

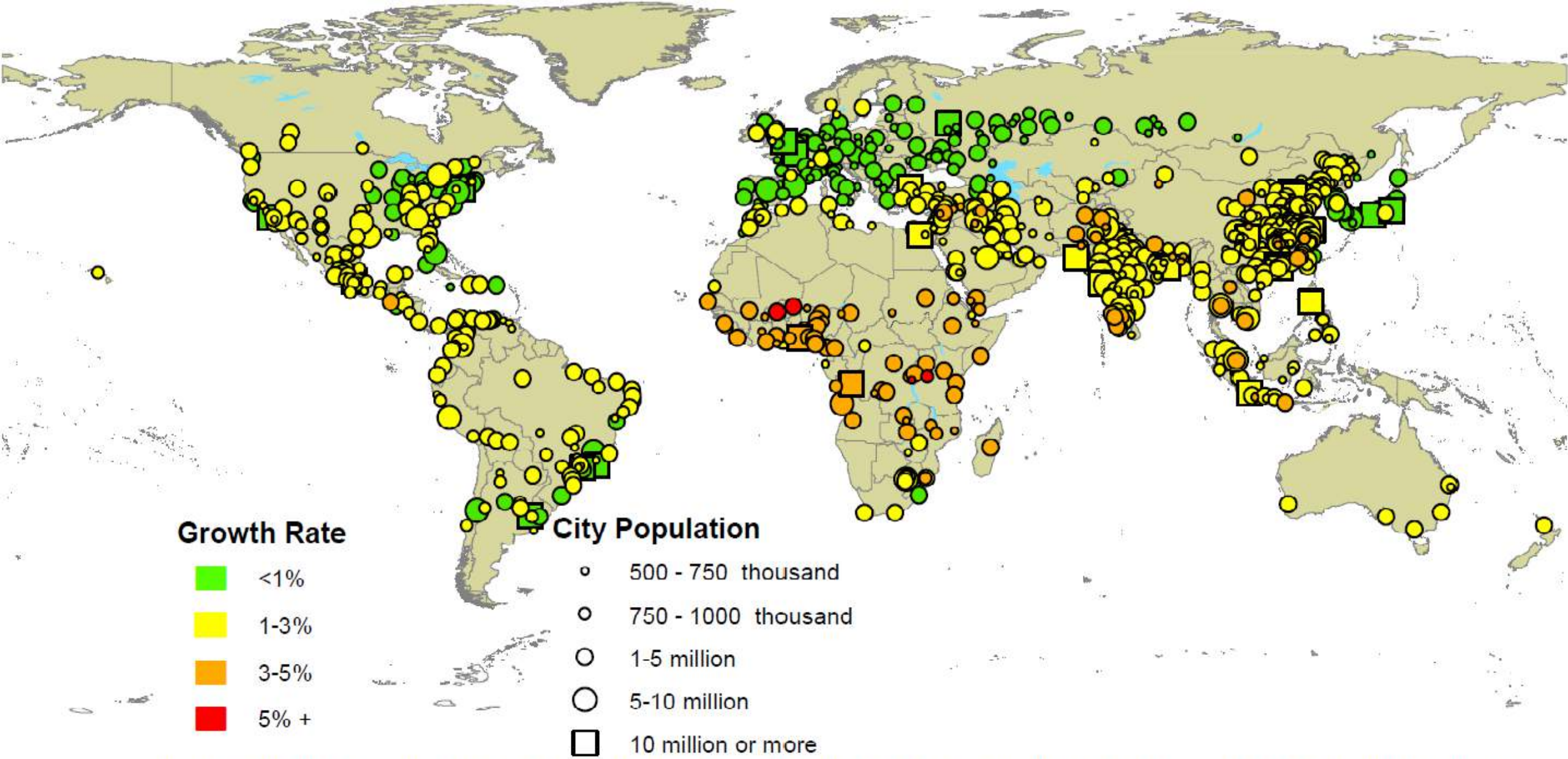
# Mapping the Urban Environment: Open Map Data—and Why it Matters Now

@TylerSRadford



Humanitarian  
OpenStreetMap  
Team

@HOTOSM



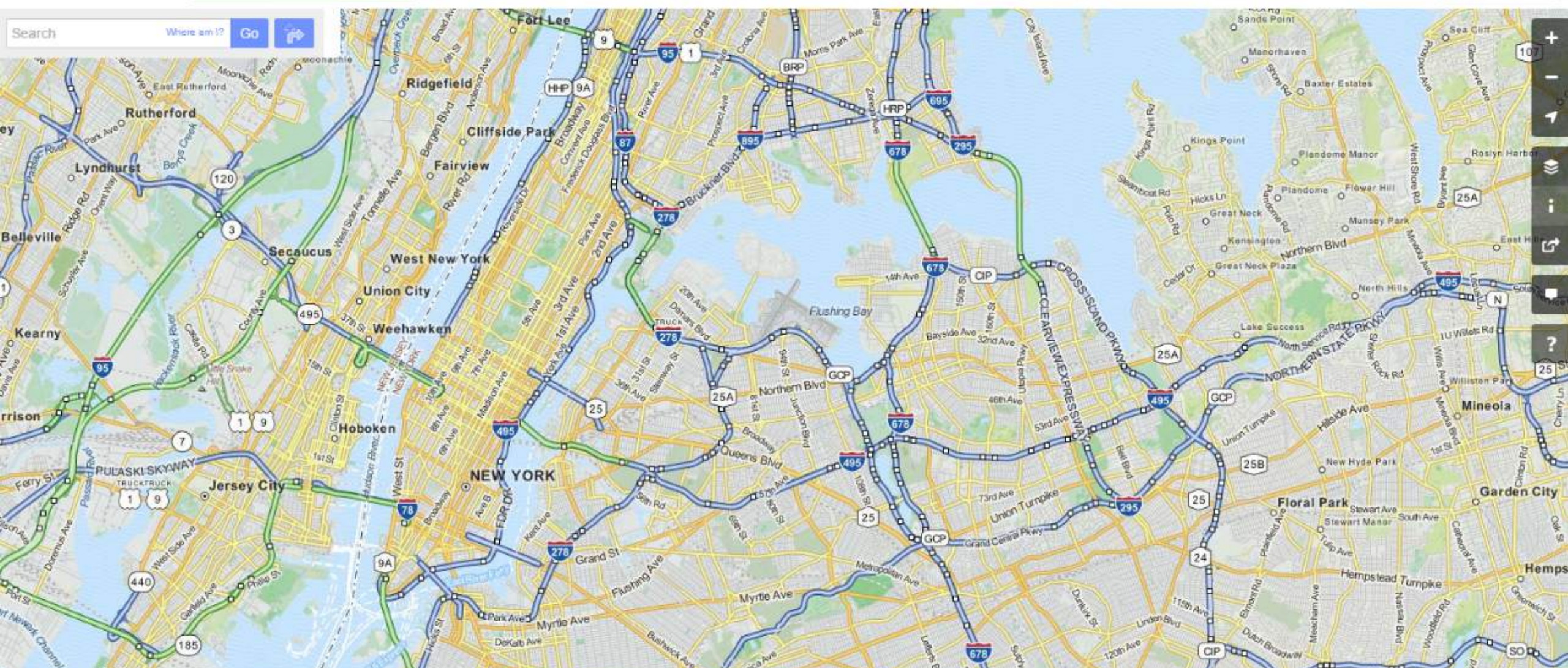
City populations soaring; Africa urbanizing most rapidly

Why open map data, and why now?



