ensuring that research outputs are also appropriately accredited to them. Co-developing the project with involvement from all partners will ensure that roles and responsibilities are divided and communicated in an equitable way (Resnik et al, 2015).

Consideration two: Following the Cambridge Analytica scandal and the implementation of General Data Protection Regulation (Gov.UK 2020) there has been increasing focus on the gathering and usage of personal data. This is a significant ethical issue, which needs to be taken into consideration through this project. **"Image: 1000 Words"** will be designed to have robust public involvement agreements, and clear guidelines on what data will be collected and how it will be used. Since digital applications will be used, there will be increased focus in this area including consideration given to App Rights Requests, the need to provide transparent and easy access to information about the project, tools used, and data sharing policies (Sturm et al, 2018).

Consideration three: As **"Image: 1000 Words"** has a focus on mental health and its relationship with the environment, it is vital to take a well thought out approach regarding working with those who may identify as having mental health considerations. There are no set guidelines on how to conduct citizen science with mental health ethical considerations therefore the Good Psychiatric Practice code of ethics (2014) will provide ethical and considered practices for all partners throughout the project.

D. DIGITAL ENGAGEMENT (max. 300 words)

Please outline what digital technologies you propose to use and why

Due to the nature of **"Image: 1000 Words"**, there are a significant number of digital elements that the project is profoundly reliant upon. These can be broken down into three distinct categories:

Recruitment and promotion:

As the project is designed for social media users targeted advertising on these platforms is the first natural use of digital technologies. This also allows the project to target specific demographics, for example based on age or location (Gelinias et al, 2017). At this initial stage of the project, it is also of benefit to start drawing together volunteers into a community of practice (Liberatore et al, 2018). This is an excellent way to ignite a real community between individuals. This could be achieved through group messages on Instagram, but this could also be transferred onto other social media platforms, depending on the want and needs of the users.

Activity:

As outlined earlier in this proposal, the delivery of **"Image: 1000 Words"** is reliant on the use of Instagram and IRecord. Both are well established platforms, and therefore the project can

reap such benefits as a self-identified userbase on Instagram, and data security, shareability features and ability to explore data shared by other recorders from IRecord (2020) which other alternative applications may not be able to provide.

The main consideration for this is the assumption that project volunteers have access to digital technologies such as smartphones, the mobile data to download and use the applications, and the technological skill to complete the project. Although there has been improvement of digital literacy since 2011 (Office National Statistics, 2019) there is still room for improvement, and the project can't assume that volunteers readily have the skills. This is one of the benefits which the project can provide to volunteers; the digital skills gained from involvement.

Sharing of content and data:

As well as sharing the final data and reports from "**Image: 1000 Words**" with local councils and decision makers, there are wider audiences who would find this of interest. Consideration should be given to sharing the research with a wider audience. Volunteers may be interested in the impact of their work; and the research may also be of interest to academic spheres and the general public.

E. PROJECT IMPACT (max. 400 words)

Please outline the benefits and impact of your project on the stakeholders involved

Working to the definition from the Research Excellence Framework (2019) 'impact' is an affect on, change, or benefit to areas beyond academia. As mentioned previously, there are academic benefits to "**Image: 1000 Words**", but the most significant impact will be through the empowerment of citizen scientists within local areas, and the contribution they can make towards shaping their local environment.

The key impact this project will have includes; the empowerment of local communities, upskilling of citizen scientists, local data regarding land use, and evidence of the link between local land use and mental health which will help influence local land use policy.

Measuring the impact of this project will include several approaches but will also allow for unexpected impact and outcomes which will be addressed as appropriate if / when they arise. Measuring and evaluating the impact will be done in several ways;

Assessment of changes through the National Coordinating Centre for Public Engagement (NCCPE) EDGE tool (2020). Although this is designed for institutions understanding the purpose, process and people aspect of this project will allow "**Image: 1000 Words**" project team to measure how the culture of the project team has developed and the impact of taking part in the project on those involved.

Long term and qualitative data will also be vital in measuring the impact of this project; as in some instances impact can take years to be achieved (ResearchFish, 2020). Opinions from key stakeholders in the project will be crucial in understanding the real impact, such as feedback from local NHS services, land use policy makers and the citizen scientists themselves. This qualitative evaluation allows exploration of the complexity of human behavior and deeper understanding into the real lived impact of the project (Johnson & Waterfield, 2004).

More quantitative impact can also be measured, such as the number of citizen science involved and the breadth of their demographics. Although targeting a set demographic is not a main aim for this project, having a diverse representative group of citizen scientists from the local area can only be of benefit to the project outcomes. Without this diversity the project outcomes will only represent a limited range of experiences and perspectives (National Institute for Health Research, 2012) and can create an opinion bias in the results presented to local decision makers. A successful project will reflect the local demographics in a proportional manner.

