Wokingham Borough Council
Climate Emergency Action Plan Progress Report
July 2020

Content

Introduction

The Paris Agreement, adopted in November 2016 by the UK, was designed to limit greenhouse gas emissions to levels that would prevent global temperatures from increasing to more than 2°C above the temperature benchmark set before the beginning of the Industrial Revolution. This was considered, at that time, to be the tipping point that would trigger extreme weather events across the world. Resulting in risks to health, livelihoods, food security, water supply, human security and economic growth.

The 2018 Intergovernmental Panel on Climate Change (IPCC) report warned that the current global target of 80% cut in carbon emissions by 2050 is not enough to avert catastrophic temperature change. It said it is highly advisable that global temperature change is limited to 1.5 degrees Celsius and that rapid, far-reaching and unprecedented changes in all aspects of society are required to ensure this.

In July 2019, Wokingham Borough Council members unanimously declared a climate emergency. The declaration set out the commitment to play as full a role as possible, leading by example as well as by exhortation, in achieving a carbon neutral Wokingham Borough by 2030. In January 2020, the council published its first climate emergency action plan, establishing the eight key priority areas to focus on for reducing CO_2e.

The Climate Emergency Action Plan Report has been developed to set out the activities that will be undertaken in order to reach the 2030 net-zero carbon target. This is a collaborative effort supported by a consultative process since August 2019. It includes the views and ideas from our members, parish and town councils, schools, local businesses, charities, public and council staff.

This Climate Emergency Progress Report presents a costed up action plan with carbon saving targets against individual projects, where possible. The report summarises the Borough's plans for the years ahead and demonstrates the benefits of becoming net zero carbon.

The achievement of the targets established by this action plan relies on the engagement and support of our residents, communities, local towns and parish councils, and local businesses. These partners will not only help us to deliver but will take the responsibility for achieving targets to help close the gap.

This is a plan for right now and for the future, it is key that the plan engages with the next generation, for whom that future belongs, and contains areas of activity that young people can engage in.

The plan has been reviewed independently by our partners in the Climate Emergency Advisory Board, which is formed with representatives from organisations including businesses, charities and academia including University of Reading, National Grid, Greater South East Energy Hub, Chairman of WBC Business Group, Sustrans, Scottish Southern Electric, Volker Highways, Reading Buses, South Western Railway, Great Western Railway, amongst others.

The targets set within this action plan allows us to understand the level of commitment that is required by all sectors and partners, and provides a clear path for the scale of the approach that is needed.

The council has committed to updating the action plan and will publish it in July each year, as part of an annual climate emergency progress report. The run rate for future performance will be calculated, so a more accurate performance assessment can be made in relation to the ten-year target.

Current Emissions Profile

The figures and charts presented below summarise the emissions relating to Wokingham Borough Council. There are two methods used for this estimation; one uses BEIS Local Authority Emissions Data, the other uses the Anthesis' SCATTER tool. The differences between the two are explored overleaf (see Appendix 1. for full data tables).

Chart 1 . 2017 BEIS Wokingham Direct & Indirect Emissions tCO_2e

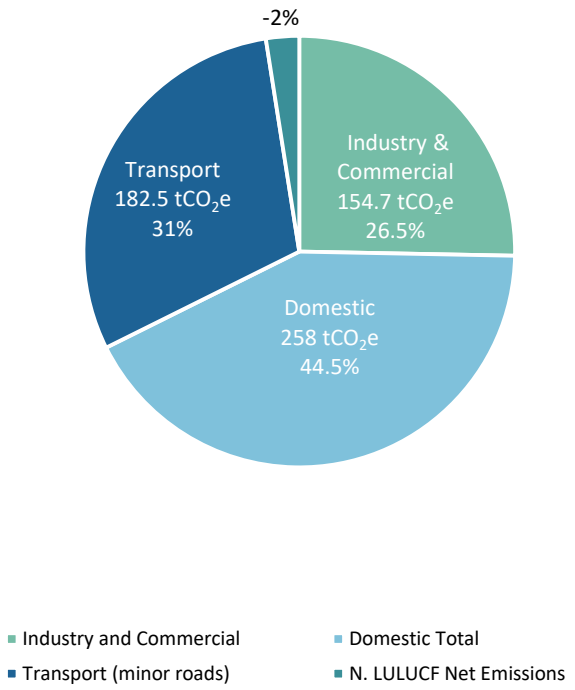


Chart 2. SCATTER Wokingham Direct & Indirect Emissions by Sector Summary $ktCO_2e$

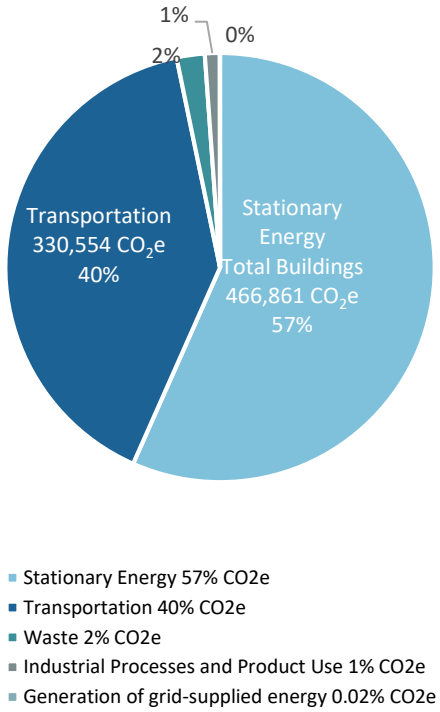
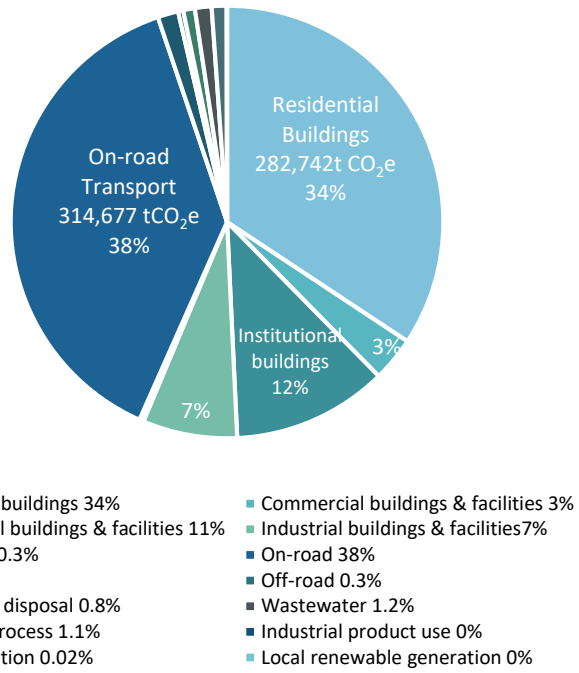


Chart 3. SCATTER Wokingham Direct & Indirect Emissions by Sector Summary $ktCO_2e$



Current Emissions Profile

Wokingham Borough`s carbon footprint has been calculated to create a baseline of carbon dioxide emissions. Based on government data and reported two years in arrears, Wokingham Borough's carbon footprint is **580.9 ktCO_2e** (BEIS 2017)[1]. This is comprised of transport emissions (31.4%), emissions from the industrial and commercial sector (26.6%), and domestic sector emissions (44.5%). This borough wide carbon footprint is being used as a baseline against which future carbon dioxide emissions are measured.

Residential Buildings

Emissions from energy and fuel use in residential buildings is the greatest single contributor to Wokingham's carbon footprint accounting for 44.5% in total.

Table 1: Breakdown of domestic emissions ktCO_2e, (BEIS 2017)

Subsector (Building & Facilities only)	ktCO_2e	Total ktCO_2e	%
Domestic Electricity	71.47	258.9	44.5
Domestic Gas	177.23		
Domestic 'Other Fuels'	10.17		

Industrial and commercial Buildings and operations

Emissions from energy and fuel use in industrial and commercial buildings contributes to 26.5% of the total carbon emissions in Wokingham Borough.

Table 2: Breakdown of industrial and commercial emissions ktCO_2e, (BEIS 2017).

Subsector (Building & Facilities only)	ktCO_2e	Total ktCO_2e	%
Industry and Commercial Electricity	93.7	154.7	26.6
Industry and Commercial Gas	39.8		
Large Industrial Installations	0.01		
Industrial and Commercial Other Fuels	17.3		
Agriculture	3.9		

Transport

Emissions from transport contribute to 31.4% of Wokingham's carbon footprint.

Table 3: Breakdown of transport emissions ktCO_2e, (BEIS 2017)

Subsector (Transport)	ktCO_2e	Total ktCO_2e	%
Road Transport (A roads)	85.5	182.5	31.4
Road Transport (Minor roads)	88.7		
Transport Other	8.3		

* This figure excludes sectors that are completely beyond the council's scope of influence. For example the emissions from major transport links (M4) (175.5 ktCO_2e) as well as diesel rail transport (14.4 ktCO_2e), which are managed by Highways England and national rail companies, respectively.

Carbon sequestration

Presently, the Borough sequestrates 15.2 ktCO_2e a year through forestry and natural land use (LULUCF). This accounts for 2% of the Borough's carbon footprint.

