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Impacts of long grasslands at bereavement sites

A short presentation on Newcastle-under-Lyme Borough Council's joint research project with Keele University to study pollinator diversity, bat diversity, and habitat connectivity through the growth of long grasslands on sites of bereavement.

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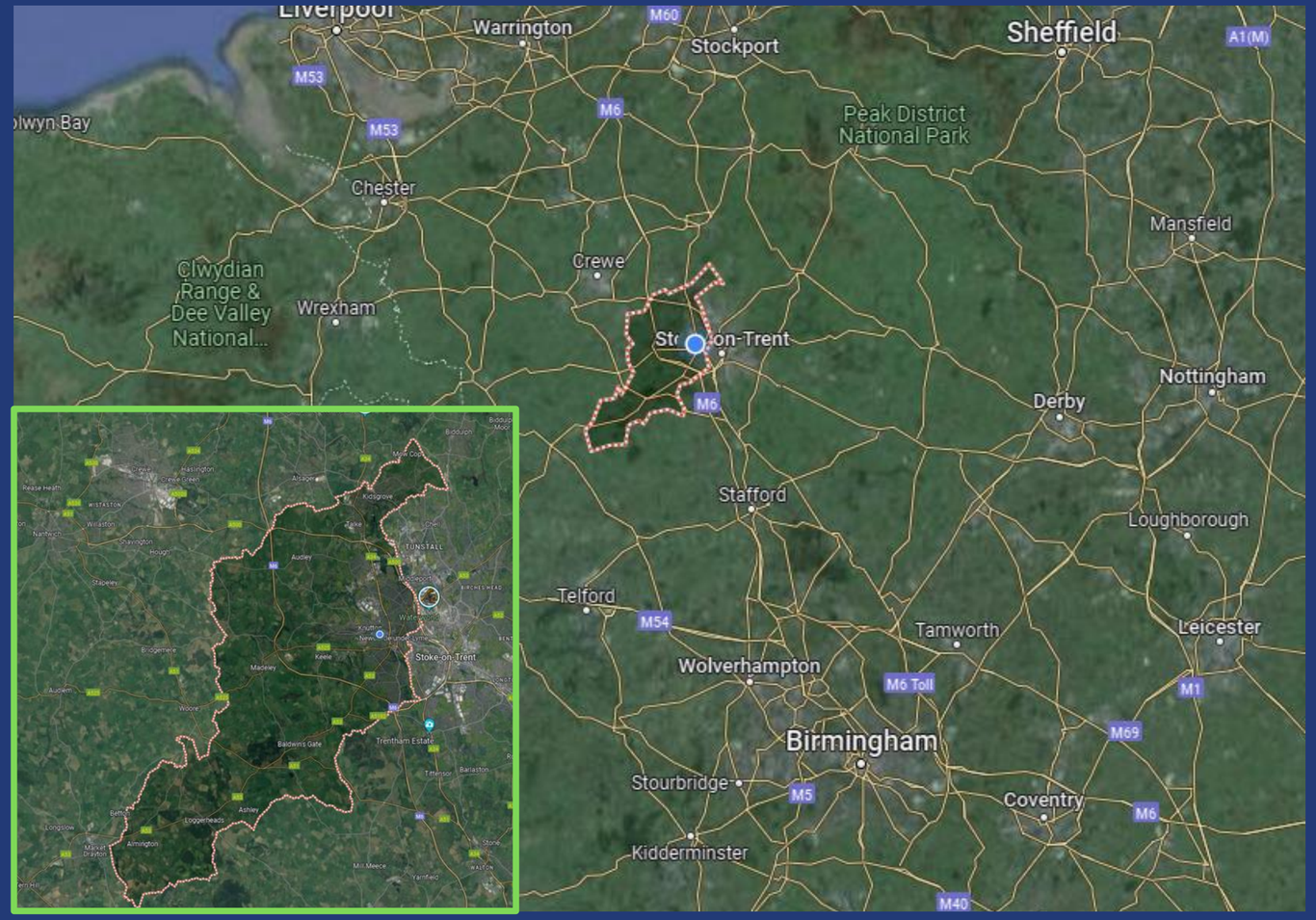
Newcastle-under-Lyme

Newcastle-under-Lyme Borough Council is a district local authority located in Staffordshire County. The Borough is at the heart of the County and is a close neighbour to Stoke-on-Trent. The borough is home to roughly 130,000 residents with some urban and mostly rural areas.

