



Report of Director of Communities and Environment

Report to Executive Board

Date: 18th September 2019

Subject: Adapting Parks and Green Spaces for Climate Change

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| Are specific electoral wards affected? If yes, name(s) of ward(s): | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Has consultation been carried out? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Are there implications for equality and diversity and cohesion and integration? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Will the decision be open for call-in? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Does the report contain confidential or exempt information? If relevant, access to information procedure rule number: Appendix number: | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

Summary

1. Main issues

- Parks and green spaces in Leeds already make an important contribution to mitigating climate change with around 2,500 of the 4,000 hectares of land managed for public access either natural or semi-natural. They help reduce carbon dioxide emissions as well as mitigate against the effects of extreme weather events and build more resilient habitats to help sustain species and food production.
- The climate emergency declaration will act as a catalyst to intensify action and develop ambitious plans to plant more trees and create more resilient habitats that benefit pollinators and alleviate flood risks. This will be done in a way that improves the recreation value of those who visit and contribute to health, wellbeing and social cohesion.
- The report provides illustrated examples of how parks and green spaces are already helping to address climate change issues and in doing so also enhance the experience of people who visit.
- People in Leeds are passionate about their local parks and green spaces and the climate emergency declaration has already sparked considerable interest from community groups keen to make a difference in their local area. This enthusiasm will be harnessed and informed by a wide range of views in developing a 'plan on a page' approach to capture key information and illustrate ambitious climate change actions.

2. Best Council Plan Implications (click [here](#) for the latest version of the Best Council Plan)

- The proposals in this report support the Vision for Leeds 2011 to 2030 and Best Council Plan aspiration for accessible, better quality green spaces. They also contribute to the council commitment to make Leeds carbon neutral by 2030.

3. Resource Implications

- This report considers the benefits of alternative approaches to parks and green space management and development. Whilst there will be resource implications, it is not anticipated that there will be significant cost savings arising from these proposals and in some cases funding provision may be necessary which will be dealt with on a project by project basis. Funding will be sought where relevant to implement specific improvement projects that deliver climate change benefits identified.

Recommendations

- a) Executive Board is requested to approve the approach outlined in this report to adapt and improve parks and green spaces and contribute to the council commitment to make Leeds carbon neutral by 2030.
- b) To note that the Chief Officer Parks and Countryside is responsible for implementing this recommendation.

1. Purpose of this report

- 1.1 This report outlines the proposed approach to be taken in Parks and Countryside in adapting parks and green spaces for the effects of climate change and contribute to corporate targets to make Leeds carbon neutral by 2030.

2. Background information

- 2.1 In March the council passed a motion to declare a climate emergency in the city. In doing this the council made a commitment to make Leeds carbon neutral by 2030 in making a contribution to achieving no more than a 1.5°C global temperature increase. This is a very ambitious target and will involve many agencies and partners working together to reduce carbon emissions.
- 2.2 Parks and green spaces have an important role to play in meeting this target. Parks and Countryside manage around 4,000 hectares of land in the city of which 2,500 hectares is natural or semi-natural, including around 1,500 hectares of trees and woodland. A report in April 2017 to Executive Board highlighted changes in the Green Flag Award® scheme with the introduction of a 'climate change adaption' strategies criteria. The adoption of this approach was agreed by Executive Board in assessing Leeds Quality Parks and this has been in place over the last two years.
- 2.3 Parks and green spaces play a role in mitigating climate change by directly helping to reduce carbon dioxide emissions, reduce the effects of extreme weather events, and build more resilient habitats to help sustain species and food production. This role can be summarised as follows:
- Trees and other vegetation remove carbon dioxide from the atmosphere and store carbon
 - Trees in particular help cool down urban centres, provide shade and capture harmful particles
 - Suitable vegetation helps address flood risks by storing and slowing down water flow upstream
 - They provide a range of connected habitats to sustain species resilience and diversity

3. Main issues

- 3.1 The key issue to address is how parks and green spaces in Leeds can fulfil this role in a better way. This report therefore sets out how action in Parks and Countryside can be intensified in a way that adapts to climate change whilst continuing to fulfil the key role that parks play in recreation, social cohesion along with promoting health and well-being.
- 3.2 This report identifies the following areas for intensified action which are each considered in turn:
- Tree and woodland planting
 - Parks and green space management
 - Relaxed mowing
 - Pollinator friendly habitats
 - Cemetery maintenance
 - Parks and green space development
 - Investment opportunities
 - Ponds and wetlands

3.3 Tree and woodland planting

3.3.1 The current tree canopy in Leeds is estimated at around 17% which equates to around 9,500 hectares following a recent survey based on aerial images capturing the whole city boundary. In 2018/19 there were around 40,000 trees planted including those involving volunteers. Local school children also get involved in seed gathering which are then grown and planted back in the local area.



