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County Council



# Digital Connectivity in Norfolk

## Corporate Select Committee

**Geoff Connell – Director of IMT**  
**14<sup>th</sup> March 2022**

 **CONNECTED**  
IoT Winner 2021

 **CONNECTED**  
Digital Council of the Year 2020

**I will provide updates on:**

- 1. Broadband**
- 2. Mobile**
- 3. & sensor networks**

**Then seek the views of the committee at the end**



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# Broadband

# Superfast & Ultrafast coverage

# Broadband - Public Sector Led Activity

- We have come a long way with the Better Broadband for Norfolk (BBfN) Superfast Programme. In 2012 we had 42% coverage, its now > 96%
- BBfN phase 3 (funded through gainshare) will connect another 9,000 homes to gigabit / ultrafast FTTP by Summer 2023, raising coverage to over 97%
- Ultrafast (Gigabit 1000mbps capable) broadband is now > 41% (it was 14% 3 months ago)
- The DCMS/BDUK Funded LLFN project is now complete with 394 public sector buildings connected to full fibre for higher speeds at lower cost. Including many Schools, Libraries, Council Offices & Fire Stations.
- The DCMS/BDUK funded Project Gigabit will connect up to 111,000 rural properties that are not considered commercially viable to the private sector for £115M-£195M
- We have applied for £400k of DLUHC/LEP Funding for an LLFN FWA project for the public sector buildings such as rural village halls that could not be connected by LLFN.

**Note apart from a very small NCC Team, all of the above are externally funded by DCMS, DLUHC/LEP, Defra & Openreach (through gainshare due to above expected take-up under the BBfN Contract)**

# Broadband – Private Sector Led

- Inward investment that we are aware of is currently running into hundreds of millions of pounds from the private sector for gigabit capable fibre broadband in commercially viable locations.
- Virgin Media have been upgrading their cable to ultrafast and Openreach, then City Fibre are most active.
- Other companies, most notably County Broadband, Upp, Lightspeed and Netomnia are also active, enabling faster connections, more choice and healthy competition, sometimes also increasing coverage
- Recent significant announcements include:
  - **Openreach - rural build** – phase 3 announced in May 21. Covering 51 local exchange areas and circa 115,000 premises
  - **Openreach** – announced November 21 **£61M** funding for 15 exchange areas.
  - **Openreach** – announced January 22 **£32M** for 3 exchange areas, including: Norwich North, Norwich West & North Walsham
  - **City Fibre** - started work to pass 97,000 properties in Norwich on 6th September 2021 and estimate it will be complete within four years
  - **City Fibre** - plans to commence the build for 32,000 premises in Great Yarmouth in October. In the longer term plans to build in some of the villages surrounding Norwich which amount to 26,000 properties (although these have not been confirmed and we do not have a start date).
  - Total investment in Norfolk by CityFibre, including all the above, will be around **£80 million**.

I propose that we monitor broadband coverage and speed improvements & report then to the committee every 6-12 months. If progress stalls we can consider investing in further initiatives such as voucher top-ups, fixed wireless access (FWA) and low orbit Satellite.

# Broadband Affordability

- **Gigabit vouchers for borderline commercially viable builds**
- The Gigabit Broadband Voucher Scheme from DCMS/BDUK has brought extra income into the county allowing private sector companies to make some non-commercially viable properties stack up financially.
- In addition to the voucher's principal value, local authorities can support the voucher distribution by applying a top up per voucher. Currently 16 local and devolved authorities have live schemes worth £10.5m to top-up our voucher projects.
- These top-ups effectively allow vouchers to reach harder areas. Previous top-ups have often doubled the value of DCMS vouchers (which are usually £3,500 for business and £1,500 for homes), meaning that suppliers can use them to build more remote premises that would otherwise be out of reach under the standard voucher scheme.

**This is an option for NCC to consider in future to help meet the final 1-3% of properties after, BBfN phase 3 & Project Gigabit have finished. The cost is likely to be > £1M to be meaningful and the return on investment is in my opinion not yet clear.**

- **Social Tariffs:** Many companies have responded to those families currently receiving state benefits by launching special discounted broadband packages, known as 'social tariffs', these include BT's 'Home Essentials' and Virgin Media's 'Essential Broadband' packages.





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# Mobile

**EE, Vodafone, O2 & Three  
Shared Rural Network,  
public assets & small cells**

# Mobile Voice & Data Networks

Mobile is the most difficult area of digital connectivity to improve as we cannot directly invest in the way we do with broadband. However, 2&4G (voice & data) coverage is gradually improving and 5G is now available in parts of Norwich & Gt Yarmouth.