F. COST & RESOURCE JUSTIFICATION (est. 300 words)

Please provide a detailed breakdown of the activities you wish to be funded and their associated, estimated costs, up to a budget of £2000

Below these costings, please also indicate:

A) Activity / Item, B) whether matched and/or in-kind funding has already been secured c) justify why you need these resources

A) Activity / Item	Cost
Partner time (camera club) (£100 per workshop)	£400
Partner time (BBOWT) (£100 per workshop)	£400
Partner time (app developer) (£100 per workshop)	£400
Partner time (Reading local community association) (£100 per workshop)	£400
Travel expenses	£400
Total Requested [budget is £2000]	£2,000
B) In-Kind or Match Funding – please share any in-kind or match funding you have sources – this can be real or imagined	
Principle investigator time (In-kind) (£100 per workshop)	£400
Reading council member time (In-kind) (£100 per workshop)	£400
Reading council venue (In-kind)	£400
Neurologist / environmental scientist / psychologist (researcher) time (In-Kind) (£100 per workshop per person)	£1,200
Berkshire Healthcare Foundation Trust representative time (In-kind) (£100 per workshop)	£400
Supermarket community fund (see appendix 4) refreshments	£200
Total Match funding	£3,200
Total funding for 4x workshops	£5,200

C) Justify any costs you are requesting

As mentioned within this grant application, the funds being requested are to cover four initial scoping meetings with all partners to co-develop this project.

The £2,000 requested from the University of Salford will cover the cost of time for project partners to ensure viability of involvement in this initial planning stage, this will enable adequate and proportional buy-in to the project. This will also establish the project in a way to give those involved 'citizen control' (Arnstein, 1969).


Other costs are being delivered through individuals providing their time at this initial stage as in-kind payment. If this project is successful, their time would be covered through identified funding sources see Appendix 1.

Supporting pages for grant application for “Image: 1000 Words”. Appendices.

Appendix 1 Potential funding bodies

Funding body
Arts and Humanities Research Council
UK Research & Innovation
Natural Environment Research Council
Medical Research Council
Wellcome Trust
University of Reading
Reading Council

Appendix 2 Example social media post on Instagram.



Appendix 3 All identified project partners

Name	Organisation	Role within the project
Hannah Lacey	Freelance	Principle investigator on project and project manager. Lead on concept, delivery, communication, evaluation and marketing.
Ramesh Naik	Reading Camera Club	Representative of photography community. Lead on integration with photography community and photographic aspects.
Liz Shearer	Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust	Co-investigator. BBOWT representative. Lead on integration with natural environment recording community and working with volunteers.
Dr Tom August and/or Professor Michael Pocock	UK Centre for Ecology & Hydrology	Representatives from environmental science research and citizen science expertise. Lead on scientific approach and integrity, and best practice for citizen science.
To be identified	Indicia	Technical lead on application development and integration between iRecord and Instagram.
To be identified		Representative from neurology and psychology research. Lead on scientific approach and integrity, to offer best practice and expertise on green spaces and mental health.
Reading Neighborhood Initiatives Team	Reading Council	Representative for community engagement within Reading and to represent decision makers within the council. Lead on integration with council and decision-making policies. To lead on integration with local community groups.
Cecily Mwaniki	Berkshire Healthcare Foundation Trust	Representative on mental health treatment and patient participation. Lead on working with those with self-identified mental health conditions.

Appendix 4 Supermarket community fund examples

Due to the nature of this project, with significant local interest, the below supermarkets and their community grant systems have been identified as potential supporters. This is a partnership that may also be developed throughout the whole project.

[Co-Op Local Community fund.](#) // [Morrisons Foundation.](#) // [ASDA Foundation](#) // [Waitrose & Partners Community Matters.](#) // [TESCO Community Grants.](#)

Bibliography:

Arnstein, S. (1969). A Ladder Of Citizen Participation. Journal Of The American Institute Of Planners, 35(4), 216-224. doi: 10.1080/01944366908977225

August, T., Affouard, A., Bystrakova, N., Fox, N., Marlowe, C., & Millard, J. et al. (2020). AI validated plant observations from social media: Flickr images from central London 2011-2019. Retrieved from <https://zenodo.org/record/3514685#.XfYYxDL7R69>

Bagnall, A., Freeman, C., Southby, K., & Brymer, E. (2019). Social Return on Investment analysis of the health and wellbeing impacts of Wildlife Trust programmes. Retrieved from <https://www.wildlifetrusts.org/sites/default/files/2019-09/SROI%20Report%20FINAL%20-%20DIGITAL.pdf>

Brand24 (2020). Hashtag Search for Twitter. Retrieved from <https://brand24.com/hashtag-search/>

Evans, G. (2003). The Built Environment and Mental Health. Journal Of Urban Health: Bulletin Of The New York Academy Of Medicine, 80(4), 536-555. doi: 10.1093/jurban/jtg063

Gangrade, S., Shrivastava, N., & Gangrade, J. (2019). Instagram Sentiment Analysis: Opinion Mining. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3372757

Gelinas, L., Pierce, R., Winkler, S., Cohen, I., Lynch, H., & Bierer, B. (2017). Using Social Media as a Research Recruitment Tool: Ethical Issues and Recommendations. The American Journal Of Bioethics, 17(3), 3-14. doi: 10.1080/15265161.2016.1276644

