PLYMOUTH CLIMATE EMERGENCY ACTION PLAN 2022

Next Steps Towards Net Zero in 2030

Plan 3 of 11
January 2022

I have great pleasure in introducing the third Climate Emergency Action Plan in response to our declaration of a climate emergency in March 2019.

I am determined that we focus on actions and not words. We have put in place measurable actions which will move us towards our ambition for net zero by 2030. With the impact of the pandemic and the funding constraints we are having to work within, we are nevertheless determined to achieve meaningful results on the ground.

We know we can't respond to the climate challenge on our own as a City Council. We will continue to work with partners, with local people and communities and with the government to do as much as we can. We also want to share good practice working with other local authorities. We know all too well that a failure to act will be a failure of leadership and will be catastrophic for our planet. We also know the cost of not acting now will put an even greater financial burden on future generations if we do nothing.

I am therefore determined that Plymouth will be on the right side of history when it comes to action on climate change and therefore look forward to continuing to work with the Plymouth Net Zero Partnership on a range of actions and initiatives to decarbonise key sectors.

Maddi Bridgeman
Cabinet Member for Environment and Street Scene, Plymouth City Council

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Everyone plays their part
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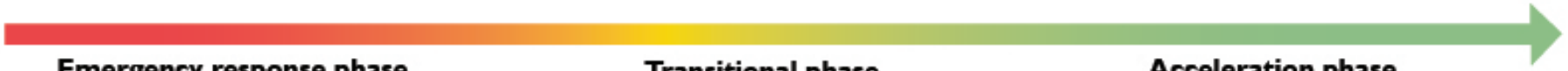
Journey towards net zero carbon



Emergency response phase 2019-21	Transitional phase 2021-23	Acceleration phase 2023-30
Emergency response phase focus Continuation of work that is effective at reducing carbon emissions. Inspire local action by focusing on projects that are quick to initiate and deliver proven carbon reduction outcomes. Analyse and assess where information, resources and policy changes are needed to support the move towards zero carbon, and initiate lobbying to secure the powers and resources needed. City collectively sets out vision for how Plymouth will function in a zero carbon world.	**Transitional phase focus** Ramping up delivery of projects that deliver significant carbon reduction, including building retrofits, new low carbon energy generation and changes to mobility infrastructure. Complete full scenario testing of options for achieving zero carbon. Identifying and prioritising actions. Embedding new ways of working. Continuing to lobby government for powers and resources to enable us to meet our aim. City collectively moves towards zero carbon living with everyone playing their part.	**Acceleration phase focus** All actions required to enable us to reach our zero carbon target are identified and are being implemented. All new projects and developments in Plymouth are being delivered in a manner that will ensure that they are zero carbon by 2030. Zero carbon working practices are fully embedded as business as usual. Plymouth is thriving, with a zero carbon focused approach to growth and quality of life.

FOCUS

The following sections provide an overview of actions that will be implemented by the Council in 2022 to tackle the climate emergency. Once again, the focus is very much on credible and deliverable activities within those sectors that are responsible for the majority of emissions.

- BUILDINGS
- MOBILITY
- POWER AND HEAT
- WASTE
- ENGAGEMENT AND RESPONSIBILTY

BUILDINGS

Along with transport, the city's buildings continue to be the greatest producer of emissions - and though the trend for emissions is a slight reduction, there is huge way to go to reach net zero.

The Government continue to stress this with the release of several funding streams aimed at retrofitting both domestic and public sector buildings. The Council has been successful in obtaining funds from these, though significant additional funding is vital in order to achieve the scale of retrofits required in the city to meet the 2030 target.

BUILDINGS Actions

The buildings sector provides an opportunity for local action to make a real impact on carbon emissions. The range of actions that can help achieve this is vast, as are the co-benefits that come with retrofitting – including benefits to the local economy and employment market, improved living conditions and health and wellbeing, reduction in energy cost and fuel poverty. The scope of building actions in this year's plan is wide ranging and covers policy, new build, retrofit and engagement – all of which are essential if we are to provide a robust response to the decarbonisation of buildings.

3.1 Commence delivery of Phase 3 of the Green Homes Programme by improving the energy efficiency of over 150 homes by 2023.

3.2 The University of Plymouth will continue to work towards net zero emissions (scope 1 and 2) by 2025 and deliver fuel and power conversion to renewables through onsite photovoltaic and heat pump installations.

3.3 The University of Plymouth will continue to deliver energy reduction projects (and work towards reducing mains grid electricity use by 20% and mains gas by 25% as a minimum by 2030 from 2005/06 levels) including: remaining LED lighting conversion projects; smart building management system upgrades for advanced controls; transformer replacements; big data project, using data driven analytics to reduce energy use.

3.4 University Hospital Plymouth will work towards reducing the Trust's carbon footprint by 20% by 2025 and reaching Net Zero Carbon by 2030.

3.5 University Hospital Plymouth will work towards achieving a 10% net biodiversity gain by 2025.

3.6 Plymouth Marjon to complete the roll out of ground source heat pumps in 44 of their student accommodation units and education buildings, saving 600 tonnes of CO_2 per year when up and running in March 2022.