## **What has NCC & the Mobile Network Operators (MNOs) been up to?**

- Met periodically with the MNOs to help facilitate improvements
- Commissioned two drive studies to ensure mobile network operators know where real life coverage gaps exist
- Developed agreements to enable MNOs to install their equipment on our buildings
- Lobbied MNOs to work with us to trial small cells to top up the signals from masts, pilots being (slowly) progressed by Vodafone and EE
- Seen improvements such as: 75 Site 4G Upgrades undertaken by Vodafone and O2. 14 New O2 Sites along the North Norfolk Coastline
- EE have directly engaged with NCC to improve coverage resulting in new sites and upgrades across the County (majority rural). 5G rollout started.
- Major 4G upgrades by Three. 202 sites receiving 4G upgrades enhancing 4G coverage across Norfolk by the end of 2023, including many rural areas. An additional 70 existing are sites being upgraded to 5G (Great Yarmouth/Kings Lynn/Norwich and a number of market towns across Norfolk).

## **What else is happening?**

The Shared Rural Network (SRN) is a £1Bn joint investment between DCMS and the four mobile network operators to first address partial “not spots” and then areas that have no coverage from any operator. The official procurement launched in November 2021 and NCC is working with both the National Shared Rural Network Project Team and individual Mobile Operators to understand and help accelerate their plans for improvements across Norfolk. The work is due for completion by the end of 2025 enabling combined coverage of 95% across the UK.

**We could ask for Norfolk’s share of the SRN to be delegated to NCC as part of a County Deal to enable us to use our data and local knowledge to accelerate improvements and target areas most in need.**





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# Sensor / IoT Network From Pilots to Full Coverage In Under 3 Years (LEP Funded)

NORFOLK & SUFFOLK  
**INNOVATION**  
— NETWORK —



 Britain  
**CONNECTED**  
IoT Winner 2021

 Britain  
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# The **largest** free-to-use public sector IoT Network in the UK

