

Bangor's SMART Town Action Plan Reviewed by



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Ariennir gan
Lywodraeth Cymru
Funded by
Welsh Government

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Town / High Street	Bangor
County	Gwynedd
Intended Start Date of SMART project	TBC
Date of Plan	TBC

<p>1. Description of the Town</p> <ul style="list-style-type: none"> • Setting the scene • Provide an overview on innovative activities <p>Bangor is the only city in northwest Wales and has a population of over 18,000 people during term time. Due to the large student population, it is unique in Gwynedd, with its population roughly split evenly between the students and local residents.</p> <p>On the digital side, Bangor is lagging behind. It needs impetus in pushing forward the digital agenda. Other places e.g., Cardigan demonstrate what can be done with a clear vision and committed set of individuals. The need is there from the student community and elsewhere.</p> <p>There are skills and expertise within Bangor University to push this forward e.g., “Bangor University’s Plans to Develop Digital Research Hub Detailed During Senedd Visit” and ensure that the University is working with Gwynedd and Bangor Councils and the business community to help establish Bangor as an innovative digital city.</p> <p>Bangor City Council attempted to lead on this agenda during 2021 and has developed a Bangor App spec that is ‘good to go’ and requires funding. Lack of buy-in and interest from others to date has been an issue, however.</p>

<p>2. Building your SMART Team</p> <ul style="list-style-type: none"> • Who? • Resources? • Experience? <p>Who</p> <p>Businesses – sharing knowledge/best practice Regen Partnership/Community Council</p>

Support from Shared Resource Service (internet/tech/IT)
Knowledge Partnership

Resources

External funding
Regeneration Partnership
Development Trust
Businesses
Gwynedd Council
Bangor Town Council
Pontio
Community Projects

Experience

Experienced in delivery of externally funded regeneration projects
Experienced business owners
Well established third sector support organisation
Trader representatives
Bangor First

3. Collecting Data – Measuring the Health

- What data needs to be measured / recorded and analysed

- City Centre / Shopping
 - Bangor City Council would be very interested in learning about footfall on Bangor Garth Pier. It would be useful to know how many people visit the Pier and associated data. Like the city centre, this will help identify needs and trends, how many people pay, patterns/preferences etc
 - Technology to aid vacant building re-development
 - Monitor students travelling in the upper Bangor area and associated spending habits
 - Capture data on local spend – which businesses / areas of the city attract most customers
 - Discover which car parks within the city are most widely used
 - Monitor car park payments with the aim of encouraging digital payment
 - Discover most common routes into and out of the city
 - Monitor the footfall traffic from the Railway Station – which direction / what routes do people take, are visitors spending within the city
- Green Agenda and Public Safety
 - Bin sensors
 - Air Quality
 - Temperature records to help tackle issues such as frost on footpath and hills within the city
 - Monitoring faulty lighting in and around the city to ensure safety of walkers
 - Display and monitor cyclists’ patterns
- College Park
 - Monitor footfall in and out of the Park including dwelling time
 - Monitor the use of footpaths

- Data as outlined above under the Green Agenda specific to College Park

4. Existing SMART Technologies

- What technologies are in place?

Public Wi-Fi to be installed using Gwynedd Council Street property with anchor network from City Council owned building.

Currently no splash-page.

Deiniol Shopping Centre currently capture footfall data using internal system.

- What data is being collected?

No data collected re: Wi-Fi

Currently footfall data collected via units in the Deiniol Shopping Centre. Menter Mon will installing Cisco Meraki units to provide Public Wi-Fi and collect data on Bangor High Street with two access points installed on the external walls of the Deiniol Shopping Centre. Data collected will be displayed on the website created by Menter Mon, known as Patrwm.

Currently Deiniol Shopping Centre are using an internal footfall counting software for their own purposes. It will be useful to compare the data displayed on the Patrwm website with the Deiniol Centre's data in future.

- What is use being made of the data?