The borough is home to multiple towns and villages such as Newcastle-under-Lyme, Kidsgrove, Talke, Audley, Madeley, Loggerheads and more. The Borough is located in between Manchester and Birmingham and shouldn't be confused with Newcastle-upon-Tyne.



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Streetscene Services

Newcastle-under-Lyme Borough Council's Streetscene Service is composed of multiple main fields of operations including arboriculture, cleansing, bereavement, parks, and grounds maintenance. Staff and crew members oversee important services to the borough and their development such as:

- Street Sweeping
- Litter, Dog Waste & Fly-Tipping
- Playgrounds
- Parks and Open Spaces
- Trees
- Grass Cutting & Grounds Maintenance
- Fly-Posting & Graffiti
- Leaf Fall Sweeping & Weed Control

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Grassland Management Strategy

Newcastle-under-Lyme Borough Council Sustainable Environment and Streetscene Services attended a sustainable land management training session with Staffordshire Wildlife Trust in January 2024. From this session the Council began development of a Grassland Management Strategy to promote the growth of long grasses in the borough.

The Council has an expansive amount of strictly mowed grasslands in the borough which have the potential to serve the residents an environment of Newcastle a lot more through the promotion of long meadow growth.

This strategy is organised through two key doucemnts, the main strategy document and the policy documents. The strategy outlines background information, main aims, plan and a timeline. the policy document outlines all 6 different grassland idenfitications and how they should be mowed.

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Grassland Management Strategy

The Strategy includes 6 main policies which detail the different mowing regimes required for different types of area and identifies those that will be used for long meadow generation. Below is listed the 6 individual policies:

Policy 1 - Public Open Spaces & Informal Sport Amenity

Policy 2 - Designated Pathways & Additional Amenities

Policy 3 - Meadow Edges & Verges

Policy 4 - Amenity Prestige

Policy 5 - Low Activity & Tree Canopy Amenity

Policy 6 - Wildflower Meadows

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Grassland Management Strategy

Phase 1: Pocket Ward Grasslands

Phase 1 will incorporate new grassland management regimes at different pocket sites in different wards. These are listed below:

- Bradwell – Arnold Grove
- Clayton – Kingsbridge medical centre
- Brampton Vale (Donkey Field)
- Bradwell - Chatterley Close (already meadow location)
- Crackley – Crackley Field
- Chesterton – Douglas Road
- Westlands – Guernsey Drive
- Keele – Keele Cemetery (already meadow location)
- Westlands – Leys Drive
- Chesterton – Loomer Road
- Clayton – Norwich Place – Stafford Ave
- Poolfields – Rotterdam Field
- Chesterton – Sheldon Grove
- Kidsgrove - Coalpit Hill
- Cross Heath – The Wammy
- Thistleberry – Thistleberry Parkway
- Westbury – Westbury Park
- Clayton – Wye Road

Phase 2: Review & Consult

After Phase 1 (which may be conudcted over 2 years), the Council will conduct a review and consultation to identify and report on the social and environmental impacts of pockets ward grasslands programme. If proved to benefit biodiversity and improve resident views on wildlife in public spaces then Phase 3 in parks and Grassland Spaces may begin.

Phase 3: Parks & Grassland Space

Once Phase 2 is completed then the Council may move to Phase 3. The Council will begin to roll out the new management regimes throughout the parks listed below and other grassland spaces such as road verges and low amenity spaces.

- Bathpool Park
- Lyme Valley parkway
- Brampton Museum & Park
- Wolstanton Marsh & Park

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The Importance of Grasslands

The Grassland Management Strategy and Policy documents were adopted by the Council in April 2024 with these main objectives:

- To increase biodiversity and nature recovery networks in the Borough.
- To increase efficiency in Council resource use by enabling resources for priority jobs and works in the Borough.
- To contribute towards the Councils Net Zero goals by 2030 and 2050 by sequestering and storing more carbon with increased grasslands.
- To inform residents, businesses and visitors about the change in grassland management and why biodiversity is important for the Borough.

