

Reviewer 2

The manuscript "Visualising historical changes in air pollution with the Air Quality Stripes" describes a data visualization project aimed at making "complex information about air quality trends understandable and engaging for a broad audience". Overall, the manuscript provides an interesting approach that stems from the well-known "Warming Stripes", which should help resonating with different audiences given their recognisability.

The manuscript is well structured, as it presents title, authors, abstract, introduction, information about the data, how the images are developed, discussion and conclusion. References seem overall appropriate. All figures are mentioned and described in the text.

The impact these "Air Quality Stripes" may have on the communication with different stakeholders is evident.

We thank the reviewer for their review and for these positive comments.

However, I believe that a "formal testing" phase would benefit the project (and the paper). Although the feedback provided by "colleagues, friends and family" (line 97) certainly provided interesting and constructive suggestions, the involvement of other testers (with different backgrounds and roles) could help making this data visualisation tool even more "accessible and engaging" (line 96) for different audiences, as the authors themselves underline (lines 135-137).

We agree that a formal testing phase involving a broader range of users would have been beneficial; the potential value of broader, structured feedback is something we acknowledge and recommend as part of future work. We note that a formal testing phase is not commonly included in the development of static images for public engagement, however a formal user testing phase is more common in the development of interactive tools; in future we plan to learn from the testing strategy used by this community.

We do not intend to change these original images as they are now well established in the community, but we are working on further developing them (including images of future PM2.5 predictions and animated images), these future developments will be subject to a formal testing phase with a wide range of stakeholders.

We have made the following changes to the revised manuscript to add more detail and clarification.

Previous Version

2. Informal Feedback and Review Stage: Feedback from colleagues, friends, and family was invaluable. While this project used informal connections, many visualisation efforts could benefit from a structured feedback process to ensure accessibility and clarity for diverse audiences.

New Version

2. Informal Feedback and Review Stage: Feedback from colleagues, friends, and family was invaluable. While this project used informal connections, many visualisation efforts could benefit from a structured feedback process to ensure accessibility and clarity for diverse audiences. **The visualisations have been heavily used e.g. by the EPIC Air Quality Fund community for engagement and outreach, and additional cities have been added on request Any further development of these images or associated works, will**

involve a formal structured review process which will take feedback from a diverse range of stakeholders.

Previous Version

However, the project aimed to create accessible and engaging images for a wide audience. To achieve this, draft images were shown to colleagues, friends, and family during an informal testing phase.

New Version

However, the project aimed to create accessible and engaging images for a wide audience. **To achieve this, different versions of draft images were shown to approximately 20 individuals, including colleagues (air quality researchers, public engagement specialists and researchers in different fields), friends, and family, during an informal testing phase. Feedback was gathered on aspects such as clarity, visual appeal, colour interpretation, and perceived message.**

Overall, the work presented in the paper can certainly have an impact on air quality communication, considering also the annotated images available also on the website, that guide the users.