Image 1 Tree Planting



Image 2 Seed Gathering

3.3.2 As an illustration of the importance of trees to climate change, over 1,400 trees were surveyed during the summers of 2017 and 2018 by volunteer staff and students on the University of Leeds campus, with more than 130 different species identified. This work was conducted as part of the Leeds4Trees project – a collaboration between Leeds Ecosystem and Forest centre (LEAF), the United Bank of Carbon (UBoC), and Leeds City Council.

3.3.3 Measurements of the trees were combined with specialist software to estimate the benefits being provided by the campus trees. Over their lifetimes, the trees are estimated to have taken in, and are now storing, over 540 tonnes of carbon (which is almost 2000 tonnes of CO₂). Every year, it is estimated that the campus trees are removing a further 18 tonnes of carbon (66 tonnes of CO₂) from the air.

3.3.4 Trees are also able to capture particulate pollution from the air because it sticks to their leaves, needles or bark and it is estimated that the trees on campus can remove around 350 kg of air pollution each year. The outcome of a similar study at Middleton Woods and Leeds on a ward by ward is being prepared and will be published in due course.

3.3.5 Given these benefits, trees clearly have an important role to play in meeting climate change commitments and there is anticipation that the tree canopy will need to increase considerably. The scale of this increase will clearly involve private as well as council land but there is scope for appropriate tree planting in parks and green spaces as follows:

- Identifying land suitable for tree and woodland planting
- Shelter belts / fringe planting in parks
- Banked areas on verges
- Central reservations
- City centre

- 3.3.6 It should be emphasised that any tree planting should be appropriate for the location with suitable species and growing conditions (including underground service checks) to prevent issues that could occur when trees mature.
- 3.3.7 Beyond our formal Parks, the Council is incorporating extensive tree planting into many of our mainstream projects and programmes. Members will be aware that the Flood Alleviation Scheme 2 incorporates proposals to plant up to 2 million trees in the upper Aire catchment as part of an extensive programme of natural flood management. In addition, the design of the East Leeds Orbital has been fully developed in line with Green Streets principles with 5,000 trees already planted as part of the enabling works. The improvements to public realm in the city centre through the Our Spaces Strategy is also helping to green the city centre, whilst the £174m Leeds Public Transport Improvement Programme also incorporates Green Street principles including substantial tree planting.

3.4 Parks and Green Space Management

- 3.4.1 There are a number of alternative management approaches that can be implemented that relate in the most part to the horticultural maintenance approach and utilisation of resources. The alternative approaches outlined in the following section are not likely to result in a reduction in cost (and some may have increased cost implications), but do have benefits in terms of adapting to climate change and improving habitat resilience.

3.5 Relaxed Mowing

- 3.5.1 An obvious intervention is to reduce mowing intensity and allow grassed areas to revert to more semi-natural conditions. This reduces energy requirements of grass cutting with fewer cuts along with greater benefits to biodiversity. Where relevant this approach can be supplemented by the creation of perennial meadows (allowing native wildflowers to flourish), but this approach does however involve higher costs of establishment and management compared to a relaxed mowing approach. Alternative habitats can be more appropriate such as woodland planting or establishing wetlands.
- 3.5.2 An example of relaxed mowing is at Carr Manor Fields, which for many years was subject to flooding which in turn impeded grass cutting operations. In consultation with members and the local community, an alternative approach has been adopted whereby paths are maintained through areas of longer grass that are cut once a year.



Image 3 Carr Manor Fields



Image 4 Illustrated Benefits

- 3.5.3 Relaxed mowing on grass verges has already been put in place on the northern ring road and main arterial routes into the city. These areas were previously cut 6 times each year and are now cut 3 times each year. One area on Moortown Ring Road was cut 14 times each year and this has been reduced to 3. A further measure that

has been put in place is to cut a 1.4 m mowing strip and thus leave grass in the central areas to grow wild. These areas can also be suitable for planting trees and shrubs or allowing other vegetation to establish thus providing wildlife corridors to benefit pollinators, other insects and mammals. There is scope to review some banked areas which are difficult to access with mowing machinery with a view to planting trees or rewilding. This also aligns more with the Plantlife campaign and contributes to flood attenuation. The following image illustrates the approach on Stanningley bypass whereby banked areas and the central reservation have been allowed to grow wild, with a fringe cut adjacent to the carriageway.