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Phase 2 Results

Social Impact

- Engaged over 235 borough residents through Facebook, the online reporting tool and in person interactions.
- 198 of these interactions were positive and 37 were negative with concerns mostly about accessibility and health and safety issues.

Biodiversity Impact

- Biodiversity has yet to be monitored at the various grassland sites however local experts like Staffordshire Wildlife Trust and Keele University have distinguished that grasslands will have a positive biodiversity impact and will be working with the Council to study this.

Carbon Sequestration Impact

- In total over the 18 grassland sites from Phase 1 equals to around 60.5 hectares of grasslands which has been calculated to have a capacity of approximately 3632.131.tCO2e to sequester and store.

Resource Impact

- Based on the trips and staff time saved from not having to mow the 18 sites undertaken in Phase 1 it has been estimated that the Council saved £5,883.84 to be invested into more priority jobs.

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Progress to Date

January 2024

Staffordshire Wildlife Trust Training Session

April 2024

NuLBC Cabinet Adopts Grassland Management Strategy

October - Dec 2024

Processing feedback and developping engaging media

April 2025 - Ongoing

Adopted Phase 3 and focusing on research in bereavement sites.

January - April 2024

Development of a Grassland Management Strategy

April - October 2024

Implementation of reduced mowing regimes at Phase 1 sites

January 2025

Adopted the full Phase 2 Review of the first phase of the strategy

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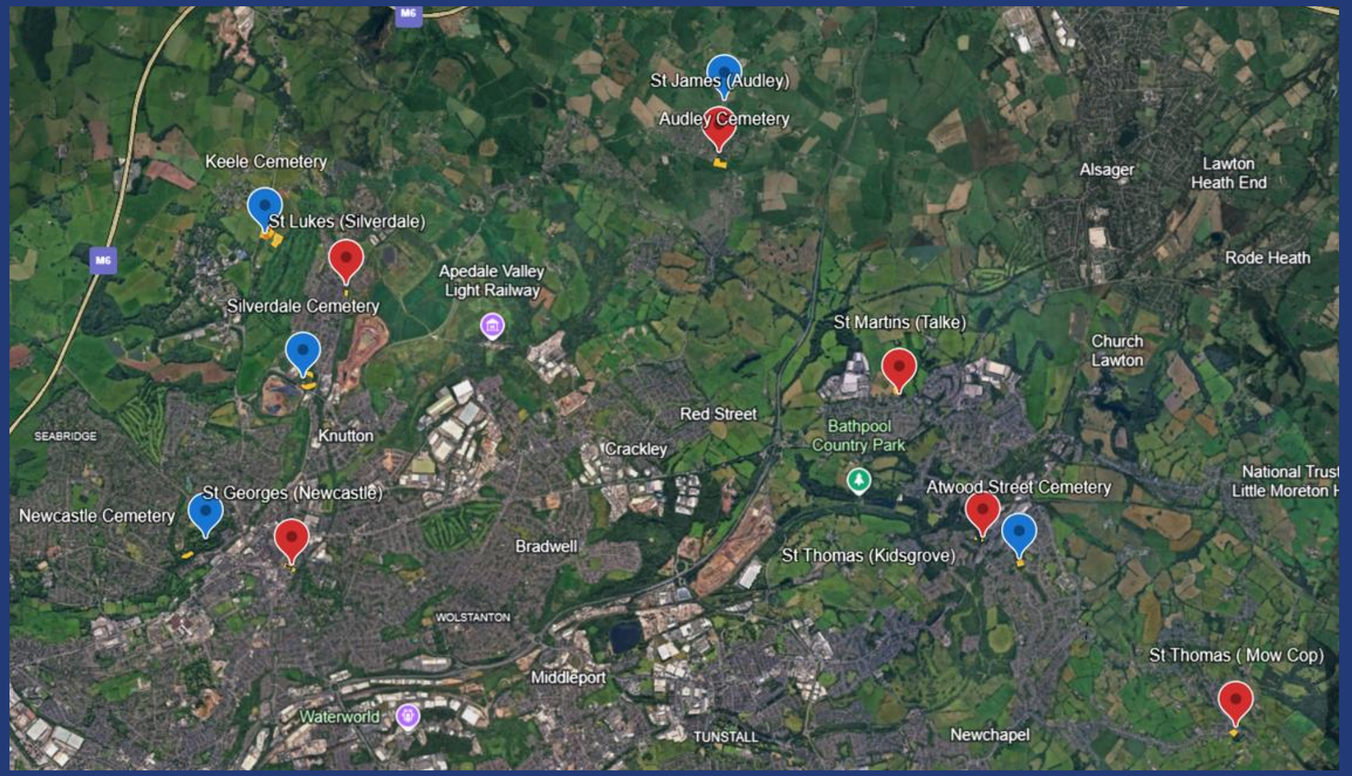
Grassland Bereavement Study

