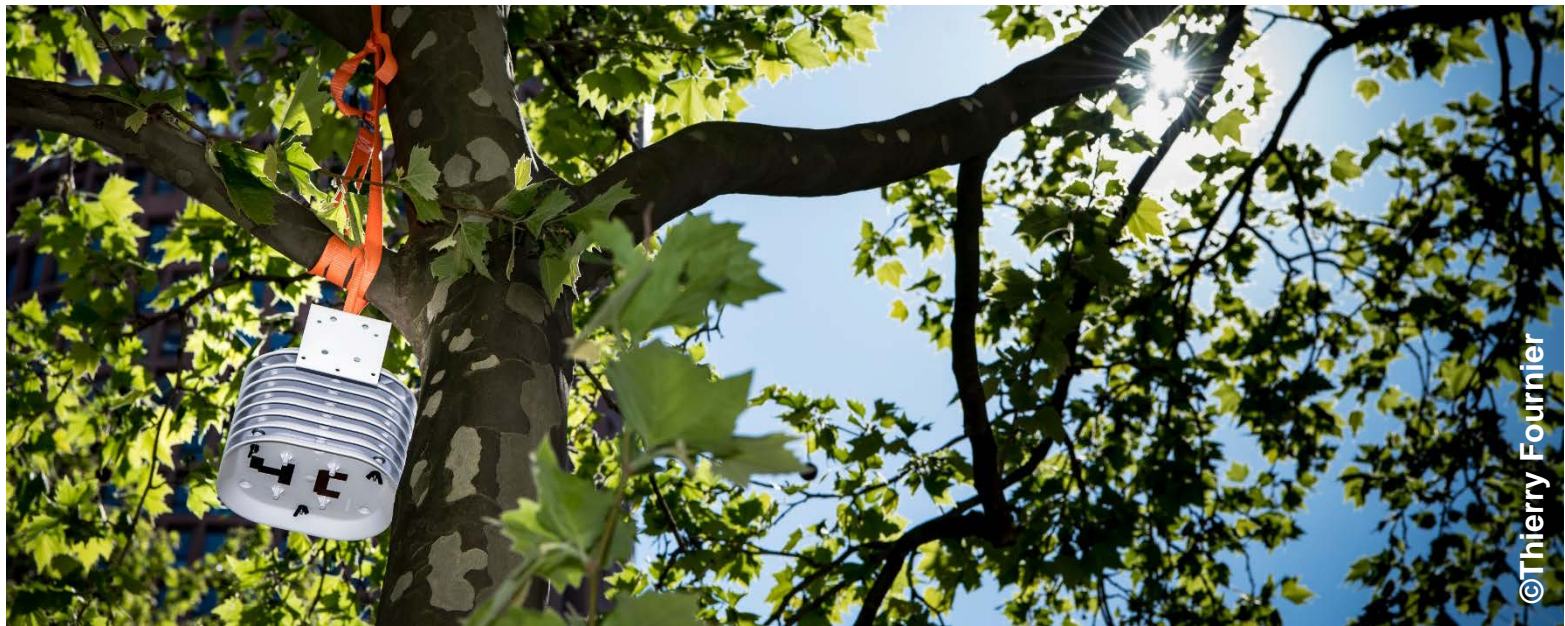


ADAPTATION TO CLIMATE CHANGE : I.O.T. SOLUTIONS TO IMPLEMENT NATURAL COOLING ON GARIBALDI STREET

Luce PONSAR, Métropole de Lyon, France



Métropole de Lyon : a journey southwards

- 59 municipalities