3.7 Commission a biodiversity report in order to set targets and measure improvements to biodiversity on the Plymouth Marjon Campus.

3.8 Secure planning permission for a flagship Energiesprong low carbon housing development on land at Kings Tamerton and commence on-site infrastructure works.

3.9 Identify further housing sites in the city which could deliver exemplar low and zero carbon housing as part of the Eco Homes Programme.

3.10 Work with the University Sustainable Earth Institute to develop a guide for developers highlighting the benefits of green walls and roofs in new housing developments and seek to ensure these are provided for in future housing schemes.

3.11 Engage with Western Power to establish existing grid capacity and understand the impact of new development. Explore smart approaches that would reduce the impact of new developments on the electricity grid.

3.12 Work with the Plymouth Net Zero Partnership to investigate innovations in decarbonising buildings.

3.13 Working with Plymouth Energy Community, Plymouth Community Homes and Live West, investigate opportunities to deliver EnergieSprong household retrofits in partnership with Homes England.

3.14 Work closely with UK Green Building Council (UKGBC), review and where relevant join its low carbon campaigns and low carbon learning opportunities.

3.15 Lobby government to provide funding support to registered providers, house builders and developers in areas of comparably lower house values like Plymouth, to meet the additional development costs of achieving net zero housing.

3.16 Work with Local Authority Building Control to interrogate the detail of Future Homes Standards and Future Buildings Standards once they are published and lobby government for improvements where standards are considered not ambitious enough to meet the 2030 net zero commitment.

3.17 Provide advice (with Plymouth Energy Community) to in excess of 200 landlords from the private rented sector on how they can improve the energy rating of their properties.

3.18 Work with social housing providers to apply for funding from the Social Housing Decarbonisation Fund, to lower the carbon emissions, reduce fuel bills and improve the comfort and health of over 100 households in the city.

3.19 Implement an accessible web-based home assessment tool working with Plymouth Energy Community to help residents establish their eligibility for funding of energy saving upgrades by 2022.

3.20 Provide a digital resource for households to provide information on the viability of heat pumps retrofits for a range of typical housing types in Plymouth by 2022.

3.21 Continue the delivery of surface water drainage improvements in Central Park to reduce the risk of flooding in Central Park and Central Park Avenue.

3.22 Commence delivery of surface water storage and Landscape Masterplanning in Trefusis Park to better protect properties in Lipson Vale and Bernice Terrace and improve park amenity and ecological value.

3.23 Commence work to extend tidal flood defences at Arnold's Point along the Embankment up to the rail bridge.

3.24 Commence the delivery of improvements to protect the causeway, public footpath and tidal creek ecology at Ernesettle Creek.

CASE STUDY

Community-led low carbon homes

Plymouth Energy Community (PEC) has partnered with Plymouth City Council for its first community-led housing project, which is a scheme of up to 70 affordable net zero homes on council-owned land in Kings Tamerton. By creating genuinely affordable, healthy homes in the heart of Plymouth, our community can be part of the solution to tackle fuel poverty and climate change. To achieve its aim, PEC set up PEC Homes and intends to use an innovative approach to the procurement, design, build and monitoring of these high-performance homes. This is referred to as the Energiesprong approach. The Kings Tamerton site would be the first Energiesprong new build scheme in the country.

What is 'Energiesprong'?

Energiesprong (Dutch for 'Energy Leap') isn't a commercial product or brand. It is an approach to housing that guarantees homes will be warm and affordable to heat and power. These net zero energy homes will produce as much renewable energy as they consume over the course of a year, making the most of every opportunity to generate renewable power, and also to use it efficiently. The energy efficiency of the properties will result in lower fuel costs for residents. The project at Kings Tamerton is going through the planning process and can be reviewed on the Council's planning page.

CASE STUDY

Construction begins on innovative CobBauge research building

The University of Plymouth is also using its estate to further research, with construction underway of the first building in the country to be made from an upgraded version of the centuries-old material of cob.

The single-storey building will act as a classroom and laboratory with researchers monitoring the performance of the new walling material, as well as demonstrating it to future building designers, contractors, housing associations and interested stakeholders.

With planning permission secured, construction of the 32-square-metre building, located next door to the University's Sustainability Hub, began in August 2021. It is expected to take around eight months to complete, with the work being carried out by Paul Barclay and Chris Noakes (Eco-Construction) and the University's Estates team.

Further information and pictures can be found at https://www.plymouth.ac.uk/news/construction-begins-on-innovative-cobbauge-research-building

UNIVERSITY OF PLYMOUTH

CASE STUDY

Reduction in anaesthetic gas carbon emissions at Derriford Hospital

University Hospitals Plymouth NHS Trust (UHP) is working with SageTech Medical (based in Devon) to undertake a pilot study in our theatres to capture, extract and purify exhaled waste anaesthetic gases. Capturing these gases, as opposed to venting directly into the atmosphere, significantly reduces their environmental impact and has the potential to minimise the clinical impacts of global warming and improve theatre efficiency. In 2018, the annual release of anaesthetics gases were equivalent to 1,109 tonnes of CO_2e. It is estimated that we could prevent 70% of this release through the use of this new technology e.g. 776 tonnes of CO_2e.

