Street-level Flooding Platform Sensing and Data Sharing for Urban Accessibility and Resilience Datasets

Datasets available at: https://doi.org/10.5281/zenodo.4162319, https://doi.org/10.5281/zenodo.4162295, https://doi.org/10.5281/zenodo.4306915, https://doi.org/10.5281/zenodo.4306918, https://doi.org/10.5281/zenodo.4429273, https://doi.org/10.5281/zenodo.4429282

(This dataset supports report **Street-level Flooding Platform: Sensing and Data Sharing for Urban Accessibility and Resilience**)

These U.S. Department of Transportation-funded datasets are preserved in the Zenodo Repository (https://zenodo.org/), and are available at https://doi.org/10.5281/zenodo.4162319, https://doi.org/10.5281/zenodo.4162295, https://doi.org/10.5281/zenodo.4306915, https://doi.org/10.5281/zenodo.4306918, https://doi.org/10.5281/zenodo.4429273, https://doi.org/10.5281/zenodo.4429282.

The related final report **Street-level Flooding Platform: Sensing and Data Sharing for Urban Accessibility and Resilience**, is available from the National Transportation Library's Digital Repository at https://rosap.ntl.bts.gov/view/dot/59897.

Metadata from the Zenodo Repository record, for https://doi.org/10.5281/zenodo.4162319:

Title: NYU FloodSense Gowanus Canal mounted distance sensor

Author: Sai Venkat Challagonda, Praneeth; Mydlarz, Charlie; Henaff, Elizabeth; Silverman, Andrea; Brain, Tega; Khan, Junaid

Description: Ultrasonic distance data in mm from a sensor mounted above the Gowanus Canal, Brooklyn, NY (40.674490, -73.994458). The sensor is designed to detect flood water that fills the street and blocks vehicle and pedestrian traffic, as well as depositing micro-organisms on the street. This one is used for data validation. The sensor transmits its data via LoRaWAN and is equipped with a solar panel for continuous operation. Data is collected at ~5min intervals. Time fields are in local time (New York). One type of erroneous data has been observed:

- There are ~1% rises in distance measures on days with sun which suggests that the distance sensor is affected by direct sunlight

This data is preliminary and is for prototyping purposes. Not to be used as a reliable data source as it is. This dataset will be updated when more data is collected. Please see our github org for sensor information and build instructions: https://github.com/floodsense

Publication Date: October 30, 2020

DOI: 10.5281/zenodo.4162319

Communities: C2SMART Connected Cities with Smart Transportation

License (for files): Creative Commons Attribution 4.0 International

Recommended citation:

Sai Venkat Challagonda, Praneeth, Mydlarz, Charlie, Henaff, Elizabeth, Silverman, Andrea, Brain, Tega, & Khan, Junaid. (2020). NYU FloodSense Gowanus Canal mounted distance sensor (0.1) [Data set]. Zenodo. https://doi.org/10.5281/zenodo.4162319

Dataset description:
This dataset contains 1 file described below.

floodsense_20201030_s4.csv:
The .csv, Comma Separated Value, file is a simple format that is designed for a database table and supported by many applications. The .csv file is often used for moving tabular data between two different computer programs, due to its open format. The most common software used to open .csv files are Microsoft Excel and RecordEditor, (for more information on .csv files and software, please visit https://www.file-extensions.org/csv-file-extension).

Metadata from the Zenodo Repository record, for https://doi.org/10.5281/zenodo.4162295:
Title: NYU FloodSense street sign mounted distance sensor
Author: Sai Venkat Challagonda, Praneeth; Mydlarz, Charlie; Henaff, Elizabeth; Silverman, Andrea; Brain, Tega; Khan, Junaid
Description: Ultrasonic distance data in mm from a sensor mounted on a street sign post at the corner of 5th Street and Hoyt, Brooklyn, NY (40.676640, -73.994595). The sensor is designed to detect flood water that fills the street and blocks vehicle and pedestrian traffic, as well as depositing micro-organisms on the street. The sensor transmits its data via LoRaWAN and is equipped with a solar panel for continuous operation. Data is collected at ~5min intervals. Time fields are in local time (New York). Two types of erroneous data has been observed:
- Large spikes in distance that always manifest at 5000mm - can be excluded
- There are ~1% rises in distance measures on days with sun which suggests that the distance sensor is affected by direct sunlight