What is Open Map Data?





OpenStreetMap – Free, open, editable map of the world



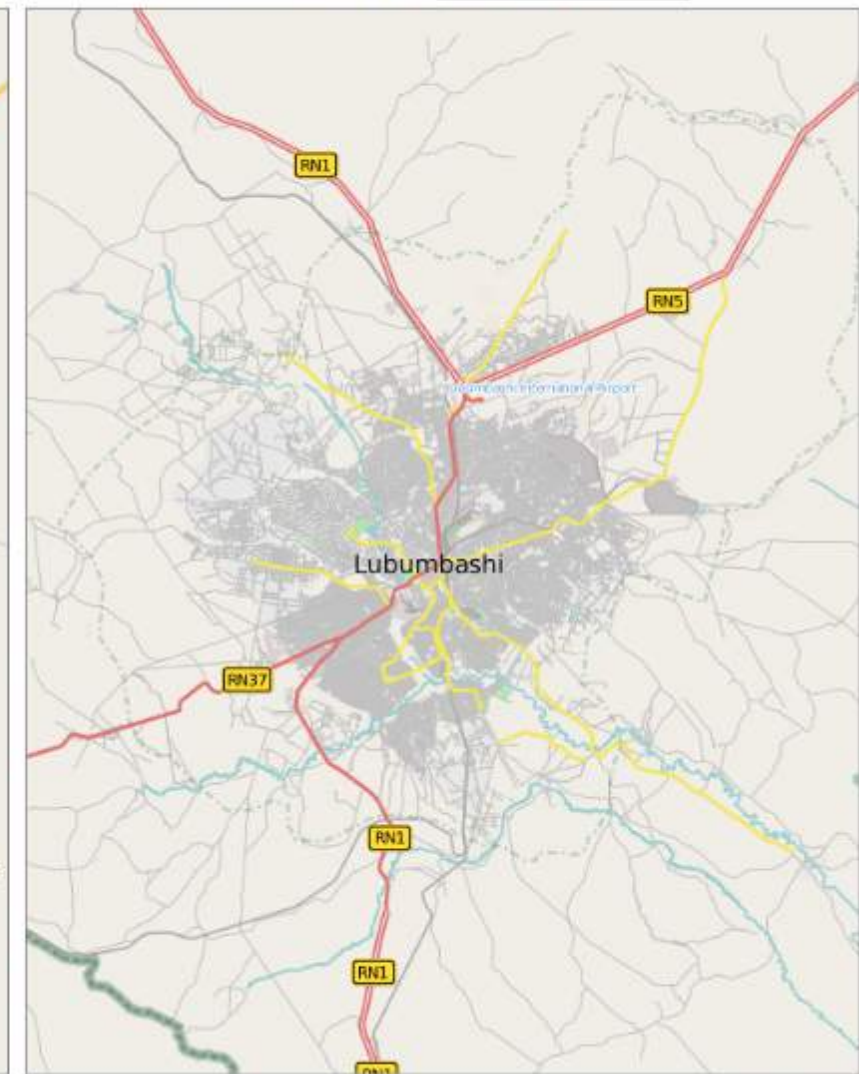
Choose map type: Bing Map



Choose map type: Google Map



Choose map type: OSM Mapnik (de)



zoom=11 number of maps: 1 2 3 4 6 8

All maps except Bing/Google/HERE based on OSM data © OpenStreetMap (License: ODbL 1.0), OSM Tiles licensed CC-BY-SA 2.0 - [help](#) - [contact](#) - [fullscreen](#)

Lubumbashi: 2<sup>nd</sup> largest city in DRC

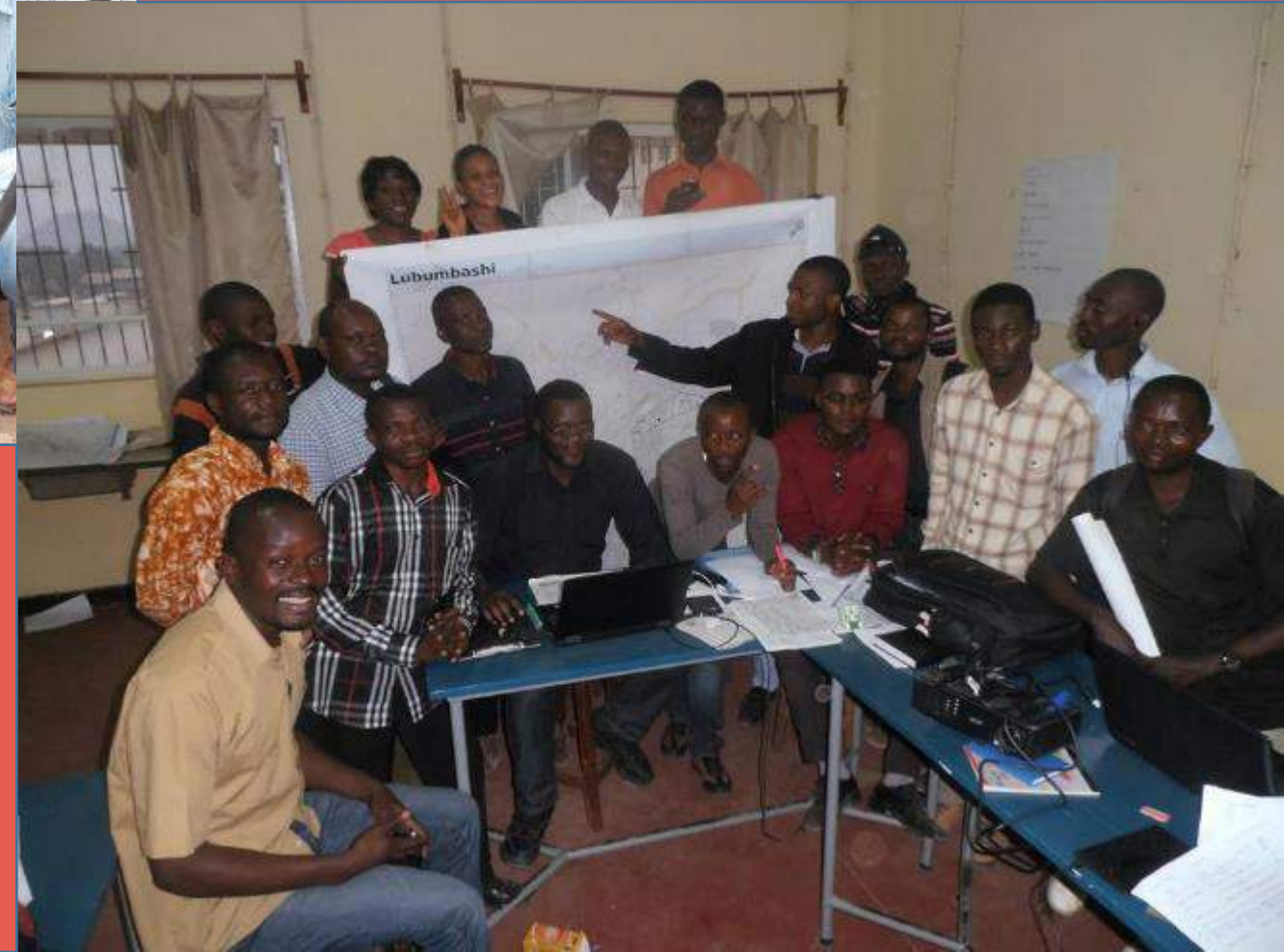
# Why do maps—especially open maps—matter?