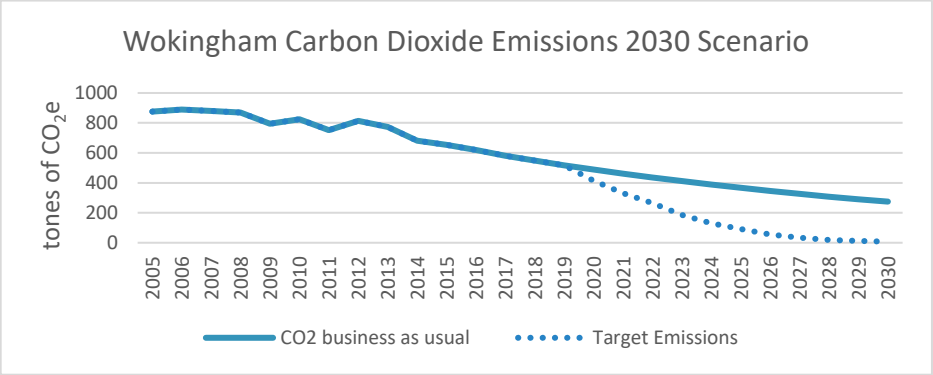
[1] UK local authority and regional carbon dioxide emissions national statistics: 2005-2017

Carbon Budgets for Wokingham Borough

The Borough wide carbon footprint of **580.9 ktCO_2e** (BEIS 2017) is being used as a baseline against which future carbon dioxide emissions are measured. This figure excludes sectors that are completely beyond the council's scope of influence, namely the emissions from major transport links (M4) (175.5 ktCO_2e) as well as diesel rail transport (14.4 ktCO_2e), which are managed by Highways England and national rail companies, respectively. Embedded carbon emissions (also known as consumption emissions) are out of the scope of the Borough's carbon footprint. However, the council will support behavioural change through the actions in this plan.

The trajectory of carbon emissions for Wokingham Borough have been steadily decreasing since 2012. This is partly due to Central Government targets to increase the renewable energy infrastructure nationally resulting in a higher proportion of renewable energy feeding into the electricity supply, and technological advances leading to greater energy efficiency.

Figure 2. Projection of current rate reduction of carbon dioxide emissions to 2030 in Wokingham Borough



Assuming that there is minimal action beyond current, national policy and nationally led decarbonisation of the electricity grid and transport through electric vehicles, the estimated carbon emissions by 2030 will be approximately **291.16ktCO_2e**. This figure excludes the carbon sequestration levels for the Borough that could potentially increase by -16.71ktCO_2e, providing a predicted carbon footprint of **274.45 ktCO_2e**.

Below is a table that provides more detail on how this carbon footprint is predicted and where this is distributed amongst the industry sectors.

Table 4: Predicted carbon dioxide emissions by 2030 assuming minimal action beyond current, national policy

Subsectors	ktCO_2e	Total Sector KtCO_2e
Industry and Commercial Electricity	27.50	Industry & Commercial 45.40
Industry and Commercial Gas	11.67	
Large Industrial Installations	0.00	
Industrial and Commercial Other Fuels	5.08	
Agriculture	1.15	
Domestic Electricity	28.22	Domestic 102.20
Domestic Gas	69.97	
Domestic 'Other Fuels'	4.01	
Road Transport (A roads)	62.35	Transport 133.11
Road Transport (Minor roads)	64.70	
Transport Other	6.05	
Carbon Sequestration	-16.71	

Targets and Estimated Carbon Savings

The priority areas of focus for the council's actions to reduce carbon dioxide emissions centre on, tackling emissions from transport, more efficient energy use in domestic properties, generating renewable energy, planting more trees and other green foliage, encourage more recycling and encouraging behavioural change.

This action plan establishes targets to achieve carbon dioxide reductions within all of these areas as outlined below. The carbon savings outline by each target, are the cumulative savings for the next ten years. Some targets will not directly represent in carbon savings, but are essential to the delivery of the other targets; these are identified as 'Neutral' in the carbon saving column.

TR	Transport	tCO_2e
1	Deliver a greenway network of over 37 Km across the Borough by 2030 with the ambition to deliver 60 Km by 2036	45
2	Double public transport use by 2030 from 2019 baseline	7,813
3	20% reduction in total distance travelled in private vehicles per individual per year by 2030.	19,624
4	The use of all cars, vans and motorbikes as a mode of transport decreases from 74% (current national/borough average) total miles to 56% in 2030	18,756
5	Leading by example - Reduce by 70% CO_2 emissions produced by council related travel by 2030	73.2
6	Continue research and innovation programmes for the reduction of CO_2	Neutral

EV	Electric Vehicles	tCO_2e
7	50% Electric Vehicles (EVs) registered in the Borough by 2030 will save around 45,000 tCO_2e	45,000
8	Council's car fleet becomes entirely ultra-low emission by 2028 producing 45 tCO_2e savings	45.2
9	100% new buildings are EV ready from 2022	Neutral
AQ	**Air Quality**	**tCO_2e**
10	Reduce NO_2 concentration by 50% against 2019 baseline in the three AQ management areas by 2025	TBC
11	Educate the public on how they can actively improve air quality whilst reducing carbon emissions	TBC
	Estimated Total Carbon Savings	59,356.9

The council will utilise its influence and collaborate with partners and residents to help ensure the achievement of these targets. However, the achievement of these targets is a collaborative effort and requires support from all areas of society.

RE	Renewable Energy Generation in Council's owned assets	tCO_2e
12	Increase the generation of renewable energy through investment in solar farms to power the equivalent of 25,000 homes within the Borough by 2030 generating 25,560 tCO_2e carbon savings	25,560
13	Increased renewable energy generation to generate equivalent to 1550 kWh per household in 2030	27,333.46
	Estimated Total Carbon Savings	-52,893.46

The -52,893.46 tCO_2e carbon savings from renewable energy generation are expressed as negative emissions.

RT	Retrofitting existing and council development	tCO_2e
14	By 2028 All council buildings to be retrofitted to carbon neutral standards	6,612.30
15	From 2021 100% council new development is built to carbon neutral standards	Neutral
16	By 2029 all local schools to be retrofitted	5,034.08
RH	**Retrofitting Households**	**tCO_2e**
17	By 2030, 20% of households to be retrofitted	35,446.0
	Estimated Total Carbon Savings	47,092.38

CS	Carbon Sequestration	tCO_2e
18	Plant 250,000 trees throughout the Borough by 2025 saving 3.5 $ktCO_2$ per annum	3,500
19	Carbon sequestration by design - improving carbon sequestration rates in future land management decisions, approximately 0.5 $ktCO_2e$ savings	620
20	Transition to low intensity (high carbon sequestration) land management approximately 0.05 $ktCO_2e$ savings per annum	224
21	Implement a programme of carbon sequestration opportunities	TBC
	Estimated Total Carbon Savings	-4,344

The -4,344 tCO_2e carbon savings from carbon sequestration targets are expressed as negative emissions because they generate carbon dioxide removal

SY	Schools and Young People	tCO_2e
22	Encourage and support school children in the Borough to take an active role in reducing carbon emissions	723.54
23	Celebrate schools achievements in climate emergency initiatives and inspire the future generations	1.59
	Estimated Total Carbon Savings	725.13

WR	Waste & Recycling	tCO_2e
24	Recover 80% recycling in the form of wet paper by October 2020	262.8
25	re3 Pilot project on contamination in 2020	131
26	Achieve 70% recycling target by 2030	2,757.8
27	Zero waste going to landfill by 2030	2,259.2
28	Establish carbon based recycling targets	Neutral
	Estimated Total Carbon Savings	5,410.80

ND	New Development	tCO_2e
29	From 2022, major residential development to be designed and built to achieve carbon neutrality	Neutral
30	From 2022, major non-residential development to be designed and built to achieve the BREEAM excellent standard	Neutral
31	Establish a spatial strategy and design framework which promotes active and sustainable travel, sustainable design and construction and enables biodiversity gain	Neutral
32	Support low carbon and renewable energy generation	Neutral
33	From 2022, all new residential and non-residential buildings to be designed and built to be EV ready	Neutral
	Estimated Total Carbon Savings	Neutral

It is imperative that new homes in the council must be built to be low-carbon, energy and water efficient and climate resilient. Building new homes to net-zero carbon standards will not generate carbon savings: however, it will stop new carbon dioxide emissions being generated. New development targets are therefore preventative targets.

	Procurement	tCO_2e
34	By 2022, achieve sustainable procurement practice throughout the Council as part of Corporate Procurement Strategy	Neutral
35	By 2023, the Council will consider social value in all its procurement cycles	Neutral
	Estimated Total Carbon Savings	Neutral

It is imperative that the council procurement and decision-making policies and procedures establish requirements for a low-carbon economy. Addressing the carbon emissions from our decision making process and the supplier chain would contribute to the reduction of carbon emissions embedded in the council operations, as this will stop new carbon dioxide from being generated. Procurement targets are therefore preventative targets.

C&E	Engagement and Behavioural Change	tCO_2e
36	Climate Emergency as part of the core communication strategy for the council	TBC
37	Active engagement with residents and local businesses with climate emergency initiatives	TBC
	Estimated Total Carbon Savings	

Engagement and behavioural change targets support the delivery of the climate emergency action plan. There is great need for significant changes to our consumption and behaviour patterns. Through active engagement programs we plan to encourage our residents to be part of this change; their buy-in to this plan is crucial in achieving a net-zero Borough by 2030.

Balancing the carbon budget

When all the actions in the plan have been implemented, the Borough will still fall short of its carbon zero target by 2030 by **72.67 $ktCO_2e$**. This figure has been balanced by accounting for renewable energy generation estimate of **-52.8 $ktCO_2e$** and the increase of carbon sequestration estimated to be **-4.5 $ktCO_2e$**.

We anticipate that new actions and initiatives will be introduced over the coming years, which will enable us to close the shortfall identified.

Considerations for the Delivery of the Action Plan

Because we are working ten years in advance, these targets are best estimates with the information we currently have. There is also an assumption that national policy will reduce carbon emissions to **274.45 $ktCO_2e$**. There is always a risk that these policies do not take place as anticipated.