This data is preliminary and is for prototyping purposes. Not to be used as a reliable data source as it is. This dataset will be updated when more data is collected. Please see our github org for sensor information and build instructions: https://github.com/floodsense
Publication Date: October 30, 2020
DOI: 10.5281/zenodo.4162295
Keywords: flood, water depth, distance, urban, street level
License (for files): Creative Commons Attribution 4.0 International

Recommended citation:
Sai Venkat Challagonda, Praneeth, Mydlarz, Charlie, Henaff, Elizabeth, Silverman, Andrea, Brain, Tega, & Khan, Junaid. (2020). NYU FloodSense street sign mounted distance sensor (0.1) [Data set]. Zenodo. https://doi.org/10.5281/zenodo.4162295

Dataset description:
This dataset contains 1 file described below.

floodsense_20201030_s2.csv:
The .csv, Comma Separated Value, file is a simple format that is designed for a database table and supported by many applications. The .csv file is often used for moving tabular data between two different computer programs, due to its open format. The most common software used to open .csv files are Microsoft Excel and RecordEditor, (for more information on .csv files and software, please visit https://www.file-extensions.org/csv-file-extension).

Metadata from the Zenodo Repository record, for https://doi.org/10.5281/zenodo.4306915:
Title: NYU FloodSense street sign mounted flood depth sensor
Author: Sai Venkat Challagonda, Praneeth; Mydlarz, Charlie; Henaff, Elizabeth; Silverman, Andrea; Brain, Tega; Khan, Junaid
Description: Water depth level in mm from a sensor mounted on a street sign post at the corner of 5th Street and Hoyt, Brooklyn, NY (40.676640, -73.994595). The sensor is designed to detect flood water that fills the street and blocks vehicle and pedestrian traffic, as well as depositing micro-organisms on the street. Ultrasonic technology is used to detect flood water depth. The sensor transmits its data via LoRaWAN and is equipped with a solar panel for continuous operation. Depth data is collected at ~5min intervals. Time fields are in local time (New York). Date format is: 2020-10-04 20:11:45.742594232-04:00. Two flood events have been observed in this dataset between these date ranges:
1. "2020-11-15 19:37:00.000000000-05:00" to "2020-11-16 00:30:00.000000000-05:00"
2. "2020-11-30 10:20:00.000000000-05:00" to "2020-11-30 13:30:00.000000000-05:00"
Erroneous data has been observed:
- There are ~1% decreases in depth measures on days with sun which suggests that the distance sensor is affected by direct sunlight

This data is preliminary and is for prototyping purposes. This dataset will be updated when more data is collected. Please see our github org for sensor information and build instructions: https://github.com/floodsense.
Publication Date: December 4, 2020
DOI: 10.5281/zenodo.4306915
Keywords: flood, water depth, depth, ultrasonic, urban, street level, water level
Communities: C2SMART Connected Cities with Smart Transportation
License (for files): Creative Commons Attribution 4.0 International

Recommended citation:
Sai Venkat Challagonda, Praneeth, Mydlarz, Charlie, Henaff, Elizabeth, Silverman, Andrea, Brain, Tega, & Khan, Junaid. (2020). NYU FloodSense street sign mounted flood depth sensor (0.2) [Data set]. Zenodo. https://doi.org/10.5281/zenodo.4306915

Dataset description:
This dataset contains 1 file described below.

third_dataset_sensor_2.csv:
The .csv, Comma Separated Value, file is a simple format that is designed for a database table and supported by many applications. The .csv file is often used for moving tabular data between two different computer programs, due to its open format. The most common software used to open .csv files are Microsoft Excel and RecordEditor, (for more information on .csv files and software, please visit https://www.file-extensions.org/csv-file-extension).