[Insert icons: DRR, Education, Health, Transportation, Water and Sanitation]





# Lubumbashi, DRC: Maximizing Impact of Cholera Interventions



And now planning a public  
bus transportation system



# Central African Republic: Local knowledge is key...



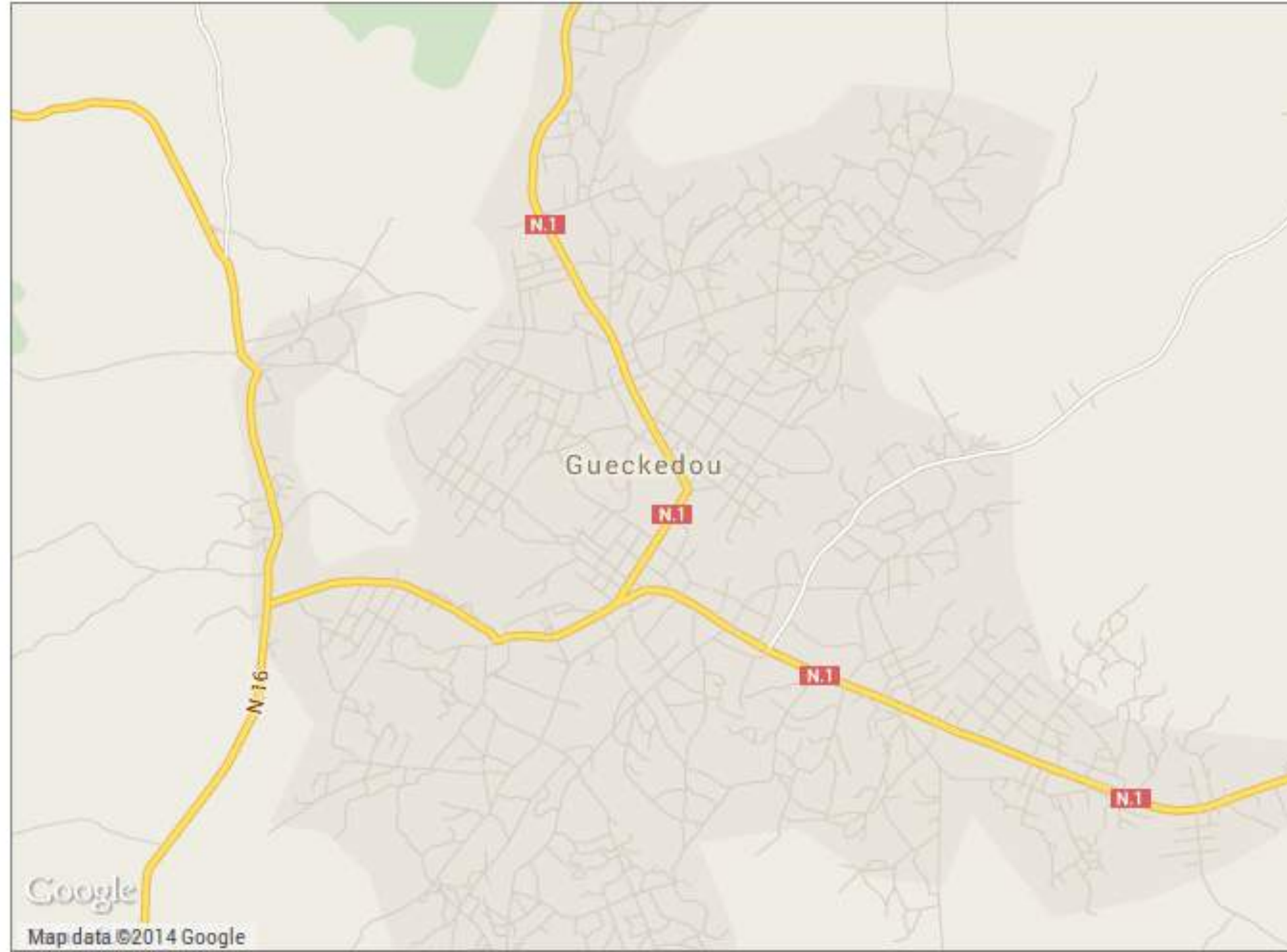




...to producing detailed city maps (health facilities, schools, water points)



