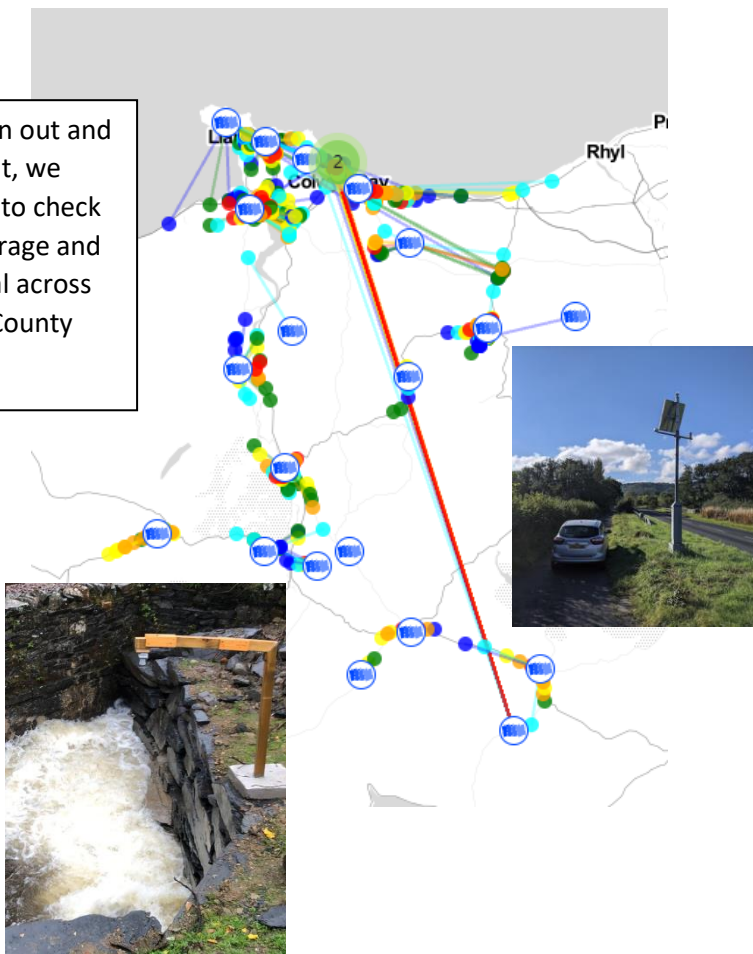


LoraWAN project funding via Rural Development

Executive Summary

October 2021

When out and about, we map to check coverage and signal across the County area.



KEY ACHIEVEMENTS

NUMBERS

- 2 public webinars held to make public and businesses aware of the technology
- 10 gateways supported by RD funding rolled out in rural areas.
- 27 gateways as a whole now across the Authority area including additional rural areas
- 84 initial sensors purchased to drive interest and take up
- Additional miscellaneous sensors for multiple uses also purchased with RD funding

INITIATIVES

- Working with the school, Natural Resources Wales (NRW), farmers and landowners in Llanfair Talhaiarn, started the first shaping of flood monitoring – the vision to work towards flood alerts and flood prediction.
 - We already have flood level, temperature, humidity and atmospheric pressure. From half term, we shall also have rainfall monitoring. A first in this area of Wales. This data will also be shared with NRW.
 - We will share this data with the school too to assist the pupils to learn about their local weather patterns and how flooding is affected by the topography of the area.
- Working with land owners in Dolwyddelan, monitoring flooding between private land and the railway
- Multiple farms have taken up sensors to be used for people monitoring to advise when unexpected movement is happening in garages in outbuildings.
 - We have had some LoraWAN coverage issues. ITDT have purchased mini-gateways to provide coverage which we connect to the home / farm's private wi-fi to ensure the data from the sensor still gets to our computers.
- Placed first fix of infrastructure at Efail Uchaf, above Maenan for culvert flooding.
- Corporate Health and Safety have successfully trialled LoraWAN CO2 sensors. The CO2 sensors are used to monitor fresh air for Covid-19 safety in offices, schools and nursing homes. This trial is being increased in size and being rolled out to more sites.
- Education are trialling automatic fridge temperature monitoring and are also considering exploring temperature and humidity data within the classroom environments

KEY ACHIEVEMENTS

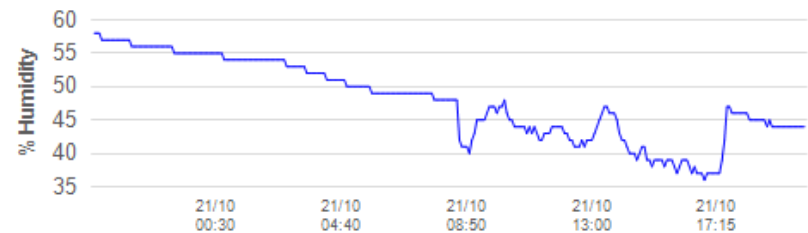
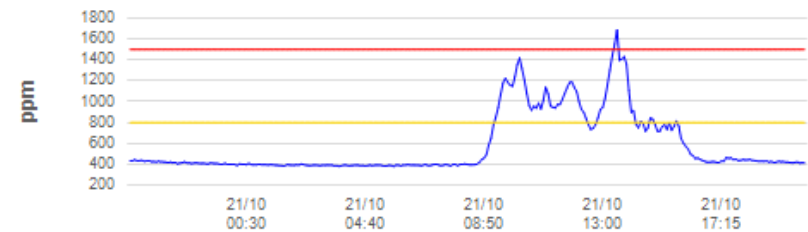
...INITIATIVES

- Members of the public working alongside Council Officers to explore opportunities with the technology including
 - Methods to run heating more efficiently by monitoring temperature and humidity
 - Pest control and opportunities to reduce damage caused by rodents
- Working with colleagues in ERF to test road temperature sensors
 - The opportunities here are to increase the size and accuracy of our road temperature network. Provide better public data to the public. Assist our gritting teams with more accurate real time weather data.
- Farming Union using sensors to protect community assets in Ysbyty Ifan
- Art workshops receiving notifications on movement monitoring in Nebo

DISCOVERIES

- LoraWAN signals can go really far. Really far.
 - Subject to there being no hills get in the way
- It's easy to monitor the water level of a pond but more challenging on a river that is in spate
- We are able to gather the data on our own computers and present the data in graphs
 - We can then identify trends
 - We can also do notifications on thresholds
 - Including e-mail and texts. Our vision is to work towards automated telephone calls and explore the technology to do this in Welsh and not just English.
- Meeting and working with local people and local teams from other organisations is interesting and fun!

We can gather data and graph it out....



....and make the data available via a web browser. We are investigating new technologies for people to see appropriate data on the public website.

We've had sensor data go from Colwyn Bay to Liverpool!