Metadata from the Zenodo Repository record, for https://doi.org/10.5281/zenodo.4306918:
Title: NYU FloodSense Gowanus canal mounted sensor depth
Author: Sai Venkat Challagonda, Praneeth; Mydlarz, Charlie; Henaff, Elizabeth; Silverman, Andrea; Brain, Tega; Khan, Junaid

Description: Water depth level in mm from a sensor mounted mounted above the Gowanus Canal, Brooklyn, NY (40.674490, -73.994458). The sensor is designed to detect flood water that fills the street and blocks vehicle and pedestrian traffic, as well as depositing micro-organisms on the street. This one is used for data validation. The sensor transmits its data via LoRaWAN and is equipped with a solar panel for continuous operation. Data is collected at ~5min intervals. Time fields are in local time (New York). Time fields are in local time (New York). Date format is: 2020-10-04 20:11:45.742594232-04:00. Two flood events have been observed in this dataset between these date ranges:
1. "2020-11-15 19:37:00.000000000-05:00" to "2020-11-16 00:30:00.000000000-05:00"
2. "2020-11-30 10:20:00.000000000-05:00" to "2020-11-30 13:30:00.000000000-05:00"
One type of erroneous data has been observed:
- There are ~1% rises in distance measures on days with sun which suggests that the distance sensor is affected by direct sunlight

This data is preliminary and is for prototyping purposes. Not to be used as a reliable data source as it is. This dataset will be updated when more data is collected. Please see our github org for sensor information and build instructions: https://github.com/floodsense
Publication Date: December 4, 2020
DOI: 10.5281/zenodo.4306918
Keywords: flood, water depth, depth, ultrasonic, urban, street level, water level
Communities: C2SMART Connected Cities with Smart Transportation
License (for files): Creative Commons Attribution 4.0 International

Recommended citation:
Sai Venkat Challagonda, Praneeth, Mydlarz, Charlie, Henaff, Elizabeth, Silverman, Andrea, Brain, Tega, & Khan, Junaid. (2020). NYU FloodSense Gowanus canal mounted sensor depth (0.2) [Data set]. Zenodo. https://doi.org/10.5281/zenodo.4306918

Dataset description:
This dataset contains 1 file described below.

third_dataset_sensor_4.csv:
The .csv, Comma Separated Value, file is a simple format that is designed for a database table and supported by many applications. The .csv file is often used for moving tabular data between two different computer programs, due to its open format. The most common software used to open .csv files are Microsoft Excel and RecordEditor, (for more information on .csv files and software, please visit https://www.file-extensions.org/csv-file-extension).

Metadata from the Zenodo Repository record, for https://doi.org/10.5281/zenodo.4429273:
Title: NYU FloodSense Gowanus canal mounted sensor depth
Author: Sai Venkat Challagonda, Praneeth; Mydlarz, Charlie; Henaff, Elizabeth; Silverman, Andrea; Brain, Tega; Khan, Junaid
Description: Water depth level in mm from a sensor mounted mounted above the Gowanus Canal, Brooklyn, NY (40.674490, -73.994458) from October 4th 2020 to January 8th 2021. The sensor is designed to detect flood water that fills the street and blocks vehicle and pedestrian traffic, as well as depositing micro-organisms on the street. This one is used for data validation. The sensor transmits its data via LoRaWAN and is equipped with a solar panel for continuous

operation. Data is collected at ~5min intervals. Time fields are in local time (New York). Time fields are in local time (New York). Date format is: 2020-10-04 20:11:45.742594232-04:00. Two flood events have been observed in this dataset between these date ranges:

1. "2020-11-15 19:37:00.000000000-05:00" to "2020-11-16 00:30:00.000000000-05:00"
2. "2020-11-30 10:20:00.000000000-05:00" to "2020-11-30 13:30:00.000000000-05:00"

One type of erroneous data has been observed:

- There are ~1% rises in distance measures on days with sun which suggests that the distance sensor is affected by direct sunlight