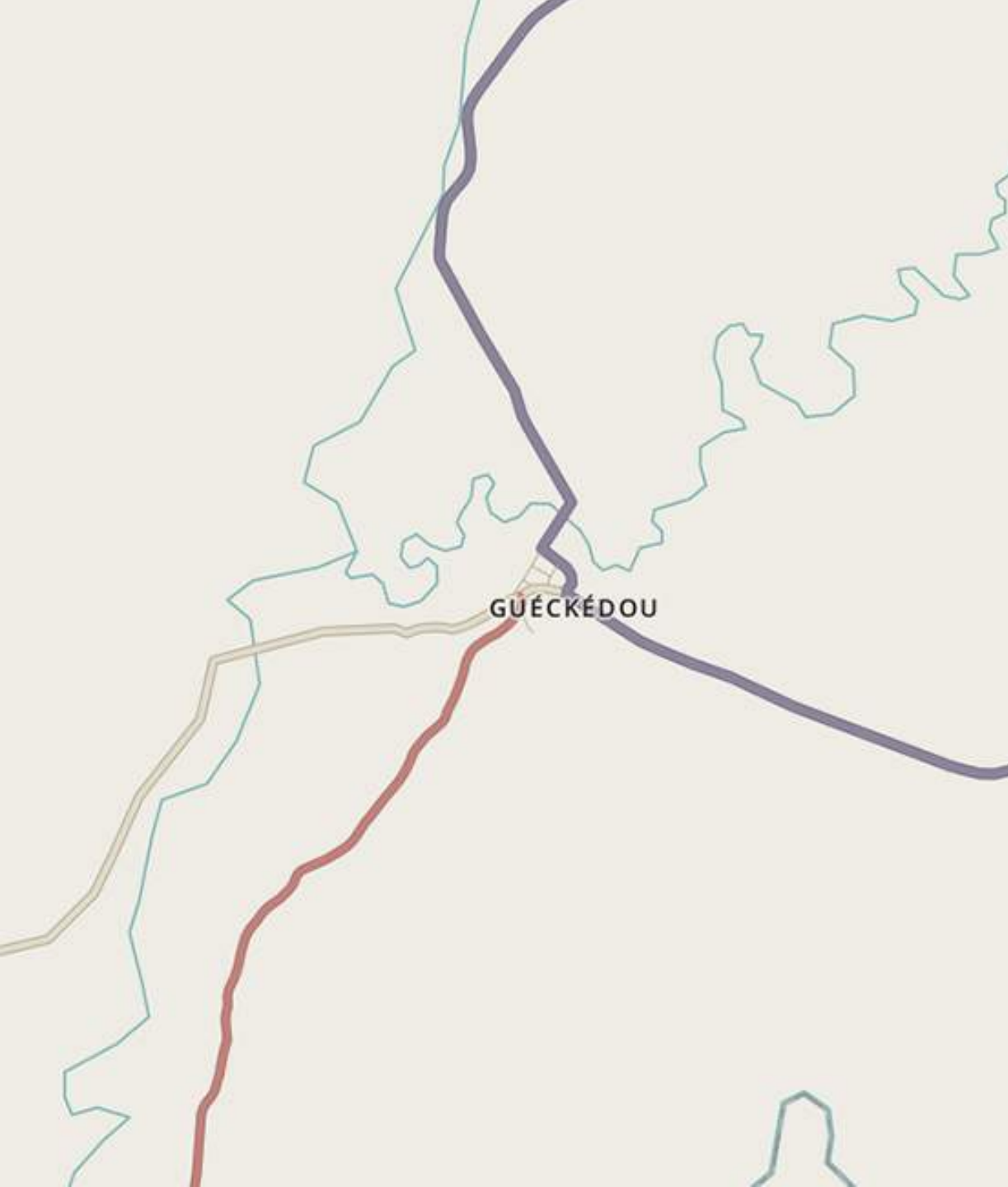
Ebola



Gueckedou  
March 26,  
2014

(Google  
Maps)





Gueckedou March 26, 2014

(OpenStreetMap)

“Anyone capable of using a web browser can help”



# Tracing roads and buildings by looking at aerial images

The image shows the OpenStreetMap editor interface. At the top, the OpenStreetMap logo is on the left, and navigation links for 'GPS Traces', 'User Diaries', 'Copyright', 'Help', and 'About' are on the right. A user profile for 'TylerOSM' is also visible. Below the navigation bar, there are buttons for 'Edit', 'History', and 'Export'. The main map area displays an aerial photograph of a residential neighborhood with many houses and trees. A white line is drawn across the map, tracing a road. A pink line is drawn vertically on the right side of the map, tracing a building. The interface includes a search bar on the left with the text 'Search features' and 'Search'. At the top of the map area, there are buttons for 'Point', 'Line', and 'Area', along with a 'Save' button. On the right side of the map, there are navigation controls including a zoom in (+) and zoom out (-) button, a home button, and a full screen button. At the bottom of the map, there is a scale bar showing '150 ft' and a footer that reads 'Edits by ryaquino, Alberto Ayala, danbjoseph, and 6 others'.







Before



After



Within 5 days, 244 volunteers mapped 90,000+ buildings



Mamou, Guinea

29 hours

68 contributors

20,105 buildings





The Impact:  
*Moving the  
right people,  
medicine,  
and  
equipment to  
the right  
place at the  
right time*



# Another impact slide

<https://twitter.com/samhirvasdev/status/542575150051655681> ?