This innovation is a global first. SageTech have developed an extraction machine to remove the captured gases and collect them as a liquid, which will then be separated and purified. The 18-month purification process has been agreed by the Medicines and Healthcare product Regulatory Agency (MHRA) in theory and in laboratory scale demonstration. This pilot is part of a process agreed with the MHRA to ensure that the recycled products are safe for reuse.

The trial in theatres is due to commence in the Autumn/Winter 2021.

NHS
University Hospitals Plymouth
NHS Trust

CASE STUDY

Marjon Zero

Marjon Zero is an exciting visionary project to make Marjon University one of the greenest in the country and to do our bit to protect the planet. We are committed to zero carbon by 2030.

Phase one of Marjon Zero is already complete. We installed approximately 2,000 solar panels saving 300 tonnes of carbon per year (tonnes CO_2e). In phase one we also switched our lighting to energy efficient LEDs and installed five electric vehicle charging stations.

Phase two of Marjon Zero is underway. We now are installing 120 bore holes as part of our ground source heat pumps project which will save 617 tonnes of carbon per year (tonnes CO_2e).

This project is ground-breaking, with Marjon being the first University to implement a ground source heat pump project of this size, meaning Marjon, its community and the surrounding areas are at the forefront of new sustainability initiatives in the race to net-zero carbon. The project is enabled by grants from the Public Sector Decarbonisation Scheme, to the value of £1.8m for solar panels and £3.5m for ground source heat pumps. In future phases of the Marjon Zero project, we will go on to retrofit current buildings and make our campus a greener space by expanding our green social spaces and the biodiversity around campus.

PLYMOUTH MARJON UNIVERSITY

CASE STUDY

Low carbon development at University of Plymouth

The University of Plymouth is currently in the construction phase of two major projects: the creation of an iconic new engineering and design facility on its main campus; and the redevelopment and refurbishment of the former Intercity House, at Plymouth Railway Station, to create Intercity Place, a new centre for students in the Faculty of Health. Both are examples of ultra-low carbon design that reuse the existing concrete frame to reduce waste and generation of embodied carbon. Both are also set to include enhanced building controls to ensure efficiency in operation of heating and ventilation and other building services, as well as renewable technology and a focus on sustainable material use.

The buildings are being converted to electric heating and cooling, powered by a renewable electricity tariff and onsite photovoltaics, decarbonising energy in use. For the new engineering and design facility, this will see the first building on campus to be disconnected from the University's gas-fed Combined Heat and Power (CHP) heat network, providing the catalyst to start the conversion of this network to an electrically-powered, low-temperature, ambient loop system. The buildings are expected to be completed by summer 2023.

UNIVERSITY OF PLYMOUTH

MOBILITY

The transport sector is accountable for 30% of the city's total emissions and is an area which requires a major change in public behaviour if we are to achieve our 2030 target.

There is a requirement to rapidly increase the rate at which emissions are reduced based on current trends. Electric vehicles and charging points hold the key to the transformation of mobility.

Net zero essentially requires all cars and vans driving in Plymouth to be electric and the provision of the corresponding charging infrastructure. At the end of 2021, there were 283 electric vehicles registered in Plymouth. Reducing emissions from larger commercial vehicles and HGVs also needs to be considered.

MOBILITY Actions

The need to accelerate the rate of reduction from transport emissions is well reflected by the scale and scope of actions included in this year's plan. Increasing the sustainable travel options available for the city is a thread which links all the following mobility actions. Supported by the Transforming Cities Fund, 2022 will continue to see design and installation work commence on several key sites in the city. These improvements will be made alongside expanding the charging infrastructure for electric vehicles in the city, and removing barriers to allow people to walk and cycle.

3.25 Complete the Southway to Plymbridge walking and cycling scheme.

3.26 Complete the continuation of the off-road Eastern Corridor walking and cycling route to Colesdown Hill.

3.27 Complete construction of the Derriford Community Park cycle paths.

3.28 Commence the delivery of the Coronation Avenue Scheme to promote walking and cycling within Central Park.

3.29 Continue work on the Dockyard to City and St Budeaux to Docks cycle schemes.

3.30 Continue development of St Budeaux Station's Sustainable Transport Interchange.

3.31 Commence delivery of the Woolwell to the George Transport Improvement Scheme, which will deliver an extension to segregated walking and cycling facilities along Plymouth's Northern Corridor.

3.32 Continue development of transport improvements along Royal Parade to enhance sustainable transport in the city centre and commence construction of preferred design.

3.33 Continue development of transport improvements on Mayflower Street that will create more space for waiting passengers and arriving buses using both Royal Parade and Mayflower Street and commence construction of preferred design.

3.34 Commence construction of the St Budeaux to Crownhill sustainable transport corridor.

3.35 Commence construction of the Transforming Cities flagship Mobility Hubs, which will offer a low carbon multi-modal network for travel throughout Plymouth.

3.36 Continue development of the Plymouth Station access project to promote low-carbon forms of transport and facilitate pedestrian access between the station, the university and the city centre.

3.37 Continue to roll out the Healthy Streets Assessments of selected city centre streets to promote better integration of public health, transport and planning in the design of streets to make them more people focussed.