The council is committed to provide an annual progress report and as more information becomes available it will continually update the targets and actions on how we can play as full a role as possible, leading by example as well as by exhortation, in achieving a carbon neutral Wokingham Borough by 2030.

We have not been able to calculate the carbon savings for all the projects, as some of the information is not available yet. As projects develop, we will be able to give more information on carbon savings per individual actions.

This action plan is a predictive tool that allows us to understand generally, where we are heading and to implement new actions accordingly. Without this tool, we would not have a clear path on what the scale of the approach should be.

In an uncertain world, this plan has the potential to be affected by major global, national and local events. There is an appreciation that the council must be agile in how it responds to the climate emergency in order to fulfil its ambition of zero carbon Borough by 2030. For example, the COVID-19 pandemic has had major implications for the economy and society in general. A shift in behaviours during the lockdown resulted in a 54% reduction in commuting in Wokingham. This change in behaviour (which may be long-term) has resulted in a significant reduction in carbon dioxide emissions.

Climate Emergency Action Plan

Transport

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
T1	**Target 1. Deliver a greenway network of over 37 Km across the Borough by 2030 with the ambition to deliver 60 Km by 2036**				**4.34**	**7.5 M**
1.1	Review and approve the Rights of Way Improvement Plan	The Rights of Way Improvement Plan is a document that summarises the community heritage green and blue infrastructure in the Brough and importantly establishes the program for creating the right of way network up to 2026 as well as improving signage & information	A coherent system of well signposted greenways that enable an increased take up of sustainable transport modes and sees a reduction of car usage.	Rights of Way Improvement Plan approved at Executive on March 2020	Neutral	Nil
1.2	Deliver a comprehensive and connected network of greenway routes to encourage active and sustainable transport modes	Greenways are a strategic network of traffic free, multi-user routes (pedestrians, cyclists and, in some instances, equestrians) that will connect the **Strategic Development Locations** to the existing communities as well as linking places of interest, employment and recreational value and provide a continuous traffic free route in the Borough. Overall, the network (SDLs) will provide 33.5 km of new and enhanced routes by 2030 and a total of 60 km by 2036.	Encouraging residents to become more active and utilise sustainable travel solutions that ultimately will reduce the amount of private vehicles on the roads. Overall, the network will provide a 33.5 km potential of 2.15 tCO_2e savings	Route A - South of M4 SDL - Arborfield - Barkham - 5.5. Km	2.15	TBC
				Route B - Arborfield SDL - Barkham - Wokingham - 7.6 km		570,000
				Route D - Arborfield SDL – Barkham – South Wokingham SDL - Wokingham - 7 Km		TBC
				Route E - River Loddon – Arborfield - 2.1 Km		TBC
				Route F - Arborfield – Arborfield SDL - 4.0 Km		TBC
				Route I - Arborfield SDL - Finchampstead - California Country Park - 1.9km		40,000
				Route J - Arborfield SDL - Blackwater Valley - 2.9 Km		TBC
				Route K - Arborfield Cross - 2.5 Km		TBC
		The River Loddon Long Distance Path (LLDP) will link between many of the Greenway Routes, particularly the greenways connecting to the Arborfield and the South of the M4 SDL. It aims to link the Thames Valley Path in the north of the Borough in Wargrave to the Blackwater Valley Path in the South of the Borough in Swallowfield.	Encouraging residents to become more active and utilise sustainable travel solutions that ultimately will reduce the amount of private vehicles on the roads Overall, the LLDP network will provide a potential of 2.15 tCO_2e 2 savings	LDP Section A - Blackwater Valley Path, Swallowfield to A327 Reading Road - 6.8 Km	2.15	TBC
				LDP Section B - A327 Reading Road to Showcase Cinema, Winnersh - 8.42 Km		TBC
				LDP Section C - Showcase Cinema, Winnersh to Waggon & Horses Pub, Twyford - 6.55 Km		612,000
				LDP Section D - Waggon & Horses Pub, Twyford to River Thames - 8.84 Km		TBC

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
		Overall, the LLDP network will provide 30.6km of new traffic free paths.				
T2	**Target 2. Double public transport use by 2030 from 2019 baseline**				**7,813.13**	
2.1	Improve the bus public transport network for Wokingham Town.	Identify the key transport needs for the public travelling between Wokingham and surrounding areas. Wokingham Town, Finchampstead, Winnersh, Twyford, and Woodley. Using this to procure an improved contract with Reading buses.	To achieve a 5% decrease in the number of people arriving in single occupancy vehicles at public transport interchanges (rail stations & P&R sites) in the Borough by March 2022. **Potential of CO_2e savings TBC**	Launch public consultation to understand demand for travel between Wokingham Town and surrounding areas using this information to help re-tender the public transport contract with reading buses.	TBC	TBC
2.2	Bus Stop Infrastructure Works to Support North Arborfield SDL Bus Strategy	Public Transport infrastructure enhancement includes more shelter from poor weather, more seating capacity and real time information displays.	Improved infrastructure will encourage more residents to use public transport/ bus network rather than using their car **Potential of CO_2e savings TBC**	Bus strategy for North Arborfield has been published. Implementation plan agreed Start works on site.	TBC	54,000
2.3	Increase peak-hour bus transport for Lower Early	A need has been identified to increase the capacity of bus transport between Lower Earley and Reading. Recent surveys suggest morning services are at capacity and leaving passengers at stops.	To achieve a 5% decrease in the number of people arriving in single occupancy vehicles at public transport interchanges (rail stations & P&R sites) in the Borough by March 2022. **Potential of CO_2e savings TBC**	Review contract with Reading buses	TBC	£0-250,000
2.4	Implement the South of M4 bus strategy	Increasing the frequency of the Leopard Bus services, serving the South of M4 SDL	To achieve at a 5% increase in the number of residents using the bus in the SoM4 SDL **Potential of CO_2e savings TBC**	Launch public consultation to understand demand for travel	TBC	£480,000
2.5	Investigate demand services opportunities and on-demand flexi-routes	Uber style public transport service which provides access to public transport for those people living in remote locations where a full service would be unviable	Improve public access to rural areas to achieve a 5% increase in the number of trips from our public transport interchanges by bus and rail by March 2022.	Twyford is being considered under the rural mobility fund bid as a pilot area.	TBC	TBC
2.6	Retender bus network operating in Wokingham Town Centre with low carbon engines	Specify a low carbon engine classification for buses for Wokingham Town to be a minimum of Euro 6 standard by the end of 2020 and ultra-low emission by 2028.	Reduce emissions from the operation of public buses.	Change specification in the tender documentation. Purchase new buses Communications campaign to promote new low carbon service.	TBC	TBC
2.7	Deliver the Winnersh Triangle Parkway parking projects. This will increase the amount of parking capacity at Winnersh parkway station	Creation of more parking spaces close to train stations and park and ride facilities to encourage uptake of public/sustainable transport	Winnersh triangle parkway to achieve a 10% increase in the number of Wokingham Borough residents who use a train or park & ride at least once a week	Design scheme Planning permission Choose contractor Start on site work Completion date	122.5	3,100,000

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
			by March 2026. 122.5 tCO_2e savings per year			
	Deliver transport infrastructure enhancement in Coppid Beech, includes the creation of more parking spaces		To provide addition park and ride capacity at Coppid Beech to achieve a 10% increase in the number of Wokingham Borough residents who use a train or park & ride at least once a week by March 2026. 30.1 tCO_2e savings per year	Design scheme Planning permission Choose contractor Start on site work Completion date	30.1	2,700,000
T3	**Target3. (Demand) 20% reduction in total distance travelled in private vehicles per individual per year by 2030.**				**19,624.04**	
3.1	Engage businesses to promote homeworking and remote working when possible	Capitalise on the unintended consequences of the national lockdown by engaging with businesses to understand their working practices and encourage to consider the new ways of working in their recovery plans.	Reduce by 30% the CO2 emissions caused by travel from workers of local businesses by 2022 4,200 tCO_2e could be saved annually	Engage business through a survey to assess their working practices during the national lockdown and encourage new ways of working as part of their recovery plans.	4,200	Nil
				Deliver a communications campaign to encourage local business to learn from COVID-19 unintended consequences.		Nil
3.2	Promote the Liftshare scheme through My Journey to support business develop bespoke travel policies	Liftshare is a car share platform, which helps companies / business parks to assess staff travel patterns and set up employee communities to promote car sharing, walking, cycling and the use of public transport.	Reduce transport related CO_2e emissions, reduce congestion, improved road safety and air quality across Wokingham Borough. To achieve a 10% reduction in the number of single occupancy car trips to and from businesses within the Borough by March 2022 9,812.02 tCO_2e savings	Produce and submit proposal Procurement process Launch Liftsare scheme	9,812.02	TBC
				Map commuter trips across the Borough and provide access to live data on how many miles/CO2 can be saved by people lift sharing across the Borough and for each individual business.		TBC
				Set up CO2 emissions targets for local businesses		
				Deliver a communications campaign to promote active and sustainable travel modes through competitions		
3.3	Develop a domestic and industrial freight management policy	Freight management policy will support borough wide traffic distribution hierarchy, understanding traffic capacity, and traffic carrying routes. Improving operational logistics could reduce the number of vehicles on the road.	Improving operational logistics could reduce the number of 'empty runs' and consequently the number of trucks on the road.	Deliver the first draft freight management policy	TBC	TBC