# South Africa – Cape Town

- Mapping for disaster (fire) risk reduction

# Dar es Salaam – Ramani Huria





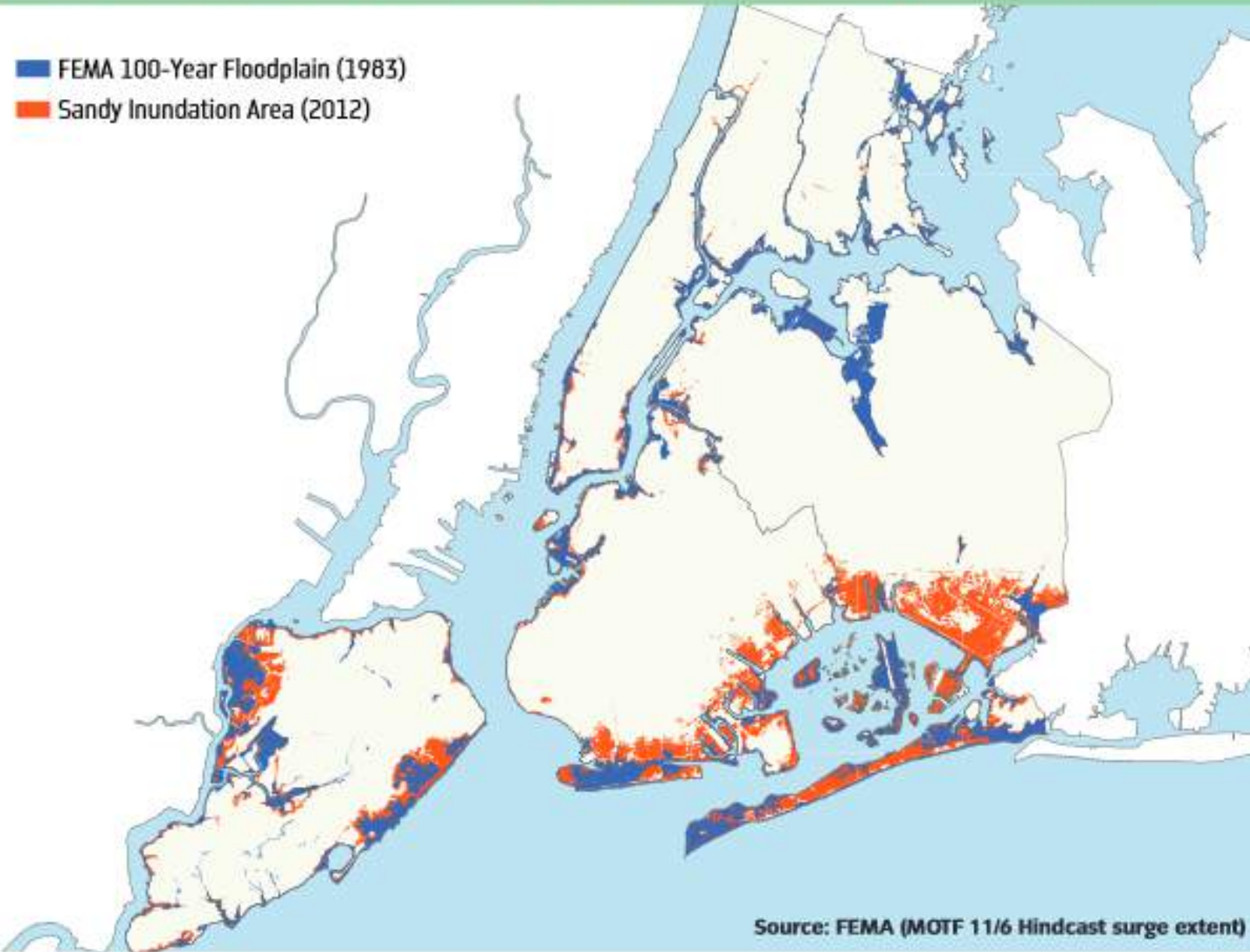


Hurricane Sandy (New York, 2012) has lessons that can be applied to Dar es Salaam



## Comparison of 100-Year Floodplain in 1983 FIRMs and Sandy Inundation Area

- FEMA 100-Year Floodplain (1983)
- Sandy Inundation Area (2012)



Source: FEMA (MOTF 11/6 Hindcast surge extent)

What happens when flood maps are old (or don't exist): real impact

## Number of Buildings in the 100-Year Floodplain by Borough

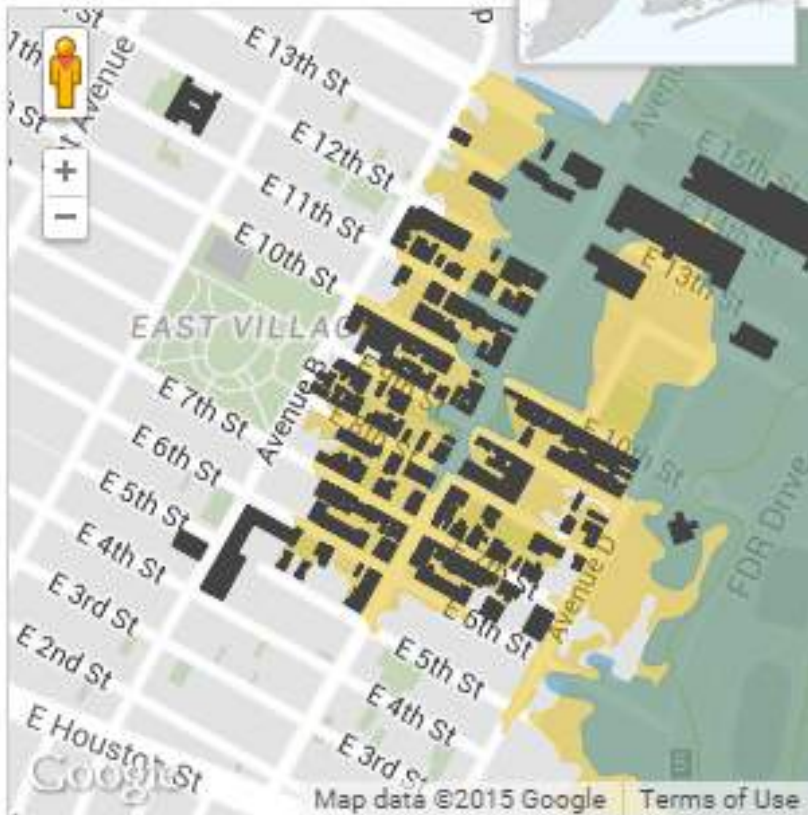
# Sheepshead Bay, Brooklyn



# Belle Harbor, Queens



# East Village, Manhattan



- 2013 Preliminary Flood Zones
- 2007 Flood Hazard Zones
- Buildings damaged in Superstorm Sandy

Source: FEMA

10,000 buildings damaged outside of flood hazard zone





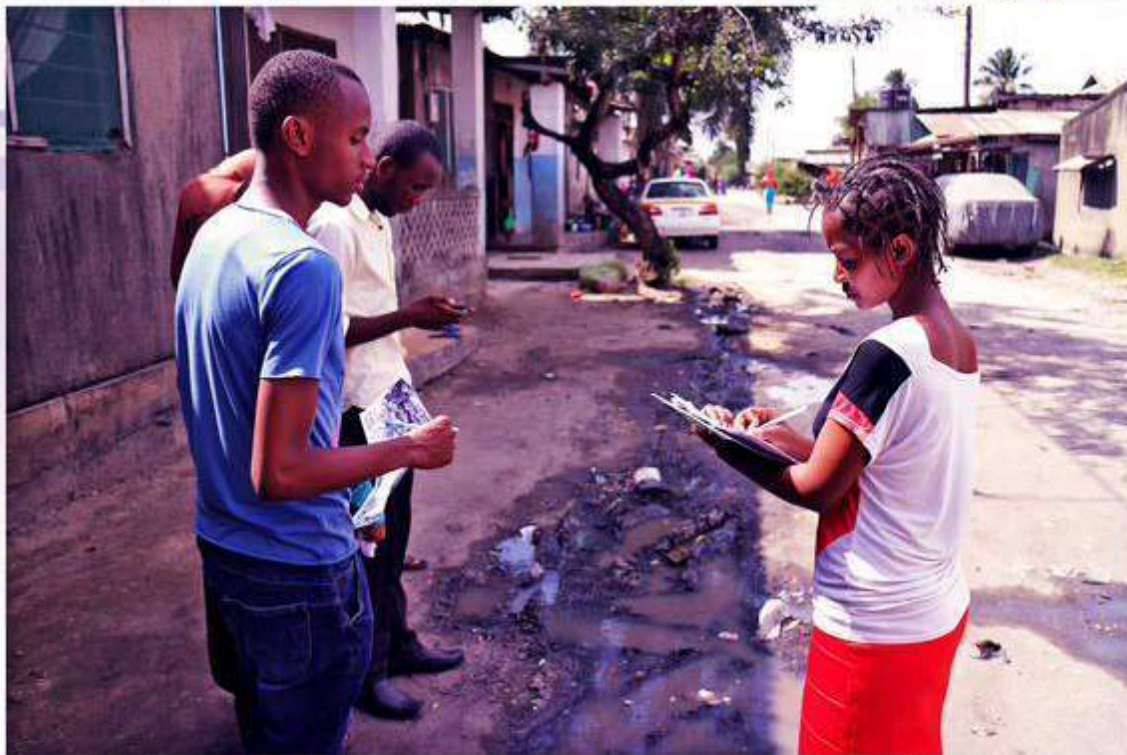
Dar es  
Salaam also  
has its  
flooding





