

Addendum to the heatwave report for the Town of Brookline

- **List of data that the Town should track for improved projections:**

- Climate related data for different locations throughout the town in a high resolution in space and time; including near surface air temperature, relative humidity, wind speed and direction.
- Detailed data of the distribution of vulnerable population. The data used in the preliminary research is based on the census data and it may not follow the municipal sectioning throughout the city.
- Health related data of patients who have been affected by heatwaves. Also, the patients who are potentially at risk because of their specific health conditions.
- Since urban development has a high impact on exacerbating heatwaves in the town, all major urban development plans need to be tracked and analyzed for their UHI effects.

- **Recommendations other than retaining existing tree canopies to mitigate UHI effects, e.g. through use of different building materials, green roofs, etc.:**

There are different methods available, and usually the best suggestion considers a mixture of different solutions, and is very specific to each urban area. Different views should also be considered. For example, the climate in which the city is located can change the preference between green solutions or reflective surfaces. Construction and maintenance costs will need to be analyzed for different solutions. Also, analyzing the broader impact of manufacturing the mentioned solutions has shown that they might have polluting effects, which takes years to balance their benefits. Older and newer buildings will work better with different solutions. Therefore, the solutions will be different for each building. In summary, a definite answer needs further research starting with considering all available solutions.

- **Suggestions for how frequently the town should update its projections:**

There are different factors which will affect the decision about the frequency of updating such projections

- The expected expansion in urban development can change the area of the impervious surfaces. It is advised that these changes be coordinated with the heatwave action committee of the town.
- Population growth is needed to be considered and based on its rate, the decisions be made about the frequency of updating the projections.
- An annual check-up is suggested about the data update and to make sure the progress is as expected.