- 1,3 million inhabitants
- 538 km²

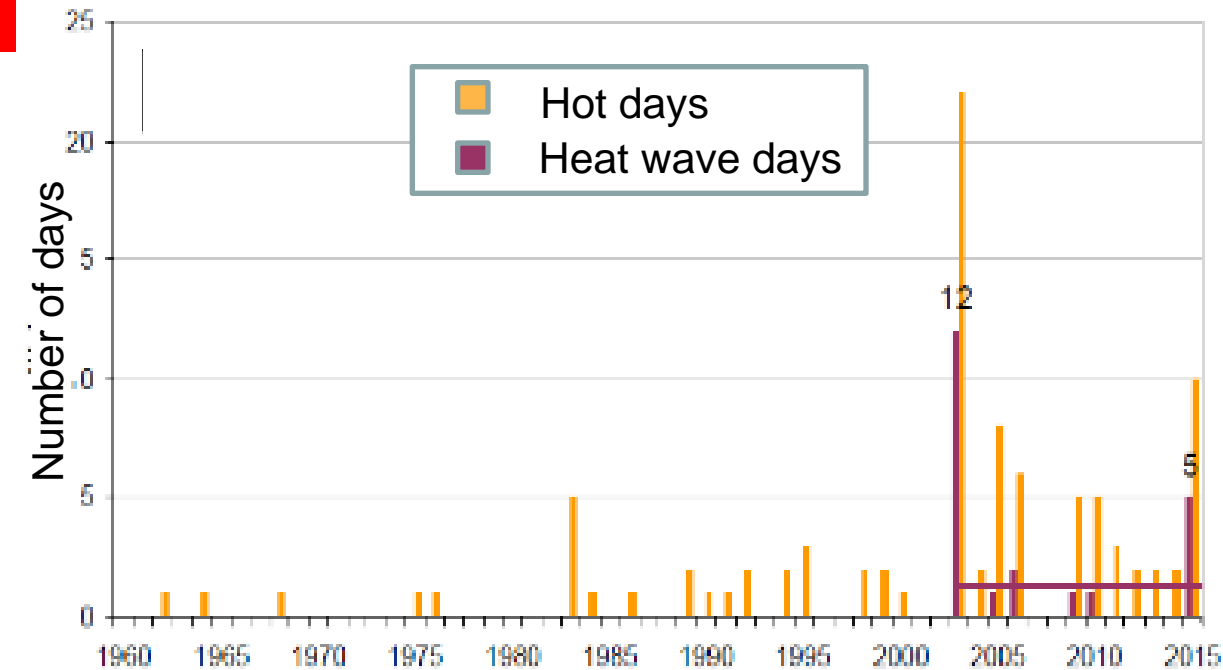


Average annual temperature
increase between 1959 and
2016 in Lyon

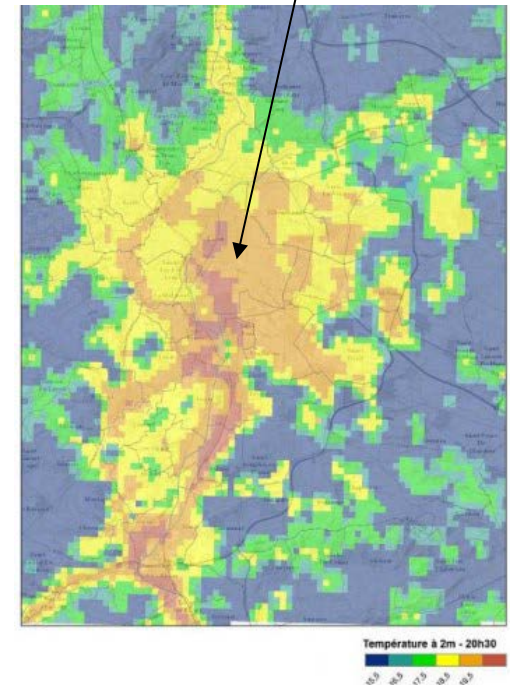
**WHAT CLIMATE TODAY,
WHAT CLIMATE TOMORROW?**