Drainage in Tandale ward







# The approach: partnerships + people (and some cool techy things)





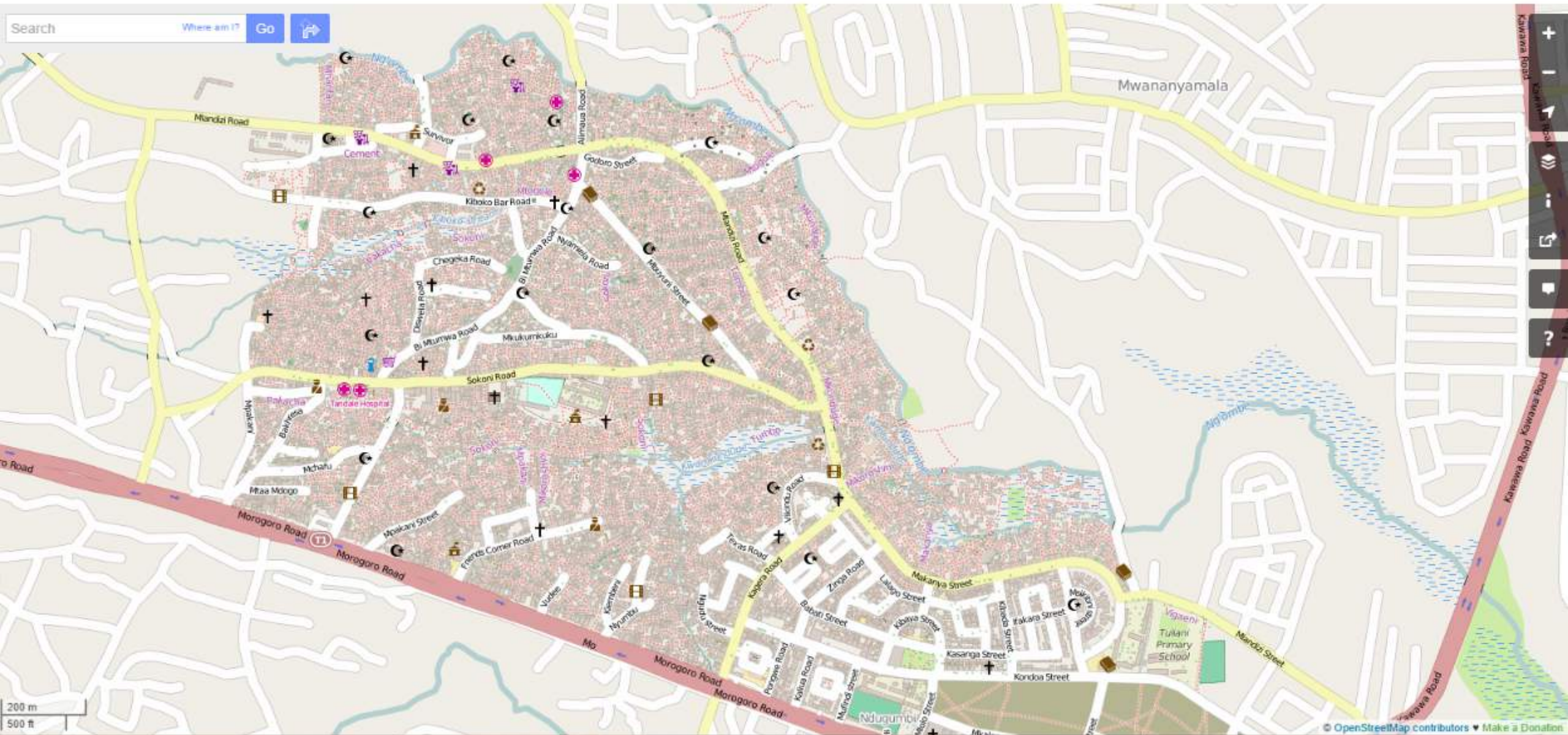
PROCESS of  
creating  
open data  
is as  
important  
as OUTPUT