Footfall data used to measure number of shoppers using Deiniol Centre's entrances

Production of a Bangor app, with the intention of sharing the above data with the public. Link to the app could be placed on the Bangor Public Wi-Fi splash page, along with inbuilt loyalty scheme to encourage local spending. App could also generate data such as which areas of Bangor are popular. Such data could also be compared to weather, footfall data etc., captured by Patrwm.

If development plans are carried out in other parts of Bangor apart from the high street, discussions of installing sensors to track footfall have started.

5. Use Case Priority List		
Use Cases	Top 3 (1 being biggest priority; 3 being lowest priority)	Suggestions (to be completed by SMART Towns team)
Location Analytics (Footfall/Dwell time) (Town Technology)	1	<p>Bangor will be receiving Location Analytics through the Wi-Fi installation that Menter Môn are doing on behalf of Cyngor Gwynedd. The installation of the W-Fi system will allow mean that Bangor will be able to monitor footfall on an open-source platform Patwrm.io. Watch our webinar on the Patwrm.io system and how to access the data: https://www.youtube.com/watch?v=eLIFlfrN5A</p> <p>There are other methods of monitoring footfall with the use of various Internet of Things network. However, less data is collected through these sensors as they use radar rather than MAC address analysis. Here is one example that uses LoRaWAN network (https://www.alliot.co.uk/product/parametric-radar-peopleflow-sensor-outdoor/). Menter Môn are also installing a LoRaWAN network in Bangor.</p>
Maintenance of Green Infrastructure	2	<p>Consider using a citizens engagement platform, such as Hello Lamppost to encourage residents and visitors to provide feedback on current green infrastructure. Having a platform like this could also allow you to know if citizens would like more green infrastructure in the town, which could be valuable data to support a funding bid for more green infrastructure.</p> <p>Please feel free to watch for our webinar with Hello LampPost: https://www.youtube.com/watch?v=wOSzig9y2mg</p> <p>Also consider using IoT sensors to monitor soil moisture to ensure that during dry seasons that green infrastructure is maintained sufficiently.</p>
Waste management	1	<p>Internet of Things sensors has been used for waste management in several towns and cities. Gwynedd Council are aware that this technology is available and YOST would be more than happy to arrange an introduction.</p> <p>YOST also recorded a webinar with a company called SENSEi Networks, who provide end-to-end IoT solutions and could</p>

		<p>assist with waste management sensors. Feel free to watch the webinar <i>via</i> this link: https://www.youtube.com/watch?v=O8D2YRjyLO8</p> <p>Lastly, there are several other companies who provide a SMART waste management service including: BrighterBins, Mr Fill and Sensoneo.</p>
Air quality	1	<p>Think Air is a company based in Wales that specialize in air quality technology, which is accessible, affordable, and easy to understand. Superfast Business Wales produced an article on Think Air which can be accessed here: https://businesswales.gov.wales/superfastbusinesswales/case-studies/improving-air-quality-across-wales-iot</p> <p>Monitoring indoor air quality has become more important since the COVID-19 pandemic, thus having sensor in key building in the town, could give citizens the confidence needed to return to the high street.</p> <p>Outdoor air quality can be used as evidence to support decarbonization initiatives, such as Active Travel projects which promotes a Healthier Wales.</p>
Parking	1	<p>YOST are planning to host a webinar with a SMART Parking solution company, AppyWay. This is one company that offers a SMART solution for parking, however, another company called SMART parking has deployed their technology in Cardiff, case study can be accessed here: Cardiff SMART Parking case study</p>
Crowd management	2	<p>Consider looking at a project called 'How Busy is Toon', which is project based in Newcastle that provides an insight into how busy the city is.</p> <p>The project has a very helpful onboarding guide that can be accessed on their website <i>via</i> this link: https://urbanobservatory.github.io/howbusyistoon/</p>
Wayfinding	2	<p>A free and open to use audio technology called Microsoft Soundscape can be piloted in your town. It uses audio cues to help guide people in your area. The technology uses Open Street Map which allows the town community to upload and edit some of the locations, such as new businesses. Microsoft Soundscape presented at one of our webinars, and would welcome enquiries: https://youtu.be/bTGyF7_jRIQ</p> <p>Digital screen is another option to support wayfinding in towns. Examples of such screen include the Pulse SMART Hub which was mentioned in the YOST, 'Become a SMART Town' workshop. We are looking to host a webinar with this company in the future.</p>