3.38 Complete the Old Town Street/New George Street public realm scheme, creating high quality walking and cycling routes through the city centre to facilitate a higher proportion of journeys by sustainable modes.

3.39 Commence construction of the Civic Square public realm scheme, creating high quality walking and cycling routes through the city centre.

3.40 Complete design work on the Armada Way public realm scheme, creating more opportunities for walking and cycling routes through the city centre.

3.41 Continue to expand the Local Cycling and Walking Implementation Plan by another 5 routes.

3.42 Undertake a car free day to support residents to walk, cycle and use public transport, rather than the car, for regular journeys they make.

3.43 Continue to support up to 30 local businesses to develop facilities for active travel through Workplace Travel Grants.

3.44 Continue to bid for Department for Transport funds to deliver active travel schemes.

3.45 Deliver tranche 3 of the Active Travel Fund to provide additional high quality walking and cycling facilities at up 10 locations in the city, delivering improved pedestrian and cycle crossings and routes.

3.46 Deliver a feasibility study on how the Plymouth Health Sector can link to the Council's wider walking and cycling programmes through a social prescription programme.

3.47 Secure Mini Holland project funding in order to deliver a feasibility study considering how Plymouth Communities can be designed to facilitate greater levels of walking and cycling and less reliance on the private car.

3.48 In response to the National Bus Strategy, develop a Bus Service Improvement Plan and form an Enhanced Partnership with public transport providers to include targets to substantially increase public transport patronage and bus reliability.

3.49 As part of the Bus Service Improvement Plan, give consideration to the role of existing Park & Ride facilities as a means of encouraging mode switch to public transport for part of the journey.

3.50 Complete the development of Morlaix Drive to provide better bus access to Derriford Hospital, improving service reliability.

3.51 Submit the Bus Service Improvement Plan which will include a bid for a share of Government funding set aside for the purchase by local bus operators of zero emission buses, including the purchase of electric mini buses to support Access Plymouth demand responsive services.

3.52 Continue to input into the Decarbonising Strategy of Peninsula Transport which will require an assessment of scenarios for transitioning to low carbon and Net- Zero mobility futures, including a phased plan outlining the steps required to achieve transition either through reducing miles travelled by motorised vehicles or reducing carbon emitted per mile travelled.

3.53 In partnership with Network Rail discuss the feasibility for investing in creating more opportunities for rail freight delivery to and from the city.

3.54 Contribute to the Peninsula Transport Regional Rail and Freight Strategy, to develop a plan for more efficient distribution of goods across the region.

3.55 Engage with taxi drivers to understand the barriers to the adoption of electric vehicles and develop a programme of support and promotion.

3.56 Deliver further charging infrastructure for electric powered boats.

3.57 Lobby government to consider fiscal incentives to support home and flexible working for businesses in the city.

3.58 Lobby government to increase the proportion of Department of Transport capital funding delegated to local authorities.

3.59 Lobby government to review vehicle exercise duty in order to encourage a switch to sustainable transport modes.

3.60 Review the government's Transport Decarbonisation Plan and identify opportunities in Plymouth for future climate emergency initiatives and actions.

3.61 Continue to liaise with the Plymouth Cycling Campaign to ensure the experiences for cyclists in the city are improved.

3.62 Publish an Electric Vehicle Chargers Inclusion and Accessibility Design Guide to raise the standard and consistency of facilities in the city.

3.63 Work with the Plymouth Net Zero Partnership to investigate innovations in fleet technologies.

3.64 Work with the University of Exeter and the University of Plymouth Sustainable Earth Institute to identify opportunities for research into clean transport technology.

CASE STUDY

Devon & Cornwall Police

On 15 March 2021 our Chief Constable, Shaun Sawyer, launched Devon & Cornwall Police's vision of 'World Class Sustainable Policing', which is underpinned by three key principles, one of which is a commitment to the UN Sustainability Goals.

To realise our vision, and in support of the UK Government's commitment to make the G7 Summit a carbon neutral event, we commissioned the Centre for Energy and the Environment (CEE) at the University of Exeter to estimate the greenhouse gas emissions that may arise from policing the event, which were then mitigated through Gold Standard offsets purchased by the Cabinet Office.

We are also piloting electric police vehicles at our Exeter Police station and are currently developing our force's sustainability strategy and decarbonisation plan, which we hope to launch soon. We are committed to creating a legacy we can be proud of.

Devon & Cornwall POLICE

CASE STUDY

EXOcell, Plymouth City Bus

Plymouth City Bus are trialling technology known as an EXOcell developed by Atmos-Clear Limited © on 5 vehicles, with the aim of reducing the production of toxic emissions from engines.

The system works by adding hydrolysed gas to the regular fuel/air mixture. The result is a faster, cooler fuel burn which eliminates almost all waste gases produced. Different cell sizes can be used for various vehicles, all the way from those with small engines to larger commercial vehicles.

This technology will enable us to reduce the emissions of our current diesel and petrol vehicles immediately whilst we prepare for a switch to affordable and effective alternative fuels and vehicles when they become available.

