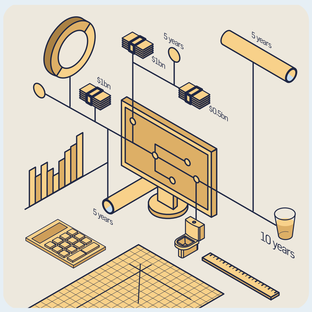
The problem

In 2017, **2 billion people did not have basic sanitation facilities** such as toilets or latrines. This is the equivalent of 2 million towns of 1,000 people.

In 2012 a WHO study calculated that **for every US$ 1.00 invested in sanitation, there was a return of US$ 5.50** in lower health costs, increased productivity, and fewer premature deaths.



The planning and design of wastewater collection networks would **cost billions of dollars** and at the current rate of progress, **take decades to complete**.

Coverage of basic sanitation by country

UNICEF data

NETCREATE is an innovative digital tool which uses global open source GIS datasets to automatically create an outline wastewater sewer networks on a repeatable basis rapidly. It brings together topographic data, **OpenStreetMap** road layouts and population distribution data to assign the route of least resistance from each property to the lowest point in the catchment along defined roads. Pipe sizes are assigned based on the number of customers; manholes are inserted at junctions and defined intervals on straight pipes. Cover levels are taken from topographic data; gradients and pipe depths are based on good engineering practice. A standardised approach makes it repeatable throughout countries or across regions, and configurable to specific needs.

NETCREATE has currently been shortlisted into the Top 20 entries for the G20 Global Infrastructure Hub InfraChallange (**https://infrachallenge.gihub.org/**), a competition to promote efficient and sustainable infrastructure delivery driven by digital initiatives.

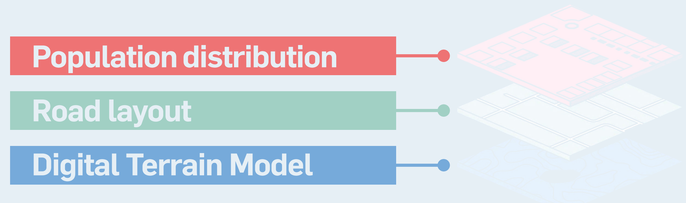
How OpenStreetMap data can help to provide sanitation to millions

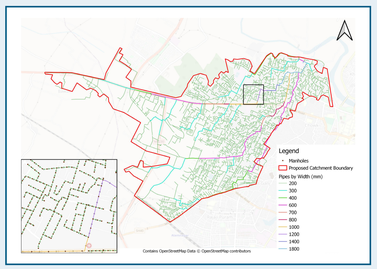
ATKINS
Member of the SNC-Lavalin Group

Contact
Matt McDonald
Matt.McDonald@atkinsglobal.com
+44 1372 754311 | +44 7804703832

The solution

Atkins NetCreate is a digital tool which uses global open source GIS datasets to create a coarse wastewater network for master planning purposes on a repeatable basis. The minimum data sets required are:





Why does NetCreate use OpenStreetMap Road data?

Atkins reviewed a range of road layout data including TomTom and World Bank road database and OpenStreetMap. From this assessment OSM was adopted as the road data for our NetCreate application as it offered the following benefits:

Best in class OpenSource road coverage and early adoption of AI.

Consistent useable format to develop repeatable automated data manipulation tasks.

Ever expanding detail and delivery of timely (daily) updates.

Applies a flexible Open Licence Agreement.

Data acknowledgement: © OpenStreetMap contributors, Japan Aerospace Exploration Agency (JAXA), Facebook, Inc.