



Humanitarian
OpenStreetMap
Team



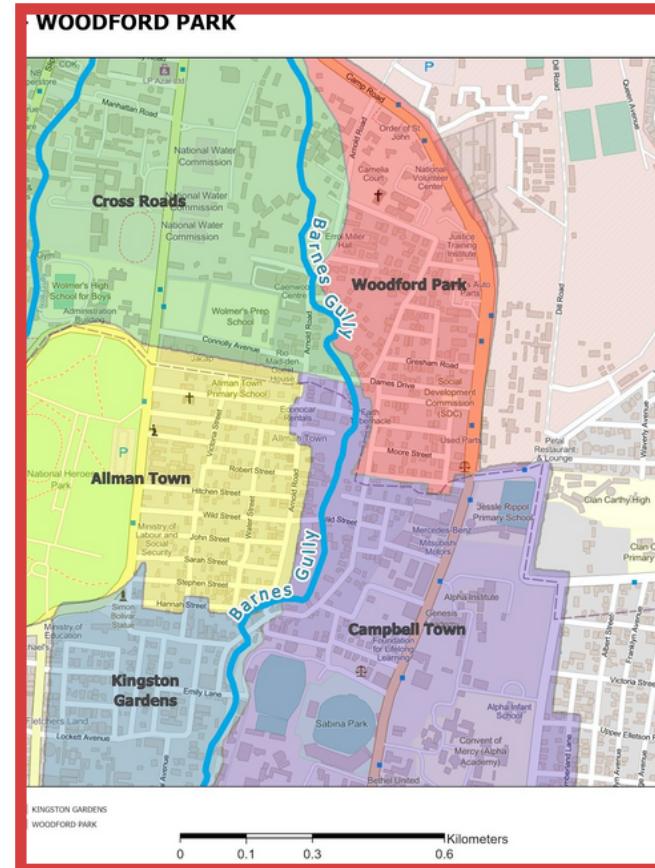
OPEN CITIES

Latin America and the Caribbean, Jamaica

IMPACT REPORT

Introduction

Kingston's Harbour is subject to a significant intake of Jamaica's solid waste that is being improperly disposed of in the network of constructed waterways, known as gullies. The capital city, being a centre of commerce and trade has encountered rapid development of the city also brought challenges of overcrowding and inadequate infrastructure. One such challenge is the effective movement of solid waste throughout the city. Several initiatives have been implemented to collect, categorize and reduce the accumulation of solid waste at the point of entry into the gullies. At least 15 main gullies traverse through several residential and commercial communities along their route. Coupled with the issue of urban flooding, particularly during tropical storm events, the narrative of spatially connecting the areas of water inundation and solid waste accumulation appeared to be an area overlooked among the many studies conducted.



This project sought to identify a sustainable approach to geospatial data collection and analysis to provide more insight to any correlation of the two phenomena. The focus was specifically on the impact of solid waste accumulation in the municipality's gullies and surrounding communities, particularly in relation to existing drainage infrastructure and urban flooding issues.

Project goals

- 1 Increase the capacity for open mapping and open data in Jamaica through development of a robust OpenStreetMap community which can be mobilized for similar initiatives outside the lifespan of the project
- 2 Increase and update the level of openly available data on drainage networks and the surrounding communities in Kingston
- 3 Train and empower communities to better collect, understand, coordinate and action open mapping data
- 4 Provide a strategy for data production and sharing that can be utilized across the region

Development

The project captured mapping data in the Barnes Gully and the surrounding communities. It was chosen based on its proximity to and impact on the harbour and historic frequency of flooding. It will serve as a baseline of community understanding and engagement for similar projects.

Program participants were drawn from residents in communities proximate to the gullies in order to leverage participants from both existing social programs, such as the Grace Kennedy Wardens, for increasing the skills set of community members as well as to tap into the efforts to start a YouthMappers Chapter at the University of the West Indies, Mona.

The mapping data to be collected evolved over an iterative process by first identifying routes from waste heaps to collection, the location of traditional points of flooding and the distance between these points in relation to gully banks. These inputs provided the necessary values for analysis of the final products. The Project activities fell under four (4) phases as outlined below:



Phase 1: Assess

This involved a deep dive into an analysis stakeholder landscape, engaging with key stakeholders and project definition. Many studies have been performed on gullies so approach as to find the information gaps that would provide new perspectives.