Newcastle-under-Lyme Borough Council and Keele University came together to study the natural impacts of long grassland on in 11 sites of bereavement including cemeteries and churchyards. 2 students from Keele University showed interest in the project, one studying pollinators and the other bats and habitat connectivity.

The Council also ran a social survey at the same time to study and understand the perceptions of grasslands on bereavement sites from visitors.



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Richness VS Abundance

In ecology, richness is the number of different species in a given area.

While abundance is the number of individuals within each of those species.

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Pollinator Diversity

Pollinator assemblages and populations in long grasslands at the 11 sites were studied through sticky traps and observations made by the student researcher. Below are the observational findings:

<u>Richness Findings:</u>

- Unmown areas generally supported higher pollinator richness than mown areas (though not always statistically significant).
- Positive effects especially for bees, hoverflies, and lepidoptera.
- Days since mowing and floral richness had strong positive effect.
- Urban areas tended to have slightly higher richness than rural ones (this needs further study).

<u>Abundance Findings:</u>

- Unmown areas had greater pollinator abundance, with significant effects for hoverflies and lepidoptera.
- Days since mowing had significant effect on abundance.
- Beetle abundance increased with shade and time since mowing.

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Pollinator Diversity

Pollinator assemblages and populations in long grasslands at the 11 sites were studied through sticky traps and observations made by the student researcher. Below are the sticky trap findings:

Richness Findings:

- Models suggested unmown areas had negative effect on overall richness, but raw data (boxplots) and key covariates (days since mowing) showed the opposite trend.
- Lepidoptera richness increased significantly in unmown plots, while hoverflies decreased.

Abundance Findings:

- Unmown plots had significantly higher overall pollinator abundance.
- Wasps benefitted most, while hoverflies and beetles were negatively impacted in unmown plots.
- Environmental drivers (days since mowing, floral richness, urban gradient, and trap colour) shaped outcomes for abundance.

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Bat Diversity & Habitat Connectivity

Bat Diversity

Bat species were studied through the collection of audio files from June to July with two recording devices at each site. 9,934 total audiofiles were collected, using Kaleidoscope software the student researcher will be able to identify different bat species present.

Habitat Connectivity

To study Habitat Connectivity the researcher used a least-cost path analysis which identifies most likely routes of connectivity and generates maps. By studying these routes we can identify what routes may currently be present and where there are barriers.