CASE STUDY

Cycling in Plymouth

Active travel is good for you and good for the planet. Not only will it boost your mental and physical health, if you replace car journeys it will reduce your greenhouse gas emissions. Road transport is responsible for over a quarter (28%) of Plymouth's total greenhouse gas emissions. Switching to active travel modes, even for some of our journeys, is one of the most immediate and accessible ways to address this.

In order to make cycling an accessible, attractive and safe option for all, Plymouth City Council and its partners are making improvements to the network of walking and cycling routes linking Plymouth's neighbourhoods.

We are constantly working to secure funding that will enable us to make improvements to our active travel network. In 2020, we delivered the following schemes:

- Southway Drive
- Stoke Damerel College to Ponsonby Road
- Broxton Drive to Saltram Meadow

Southway Drive

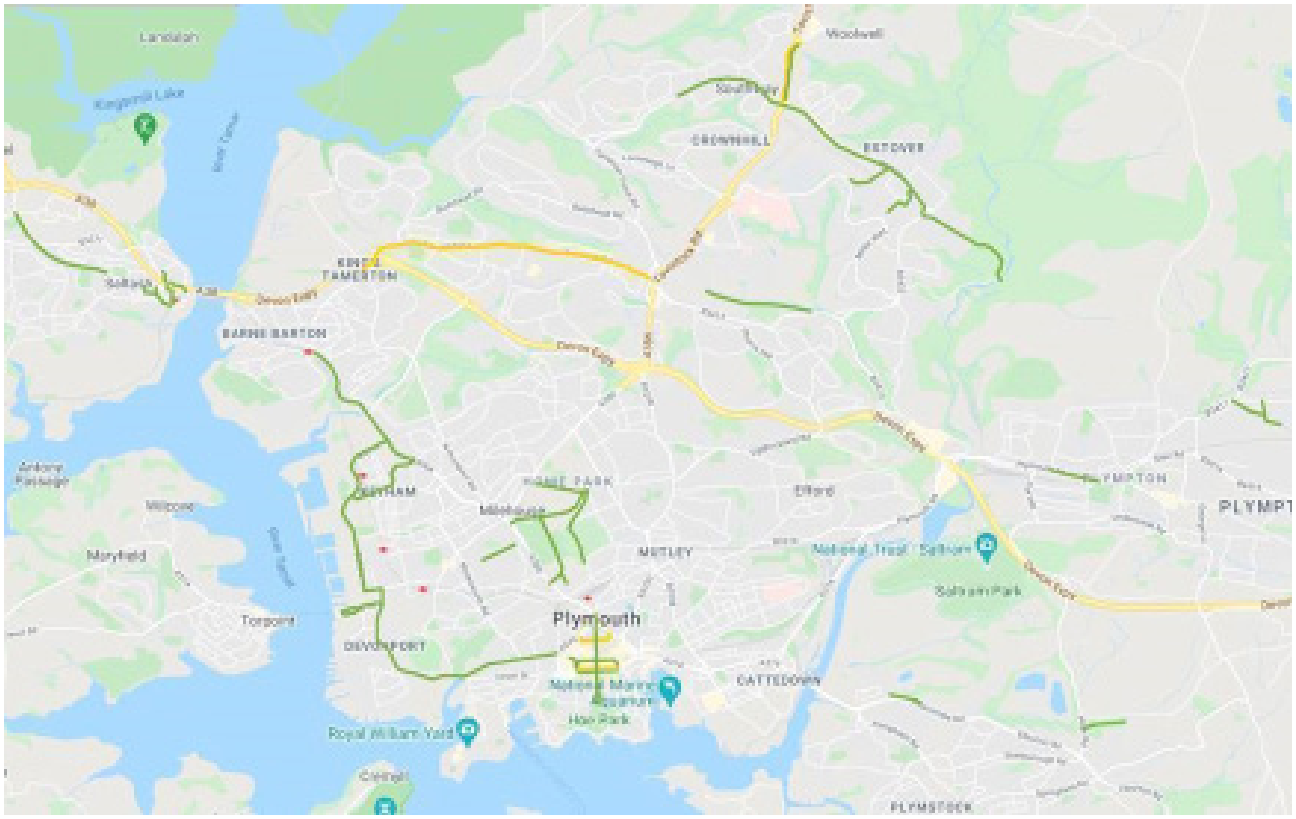
People that are not confident to cycle with general traffic are now able to avoid the road, after a length of footway along Southway Drive and Southway Lane was widened and resurfaced to provide a traffic-free route. A number of crossings for pedestrians and cyclists at side roads were also improved, and tactile paving added to help improve safety for people with visual impairments. Two well used paths connecting Plymbridge Road with Miller Way were also widened and resurfaced.

Stoke Damerel College to Ponsonby Road

We improved the path running between Somerset Place and Ponsonby Road in Milehouse. New lighting was installed and the path was realigned, resurfaced and widened to make the route far safer and more attractive to walk and cycle to Central Park and the Life Centre from Stoke and the surrounding area. Since the works were completed usage of the path has increased by 124% (the comparison is between 2013 and 2020 survey data).