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
		The framework will support decision making on the traffic distribution, based on air quality, carbon emissions and energy savings.	22% decrease in distance travelled by road freight – Carbon savings to be confirmed			
T4	**Target 4. (Modal shift) The use of all cars, vans and motorbikes as a mode of transport decreases from 74% (current national/borough average) total miles to 56% in 2030**				**18,755.98**	
4.1	To provide more primary school children with the opportunity to develop practical skills and an understanding of how to cycle safely.	To offer bikeability training to more primary school children in Wokingham Borough and provide more children with the opportunity for a higher level of bikeability training (Level 3). Improving cycle skills amongst children support the development of healthy and independent young people and improved local air quality.	Achieve a 5% reduction in the number of children being driven to Wokingham Borough schools by March 2022. 15.4 tCO_2e savings	Compile and deliver an annual events programme for Bikability courses. Monitor impact of programme on take up of cycling to school	15.4	£122,512
4.2	Encourage and support local schools to join Modeshift Awards scheme for active and sustainable travel	Modeshift Sustainable Travel Accreditation and Recognition for schools is a national awards scheme that rewards the work schools do to promote active and sustainable travel	Create a culture of active travel amongst school children, which has a direct impact on air quality, carbon savings and helps improve student health and concentration levels. A 10% reduction in the number of children being driven to school by March 2026. 137.7 tCO_2e emissions could be saved each year	Eco - Officer will target six schools within the Wokingham Town, Finchampstead and Twyford areas (AQMA), to achieve Modeshift STARs accreditation at bronze, silver or gold level, as appropriate for the school.	137.7	£49,000
				Active travel officers will support schools across the Borough to achieve Mode Shift STARs accreditation as appropriate for each school		£40,000
				Promote the following campaigns in schools in the AQMA area: a car free day, an anti-idling campaign, national clean air day campaign, and Beat the Street		£101,101
4.3	Roll out the Healthy School Streets programme	Trial programme at school streets across the Borough to tackle congestion, road safety and air quality by restricting motor traffic at the school gates for a short period of time, generally at drop-off and pick-up times. The scheme will encourage people to walk	A 10% reduction in the number of children being driven to school by March 2026. This will not only reduce carbon emissions but contributes to reduce congestion, improved road safety and air quality around the schools in Wokingham Borough.	Design how the scheme will work. Select a school to pilot scheme. Review the results of the pilot. Role our scheme more widely.	137.7	£2,000

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
		and cycle to school and make it more difficult to drive to the school for the school run resulting in a reduction in the number of students being driven to school.	137.7 tCO_2e savings a year.			
4.4	Increase the uptake of cycling from local business by promoting the Love to Ride programme	Love to Ride is a programme that encourages people to choose cycling as their main mode for essential travel and as a fun, enjoyable form of daily exercise. Uptake on cycling will reduce transport related CO2 emissions, reduce congestion, and improved air quality across Wokingham Borough.	To reduce the CO2 emissions from employees of local businesses travelling to work by 10% by 2025. 1,240 tCO_2e savings a year	Ride anyway week campaign - 23 - 27 March 2020 Run 4 campaigns per year to promote cycling to work Work in partnership with local businesses to promote active travel breakfast	1,240	£50,000
4.5	Develop the Local Cycling and Walking Infrastructure Plan (LCWIP) to be Borough wide and implement 50% LCWIP by 2030	A comprehensive network across the Borough which is joined up and is based on evidence and data from the LCWIP process.	Increase cycle networks across the Borough will increase cycling modal share by 4%. 5,031.8 tCO_2e savings a year	Completion of first LCWIP report 2020. Roll out of further LCWIP studies across the Borough from 2021 to 2025. Implementation of measures from the reports ongoing to 2030.	5,031.8	5,000,000
		Investment in current/future walking networks in the Borough based on the LCWIP plan.	Increase walking networks across the Borough will increase walking modal share by 5%. 4,906 tCO_2e savings a year	Completion of first LCWIP report 2020. Roll out of further LCWIP studies across the Borough from 2021 to 2025. Implementation of measures from the reports ongoing to 2030.	4,906	3,000,000
4.6	Deliver engagement and cycle training events across the Borough	Deliver target events such as bike hubs, Dr bike checks, puncture repair classes, smoothie bike, cycling skills and bike obstacle course, Bike bonanza, Bikeability training levels 1, 2 and 3. Cycle training increases confidence, road safety awareness and skill level on bikes amongst new residents.	To achieve a 2% increase in the number of Wokingham Borough residents regularly cycling for leisure and utility by March 2022. 102.9 tCO_2e savings a year	Deliver events for Montague Park and a new one in Shinfield as planned in the Events Programme 2020 - 2021	102.9	£1,500
				Deliver Wokingham Bikeaton as planned in the Events Programme 2020 - 2021		£500
		Engage residents with active travel schemes by providing discounts for bikes & accessories.	To achieve a 1% increase in the proportion of adults in Wokingham Borough who walk at least once a week by March 2022. 110.3 tCO_2e a savings year	Deliver Cycle hubs for Woodley, FBC, Montague Park and Shinfield as planned in the Events Programme 2020 - 2021	110.3	£5,000
4.7	Adult cycle training	Shine over 60s cycling program, focus on encouraging outdoor cycling for people over 60.	More residents over 60 riding bikes for travel. A 3% reduction in car use by residents over 60. 1,757.8 tCO_2e savings a year	Deliver SHINE rides events as planned in the Events Programme 2020 - 2021	1,757.8	£1,500

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
4.8	Completion of the Cross Berkshire Cycle Route	The NCN 422 is a new national cycle route between Newbury and Windsor (approx. 30 miles), including a section within Reading, Wokingham Borough, West Berkshire, Bracknell Forest and Windsor & Maidenhead, and it is included within the Thames Valley Berkshire Local Growth Deal. Improved cycle network will encourage more residents to cycle by connecting people with key destinations.	This scheme will assist with increasing cycling modal share and has already seen an increase in cycling on the route. Carbon savings have therefore mostly already been captured.	Completion of route across Wokingham with a combination of shared use and on-carriageway cycle lanes on the A329. Phase 1-3 completed 2013-2018 Phase 4 underway May/June 2020	Neutral	1,000,000
4.9	South Wokingham Railway Crossings (Foot and cycle)	New foot and cycle infrastructure in the Borough.	Improved walking and cycling infrastructure will encourage residents to mode shift.		TBC	1,500,000
4.10	Promote active and sustainable travel modes amongst new residents in new developments.	Inform new residents of the alternatives to single occupancy car use, promote the wider benefits of active and sustainable travel and provide a local context. Welcome packs are provided with offers and discounts for sustainable travel like bus taster tickets and cycle shop discounts as well as localised cycle and bus maps and SANG walks.	Better informed residents regarding walking, cycling, public transport opportunities will help to achieve 25% of new residents travelling sustainably on a daily basis across the Strategic Development Locations each year by 2026.	Welcome pack for Deer Leap Park and Orchard Rise in the Spencerswood area	TBC	£1,000
				Welcome pack for Deer Leap Park and Orchard Rise in the Arborfield area	TBC	£1,000
				Welcome pack for Deer Leap Park and Orchard Rise in the Wokingham area	TBC	£1,000
4.11	Provide personalised travel planning to new residents	Travel planning advisors are employed to provide support and information to residents at new developments about alternative modes of travel.	All residents in new developments are offered transport advice, including free testing ticket and tailored travel packages To achieve 25% of new residents travelling sustainably on a daily basis across the Strategic Development Locations each year by 2026.	Personalise travel planning to new residents in Shinfield development	TBC	£25,000
T5	**Target 5. Leading by example - Reduce by 70% CO_2e emissions produced by council related travel by 2030**				**73.2**	
5.1	Deliver a strategy to reduce miles produced by council staff work related travel (grey fleet miles)	To investigate the possibility to introduce EV Car clubs for council staff between Monday to Friday and with the option to open to the public during the weekends.	To reduce grey fleet miles by 30% from transport related trips 13.75 tCO_2e savings a year	Carry out assessment for car clubs and produce a strategy	13.75	TBC

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
5.2	Promote homeworking and remote working practices amongst council staff	In addition to home working, expand remote working practices in other locations to reduce unnecessary travel and the need for central office accommodation. Capitalised on the unintended consequences of the national lockdown.	To reduce the CO2 emissions travelled from council staff to work by 40% by 2022. 41.8 tCO_2e savings a year	Capitalise on the unintended consequences of the national lockdown by reviewing working from home practices in the council and consider new ways of working in the recovery plan for the council.	41.8	Nil
				Deliver a staff survey to assess working from home preferences amongst council staff.		Nil
5.3	Incentivise council staff to mode shift to active and sustainable transport	Investigate incentives that can be given to council staff to commute to work more sustainably including 'salary sacrifice' schemes for bus, rail, tram and cycling to work.	To reduce the CO2 emissions from staff travelling to work by 10% by 2025. 10.4 tCO_2e savings a year	Review of system and potential alternatives to be identified in 2020	10.4	c£10k
5.4	Workplace EV Scheme	Support WBC employees that rely in private vehicles to transition to EV by assessing the potential of implementing schemes that make EVs more accessible and the preferable choice.	To reduce the CO2 emissions from staff travelling to work by 10% by 2030. 10.4 tCO_2e savings a year	Carry out an assessment to salary sacrifice schemes that could be offered to council employees	10.4	Nil
T6	**Target 6. Support research and innovation programmes for the reduction of CO**					
6.1	Continue to research and use innovative techniques to manage traffic and encourage uptake of sustainable modes and ultra-low emission options	Research will continue and opportunities will be taken where appropriate.	Dependant on the outcome research. An arbitrary estimate of a 10% reduction in CO2 is assumed.	Low Emission Transport strategy to be completed in 2020/21 in advance of LTP4	TBC	TBC
6.2	Mobility as a service (MaaS) and future proofing the network	Mobility as a Service (MaaS) will contribute to reduce the need to own a car and link up the public transport and active mode options to make it easier to travel around the Borough.	This could result in a further reduction of private motor vehicle ownership of 10%	To be considered further in 2021/2022	TBC	TBC
6.3	Deliver the smart mobility projects within the Borough	The smart mobility project consists of a combination of operational and information technologies that assess growing traffic peak demand while attaining environmental and user-experience data. This will deliver smarter and more sustainable transport mobility.	Smart mobility can combine different modes and options (public transport, car sharing, car rental services, taxis and a bicycle system) to cater for mobility needs. Carbon savings will be attributed to the individual projects.	ITS strategy underway and to be completed in 2020. Investigate key locations to be included in the pilot. Special focus on Park & Ride sites and key gateways to the Borough.	TBC	TBC
				Gather C2 Cloud traffic data and put it in an open form to be utilise internally.		