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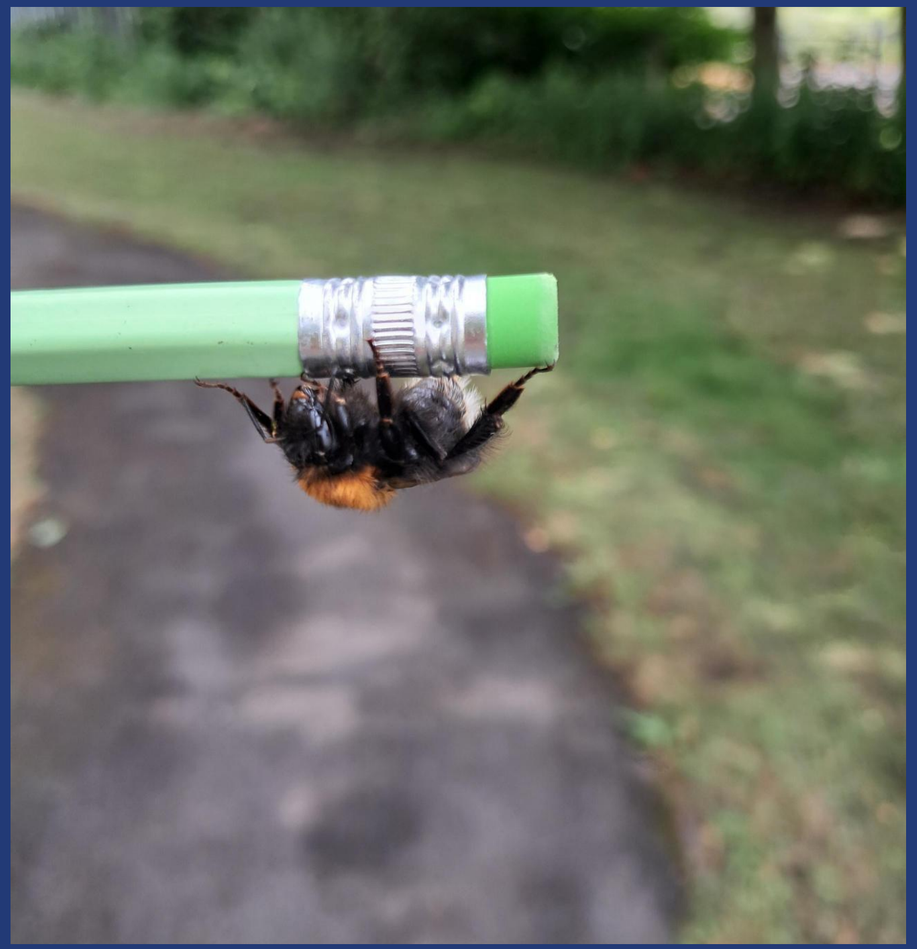
Study Analysis

Pollinator Study

- Overall, reduced mowing on the 11 sites of bereavement studied enhanced pollinator communities by increasing abundance and, in most cases, richness.
- It is important to note that pollinator responses vary by taxonomic group with Bees, Hoverflies, and Lepidoptera generally benefit and Beetles and Wasps showing a mixed/contrasting responses
- For management practices, the data helps show that longer intervals between mowing and higher floral richness improve pollinator diversity and abundance.

Bat & Habitat Connectivity Study

- The student researcher looking into this subject has collected all relevant data from audiofiles to maps and will be analysing this data and publishing it by November. A summary of the study will be published by the Council and sent to organisations like APSE to also send out.