Image 5 Stanningley Bypass

3.5.4 The land that formed Middleton Golf Course has also been transformed from intensive management to a semi-natural landscape. Use of the landscape in this way and incorporating the land into the wider estate has many environmental benefits and has enabled the development of a nationally recognised Middleton Park Urban Bike Park as well as incorporating other recreational opportunities for cycling.

3.6 Pollinator Friendly Habitats

3.6.1 Leeds has recently been a part of 'Urban Buzz', a national project to improve 200 ha of land for pollinators. In Leeds, 20 flagship sites have been identified (as large as 0.5 ha) with a total of 35 hectares. In addition, 128 'buzzing hotspots' have been created which are areas rich in flowers or providing sheltering / nesting opportunities, building species resilience as well as sustaining food provision.



Image 6 Becketts Park (courtesy of Andrew Pomeroy)



Image 7 Bee Hotel Kippax Meadows

3.6.2 Pictorial meadows are visually attractive and appealing, but also have a high net cost and therefore require specific funding to be identified to implement. They do however provide some benefits for pollinating insects and are more akin to replacing bedding displays rather than an alternative approach to grass management. Perennial meadows tend to focus more on native species and whilst less appealing visually after the first year, nevertheless provide a valuable habitat for pollinators. They do however involve preparation and sowing every 3 – 4 years and there is a cost implication but can be introduced where funding provision is available.

3.7 Cemetery Maintenance

3.7.1 Horticultural maintenance of cemeteries can present challenges particularly with traditional and historic memorials of a sufficient age that there are few, if any, visits from family members. The images below illustrate the difficulties in accessing grass cutting machinery in these circumstances:



Image 8 Challenges in Maintaining Cemeteries

3.7.2 A national charity 'Caring for God's Acre' has developed an alternative management approach that is focussed around conservation and habitat creation. Rather than attempt to sustain close mown grass around historic gravestones, a more creative approach is taken with mown margins and a mosaic of grassland of varying heights to help wildlife flourish. For example:

- Close mown – to encourage ground feeding birds and colourful fungi
- Medium – to help clover and other flowering ground cover plants
- Tall – less visited areas enabling wildflowers to flourish and support pollinating insects

3.7.3 There is scope to utilise volunteers with this approach and countryside rangers in Leeds have commenced working with volunteers in an area of Holbeck Cemetery and Becketts Street Cemetery. It is important to emphasise that this is a changed management approach and should not be perceived as a failure to maintain or allow to grow wild. The following images illustrate the desired outcome:



Image 9 Caring for God's Acre Approach

3.8 Parks and Green Space Development

3.8.1 Opportunities are continually being sought to improve parks and green spaces which are largely driven by available funding. In many cases there is a need to improve recreational provision but this can also enable consideration to be given to addressing climate change issues.

3.9 Investment Opportunities

3.9.1 Most parks feature some play equipment and sealed play surfaces. Management generally involves maintenance and repair of equipment and surfaces and periodic replacement. Damage to play areas due to weather conditions is likely to increase with an associated increase in cost. Warmer, drier, summer conditions will increase the need for more shelter and shade around play. Potential actions to address these issues include changes in materials to improve drainage, play areas with more natural play features and locating play facilities in areas of shelter and shade.

3.9.2 There are already some examples of this including a play surface has been introduced at a multi-use games area at Queen's Park in Pudsey that is porous and therefore reduces water run-off and puddling which can occur on traditional surfaces. Bark mulch has also been used as a safety surface at East Ardsley Recreation Ground and Holt Park and sand-based play has been introduced at Horsforth Hall Park and The Arium. There is also an example of more naturalistic play which has been introduced at Alexandra Park by arranging sandstone boulders to enable children to climb and explore. Finally, one of the playgrounds at Temple Newsam uses natural materials and has been integrated into the landscape as a key feature of the design.



Image 10 Alexandra Park



Image 11 Temple Newsam

3.9.3 Design of playing pitches needs to take full account of the impacts of climate change. This is particularly important when deciding upon drainage solutions for new and existing pitches. A balance is required between maintaining playable conditions and the requirements of sustainable drainage. In some cases pitches can be designed to allow temporary flooding to prevent rainwater in extreme events from accessing housing and other buildings. For example in the Garforth area of Leeds a small bund has been constructed around the south west corner of Barley Hill Recreation Ground as well as Glebelands Recreation Ground sports pitches as part of flood alleviation measures. This allows the pitch area to temporarily store flood water and then slowly release the water into the existing watercourse downstream.