Anti-social behaviour	1	Internet of Things people counters and a noise sensors in combination can be used together to be an indicator of anti-social behaviour. For example, in an area that is vulnerable to anti-social behaviour and alert could be sent to the local police department when 4+ people exceed noise levels of 90dB.
Flood monitoring	2	Floods is another problem in many rural areas of Wales that the Internet of Things sensors can be used to support flood monitoring. For example, consider looking into rain sensors to collect local data on annual rain patterns. Furthermore, in areas vulnerable to flooding, sensors to measure fluid levels could be installed to monitor under bridges or wells to assess relationship between rainfall and water levels.
Workspace management	2	Towns and cities are increasingly investing in having co-working spaces. If this is something that Llandysul might be considering for the future of the town, consider looking into applications such as District Technology as a workspace management tool. Earlier this year, YOST recorded a webinar with this company that can be accessed following this link: https://district-tech.com/
Tourism trails	2	A North East Wales Digital Trails app is currently active in Denbighshire, Wrexham, and Flintshire. Once the app is downloaded, visitors will receive push notifications when pacing key locations of the trail, such as historic landmarks.
Local economy	1	Consider developing the local voucher scheme digitally. Companies such as MICONEX produce digital local Gift Cards that can only be spent in the local area. Every time a local Gift Card is bought or used, data on local spend is generated. Alternatively, this data can also be capture by using digital Loyalty Schemes such as: <ul style="list-style-type: none"> • Reward-it • Local Rewards by Maybe* • MI-Reward by MICONEX It is also possible to use digital Loyalty Scheme to gather data on where and when money is being spent in the town. Watch a webinar with recorded with MiCONEX where Gift Cards and Loyalty Schemes gets discussed: https://www.youtube.com/watch?v=eahs8PIPqRs
Urban traffic monitoring	1	Vivacity Lab have been helping communities to analyse pedestrian, cyclist, and traffic flows, in order to optimise their networks with regards to the implementation of schemes such as Active Travel, Low Traffic Neighbourhoods, High Street Regeneration and School and Streets programmes.

	<p>YOST hosted a webinar on this technology that can be viewed via this link: https://www.youtube.com/watch?v=i1jQBf2KhoQ</p> <p>YOST will also be putting together a case study some towns in Wales that is already making use of this technology.</p>
Other technology/data/use cases (please explain):	

6. SMART Town Action Plan Tasks		
Intended Start Date of SMART project		
Action	Timescale	By Whom
Develop Bangor app		Bangor University
Develop Digital Research Hub Detailed During Senedd Visit		Bangor University
Establishing partnerships		Save Our City – Sub Group
Analysing Data		Save Our City – Sub Group
Identifying projects out of data		Save Our City – Sub Group Including Gwynedd Council Regeneration Team and Bangor University
Install Wi-Fi and LoRaWAN Network	Winter/Spring 2022	Menter Môn
Create free splash page for town Wi-Fi	Winter/Spring 2022	Menter Môn

ADDITIONAL SUPPORT NEEDED (TICK BOX)

What additional resource do you need to support your SMART Town project

Resource (✓)			
x	Wi-fi Terms & conditions example	x	Wi-fi Installation Agreement example

x	Data protection Impact Assessment example	x	Wi-fi privacy policy example
x	Meraki Wi-fi Guidebook	x	Comprehensive Action Plan template
	Other (fill in the box below)		

7. SMART Town Action Plan Review (to be completed by SMART Towns team)

Firstly, the SMART Towns team want to thank Bangor for completing a SMART Action Plan for their City. We consider this to be the first step to making your city SMART. In this Action Plan, the team has provided feedback and provided guidance wherever possible (all the comments are in **red**).

