### Tags: Citizen Science, Hardware, Platform

*The Greener City project crowd-sources the collection of microclimate data through low-cost sensors, network connectivity, and urban gardens. By giving people access to useful information about their garden, we can aggregate many points of atmospheric measurement across a city and display this data in near real-time. The aggregated information can be used by city officials to monitor air quality on a neighbourhood level, and by scientists to gain deeper insights related to global climate.*

This project is solving the [**Smart Cities, Smart Climate**](https://2013.spaceappschallenge.org/challenge/smart-cities-smart-climate) challenge.

**Description**

Our design seeks to compliment NASA satellite climate data with crowd-sourced micro-climate data; in effect, providing higher resolution information for monitoring the environment. Using a basic air quality and soil sensor, users can "plant" our sensor into their box gardens (very common in Sweden for people who live in apartments) and get a variety of information about the state of their garden and the environment it's in. For example, they may log into their web dashboard and see a need to water the tomatoes, or the basil might be ready for picking.

The data reported from individual gardens is aggregated in order to crowd-source the generation of air quality monitoring data for the city. This data can be merged with other openly available city environment sensors and then with global climate data from NASA to provide an extra level of detail for researchers and others who have a need for this information. Accordingly, this data can be utilized at the local level to affect change that reflects good environmental behaviour.

Our project has three parts: 1. Low-cost garden monitoring sensor. 2. Aggregate and normalize local environmental data for climate research and smart city greenhouse gas abatement. 3. Scale to global educational initiative for kids to encourage interest in programming and their environment.

Imagine kids around the world building garden monitors and learning to program. It could encourage their parents to grow food locally, while also creating a massive open-source database of local environmental data. This crowd-sourced micro-climate monitoring done through urban garden box sensors can be fun, educational, and world-changing!

**Project Information**

* License: [Creative Commons BY 3.0](http://creativecommons.org/licenses/by/3.0/)
* Source Code/Project URL: <https://github.com/KurtCode/GreenerCity>

**Resources**

* Source Code for Arduino Proof-of-Concept: <https://github.com/KurtCode/GreenerCity>
* Design resources: <https://drive.google.com/folderview?id=0B5rm4GLR25s7RVZxeVJkMnJWRG8&usp=sharing>
* Original :30 sec Pitch Video: <http://www.youtube.com/watch?v=Cwag_ZrkgVw>