Broxton Drive to Saltram Meadow

The Broxton Drive to Saltram Meadow scheme continues the high quality, traffic-free walking and cycling route alongside Billacombe Road. This brand-new route for pedestrians, cyclists, wheelchair and mobility scooter users, was completed in June 2021. A second phase of this scheme, ensuring a safe and attractive continuation of the route on Colesdown Hill, is planned to begin in 2022. The longer term proposal is to extend the path further east to Colesdown Hill and beyond to link in with Elburton Road and the Sherford development; so providing a safe, and healthy, travel alternative and reducing congestion and air pollution on the A379 and elsewhere.



As a Council we're committed to walking and cycling and further improvements are planned. The map shows the cycle routes (in green) that either have been, or are, being delivered through the Transforming Cities Fund programme by 2023.

However, our walking and cycling programme goes beyond the provision of new infrastructure. Alongside the investment in new routes we're also giving people the skills and experience they need to get out and about on foot and by bike in Plymouth through our Plymotion programme.

Plymotion offers adult cycle training, led rides, bike maintenance courses, along with personalised travel advice. Qualified instructors can even cycle with people on routes individuals would like to try – all for free.

Between 2017 and 2020, through the programme:

- 1,270 hours of free adult cycle training were provided
- 1,781 people participated in led cycle rides
- 17 customers received adaptive bike training
- 47 bike maintenance workshops were held
- 144 people were trained in bicycle maintenance
- 29 cargo bike loans took place

This programme is having an impact and Department for Transport figures show that cycling has doubled in the past decade in Plymouth. Please visit www.plymouth.gov.uk/plymotion to find out more and start your active travel journey.

POWER AND HEAT

Power and heat includes emissions resulting from electricity usage and emissions resulting from providing heat to buildings.

Nationally, emissions from power generation have continued to fall as the percentage of renewable energy contributing to the national grid increases. Last year renewable energy (including biogas) provided 43% of the power the UK consumed.

POWER AND HEAT Actions

Local solutions to decarbonise heat are crucial if we are to meet our 2030 target. The following heat and power actions are a reflection of this, highlighting areas that are already at an advanced stage, as well as more innovative solutions that require further development. Successful funding applications will enable a low carbon heat network to commence, whilst our partnership work with Western Power will ensure grid capacity to keep our buildings warm.

3.65 Progress proposals to connect Civic Centre to the city centre low carbon heat network.

3.66 Assess the feasibility of marine source heat pumps at various sites around Plymouth.

3.67 Assess the feasibility of heat networks in Barne Barton and Derriford.

3.68 Test the yield from ground source wells in Millbay to provide low carbon heat.

3.69 Secure planning permission for a Community Solar Farm at Chelson Meadow in partnership with Plymouth Energy Community (PEC), with a view to deliver a 13.2MW array.

CASE STUDY

Chelson Meadow solar farm

Plymouth Energy Community (PEC) is working with Plymouth City Council to develop a solar farm. The solar project will be located on the old landfill site at Chelson Meadow. The site will be the size of 24 football pitches, three times bigger than the 4MW Ernesettle solar farm, owned by PEC. With support from a government grant, PEC have now completed feasibility studies that show the project could generate enough renewable electricity to power 3,860 homes, save 3,330 tonnes of carbon each year and provide a 10% improvement in biodiversity.

The project will maximise the local economic benefits of the investment and ensure any surpluses are invested into other local projects that respond to climate change.

3,860
homes powered each year

14,284 MWh
renewable energy produced each year

3,330
tonnes of carbon saved each year

9
full time jobs

£3.5 million
for local projects over 30 years

10%
improvement in biodiversity

WASTE

The Climate Change Committee's Sixth Carbon budget suggests that 80% of the UK's CO_2 reduction in the waste sector to 2035 should be achieved through waste prevention, increased recycling and banning biodegradable waste from landfill.

This will require a huge increase in recycling rates across the city, as well as large scale behaviour change.

The Environment Act 2021 has the potential to have a big impact on how local authorities deal with waste. That said, carbon emissions resulting from waste are still some of the most difficult to calculate, and subsequently some of the most difficult to mitigate through action. The basic principle of Reduce, Re-use, Recycle within the waste hierarchy has been consistently adopted across the city and this year's resulting actions continue to follow that theme. Alongside increasing recycling rates, actions also look at targeted waste audits to further understand how residents utilise the waste collection service.

3.70 Research waste reduction and barriers to recycling in Plymouth using community feedback and service data to inform a new campaign on waste reduction and recycling to improve the quality and quantity of Plymouth's household recycling.

3.71 Improve waste collection route planning to reduce failure demand by optimising the use of national and local data.

3.72 Continue to work with partners to ensure that, where practical and economical, recyclable material is processed and recycled in the UK – with a preference for the South West peninsula.

3.73 Work with the Government to evaluate the 2018 Resource and Waste Strategy and 2021 Environment Act to ensure local authorities are provided with effective powers and additional resources.

3.74 Engage schools through development of Plymouth education and activity resources to increase recycling and re-use.

3.75 Work with 'Borrow, Don't Buy: Plymouth's Library of Things' to highlight opportunities to repair and re-use tools and develop skills.