Phase 3: Analysis and Product Analysis

Data analysis from field and other acquired data. Hackathon to stimulate local contingent in solutions and their application based on data reviewed. Product design based on data analysis and selection of product ideas.



Phase 2: Training and Mapping

Identifying stakeholders that would prove to be sustainable partners as volunteers and facilitators for data collection and mapping. Definition of project area in conjunction with resources, local capacity and community reach. Training and mapping using open source tools.



Phase 4: Development and presentation

Presentation of final finding. Awarding of development application for locally derived solutions and information sharing to key stakeholders and wider open-source community.



Outcomes

Increase the capacity for open mapping and open data in Jamaica. The island has an inclination to mainstream commercial GIS and mapping products which is supported by the national government. As a result, the understanding of the benefits of the open source community is underserved.

Development of a curriculum that can be refined, customized and deployed to any OSM hub or community worldwide for training in data collection and mapping utilization.

In addition to the awareness, an increase in quality, volume and frequency of openly available data on drainage networks and the surrounding communities in Kingston was made available to those outside of the government acquired data on open platforms.

The data collection activities covered 24 known flood points over a 3.4 ha area in the city impacting a 6,886 person. Additionally, 58 illegal solid waste collections identified over a 14.8 ha coverage, with 142 drainage features of interest over 1.4 km of linear drainage.

3

Tools/products developed

351

New features added on the map

1.4

km of drains mapped

76

Trained Participants which
67 % were women

Project Product

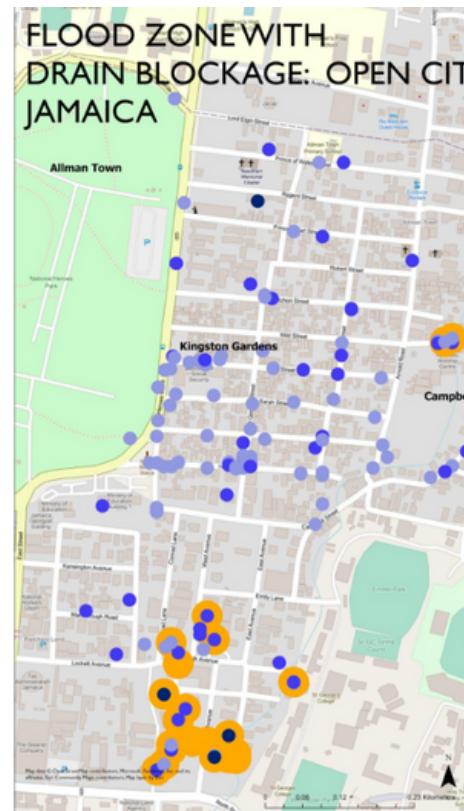
Several map outputs from the analysis in the form of shapefiles have been derived for better understanding of the granular level of the initiative, available in the project detail. The focus was put on the attributes of drainage issues as well as the testimonials of flood events. This helped provide a richer information set to the decision makers and authorities of sanitation of drainage.



Lessons learned

Direct engagement with local government agencies such as with the Mayor of Kingston or St. Andrews leads to better buy in. It was also found through that engagement that the community stakeholders were more engaged on the capacity building side than around the outputs around solid waste management. Moreover, it is important to recognize the community dynamics on multiple levels - political, social, existing initiatives, past relationships with institutions, security concerns, etc. This means that the community was not always available and that a project fatigue might be existing. In order to balance this, more frequent or consistent disbursement of programme incentive should be disbursed to keep participants engaged. Also, adding the presence of local community leader was essential for safe mapping as local community dynamic can be sensitive for outsiders.

A highlight of the project was the field mapping and hackathon exercise, where participants were providing a voice, not only in the data collection but on how the data could be used and have an impact on their own life.



Sustainability plan

The project team is planning to re-engage stakeholders with project findings and gauge appetite for collaboration in future projects, namely National Solid Waste Management Agency (NSWMA), National Works Agency (NWA), and the Office of Disaster Preparedness and Emergency Management (ODPEM) among others. Further, as part of the hackaton, a team was awarded with a grant to develop an app within one year. This will therefore be done by August 2024 and will be a step to re-engage with the community as well. Moreover the neighborhood of Tivoli garden, which was avoided due to security concern will be revisited as it is an area known for widespread flooding.

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