Climate change ... and Urban Heat Island



Garibaldi street

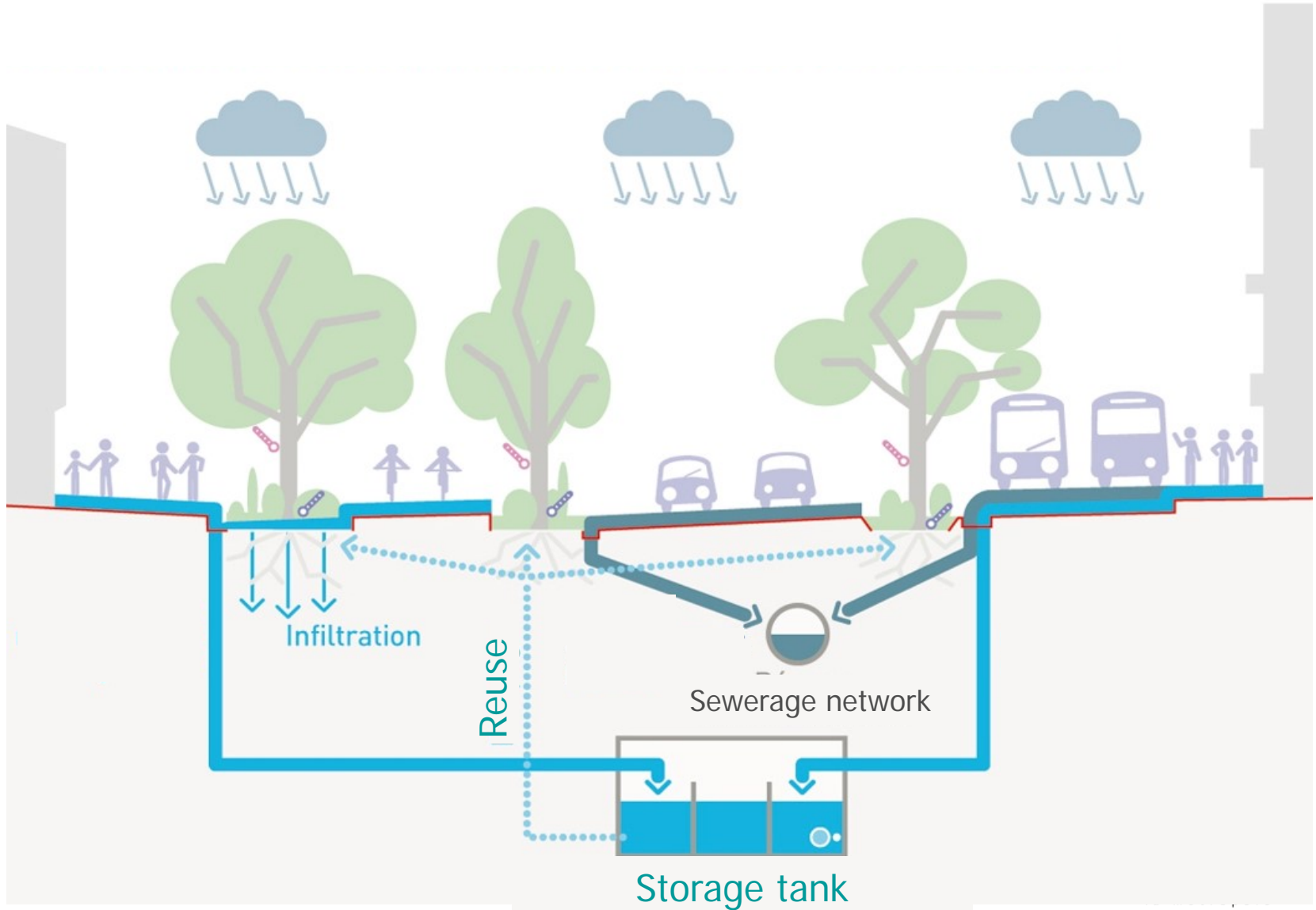


UHI effect in Lyon (Dudek, 2014)