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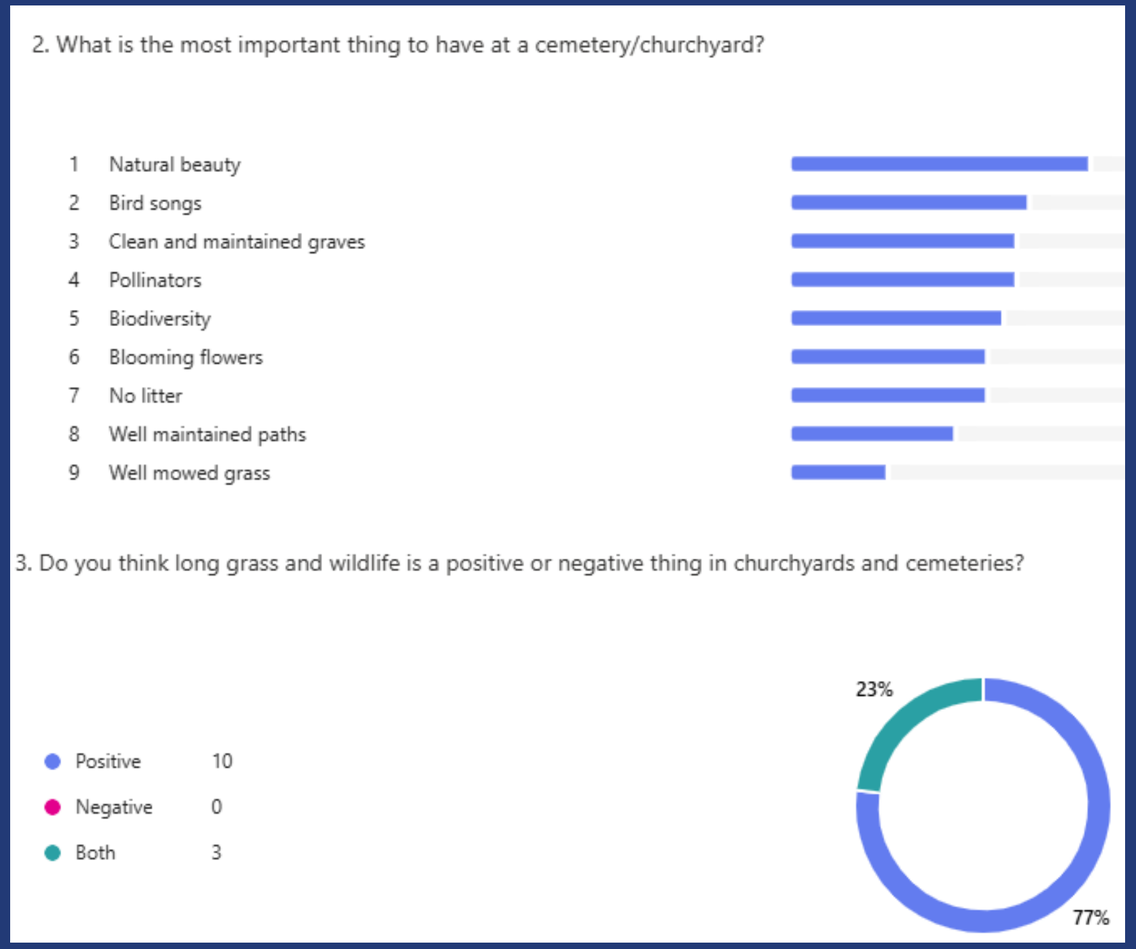
Grassland Social Study

Alongside the Keele University Research Study, NuIBC conducted an online survey to understand visitor perceptions of long grass on sites of bereavement.

It was found that visitors to sites of bereavement in Newcastle-under-Lyme:

- Valued natural beauty, bird songs and maintained graves the most.
- Mostly found long grass as a positive for these sites.
- Cared greatly for the local wildlife of these sites.



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Phase 3 Grassland Review

Phase 3 of the Grassland Management Strategy will initiate new grassland management regimes throughout the borough's green spaces including district parks and sites of bereavement expanding from the initial 18 Phase 1 sites.

The main parks included are:

- Bathpool Park
- Lyme Valley Parkway
- Brampton Museum & Park
- Wolstanton Marsh & Park
- Wye Road Park

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Newcastle-under-Lyme Borough Council

Sustainable Environment Strategy & Delivery Plan

The aim of the Sustainable Environment Strategy and Delivery Plan is to drive foward a sustainable society, economy and environment in Newcastle-under-Lyme Borough for the benefit of residents, businesses, visitors and the natural environment by 2050, focusing on the built environment and energy, travel and transport, natural environment and sequestration, and engagement and behaviour change.

Facilitate the development into a Net Zero Council by 2030 through the decarbonisation of the Council's built environment and fleet.

Facilitate the development into a Net Zero borough by 2050 through the decarbonisation of housing, businesses, transport and more.

Promote the natural environment in the borough to increase biodiversity, carbon sequestration, and storage.

Develop a service focused strategy and delivery plan in the Council to engage Council staff and deliver service owned actions.

Engage with residents, businesses and visitors through communication networks to create sustainable behaviour change within the borough.

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Thank you for Listening!

Learn more at newcastle-staffs.gov.uk/sustainability or email thomas.guilbert-newell@newcastle-staffs.gov.uk.

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