3.9.4 Parks and green spaces can also incorporate opportunities for more active and sustainable travel. Walking, cycling and the use of public transport are therefore important aspects of climate change mitigation. The promotion of active travel is a local and national priority and the West Yorkshire Local Transport Plan aims to encourage more non-motorised travel, especially walking and cycling, thereby reducing trips by motor vehicles and encouraging healthy exercise. Leeds Core Cycle Network Project aims to provide routes around Leeds specifically for cyclists each of which is named, with signage. They may form routes to schools, shops or to leisure opportunities but they are primarily aimed at helping cyclists get into work. Parks and green spaces play an important part in developing such routes as they are away from traffic and can often provide a short cut.



Image 12 Cycle Routes

3.10 Ponds and wetlands

3.10.1 Some public parks and other green spaces have ponds or lakes within them. Some are relatively wild but many are more formal and typically have hard edges, a fairly regular shape and little marginal vegetation. Predicted changes in rainfall patterns will mean that ponds may dry out partially or wholly in hot, dry weather and may flood more frequently in wetter periods. There will be an increased need for new ponds to contribute to sustainable local drainage. There will also be an increased need to capture and retain winter rainfall for use at other times of year and retention ponds may be an option for this. As climate change puts increasing pressure on biodiversity there will be a greater need for ponds and associated wetlands to contribute to biodiversity and local habitat networks.

3.10.2 There are some good examples where parks and green spaces are being utilised as part of wider strategic projects. The £4.2 million investment into the Wyke Beck Valley flood alleviation scheme will part-fund works in Killingbeck Meadows, Arthur's Rein and Halton Moor, in East Leeds. This will help reduce the risk of flooding to local homes in the area and support further housing growth. The project includes the creation of a flood alleviation scheme at Killingbeck Fields, which would operate as a 45,000 m³ flood storage area and enhanced public greenspace. Complementary works are already underway at Arthur's Rein and Halton Moor Local Nature Reserve. The work at Arthur's Rein includes 'daylighting' previously buried water courses, along with woven willow to encourage vegetation to grow in Wyke Beck Woods is illustrated below:



Image 13 Arthur's Rein



Image 14 Wyke Beck Woods

3.11 Engaging communities: planning for change

3.11.1 It is important to note the important contribution that local communities provide in terms of practical volunteering work with an estimated 29,000 volunteer days each year, equivalent to around 109 full-time equivalent staff. The Leeds Parks and Green Space Forum, established in 2012 aims to engage more local people in caring for parks and green spaces and has around 120 members representing 85 different organisations. A number of examples of further volunteer contribution opportunities have been cited throughout this report including the following:

- Tree and woodland planting
- Helping create pollinator friendly habitats
- Cemeteries
- Flood alleviation

3.11.2 The climate emergency declaration has already sparked considerable interest from local ward members and community groups keen to make a difference in their local area. This shared commitment and enthusiasm will be vital in helping to lead change and gaining a shared understanding of the benefits that the proposals and illustrated examples can bring when turned into action.

3.11.3 A planned approach to involve as many people as possible is proposed with the intention to intensify action at a site level to combine many of the factors outlined. This will be conducted on a site by site basis taking into account relevant Leeds Quality Park assessments. This will ensure that climate change adaptations will be delivered in the context of improving the quality of parks and green space against Green Flag criteria.

3.11.4 A 'plan on a page' approach is proposed focussed on the 63 community parks in the city aiming to capture key information and developments on two sides of A3 paper. This will enable information on the site history, current function and usage as well as general improvements identified in line with Green Flag criteria. Significantly it will also capture and illustrate proposed climate change actions within the context of the overall park. This approach will also be applied to other parks and green spaces where climate change actions are identified. This will include land for tree planting, local green spaces where different approaches are proposed or for example the introduction of a 'caring for God's acre' approach in cemeteries.

| East End Park | | Date last modified: 01/06/2016 Modified by: Deav NkMundo |
|--------------------------|--|---|
| History of the park | History of the park including origins & original purpose of park. History of the park including origins & original purpose of park. | |
| Size (square metres) | 20.3 | |
| Sporting Features | <ul style="list-style-type: none"> There is 1 football pitch on site for community use, used regularly every week by 2 local clubs There are 2 rugby pitches on site for community use There are 2 bowling greens on site for community and club use. | |
| Community Group? | There is currently an active 'Friends of...' or community group established for this site—Friends of East End Park. | |
| Events | In 2015 there are 5 sporting events, 1 BP event, 1 community event, 1 LCC event and 1 funfair planned on | |
| Residents Survey/Results | <ul style="list-style-type: none"> Approximately... visits per annum. Park satisfaction score of ... Room for more info if necessary. | |
| Additional info. | | |
| Vision for the park | Vision for the future development of the park. Vision for the future development of the park. Vision for the future development of the park. | |