This data is preliminary and is for prototyping purposes. Not to be used as a reliable data source as it is. This dataset will be updated when more data is collected. Please see our github repo for sensor information and build instructions: https://github.com/floodsense

Publication Date: January 8, 2021
DOI: 10.5281/zenodo.4429273
Keywords: flood, water depth, depth, ultrasonic, urban, street level, water level
Communities: C2SMART Connected Cities with Smart Transportation
License (for files): Creative Commons Attribution 4.0 International

Recommended citation:
Sai Venkat Challagonda, Praneeth, Mydlarz, Charlie, Henaff, Elizabeth, Silverman, Andrea, Brain, Tega, & Khan, Junaid. (2021). NYU FloodSense Gowanus canal mounted sensor depth [Data set]. Zenodo. https://doi.org/10.5281/zenodo.4429273

Dataset description:
This dataset contains 1 file described below.

gowanus_canal_sensor_out.csv:
The .csv, Comma Separated Value, file is a simple format that is designed for a database table and supported by many applications. The .csv file is often used for moving tabular data between two different computer programs, due to its open format. The most common software used to open .csv files are Microsoft Excel and RecordEditor, (for more information on .csv files and software, please visit https://www.file-extensions.org/csv-file-extension).

Metadata from the Zenodo Repository record, for https://doi.org/10.5281/zenodo.4429282:
Title: NYU FloodSense street sign mounted flood depth sensor
Author: Sai Venkat Challagonda, Praneeth; Mydlarz, Charlie; Henaff, Elizabeth; Silverman, Andrea; Brain, Tega; Khan, Junaid
Description: Water depth level in mm from a sensor mounted on a street sign post at the corner of 5th Street and Hoyt, Brooklyn, NY (40.676640, -73.994595). The sensor is designed to detect flood water that fills the street and blocks vehicle and pedestrian traffic, as well as depositing micro-organisms on the street. Ultrasonic technology is used to detect flood water depth. The sensor transmits its data via LoRaWAN and is equipped with a solar panel for continuous operation. Depth data is collected at ~5min intervals. Time fields are in local time (New York). Date format is: 2020-10-04 20:11:45.742594232-04:00. Two flood events have been observed in this dataset between these date ranges:

1. "2020-11-15 19:37:00.000000000-05:00" to "2020-11-16 00:30:00.000000000-05:00"
2. "2020-11-30 10:20:00.000000000-05:00" to "2020-11-30 13:30:00.000000000-05:00"

Erroneous data has been observed:
- There are ~1% decreases in depth measures on days with sun which suggests that the distance sensor is affected by direct sunlight

This data is preliminary and is for prototyping purposes. This dataset will be updated when more data is collected. Please see our github org for sensor information and build instructions: https://github.com/floodsense.

Recommended citation:
Sai Venkat Challagonda, Praneeth, Mydlarz, Charlie, Henaff, Elizabeth, Silverman, Andrea, Brain, Tega, & Khan, Junaid. (2021). NYU FloodSense street sign mounted flood depth sensor [Data set]. Zenodo. https://doi.org/10.5281/zenodo.4429282

Dataset description:
This dataset contains 1 file described below.

street_sensor_out.csv:
The .csv, Comma Separated Value, file is a simple format that is designed for a database table and supported by many applications. The .csv file is often used for moving tabular data between two different computer programs, due to its open format. The most common software used to open .csv files are Microsoft Excel and RecordEditor, (for more information on .csv files and software, please visit https://www.file-extensions.org/csv-file-extension).

National Transportation Library (NTL) Curation Note:
As this dataset is preserved in a repository outside U.S. DOT control, as allowed by the U.S. DOT's Public Access Plan (https://ntl.bts.gov/public-access) Section 7.4.2 Data, the NTL staff has performed *NO* additional curation actions on this dataset. NTL staff last accessed these datasets on 2022-05-16. If, in the future, you have trouble accessing this dataset at the host repository, please email NTLDataCurator@dot.gov describing your problem. NTL staff will do its best to assist you at that time.