3.76 University Hospital Plymouth will work towards recording an 85% avoidance of waste going to landfill by 2025.

ENGAGEMENT AND RESPONSIBILITY

The City Council recognises that it needs to play a leadership role working with partners and the local community across the city to raise awareness and understanding around climate change.

Importantly we need to ensure everyone understands what part they can play in addressing the Climate Emergency from an individual level through to community groups, businesses and public sector organisations. The Climate Change Committee suggest that 59% of all reductions will require behaviour change, and as such engagement with all these groups is essential. We will work with the Youth Parliament, children, and young people across the city to ensure that their voice is heard in designing the actions needed to address climate change.

ENGAGEMENT AND RESPONSIBILITY Actions

The role of engagement in meeting our Climate Emergency ambitions is huge and should not be underestimated. The only way we can achieve our target is by working collaboratively and sharing responsibility. This sentiment is clearly reflected in the diversity and range of actions that are set for 2022, from tree planting to creating a climate investment fund.

3.77 University Hospital Plymouth will work towards embedding sustainability into every Trust service and activity by 2025.

3.78 Plymouth Marjon to create student sustainability champions in order to increase student engagement.

3.79 Plymouth Marjon to organise a climate crisis event for staff and students.

3.80 The University of Plymouth will support Plymouth enterprises to shift to a low-carbon economy through the Sustainability Hub: Low Carbon Devon project.

3.81 The University of Plymouth will support the management of the Future Plymouth 2030 webinar series and the delivery of presentations on the latest research.

3.82 The University of Plymouth will utilise and grow the usage of the Sustainability Hub for engagement with staff, students and the local partners around the Net-Zero Carbon agenda.

3.83 Continue the delivery of the Future Parks Accelerator Programme and associated projects to deliver nature-based improvements to strategic green spaces across the city.

3.84 Working with the creative and cultural sectors continue to deliver the Green Minds engagement programme, to support residents to take action for wildlife.

3.85 Deliver a nature-based leadership programme to bring together people from different sectors who share an interest in preserving the environment and to support the development of nature-based social enterprise.

ENGAGEMENT AND RESPONSIBILITY Actions

3.86 Deliver a green social prescribing programme, to promote engagement with nature for health and wellbeing.

3.87 Working with community volunteers and young people, deliver natural infrastructure enhancements to increase biodiversity across the city, offering training, work experience, jobs and apprenticeships.

3.88 Continue to deliver the Preventing Plastic Pollution Programme to remove plastic pollution raise awareness of the impact of single use plastics on the marine environment.

3.89 Continue to deliver the ReMEDIES and European Marine Site Recreation Impact Mitigation projects, which aims to identify areas for large scale restoration of seagrass beds.

3.90 Commence delivery of the Plymouth and South Devon Community Forest project, which will create 500 hectares of new woodland planting across the city by 2025.

3.91 Deliver a pilot permaculture project at Zoo Field in Central Park.

3.92 Undertake a review of Local Nature Reserves in the city and give consideration to further designations to mitigate biodiversity and habitat loss.

3.93 Building on the work of the Plymouth Skills Plan, we will support the development of green skills action plans for the key sectors of the Plymouth Economy, actively working with the Employment Skills Board, Skills Advisory Panel and Heart of the Southwest Local Enterprise Partnership and other key partners to secure funding to develop climate change skills.

3.94 Support businesses in the tourism industry to gain 'Green Tourism' accreditation, aiming to achieve 100 accreditations in 2022.

3.95 Provide direct support to businesses in sectors hard-hit by the pandemic to develop new business models and ensure a green, inclusive and sustainable economic recovery.

3.96 Continue to encourage partner organisations to adopt and align social value procurement policies and ensure carbon reduction is duly considered in their procurement initiatives.

3.97 Work with the Key Cities Group to benchmark innovative approaches to inform future climate actions and initiatives.

3.98 Review government commitments arising from COP 26 and the Net Zero Strategy in relation to new requirements on how Plymouth can meet its net zero ambitions by 2030.

3.99 Through the Community Empowerment programme, identify current engagement, intelligence and successful interventions around reducing emissions across the city to identify good practice and opportunities to expand, and any gaps to be addressed.

3.100 Continue to work with Cornwall Council, Devon County Council and South Hams and West Devon councils on developing climate emergency initiatives including sharing good practice.

3.101 Work with the Local Resilience Forum to scope a Plymouth Climate Resilience and Adaptation Plan.

3.102 Put in place interim planning guidance, pending the review of the Joint Local Plan, to provide even greater protection to the natural environment, and even higher standards of low carbon design and resilience, so that planning practice stays in tune with changing national policy and guidance and gives proper weight to the climate emergency.

3.103 Investigate the potential for the creation of a Carbon Offsetting Fund secured through Section 106 agreements to fund carbon saving initiatives where high energy efficient requirements in new developments cannot be met.

3.104 Ahead of the ' Acceleration Phase' of the Plymouth Climate Emergency, commit to the establishment of climate budgets, monitoring trajectories and year-on-year milestone targets for all 5 key climate emergency sectors (buildings, mobility, power and heat, waste and engagement and responsibility).