Image 15 'Plan on a Page' Example

3.11.5 These plans will then be shared with ward members (including community committee environment sub-groups), the Parks and Green Spaces Forum, local 'friends' groups and enable general comments from members of the public. This will also enable more general information about the benefits that adapting parks and green spaces can bring with the aim of enabling residents and visitors to gain an understanding and acceptance of the importance of proposed changes. This community engagement phase will also allow people to comment and influence the development of site plans ahead of implementation.

3.11.6 This process for change will be developed over the next year or so and will enable an overall climate change improvement plan to be developed. It will also provide opportunity to map potential changes to illustrate and quantify benefits as well as review implications that might arise for example to machinery utilisation and skills.

4. Corporate considerations

4.1 Consultation and engagement

4.1.1 The climate emergency declaration has already sparked considerable interest from local ward members and community groups keen to make a difference in their local area. This shared commitment and enthusiasm will be vital in helping to lead change and gaining a shared understanding of the benefits that the proposals and illustrated examples can bring when turned into action.

4.1.2 A presentation of parks and green space climate change proposals has been shared with community committee environment champions and in due course it is intended that a presentation will be developed and made available to all members via Member's development.

4.1.3 A 'plan on a page' approach is aiming to capture key information and developments at a site level. Significantly it will capture and illustrate proposed climate change actions within the context of each relevant park. These plans will then be shared with ward members (including community committee environment sub-groups), the Parks and Green Spaces Forum, local 'friends' groups and enable general comments from members of the public. This will also enable more general information about the benefits that adapting parks and green spaces can bring with the aim of enabling residents and visitors to gain an understanding and acceptance of the importance of proposed changes. This community engagement phase will

also allow people to comment and influence the development of site plans ahead of implementation.

4.2 Equality and diversity / cohesion and integration

4.2.1 An equality, diversity, cohesion and integration screening has been completed.

4.3 Council policies and the Best Council Plan

4.3.1 The proposals in this report support the Vision for Leeds 2011 to 2030 and in particular the aspiration that 'there are high quality buildings, places and green spaces, which are clean, looked after, and respect the city's heritage, including buildings, parks and the history of our communities' as part of the overall aim that 'all Leeds' communities will be successful'. The proposals contribute to the Best Council Plan outcomes to 'enjoy happy, healthy, active lives', and 'enjoy greater access to green spaces, leisure and the arts' and also priority 20 'enhancing the quality of our public realm and green spaces'.

Climate Emergency

4.3.2 The proposals in this report will contribute to the council commitment to make Leeds carbon neutral by 2030 following the declaration of a climate emergency in March 2019.

4.4 Resources, procurement and value for money

4.4.1 This report considers the benefits of alternative approaches to parks and green space management and development. Whilst there will be resource implications, it is not anticipated that there will be significant cost savings arising from these proposals and in some cases funding provision may be necessary which will be dealt with on a project by project basis. Funding will be sought where relevant to implement specific improvement projects that deliver climate change benefits identified.

4.5 Legal implications, access to information, and call-in

4.5.1 There are no legal issues identified with this report or with access to information. The report is subject to call in under the Council's constitution, rules and procedures.

4.6 Risk management

4.6.1 There are no significant risks identified with the recommendations contained in this report.

5. Conclusions

- 5.1 Parks and green spaces in Leeds already deliver considerable benefits and contribute to the effects of climate change as part of an integrated network of habitats. There is opportunity to intensify action by planting more trees and woodlands, develop alternative approaches to managing grassland and generally adopt a more environmentally sustainable approach to managing parks and green spaces whilst continuing to deliver the benefits to health, wellbeing, recreation and social cohesion. To do this will require the continued commitment and involvement of volunteers and partner organisations who, along with community committees will be involved in a planned approach to implementing improvements and delivering the benefits identified.

6. Recommendations

- 6.1 Executive Board is requested to approve the approach outlined in this report to adapt and improve parks and green spaces and contribute to the council commitment to make Leeds carbon neutral by 2030.
- 6.2 To note that the Chief Officer Parks and Countryside is responsible for implementing this recommendation.

7. Background documents¹

- 7.1 None.

¹ The background documents listed in this section are available to download from the council's website, unless they contain confidential or exempt information. The list of background documents does not include published works.