Interactive, hands-on, and supervised by student leaders

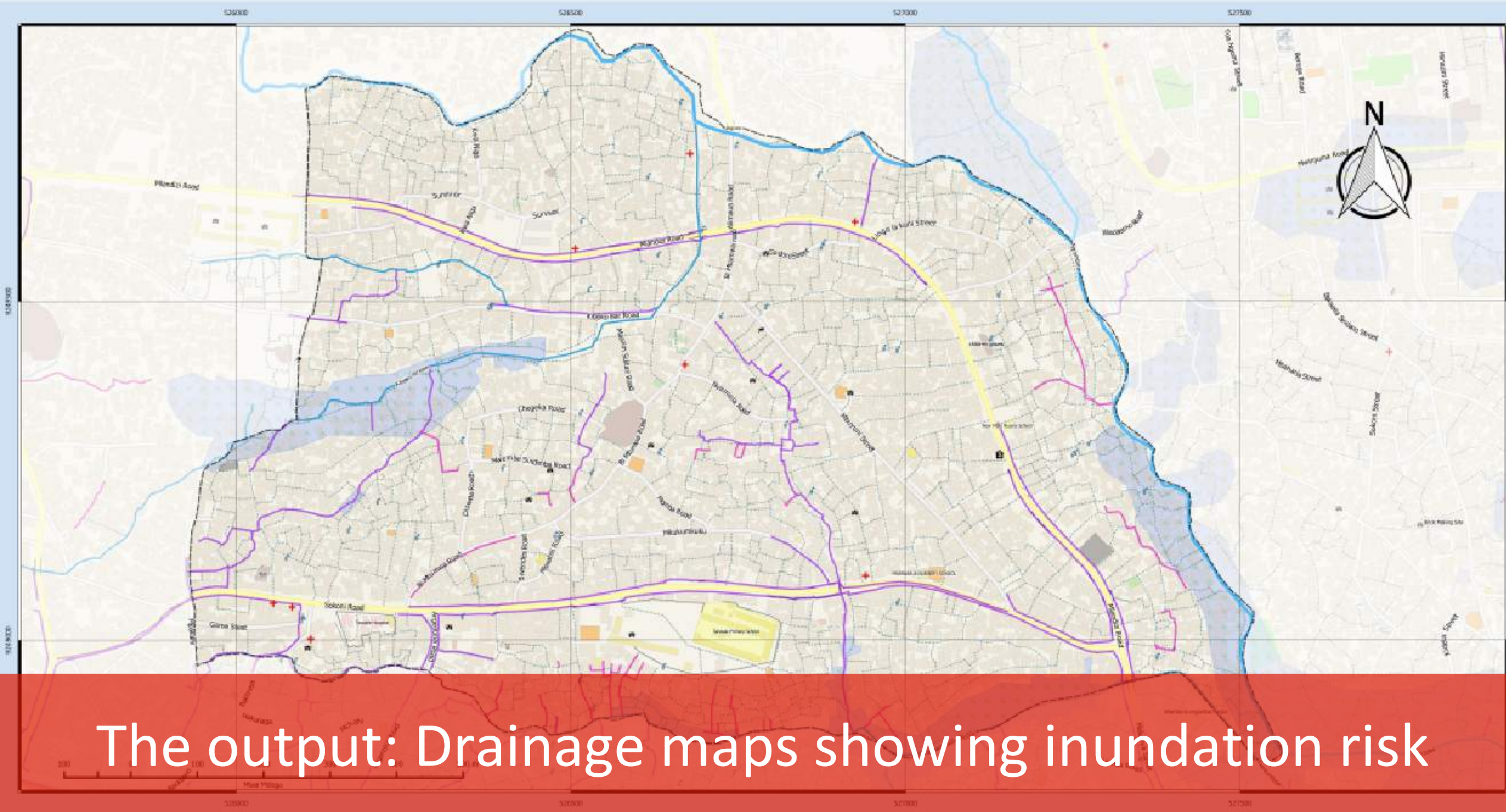




The output: what detailed maps can capture



# Tandale Ward - Drainage Map



The output: Drainage maps showing inundation risk





And, barriers to entry are low: minimal cost, great results





Barriers to entry are low:  
Almost anyone can do it



<https://flic.kr/p/rf9wJC>





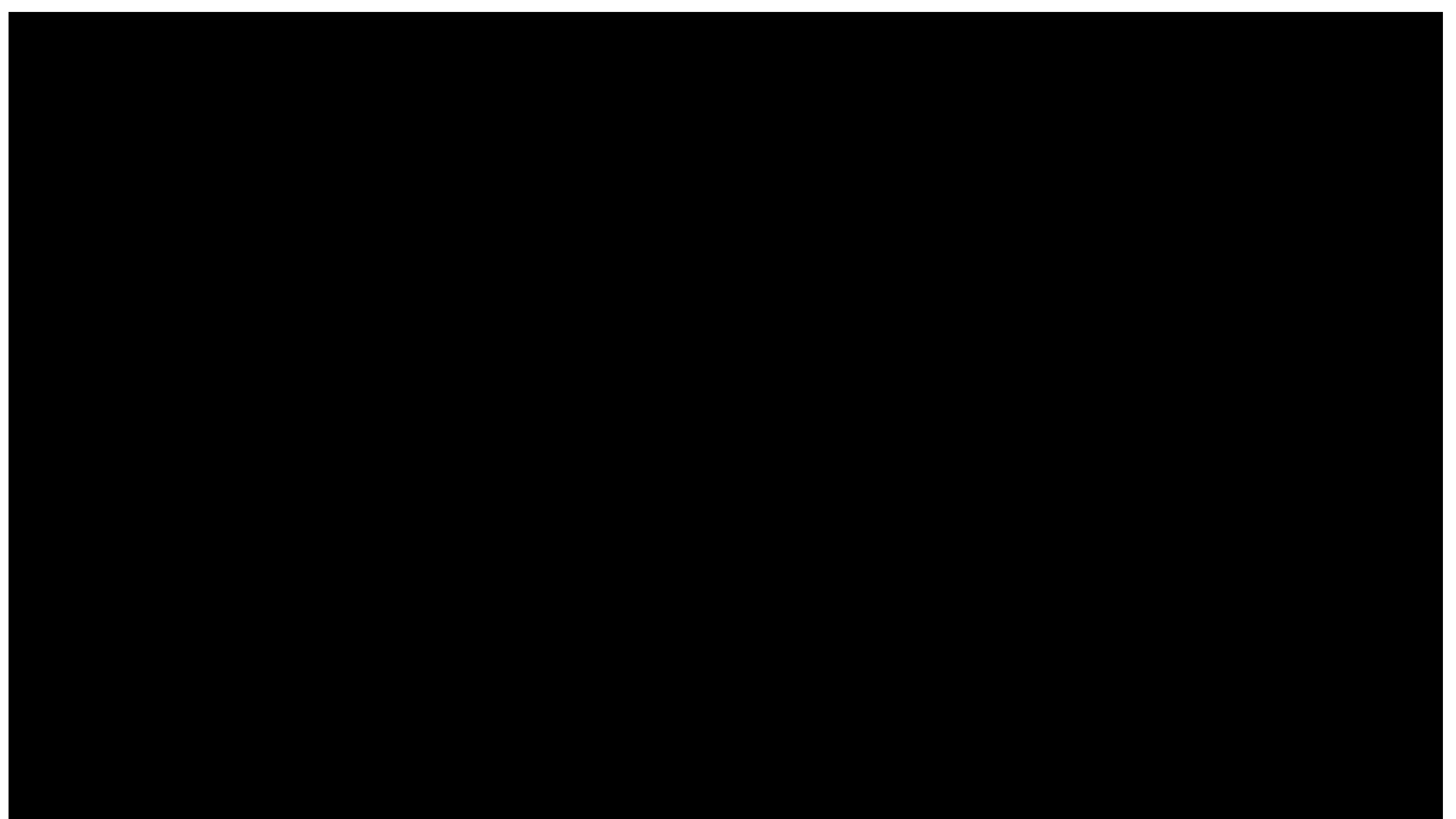
The result: 3 to 5 weeks







What we've accomplished together in the past 3 years







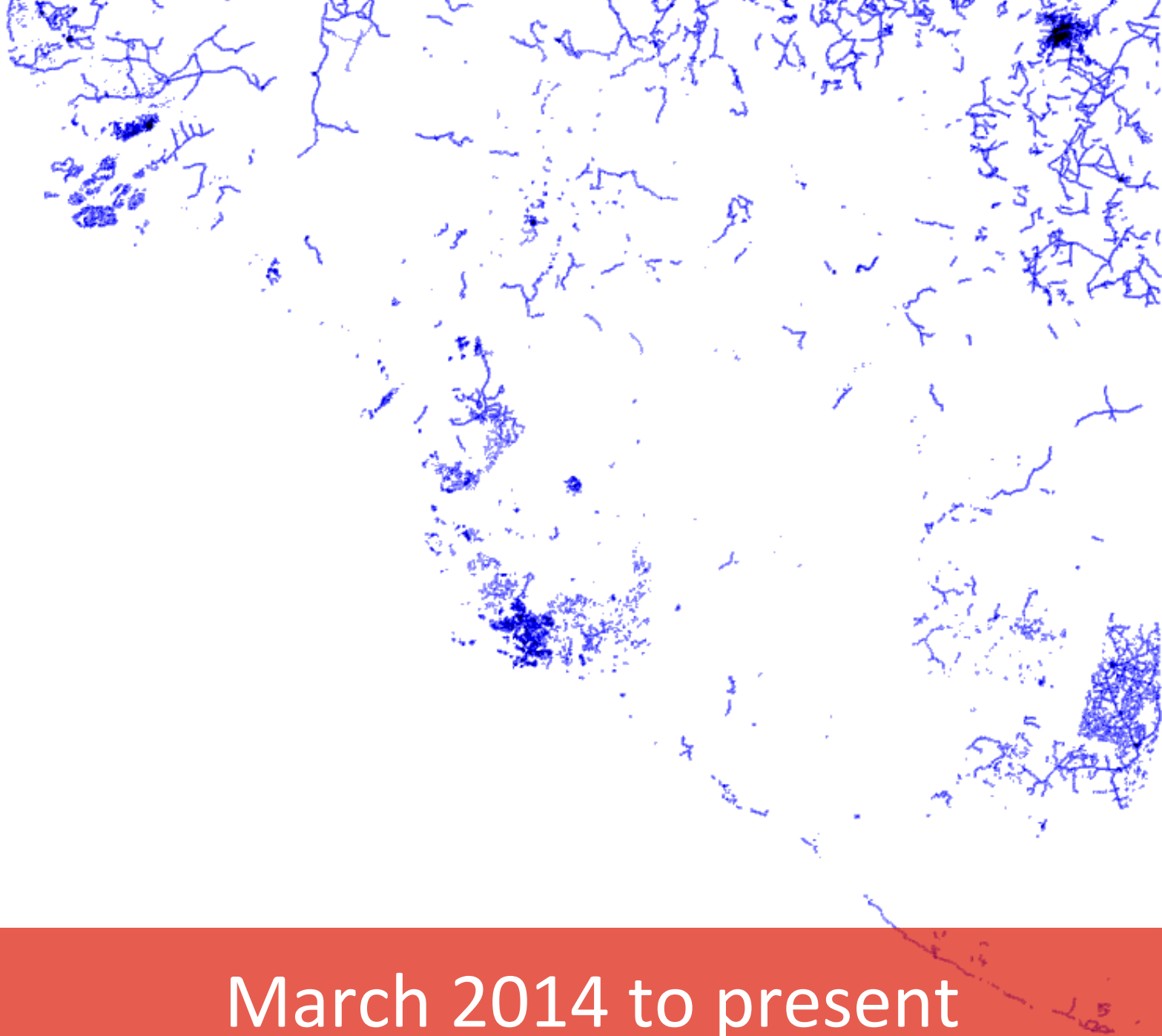
@TylerSRadfor  
d

@HOTOSM

*Get involved! [HOTOSM.org](http://HOTOSM.org)*

# Appendix





March 2014 to present

# OpenStreetMap Activities for Ebola Response (2014)

Copyright © Pascal Neis [\[neis-one.org\]](http://neis-one.org)  