Electric Vehicles

REF	Action	Description	Outcome	Milestone	Carbon savings tCO2e	Project Cost
T7	Target 7. 50% EVs registered in the Borough by 2030 will save around 45,000 tCO_2e				45,625	
7.1	To develop an EV strategy for Wokingham Borough	Map the existing EV chargers across the Borough and on council property. Obtain a baseline on current electric vehicle market, current ownership, forecast growth and charging infrastructure technologically. Develop and agree policy for EV charge point provision, which will maximise uptake of EV in the Borough. Assess the potential for an integrated network of EV charge points. This would include encouraging the installation of EV charging points at motorway service areas and at large fuel retailers	Borough wide strategy to specify the infrastructure for EV charging point to encourage the uptake of EVs. Carbon savings cannot be achieved without a clear strategy to enable to uptake of EVs. Specific carbon savings cannot be attributed to the strategy as a document, but can be attributed to the actions that it sets out.	Carry out initial assessment of the EV requirements for the Borough	Neutral	Nil
				Instruct consultant on requirements baseline and create a brief to commission expert work		Nil
				Create a business case for funding Consultant provides draft EV report		Nil TBC
				Consult on report - recommendations for determining the best approach to providing charging solutions for the public.		Nil
				Establish policy, processes and protocol for responding to requests for charge points and how they can be operated and maintained.		Nil
				Agreeing partnerships, income streams and service providers to ensure best uptake		Nil
				Produce EV strategy report and present to senior leadership teams for approval		Nil
				Present strategy for approval		Nil
7.2	Provide a uniform method of accessing public and private charge points	Making EV charges accessible and easy to use. WBC needs to provide accurate standardised public information on how to locate, use and pay for chargers in the Borough.	Set up the back office so that EV chargers are accessible and easy to use to encourage more people to use them. Carbon savings cannot be achieved without setting up the back office to enable to uptake of EVs.	Investigate the types of back office payment systems used by the industry and assess the best option to be implemented at WBC. Harmonised EV related contracts such as electricity, maintenance, service and back office.	Neutral	Nil
7.3	Review the residential charge point infrastructure for those who have communal parking	Currently, 27% residential buildings do not have off-street parking and therefore direct access to safely charging an EV	27% households, approximately 12,000 households do not have off-street parking.	First stage: Implement a pilot of EV charging points in selected location, aim at installing 18 new charging points for	77.6	TBC

REF	Action	Description	Outcome	Milestone	Carbon savings tCO2e	Project Cost
	facilities such as flatted developments	vehicle. This represents a barrier for these occupants to own an EV and so reduces the uptake of EVs in the Borough.	Initial pilot: 18 new charging points for residents generating an estimated of 77.6 tCO_2e annual savings	residents with communal parking facilities.		
				Second stage: Based on the experience gained during stage 1, the council will seek to extend charging point facilities across the Borough.	77.6	TBC
7.4	Increase the amount of EV Transport used on education and social care services	Work with Education and Social Care transport providers to encourage/specify transition to ultra-low vehicles for use on HTST transport.	50% (which exceeds the statutory minimum of 35%) contract transport fleet will be hybrid or fully electric by 2028.	Review the contracts with our transport providers and establish requirements to transition to ultra-low emissions vehicles	TBC	Nil
7.5	Ensure that all EV charging points installed in the Borough are 'smart ready' to balance the electricity load demands on the grid.	Ensure that charge points are smart ready by setting requirements prohibiting installation of charge points unless they meet certain load management specifications. Establish the parameters for the management of available energy in an area through methods like dynamic load balancing or local storage systems.	Correct power infrastructure for all EV charging point network in place. This will ensure reliability of power supply in the system. Maintaining confidence in the network and increasing the uptake of EVs. Carbon savings cannot be achieved without a reliable power infrastructure in place to enable to uptake of EVs.	Identification of dynamic load balancing or local storage systems that could be implemented in WBC	Neutral	Nil
				Engage with service providers about generic support for WBC EV chargers through standards such as OCCP.	Neutral	Nil
7.6	Support local businesses, including commercial property owners, to transition their commercial fleets to EV. Also to encourage employees to switch to EV for private use	Consult with local businesses to understand needs, including taxi fleets, to develop the required charging infrastructure to support the uptake of EVs. This includes applying for grants and funding for purchase and installation cost, etc. Guide and advise local businesses about the benefits of transitioning to EVs.	Support the transition of 20% vehicles used for commercial purposes to ultra-low or electric 1,834.6 tCO_2e savings by the end of 2030	Engage local business with Workplace Charging Scheme	1,834.6	Nil
				Provide information on salary sacrifice schemes to support employees to transition to EV		Nil
				Assess opportunities to support the development of plug-in taxi programs within the Borough, considering the requirements for charge points.		Nil
				Deliver a sustained campaign to inspire residents and local businesses to 'Go Ultra Low' and transition to EVs		Nil
7.7	Promote uptake of EVs with our residents	Support and educate our residents about the benefits of transitioning to EVs. Make available information that will support residents in taking the decision to transition to EVs, including government	60% of residential buildings have parking facilities. 46,800 households. 10,732.72 tCO_2e savings by the end of 2030	Deliver a sustained campaign to inspire residents to 'Go Ultra Low' and transition to EVs.	10,732.72	Nil

REF	Action	Description	Outcome	Milestone	Carbon savings tCO2e	Project Cost
		schemes that will support residents in the installation of EV charging points.				
7.8	Coordinate the installation of EV charging points into private and commercial owned land in line with the EV network plan approved in the strategy.	Investigate the requirements to install EV charge points to commercial property such as business parks, shopping centres, etc.	Carbon savings to be confirmed	Align the EVs installation requirements to the building retrofitting programs.	TBC	TBC
7.9	Enable street lighting columns to be EV charging ready	All new street lighting columns in new developments have the capacity to include charging points, where appropriately located. Particularly in areas with on-street parking provision.	It will encourage more people to switch to EV. Carbon savings to be confirmed	Specification for lampposts charging. Align EVs installation requirements to Provide guidelines for developers	TBC	TBC
T8	**Target 8. Council's car fleet becomes entirely ultra-low emission by 2028 producing 45t CO_2e savings**				**45.2**	
8.1	Ensuring 100% of the car fleet operated by the council is ultra-low emission by 2028	Leading the way by transitioning the 16 WBC owned and leased vehicles to EV or low carbon vehicles at the end of their leasing contract/life. Vehicles range from minibuses, cars and a tractor in Dinton Pastures.	45.2 tCO_2e savings	Deliver the programme to transition WBC owned vehicles to be ultra-low vehicles by 2028	45.2	TBC
				Review lease contracts and establish a programme for transitioning leased vehicles to EV when engaging in new contracts		TBC
				Embed requirements for EV's or Low Emission vehicles in WBC Fleet Guidelines Policy and WBC Vehicle Procurement Guidelines.		Nil
				Update the Vehicle Procurement Application form to include the consideration of EV's or Low Emission vehicles as a standard with no sign off from the Board for any vehicle that does not meeting this requirement.		Nil
2.2	Installed EV charging points into council owned buildings in line with the EV network plan approved in the strategy.	EV network plan will have standardised EV charging point requirements to make charging easy to access across the Borough To support this ensure all council-owned assets comply with the standard. Include	Specific carbon savings can be attributed to the retrofitting of each building depending of the installation requirements of EV charge points.	Align the EVs installation requirements to the building retrofitting programs.	TBC	TBC

REF	Action	Description	Outcome	Milestone	Carbon savings tCO2e	Project Cost
		locations such as libraries, leisure centres, parks, etc.				
8.3	Establish contractual policies that promote the use of EV or ultra-low emissions vehicles as the council's preferable vehicles	Ensuring all our contractors use ultra-low of EV when possible will reduce emissions from contractors and suppliers vehicles working for and in partnership with the council	50% (which exceeds the statutory minimum of 35%) contract transport fleet will be hybrid or fully electric by 2028. Specific carbon savings can be attributed to each contractor depending of their size fleet and type of service provided. Carbon savings to be confirmed	Include in procurement policies considerations for EV/ultra-low emission vehicles as a standard.	TBC	Nil
				All buyers/commissioners to apply contractual policies when subcontracting services		Nil
T9	**Target 9. 100% new buildings are EV ready from 2022**					
9.1	Make all new houses electric vehicle ready by establishing requirements for EV charging points in new dwellings as described in the EV strategy	Establish the requirement for EV charging point infrastructure for new dwellings in the Borough where appropriate. Make sure that new homes planning applications submitted from 2022 and where appropriate, have a charge point available. This will ensure there is no barrier for new homeowners or occupants of new dwellings to own or leased an electric vehicle.	New residents will have the infrastructure to support the ownership of electric vehicles; this will stop new CO_2e emissions.	Publish policy as part of the adopted Local Plan. Developers to be informed of policy and requirements shall be listed in planning application New developers to ensure that there is sufficient power serving new developments.	Neutral	Nil
9.2	Make all non-residential buildings EV ready by establishing requirements for EV charging points in new construction as described in the EV strategy	The EV policy will request relevant charging provision in new non-residential buildings. This will ensure there is no barrier for occupants of new buildings to own or lease an electric vehicle. Developers will have to ensure there is sufficient power serving their developments.	New residents will have the infrastructure to support the ownership of electric vehicles. This will stop new CO_2e emissions.	Publish policy as part of the adopted Local Plan. Developers to be informed of policy and requirements shall be listed in planning applications. New developers are to ensure that there is sufficient power serving new developments.	Neutral	Nil