Garibaldi street



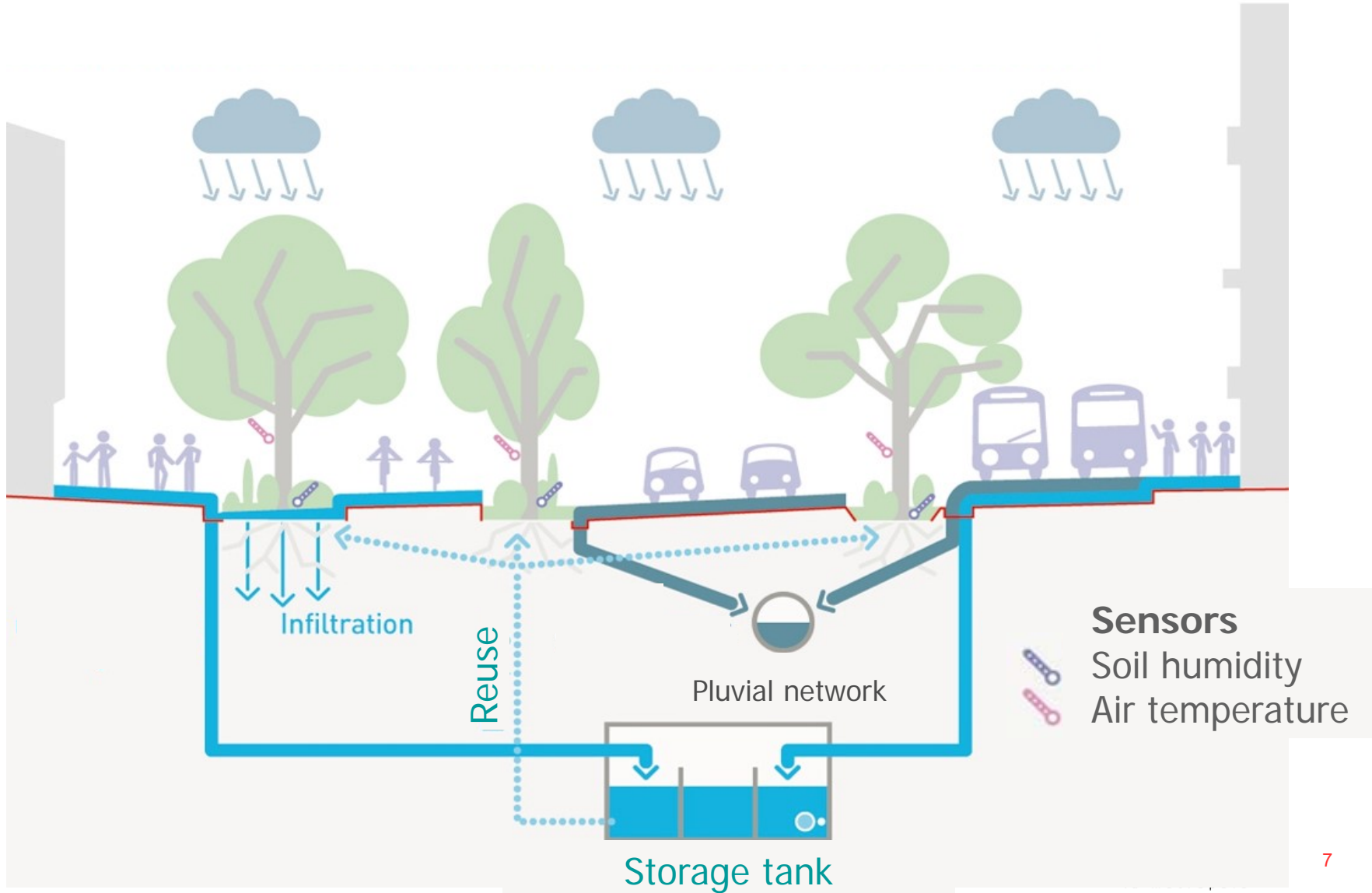
Garibaldi street



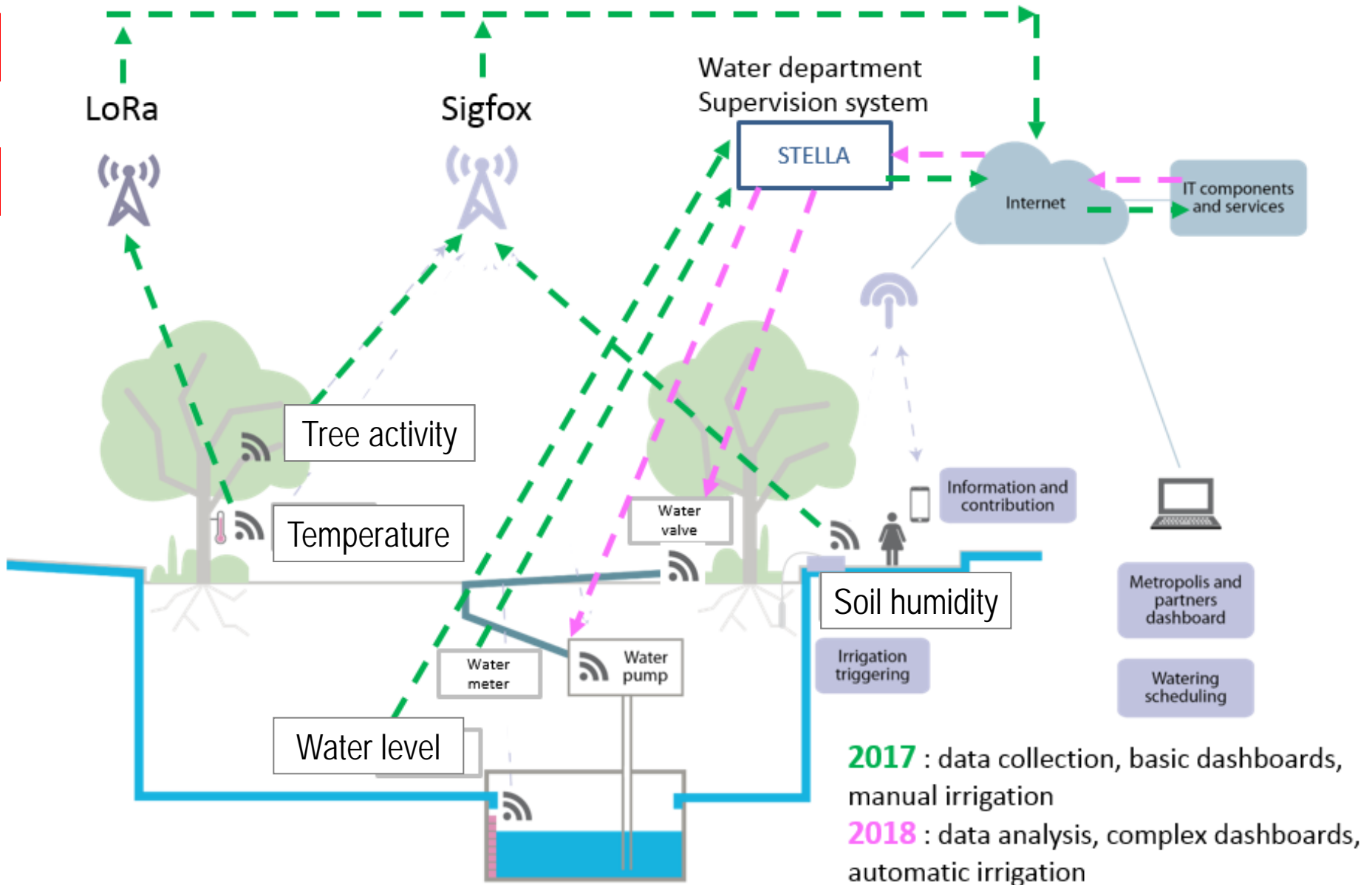
Garibaldi street



Garibaldi street



Collecting data – I.O.T approach