3.105 Organise a themed day at Plymouth Libraries on the topic of climate change.

3.106 Continue to raise awareness of climate change issues by supporting the Future Plymouth 2030 conference programme in partnership with the Royal Institute of British Architects.

3.107 Undertake the 2022 Plymouth Climate Challenge to support community-led climate change projects and initiatives.

3.108 Continue to engage with the Youth Parliament to ensure that the voice of children and young people is heard in relation to the climate emergency.

3.109 Continue to promote Ashden Let's Go Zero Campaign to Plymouth's primary and secondary schools to encourage all schools in the city to develop net zero carbon plans.

3.110 Hold Climate Emergency events for Plymouth schools by embedding it in health and wellbeing briefings.

3.111 Expand the programme for Climate Change Ambassadors across the whole of Plymouth.

3.112 Implement the Building (Flood) Resilience in Communities social innovation project in Lipson Vale and St Levan areas to improve and enhance community resilience and increase their ability to meet the challenges posed by climate change.

3.113 Continue to liaise with interested stakeholders to explore the opportunities and challenges of delivering land and maritime applications for hydrogen generation, supply and use for motorised transport in Plymouth.

3.114 Establish with partners a Climate Emergency Investment Fund to provide finance to support projects and initiatives to accelerate reductions in carbon emissions and lobby government to resource future provision.

CASE STUDY

Climate event at Central Library

'In this together', the first event to be held at Central Library since the pandemic, brought a total of 385 people to the Central Library on Saturday 9 October 2021.

The event was a collaboration between the Library Service and multiple local organisations intending to raise awareness and empower young and old to take action to protect our planet's green and blue spaces.

The event gave all participants an opportunity to:

- Learn from the Ocean Conservation Trust (National Marine Aquarium) about the impact of carbon on the coral reef.
- Find out about the dangers plastic pollution poses to our oceans and what we can do about it with Preventing Plastic Pollution project.
- Enjoy a beautiful seagrass sculpture and learn about the importance of seagrass meadows in capturing carbon.
- Make their own contribution to the Art and Energy Collective's Moth to a Flame installation which was exhibited at the COP26 in Glasgow.
- Receive practical tips on recycling from the Council's street services team.
- Get support and practical advice to adopt active travel from Plymotion.
- Talk to our GreenMinds colleagues about their connection with nature.

CASE STUDY

Adapting to climate change

Whilst mitigation actions will help us to prevent further climate change, we cannot solely rely on them. We are already experiencing a changing climate in our city, from increased extreme rainfall events to increasing average temperatures. As such, we also need to take action to adapt to the changes we are currently facing – be it flooding or excessive heat. In 2022, the Council will undertake a number of improvement works to minimise the risk of flooding.

Building (Flood) Resilience in Communities (BRIC)

BRIC is a social innovation project working in the Lipson Vale and St Levan areas. BRIC aims to improve and enhance community resilience and to increase people's ability to meet the challenges posed by climate change. This project is particularly focussing on increasing flood preparedness by raising awareness through the use of new and creative community engagement methods, education and the creation of flood support networks.

Objectives:

- To engage with the Lipson Vale and St Levan communities using the Appreciative Inquiry model to build greater understanding, empathy and trust and to put people at the heart of decision making.
- To create two Flood Action Groups to support local residents be more prepared for a flood event, know how to act quickly and recover well.
- To install two alert and protection systems in the community that provide real-time information, warning residents of potential risks of flooding.

CASE STUDY

Earth Alliance Group at Plymouth High School for Girls

Members of the Earth Alliance worked with senior managers of our school Trust to secure funding and put our carbon reduction initiatives into action. We have changed the paper the Trust uses to make sure it meets approved sustainability standards. We will begin to install smart meters within all Trust schools between Easter and the 2022 summer holidays. These smart meters will help us to track our energy usage and allow us to reduce our consumption.

We are also looking to decrease the environmental footprint of our food service areas. Over the past seven years, as students at Plymouth High, we have seen vast improvements in our canteen. We are really proud to be free from single-use plastic. We aim to make our menu more seasonal to reduce food miles. And we have started an enquiry into where we get our fish from to make sure that, as a school, we are not supporting overfishing.

We hope to keep making further progress. We have now formed the Earth Alliance, our climate awareness group created by the students, for the students, to make the school and city more environmentally friendly. We held an online conference with about 22 schools from the trust to discuss global warming and what we as a school can do about it. The school strike that was held on Friday 5 November, attended by 400 students, reminded us of how much we all care about this issue. We have sent a letter to our MP Luke Pollard to inform him of our actions and to ask him to make sure that the climate crisis remains high on his agenda.

Climate change is still the biggest challenge facing our city's future and without rapid action the consequences will be severe on society, the environment and the economy. Plymouth cannot resolve global climate change alone, but we can play our part by participating fully in a climate emergency response.

This third action plan is a significant step in directing action that will reduce carbon emissions across Plymouth and advance us on a path to meet our net zero carbon ambition by 2030.

The Action Plan gives an overview of the work that will be undertaken in the next year as our emergency response to the climate crisis moves into the transition phase. The whole document will be reviewed and updated in one year's time.

If you think there is more you can do to help please contact us at ClimateEmergency@plymouth.gov.uk

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