Air Quality

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
T10	**Target 10. Reduce NO2 concentration by 50% against 2019 baseline in the three AQ management areas by 2025**				TBC	
10.1	Continue air quality monitoring for NO_2 concentration in air quality management areas	There are 47 locations across the Borough. The Public Protection Partnership (PPP) set up a target to reduce Nitrogen Dioxide emissions from transport in Wokingham Town Centre and Twyford Crossroads. Monitoring allows us to assess the levels of pollution so we can increase the effort to reduce pollutants in the most affected areas	Monitoring which is overseen by Defra has shown a reduction of NO_2 levels in Wokingham Town Centre, Twyford Crossroads and the 60m either side of the M4 throughout the whole of the Borough over the last 6 years to 2018.	Continue implementing pollution prevention and control inspections required at Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995). The Air Quality Annual Status Report is published annually and provides an update of the monitoring results for the LAQM.	TBC	Nil
10.2	Changes to how we manage and control the traffic in the Borough	Use intelligent traffic systems to allow the traffic signals at Twyford crossroads to respond to air quality readings. If successful, this technology could become more widely used at other junctions in the Borough.	Reduce air pollutants concentration and therefore CO_2e emissions Reduced traffic queues and resulting emissions through improving traffic flow in the most traffic heavy areas	Explore and install technology options that can be used in Twyford cross roads	TBC	TBC
10.3	Implementation of air quality mitigation projects	Using the data from the air quality monitoring work above, air quality hot spots have been identified in the Borough. TRF have been commissioned to produce a plan of improvement projects that can be implemented to improve air quality in these areas.	Reduce NO_2 emissions from transport in Wokingham Town Centre and Twyford Crossroads	Defra has recently confirmed through its annual assessment of these plans that it is satisfied with the progress made against them. Commissioned study to identify further air quality improvement measures for Twyford Crossroads which will feed into a further action plan A Smart Living Pillar installed in Twyford as a pilot to improve air quality. We hope to extend this concept into surrounding areas.	TBC	TBC

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
T11	**Target 11. Educate public on how they can actively improve air quality whilst reducing carbon emissions**					
11.1	Engage the public with air quality matters by providing information through campaigns and activities	Working with schools to increase awareness of air quality issues though running a competition to produce signs, stickers and leaflets to be distributed across the Borough with focus on hotspots	Reduce air pollutants concentration and consequently CO_2e emissions	Run communications campaigns that include subjects such as Myths & facts of idling, Home air quality. Increase awareness of the impact of poor air quality on health.		
11.2	Reduce idling	Description on how idling impacts on air quality levels. Improve signage around key spots such as schools, taxi spots, stations. Engaged children with air quality issues. Raise public awareness about the relationship between improving air quality and CO_2 emissions.	Reduce air pollutants concentration and consequently CO_2e emissions.	Run a schools air quality competition, to engage children, parents and local residents with air quality issues related to idling.		
				Signage has been put up in Twyford main road to encourage drivers to switch off their engines whilst waiting at the crossroads.		
				Introduce an 'emissions and idling policy' in the Borough.		
				Implementing No-Vehicle-Idling zones, around as many schools in the Borough as possible, by the end of 2022, and in other identified areas such as taxi ranks, GP surgeries, and close to level crossings.		

Renewable Energy Generation

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Estimated Project Cost
T12	**Target 12. Increase the generation of renewable energy through investment in solar farms to power the equivalent of 25,000 homes within the Borough by 2030 saving approximately 25,560 tCO_2e**				25,560	18 M
12.1	Deliver the installation of a solar farm in Site 1 with the capacity to generate in excess of 20 MWh of energy.	Installation of a large scale solar farm on council owned land will allow the council to offset its carbon emissions from electricity and gas usage and possibly 'retail' any excess.	Large scale solar farm installed in Site 1 with the potential of generating 20+ MWh by 2023. Estimated Carbon savings 5,112 tCO_2e potential to feed 5,000 homes.	Asset review board to the potential sites - consultant briefing for review of master planning of specific sites - With WSP for land planning now. Options appraisal - commission specifications of the project to procurement team Site tenant notice - one year notice Initial procurements process - identify the contractor - framework and due diligence process - 6 months Planning application - full application submission Consultation processes with local residents Project delivery - Construction of solar farm - Project management Start operation	5,112	
12.2	Deliver the installation of a solar farm in Site 2 with the capacity to generate in excess of 20 MWh of energy.	Installation of a large scale solar farm on council owned land will allow the council to offset its carbon emissions from electricity and gas usage and possibly 'retail' any excess.	Installation of solar farm in Site 2 with the potential of generating 20+ MWh generation by 2025. Estimated Carbon savings 5,112 tCO_2e potential to feed 5,000 homes.	Asset review board to the potential sites - consultant briefing for review of master planning of specific sites Options appraisal - commission specifications of the project to procurement team Site tenant notice - one year notice Initial procurements process - identify the contractor - framework and due diligence process - 6 months Planning application - full application submission Consultation processes with local residents Project delivery - Construction of solar farm - Project management Start operation	5,112	

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Estimated Project Cost
12.3	Deliver the installation of a solar farm in Site 3 with the capacity to generate in excess of 20 MWh of energy.	Installation of a large scale solar farm on council owned land will allow the council to offset its carbon emissions from electricity and gas usage and possibly 'retail' any excess.	Installation of solar farm in Site 3 with the potential of generating 20+ MWh by 2027. Estimated Carbon savings 5,112 tCO_2e with the potential to feed 5,000 homes.	Asset review board to the potential sites - consultant briefing for review of master planning of specific sites Options appraisal - commission specifications of the project to procurement team Site tenant notice - one year notice Initial procurements process - identify the contractor - framework and due diligence process - 6 months Planning application - full application submission Consultation processes with local residents Project delivery - Construction of solar farm - Project management Start operation	5,112	
12.4	Deliver the installation of a solar farm in Site 4 with the capacity to generate in excess of 20 MWh of energy.	Installation of a large-scale solar farm on council owned land would allow the council to offset its carbon emissions from electricity and gas usage and possibly 'retail' any excess.	Installation of solar farm in Site 4 with the potential of generating 20+ MWh by 2030. Estimated Carbon savings 5,112 tCO_2e potential to feed 5,000 homes.	Asset review board to the potential sites - consultant briefing for review of master planning of specific sites Options appraisal - commission specifications of the project to procurement team Site tenant notice - one year notice Initial procurements process - identify the contractor - framework and due diligence process - 6 months Planning application - full application submission Consultation processes with local residents Project delivery - Construction of solar farm - Project management Start operation	5,112	

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Estimated Project Cost
T13	**Target 13. Support the generation of renewable energy in the Borough to generate the equivalent of 2500 kWh per household in 2030, this will result in carbon savings of approximately 44,666.3**				44,666.3	
13.1	Set up a Community Energy Fund for Wokingham (WCEF)	A Community Energy Fund will help accelerate the uptake of renewable energy generation within the Borough. It will allow the council to engage with the community in the journey to net-zero carbon. The WCEF funds renewable energy installations through local shares from the community, enabling individuals and local organisations to support and benefit from the scheme.	Generate an average of 27,000 kWh/year of renewable energy from the installation of small-scale PV systems funded through this scheme. Estimated carbon savings per year 6.90 tCO_2e Estimated carbon savings for ten years 69 tCO_2e	WBC will assess potential buildings that could be considered for the scheme. These include all schools without solar PV and Young and Community Centres without PV.	69	Nil
13.2	Support residents and local businesses to reduce their energy usage and carbon emissions and increase the uptake of renewable energy installations through the green bank scheme	The Green Bank Scheme will provide a loan to assist householders in their net zero carbon ambitions. This will include renewable energy generation technologies. Develop a consultancy service to assist businesses with legislative compliance and energy/carbon reduction techniques.	It is estimated that 15,000 households will apply for funding for the installation of PV through the Green Bank scheme. Estimated carbon savings 9,585 tCO_2e	Assessment of the requirements to set up the scheme and assessment of the stakeholders involved. Identification of potential partners that will support the deployment of the scheme. Terms of Reference for the scheme. Launch the scheme with a communications campaign.	9,585	
13.3	Develop an ECO (Energy Company Obligation) offering	Support residents and local businesses to reduce their energy usage and carbon emissions and increase the uptake of renewable energy Some minor installations of Renewable Energy Generation technologies as part of this scheme.	It is estimated that 15,000 households will apply for funding for the installation of PV through the Green Bank scheme. Estimated carbon savings 9,585 tCO_2e	Provide a scheme which allows for the public to take advantage of Renewable Energy Technologies	9,585	