Map data © [OpenStreetMap](http://OpenStreetMap) contributors  
(Data is updated on a hourly basis)

## General Information

Number of OSM Contributors: 3,856  
Number of Map Changes: 16,174,306  
(Total number of Changesets: 120,400)  
(Number of visualized Changesets with >= 400 Map Changes: 10,148)

## If you want to help?

Go to the OpenStreetMap Wiki page [West Africa Ebola Response \(2014\)](#)

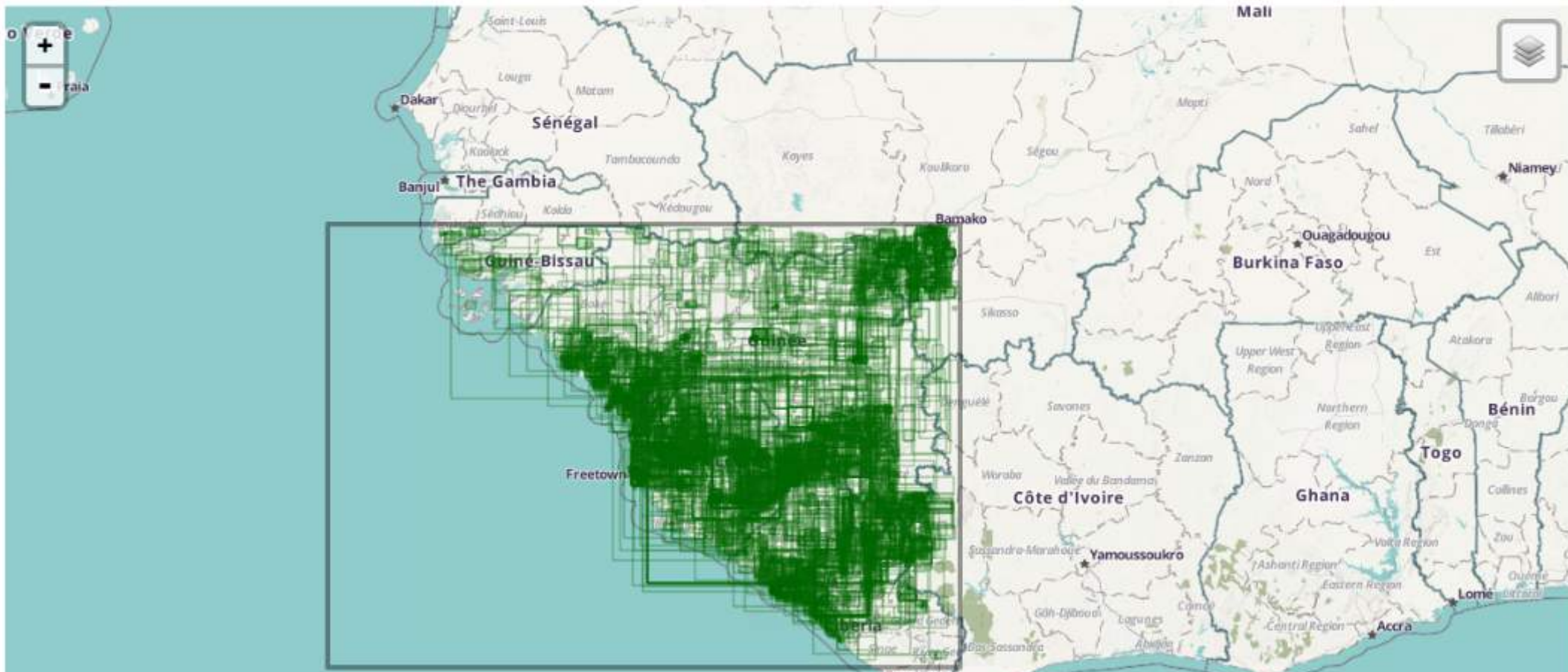
Additional information can be found at [Humanitarian OSM Team \(HOT\) Mailing-List](#)

[Who helped?](#)

[Blog Post](#) about this website

## Legend

- Analysis Extent
- OSM Changesets



March 2014 to present

2014-03-01

2015-08-10

Last Update: 2015-08-09 21:19:37 UTC