Ghani, N., Hamid, S., Targio Hashem, I., & Ahmed, E. (2019). Social media big data analytics: A survey. Computers In Human Behavior, 101, 417-428. doi: 10.1016/j.chb.2018.08.039

Gov.UK (2020) Guide to the General Data Protection Regulation. Retrieved from <https://www.gov.uk/government/publications/guide-to-the-general-data-protection-regulation>

Hecker, S., Haklay, M., Bowser, A., Makuch, Z., Vogel, J., & Bonn, A. (2018). Citizen Science: Innovation in Open Science, Society and Policy. Retrieved from www.jstor.org/stable/j.ctv550cf2

Instagram. (2020). Instagram. Retrieved from <https://www.instagram.com/>

iRecord. (2020). Record any species on the go. Retrieved from <https://irecord.org.uk/app/>

Johnson, R., & Waterfield, J. (2004). Making words count: the value of qualitative research. *Physiotherapy Research International*, 9(3), 121-131. doi: 10.1002/pri.312

Kilvington, M., & Saunders, W. (2019). Gaining public input on natural hazard risk and land-use planning. *Disaster Prevention And Management: An International Journal*, 28(2), 228-244. doi: 10.1108/dpm-04-2018-0134

Liberatore, A., Bowkett, E., MacLeod, C., Spurr, E., & Longnecker, N. (2018). Social Media as a Platform for a Citizen Science Community of Practice. Retrieved from <https://theoryandpractice.citizenscienceassociation.org/articles/10.5334/cstp.108/>

Malik, M. (2018). A Theoretical Investigation into Instagram Hashtag Practices. Retrieved from <https://curve.carleton.ca/2289951d-9632-4a84-a77b-bd9a315446ed>

Maynard, A. (2016). Can citizen science empower disenfranchised communities? Retrieved from <http://theconversation.com/can-citizen-science-empower-disenfranchised-communities-53625>

National Coordinating Centre for Public Engagement (2020) Introducing the EDGE tool. Retrieved from <https://www.publicengagement.ac.uk/support-engagement/strategy-and-planning/edge-tool/introducing-edge-tool>

National Institute for Health Research (2012) Diversity and inclusion: What's it about and why is it important for public involvement in research? Retrieved from <http://www.invo.org.uk/wp-content/uploads/2012/10/INVOLVEDiversityandInclusionOct2012.pdf>

Natural Environment Research Council (2020). Public Insight Report. Retrieved from <https://nerc.ukri.org/about/whatwedo/engage/public/public-insight-report/>

NHS (2020). NHS Mental Health Dashboard. Retrieved from <https://www.england.nhs.uk/publication/nhs-mental-health-dashboard/>

Office for National Statistics. (2019) Exploring the UK's digital divide. Retrieved from <https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/articles/exploringtheuksdigitaldivide/2019-03-04>

Reading Borough Council. (2019). Reading Borough Council Local Plan. Retrieved from https://www.reading.gov.uk/media/10410/Reading-Borough-Council-Local-Plan/pdf/Local_Plan_Adopted_November_2019.pdf

Reading Borough Council. (2020). Planning Policy. Retrieved from <https://www.reading.gov.uk/planningpolicy>

Research Excellence Framework. (2019) Guidance on submissions (2019/01) - REF 2021. Retrieved from <https://www.ref.ac.uk/publications/guidance-on-submissions-201901/>

ResearchFish. (2020) Why Report. Retrieved from <https://www.researchfish.net/why-report>

Resnik, D., Elliott, K., & Miller, A. (2015). A framework for addressing ethical issues in citizen science. *Environmental Science & Policy*, 54, 475-481. doi: 10.1016/j.envsci.2015.05.008

Royal College of Psychiatrists (2014) Good Psychiatric Practice Code of Ethics. Retrieved from https://www.rcpsych.ac.uk/docs/default-source/improving-care/better-mh-policy/college-reports/college-report-cr186.pdf?sfvrsn=15f49e84_2

Sturm, U., Gold, M., Luna, S., Schade, S., Ceccaroni, S., & Kyba, L. et al. (2018). Defining principles for mobile apps and platforms development in citizen science. Retrieved from <https://nhm.openrepository.com/bitstream/handle/10141/622315/Defining+principles+for+mobile+apps+and+platformsdevelopment+in+citizen+science.pdf?sequence=1>

Tweedle, J.C., Robinson, L.D., Pocock, M.J.O. & Roy, H.E (2012). Guide to citizen science: developing, implementing and evaluating citizen science to study biodiversity and the environment in the UK. Retrieved from: <https://www.ceh.ac.uk/sites/default/files/citizenscienceguide.pdf>

UK Centre for Ecology & Hydrology. (2020). Land Cover Map 2015. Retrieved from <https://www.ceh.ac.uk/services/land-cover-map-2015>

United Nations (2020) Sustainable Development Goal 11. Retrieved from <https://sustainabledevelopment.un.org/sdg11>

Vandae, K., Dewaele, A., Buysse, A., & Westerduin, S. (2018). Guide to Co-Creation. Retrieved from https://docs.wixstatic.com/ugd/35d470_3136df3c786149e2ab78027fb0cc33f1.pdf