Retrofitting Domestic and Commercial

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
T14	**Target 14. By 2028 All council buildings, excluding schools, will be retrofitted to carbon neutral standards**				6,612.30	4,500,000
14.1	Improve energy performance of council owned buildings to carbon neutral standards	Implement a wide range of energy efficiency projects at existing properties to improve energy efficiency. These include, installing LED lighting, Cavity Wall, loft insulation boiler controls etc., all to make the property 'consume' less energy.	All corporate assets energy performance reviewed, and a retrofit programme of improvement measures in place.	Have a baseline of energy performance for each council-owned asset. Three year assessment, average kilowatt value (FY from 2017-18, 18-19, 19-20).	6,612.30	4,500,000
			Programme for retrofitting corporate assets based on energy performance baseline and energy improvement requirements. 6,612.30 tCO_2e savings by 2028	Identify energy performance improvement requirements to all corporate sites and recorded in the Corporate Assets Carbon Reduction Database.		
				Set up a programme for retrofitting assets.		
				Carry out a feasibility assessment on Woodley Library as a pilot project.		
				Establish guidelines of energy improvements that can be used for all corporate assets.		
				Deliver the retrofitting programme.		
14.2	Improve energy performance of council housing stock	There are around 2,600 council owned housing units. We want to improve energy performance of council housing and incrementally reduce the use of domestic gas and replace it with cleaner technologies. This will contribute to a reduction in energy bills and fuel poverty rates.	Set up a programme for retrofitting of our housing stock to net zero standards 9,880 tCO_2e savings	Survey the whole stock to develop and energy benchmark.	9,880	Nil
				Carry out assessment to Public Energy Supplier funding that could be used to improve the energy profile of council housing.		Nil
				Carry out an assessment to ECO (Energy Company Obligation) scheme and potential funding.		Nil
				Pilot energy improvement work to a property increasing it from SAP D to B.		TBC
				Carry out independent EPC ratings for each property.		Nil
				Establish and deliver a retrofitting program for council housing based on EPC baseline and available budgets.		

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
T15	**Target 15. From 2021 100% of council new development is built to carbon neutral standards**					
15.1	All new council properties non-residential will be built to the highest efficiency standards from 2021	Consult on all future council builds and engaged with developers to ensure that carbon neutrality is consider from the design stage and associated cost is identified. The new development has been placed with a consultant to look at carbon neutrality and associated build costs.	Net zero carbon standards to be considered for all new developments. Move away from 'gas provision' to cleaner technology for new build properties when possible.	Initial assessment to all new council development to assess stage of development and possible interventions to committed buildings	Neutral	Nil
				Assessment of possible interventions to Arborfield School to new carbon		Nil
				Assessment - possible interventions to Dinton Activity Centre		422,000
				Assessment - possible interventions to Addington scheme		83,000
15.2	All new council homes will be built to the highest efficiency standards by 2024	To develop a council led pilot Passivhaus housing scheme by 2021. Regeneration of urban improvement schemes.	There are around 255 homes in Gorse Ride state regeneration project. 950 tCO_2e savings when completed	Gorse Ride development has been for pre planning. It has designed houses to the first the first stage of Passive House. There will be no gas to the domestic houses on the side.	950	TBC
T16	**Target 16. By 2029 all local schools to be retrofitted**				5,034.08	
16.1	Upgrade various energy measures in the schools to improve their energy performance.	Schools retrofitting programme will be based on initial assessment. Works will typically include: LED lighting, Insulation measures, controls upgrades, heating upgrades / replacements and Renewable Energy Generation technologies. Priority given to energy 'payback' calculations of less than five years against energy spend	Implement energy reduction projects to all local schools to improve their energy performance and reduce carbon emissions. 5,034.08 tCO_2e savings when completed	Carry out energy audits to all schools to identify possible energy reduction projects.	5,034.08	This project is included in the budget for retrofitting council property (4,500,000)
				Establish and deliver the schools retrofitting programme which will be based on carbon 'paybacks'		
T17	**Target 17. By 2030, 20% of households to be retrofitted**					75,0000
17.1	Support residents and local businesses to reduce their energy usage and carbon emissions by retrofitting their properties - Green Bank Scheme	The Green Bank Scheme will provide loans to assist householders in their net zero carbon ambitions. This will include energy efficiency measures on the fabric of the building and replacing appliances with low carbon versions. Householders will pay this back against a loan re-payment (plus interest) over a period of time (7, 10 and 15 years).	More residents will be able to improve the energy efficiency of their properties and switch from gas to electricity with the financial support the Green Bank Project 44,307.5 tCO_2e savings	Conversations with Legal / Finance ongoing	44,307.5	FY21/23 75,0000
				Identify partners and set up the scheme		
				Launch the scheme		

Carbon Sequestration

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Estimated Project Cost
T18	**Target 18. Plant 250,000 trees throughout the Borough by 2025 saving 3.5 $ktCO_2e$ per annum**				**3,500**	**No allocated**
18.1	Create a new forest that will increase the number of trees in the Borough to improve carbon capture and biodiversity net gain	Large-scale (greater than 5ha) woodland planting on council owned land on high carbon capture potential sites (e.g. arable land, improved grassland).	Carbon sequestration potential of 7.83 tonnes of CO_2e equivalent per hectare in first year of planting, 13.7 tonnes thereafter. Current woodland cover estimated at 2576 ha of Wokingham Borough (14.3%). Planting 115 ha more woodland (and associated green infrastructure) would get the Borough woodland land cover close to 15%.	Identify council owned land that is suitable for a major tree planting scheme Review our estate portfolio for agricultural land / improved grassland, which has the potential to be converted to woodland. Engage forestry specialist contractor to advice on feasibility, constraints, and process. Prepare consultant brief Preparing plans and consulting public EIA Screening / Planning Grant and other scheme applications Ordering and planting trees (with protection) Installation of other site infrastructure Produce forest management plan Handover to site manager (phased) - Ongoing management	3,500	Tree stock, planting, and maintenance during establishment estimated at £1,500,000 Planning, consultation, public co-ordination, and handover estimated at £220,000
18.2	Deliver small-scale woodland planting on council estate in existing parks and opens spaces sites.	Identify potential programme to invest in small-scale woodland planting on council estate in existing parks and opens spaces sites. This small scale planting can be deployed with shorter time scales than larger afforestation schemes.	Estimate 5 to 10 ha of land available (circa 8,000 to 16,000 trees if planted as woodland) Potential for the sites to be planted as Community Orchards for local food production and BAP targets but this would be at a lower tree density. However, converting from improved grassland to traditional orchard with wildflower rich ground flora has the potential to still sequester circa 6 tonnes of CO_2e equivalent a year.	Assessment to council estate portfolio to identify areas in existing public open space that has potential to be converted to woodland. Carried out an internal review of constraints, costing, and scheduling. Preferably looking to target small low risk areas Preparing plans Implement public consultation on identified sites Grant and other scheme applications Ordering and planting trees (with protection)	7,938	Tree stock, planting, and maintenance during establishment estimated at £135,000 Planning, consultation, public co-ordination, and handover estimated at £35,000

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Estimated Project Cost
				Ongoing management - Produce/review woodland management plan		
				Promote tree planting campaigns to engage with residents, schools and local businesses (e.g. National Tree Week on 28th November)		
18.3	Support woodland and hedgerow creation on private sites.	Set up a grant scheme for local private landowners to apply for funding to create new woodland and hedge roads on privately owned sites.	Recommend running scheme as yearly rounds with a ceiling of 16,000 whip trees (equivalent to 10ha broadleaf woodland) per year. If run in 2022/23, 2023/24, and 2024/25 with complete take up it has a potential to deliver 48,000 trees.	Produce Wokingham Borough Tree strategy to establish guidance for the delivery of the scheme	9,531	Tree stock, delivery, and planting (with partners) estimated at £90,000 Scheme creation, promotion and community engagement estimated at £45,000
				Set up the scheme. Define the thresholds, suitability assessment and grants or plants		
				Call for sites - Scheme promotion and engagement with local landowners Selection for piloting with a beacon site		
				Tranche 1 - Planting plan design and approval, establishing contract negotiation, payment mechanism, compliance checking and other grant and carbon trading scheme support		
				Review of tranche 1 take-up and feasibility assessment for tranches 2 & 3		
18.4	Make Wokingham a Garden Forest by promoting and encouraging residents to plant new trees	Establish general process and guidance that could allow residents and local businesses who want to plant and maintained their own trees either with our permission on our land, or to help them have a successful tree on their own land. A community of garden tree owners - scheme will be required to engage the community and ensure the legacy of the tree planting, securing that trees will be looked after.	These schemes will seek to deliver 6,000 trees Estimate that a scheme with approximate 10% of householder take up rate has the potential to deliver 6,000 to 7,000 trees planted. Recommend that that the scheme should be budgeted to have a 10,000 tree ceiling.	Produce Wokingham Borough Tree strategy to establish guidance for the delivery of the scheme	4,950	Tree stock and delivery (with partners) estimated at £130,000 Scheme creation, promotion, and community engagement estimated at £60,000
				Design the scheme; include considerations on types of trees, maturity. Provide the mechanism to select the right tree for the right place. Establish the delivery mechanism		
				Launch the scheme and engage with residents and local businesses. Provide guidelines on the types of trees to be planted, the path way for application of new trees and the benefits from the tree (carbon savings, biodiversity gain, etc.).		