Soil humidity sensors



Tensiometers (INRA – Hydrasol) - Sigfox

Trees activity sensors



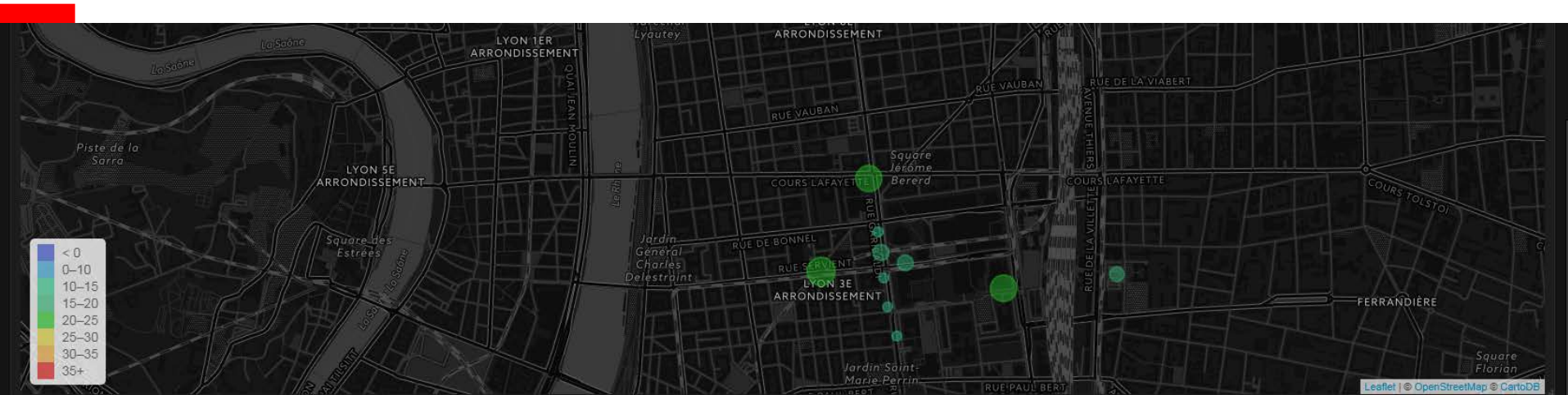
Pepipiaf sensors (INRA – Hydrasol) - Sigfox