Here is a summary of our comments and support.

Our first suggestion would be to encourage active groups in the town, such as a business group, town council and/or community group to discuss forming a SMART Towns group to drive the initiative forward in the town. Once a group has been formed, roles can be assigned to turn the data into information and provide insight, distribute this information monthly maybe to the business community members plus local government and town council. Ensure a frequent reporting and also report back to stakeholders on the impact of events for dwell and footfall to show things are working

Consider installing Internet of Things sensors network for future use of sensors for monitoring and alerting in the town.

- If you plan to create a LoRaWAN/IoT infrastructure to monitor weather and parking, then you need to consider your LoRaWAN network coverage. This network is supported by LoRaWAN Gateways. For information of your current LoRaWAN coverage visit: <https://ttnmapper.org/>
- To use LoRaWAN sensors you will also need to create a dashboard for capturing LoraWAN IoT sensors – look at Tago lot as an example [Cloud IoT Platform | Internet of Things - TagoIO](#)

Here are some specific suggestions in addition to the ones mentioned in the SMART use case table:
Temperature and humidity example:

- <https://www.alliot.co.uk/products/sensors/environment-sensors/netvox-r712/>

Parking sensors

- <https://www.alliot.co.uk/products/sensors/parking-management-sensors/bosch-lorawan-parking-sensor/>

Bin sensors

<https://www.brighterbins.com/request-a-sample> (set-up instruction video: [watch here](#))

To get on the ground information on what could benefit the town in those empty premises, consider using of [Hello Lamppost](#) to gather people’s views to support the vinyls in vacant buildings. Potentially, Pontypool could take this a stage further or use a slightly different approach, by looking into [Grand Bequest Historical Real Estate Platform](#). A digital marketplace for vacant buildings to be redeveloped and put back into use. They are currently looking for areas to trial their platform. Furthermore, YOST have recorded a webinar that can be watched *via* this link: <https://www.youtube.com/watch?v=Mer7SewCTdw>

With footfall, dwell time and repeat visitor data being collected for Pontypool, consider using a digital Loyalty platform such as [Mi-REWARDS](#) (by [MICONEX](#)) to provide valuable insights into spend patterns that can be compared against town footfall data sets. Additionally, this platform could also



encourage local spend, by creating monthly prize draws for customers who registered with the platform. For more information on this, YOST recorded a webinar that can be accessed via this link: <https://www.youtube.com/watch?v=eahs8PIPqRs>

A task for the business group – look into what use is being made across the towns businesses for social media. [Maybe*](#), is a technology company that offers a set of social media engagement and insight tools. We are currently trialling technology in another town in Wales and are looking to produce a report that can be shared. If this is something that you are interested in, feel free to watch a webinar YOST produced with the company:

https://www.youtube.com/watch?v=gdVO99T2nCQ&list=PLSamvMtOI0QvEQKe_XnsRXRvtzWYUgFU9&index=16

Resources and skills are sometimes a barrier that many towns have addressed in their SMART Action Plans. We advise that you create a survey to what skills members of the SMART Town Action Team have and what training is needed. Here is access to a range of digital skills training resources:

- [Digital Skills - Microsoft UK](#)
- [Learn Digital Skills with Free Training - Google Digital Garage](#)
- [IBM Skills - Free Events, Courses and Training Programs](#)
- <https://www.digitalcommunities.gov.wales/>
- <https://businesswales.gov.wales/superfastbusinesswales/>
- <https://businesswales.marketinginfohub.co.uk/topic-overview/branding>

Thank you for engaging with the 'Year of SMART Towns' project. Please feel free to contact us directly with any question, and we will try our best to support you.

✉ smarttowns@mentermon.com