NORFOLK & SUFFOLK  
**INNOVATION**  
— NETWORK —





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# Gateway Locations



**85 Gateways  
Deployed in  
Norfolk as at  
Feb 2022**

**Planning for  
110 external &  
25 internal  
(in Norfolk)**





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# Use cases

Building Efficiency

Archive Store Monitor

Walking Trails



Assisted Living



Winter Gritting

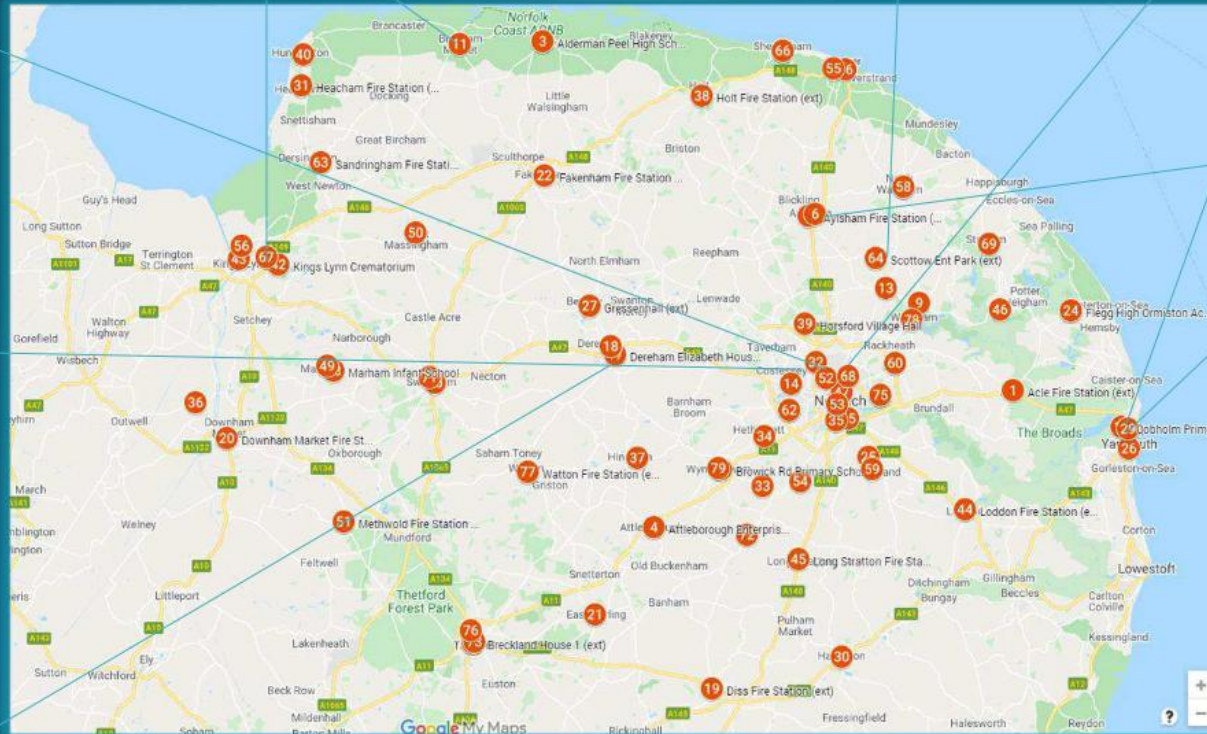


Crop monitoring  
Water level monitor

Signal fault monitor



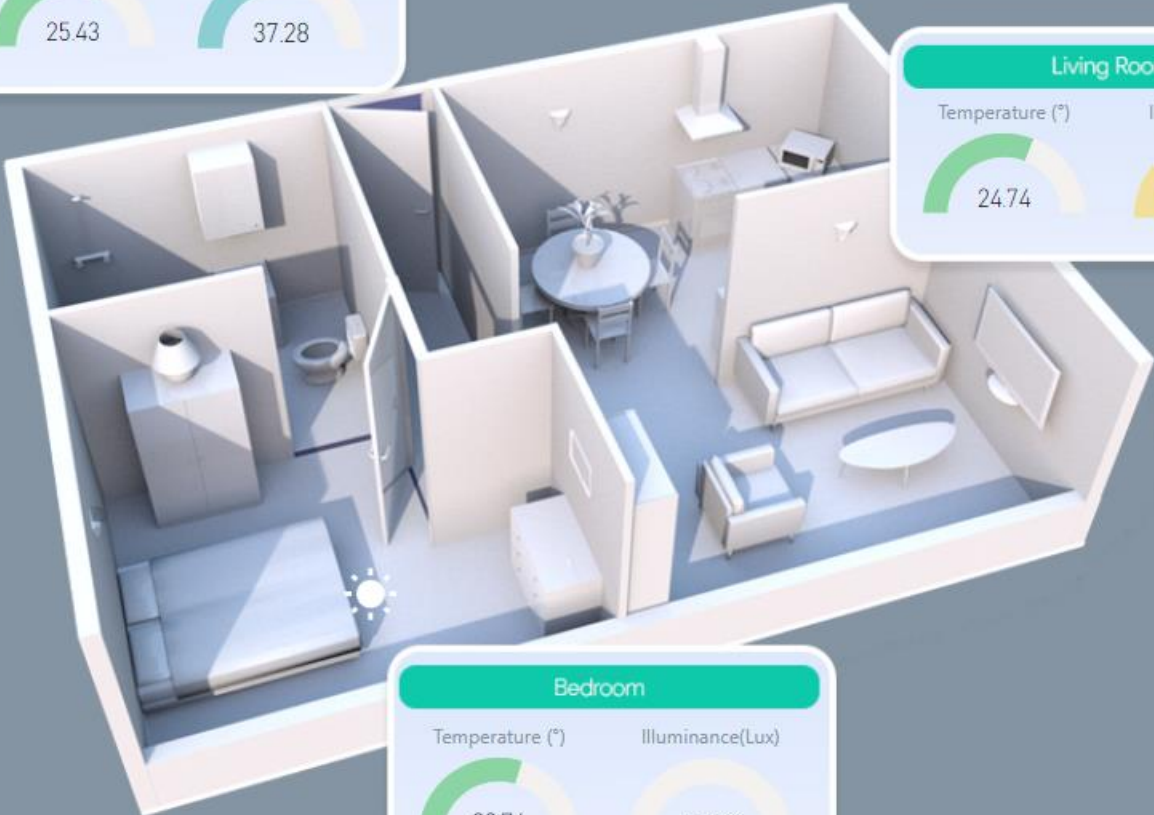
Traffic Flows



Activity



Adult Social Care Assisted Living Dashboard






 Demo-Flat 14 9.7 °

Mostly cloudy




Daily vitals

Based on last detected movement/contact reading

-  Woke at: 00:58:34 Living Room
-  Slept at: 23:36:08 Bedroom
-  Shower:

Connected Devices

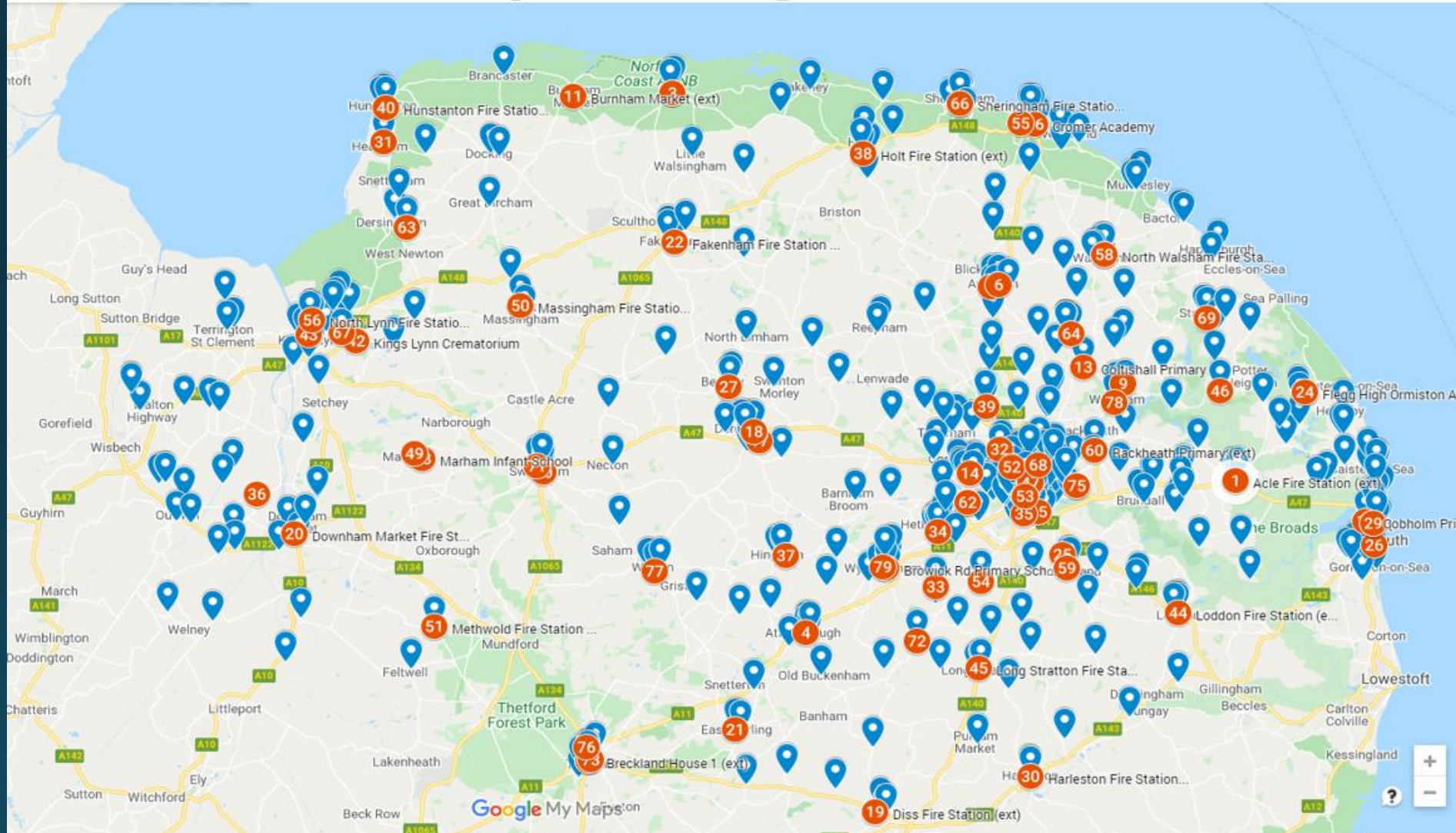
Last recorded usage

 10:59:38	 07:20:34	 02:24:10
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## Norfolk Gateway Coverage





☰ Building Sensor Explorer

Text Filter

- Cromer Library** 1  
Last updated: never >
- Gorleston Library** 1  
Last updated: never >
- Wroxham Library** 1  
Last updated: 3 minutes Ago >
- Sprowston Community ...** 2  
Last updated: 4 minutes Ago >
- Priory House** 1  
Last updated: never >
- Havenbridge House** 1  
Last updated: never >
- Dereham Community H...** 1  
Last updated: never >

Locations: 9



## Sprowston Community Hub

Monitoring 2 Sensors

18.9°C  
Partly sunny

☀️

uniotec-nccproperty-008

13/07/2021, 16:25:36

3.66V 🔋 Battery	62% 💧 Humidity	21.4°C 🌡️ Temperature
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Full Report 📄

Data Services  
PoC Screenshots



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# Focus areas for 2022

Working on developing use cases  
to support wider regional priorities  
& enabling business growth.

**Smart high streets:** digital cities, towns, villages and communities.

**Heath and social care:** supporting social care.

**Environmental:** natural capital, water management (protection/monitoring), net zero.

**Crime and protection:** Rural crime

**Agriculture:** Smart farms

**Hospitality:** incentivising sales; tracking visitors

**Education:** Increase awareness and skills

# Questions and Views of the Committee

- Does the committee agree that the activities currently underway and planned (by NCC, Government and the private sector) strike an appropriate balance between driving digital connectivity improvements and achieving best value for Norfolk taxpayers.
- How often would the committee wish to be updated on progress?
- Would the committee like further information on current, planned or possible additional initiatives at a future meeting.
- Any other comments or questions?



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# Thank you for listening



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