Air temperature sensors

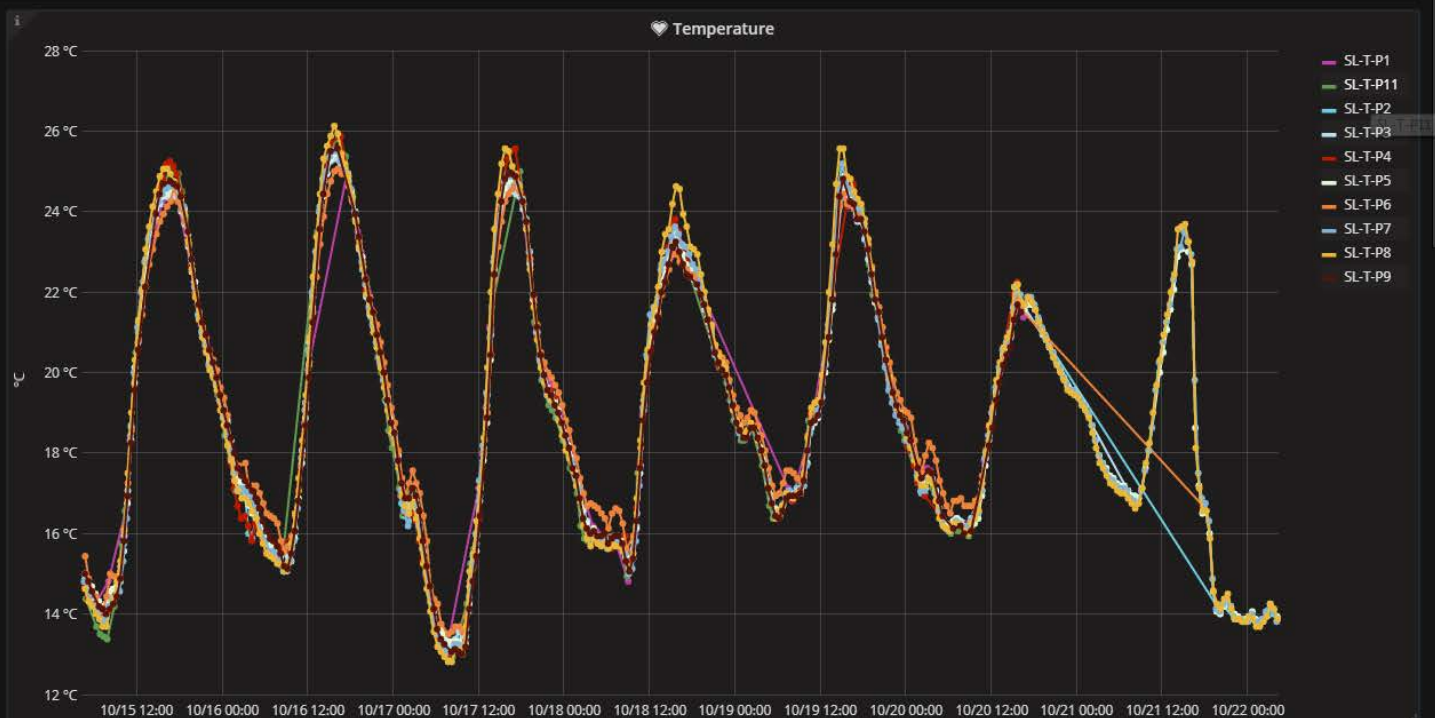


Air temperature sensors (Sensing labs) - LoRa

Air temperature dashboard



Last values			
Time	nodeName	Temperature	Battery
2017-10-20 09:21:39	SL-T-P11	16.2 °C	87%
2017-10-20 15:40:22	SL-T-P4	22.3 °C	87%
2017-10-20 16:12:27	SL-T-P9	21.5 °C	87%
2017-10-20 16:32:02	SL-T-P1	21.4 °C	87%
2017-10-21 08:45:04	SL-T-P3	16.9 °C	87%
2017-10-21 17:46:32	SL-T-P6	16.7 °C	87%
2017-10-22 03:42:57	SL-T-P2	14.0 °C	87%
2017-10-22 04:06:40	SL-T-P7	13.8 °C	87%
2017-10-22 04:11:52	SL-T-P5	13.9 °C	87%
2017-10-22 04:15:17	SL-T-P8	13.9 °C	87%



Adapting to a changing climate



1

Prepare territory to water scarcity

2

Reduce Urban Heat Island effect

3

Accompagny population

4

Adapt farming activities

5

Work with local research





Thanks for your attention

For more details, come to visit Lyon !

“Climate Plan” blog

<http://blogs.grandlyon.com/plan-climat/>

Biotope project

<http://www.biotope-project.eu/>

<https://biotope-viz.datalab.erasme.org/?orgId=2>

<https://biotope-omi.datalab.erasme.org/>

Data platform

<http://data.grandlyon.com/>