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Estimated Project Cost
				Implementation of the scheme. System to take and register the orders - place tree orders and delivery. Record keeping.		
				Legacy - is there ongoing support offered. Long-term recording of benefits Opt-out (local offsetting)		
				Annual review and monitoring of the scheme		
				Assume request a tree scheme will run for 1 year only but potential to turn into an annual campaign depending on uptake in 2022		
T19	**Target 19. Carbon sequestration by design - improving carbon sequestration rates in future land management decisions, Approximately 0.062 $ktCO_2e$ savings**				**660**	
19.1	Develop the Wokingham Borough Tree Strategy to support long-term creation and retention of woodland and trees	Developing a tree strategy for the Borough which will help define: Appropriate species (and adaptation to climate change); Good management practice; Facilitating ongoing recruitment to veteran tree population; Appropriate places for woodland creation; and access.	Improving the retention rate of trees - The longer trees are standing the longer carbon is locked up. Encouraging planting of woodland on private land.	Identification of requirements for Tree Strategy Development of Feasibility study brief (including land appropriation and/or acquisition) Develop and builds upon existing studies Identify land available and type of habitat Verify likely carbon sequestration Confirm more detailed cost estimates Allows milestone point for decision to continue with full funding	Neutral	Nil

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Estimated Project Cost
19.2	Include in the Local Plan Update policy for carbon sequestration potential. Subject to inspection, the local plan for the period 2026-36 will include: Green Infrastructure Policy Tree Policy Flood Policy Biodiversity Policy Design Guide	Policies written to avoid loss of established habitat will help retain carbon stores. Policies written to seek multifunctional design of green and blue infrastructure will build in carbon sinks to new development. Policies written to retain and enhance biodiversity (particularly botanic diversity) will aid carbon sequestration in soils. Design guide to green and blue infrastructure will encourage inclusion of low intensity (maintenance) habitat for carbon sequestration.	Assuming roughly 70ha of green infrastructure created in the LPU cycle. A nudge of 10% cover from high intensity maintenance grassland to low intensity species rich, brought about by good design guiding, could sequestrate a further 42 tonnes of carbon dioxide equivalent per year.	Require a review of ability to enhance carbon sequestration rates for all new policies and design guides to be published alongside. Independent assessment - design policy approach to maximise carbon sequestration	42	£10,000 Approx.
19.3	Develop the Local Nature Recovery Strategy to provide complementary funding source to aid land use change (LULUCF being a carbon sink)	Developing a Local Nature Recovery Strategy that covers the Borough will provide a 5% uplift on the number of biodiversity net gain units that can be generated in areas identified as part of a local nature recovery network. The ability of soil to sequestrate carbon correlates positively with biodiversity. Additional biodiversity net gain unit capacity raises the value of land (for making improvements for biodiversity), and will leverage funding for habitat improvement that will lead to soil restoration and carbon sequestration.	On assumption that average of 2.5 units per ha (not including current woodland area) can be generated at £15,000 per unit, the 5% uplift on a LNRS (over and above the national strategy area) would generate value on the biodiversity potential of £5,276,250	Develop the Local Nature Recovery Strategy through the Berkshire Local Nature Partnership Initial analysis of 30% target area - mapping exercise Consultation exercise with stakeholders Revising the Local Nature Cover Strategy and taking it through the local authority adoption process	Neutral	Initial £40000 further funding will be required
19.4	Develop a Natural Flood Management partnership and scheme	The creation of wetland habitat as part of a programme of restoration of natural flood management processes has potential to sequestrate carbon and reduce soil degradation. The partnership work and scheme would place through agreements with	Within Natural England's Research Report 43, the change of use from arable land to wetland has examples of carbon sequestration rates of circa 8 to 17 tonnes of carbon dioxide equivalent per hectare per year. Working from figures in the report, on	Initial mapping exercise to identify locations that will provide wetland habitat and could be forward into the scheme Consultation exercise with stakeholders	0.25	TBC

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Estimated Project Cost
		Environment Agency, water companies, and other Loddon Catchment Partnership partners.	the basis that soil carbon loss under agriculture might be at a rate of 0.6% per year and carbon stocks for this habitat average 43 tonnes of carbon per hectare, natural flood management measures that prevent degradation might prevent 0.25 tonnes of carbon per hectare being released into the atmosphere.	Revising the Strategy and taking it through the local authority adoption process		
T20	**Target 20. Transition to low intensity (high carbon sequestration) land management. This will sequestrate approximately 0.024k tCO_2e per annum**				**642**	
20.1	Work to transition Grassland Management to less frequent cutting scheme allowing wildflowers to bloom and set seed	Considerations to the BLUE heart campaign style management of grassland moving away from improved grassland habitat under an intensive cut cycle and allowing rewilding of highway verge and other areas increasing Currently approximately 125ha of Environmental Localities greenspace is improved or semi-improved grassland. Currently approximately 100ha of highways verge is on a rural route that could be trialled for cut and collect. Converting to cut and collect will improve botanic biodiversity and restore the carbon sequestration function in the soil.	Converting 1/3 of the approx. 125ha of improved grassland within Environmental Localities portfolio to species rich grassland on a once a year cut could sequester an additional 242 tCO_2e per year (33% of 125 x 5.87, for conversion rate of improved to pollen and nectar mix from NERR043). Converting rural highways verge to cut and collect, estimate of 4 tonnes per hectare would equate to 400 tonnes CO_2e per year for 100% conversion. 5% pilot is estimated to have the potential to sequestrate 20 tonnes of CO_2e per year.	Pilot the principle of cut and collect to highways verge to improve biodiversity and soil restoration in selected areas. Run a 5% conversation pilot for highways verge and rural highways verge Target of 12.5ha of wildflower grassland creation across Environmental Localities sites. Converting 10% of this to pollen and nectar mix would sequestrate approximately 74 tonnes of CO2 equivalent per year.	642	Estimated at £130,000

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Estimated Project Cost
20.2	Work to transition Grassland Management to support the Restoring Biological Processes	Natural greenspace grassland will perform better at carbon sequestration where: a) soil compaction from machinery is kept to a minimum, and b) structural diversity is encouraged by 'conservation' grazing (instead of uniform cutting). With the additional natural greenspaces being taken on alongside development the scale to justify an internally owned and managed conservation-grazing herd may be reached.	A goal of 642 tCO2 per year (0.64 $ktCO_2e$) would be targeted to be met in the period 2025 to 2030	A feasibility study for applying a Legacy Gracing approach will set out the steps towards reducing our reliance on machine cutting and restoring soils.	642	
20.3	Implement Citizen Science Engagement for Hedgerow Restoration	There is approximately 1534 km of (mapped) hedgerow in Wokingham Borough. Of this, approximately 963km (63%) is within the countryside (as defined by settlement hierarchy). Of this, approximately 397km (26%) are associated with the adopted highway. Hedgerows are a good target for restoration work to increase the number of standing mature trees storing carbon. At a 50m spacing 400km of hedgerow would be equate to 8,000 open growing trees.	One mature oak tree is estimated to be 10.5 tCO_2e. If hedgerow restoration can be encouraged through use of a streamlined assessment and interpretation tool and this nudges to increase the % of hedgerow with oak standards up by just 1% in the Borough, this will equate to (approximately) an additional 3,200 tCO_2e captured over the next 70 years.	TVERC product development to take PTES hedgerow survey data and project in an interpreted way to inform hedgerow management for land managers. Tool can be used by Trees & Landscape officers for enforcement of the Hedgerow Regulations. To inform a planting and restoration plan (as a part of the tree strategy), a citizen science condition assessment programme would greatly enhance the targeted planting of trees in suitable locations.	3,200	£15,000
T21	**Target 21. Implement a programme of carbon sequestration opportunities**				**Neutral**	**Nil**
21.1	Engage the community with Community Garden Schemes	Allow new allotment site due to be opened in 2020 as part of the South Wokingham Strategic Development Location (SDL)	Carbon savings for these schemes are detrimental, however engaging residents with allotments and community garden schemes contributes to behavioural change	Work with UoR in assessing the 'Life Cycle Sustainability Analysis (LCSA) of Urban Food Production – the Case of Allotment Gardens and identify future opportunities for engagement	Neutral	Nil
21.2	Enable the assessment and test of carbon sequestration new technologies	Enable the safe testing and assessment of new initiatives for carbon sequestration	There is potential for carbon savings of individual projects which will be assessed on once projects have been identified	Road spray initiative under investigation	Neutral	TBC

Engaging Schools and Young People

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
T22	**Target 22. Encourage and support school children in the Borough to take an active role in reducing carbon emissions**					
22.1	Deliver annual climate emergency assemblies at local schools	Use school assembles as an opportunity to introduce discussions about Climate Emergency amongst children and young adults	All secondary school children will receive an annual climate emergency assembly 469.3 tCO_2e savings per year	Plan and deliver climate emergency assemblies with all secondary schools	469.3	TBC
22.2	Create climate committees in schools	Schools Climate Committees will include parents, students, teachers, staff and the local community and will support the delivery of climate related projects. Use this as an opportunity to get adults and children working together, around climate action.	Increase engagement with climate emergency issues and ownership of actions to reduce carbon dioxide emissions. One per school starting with secondary schools initially. 52.5 tCO_2e savings per cohort	Produce information pack for how to set up a school council. Provide contacts within Wokingham Borough Council to help/attend when needed	52.5	TBC
				Aim to set first committees up with particularly engaged schools in 2021, or 2022 depending on the schools capacity post covid-19.		TBC
22.3	Deliver the Youth Climate Conference	Youth Climate Conference is aimed at sixth form (16+) students from across the Borough. Conference aim to engage young adults with climate related issues such as fast fashion, climate justice, climate migration, sustainable transport, etc.	Increased awareness and understanding on climate emergency issues amongst children and young adults attending.	Plan and deliver climate emergency assemblies with all secondary schools	25.44	2,000
22.4	Encourage schools to include climate emergency issues in lesson time	Get schools to commit to teaching about climate change, in lesson time. Lobby for science/geography lessons in non-exam year groups to include this in the curriculum.	Increased knowledge amongst children and young adults on climate emergency issues 176.3 tCO_2e savings This would be aiming for a commitment from schools to teach it across all year groups in at least one subject i.e. science, geography, philosophy, PSHE. So the target would be all children in at least one subject	Create campaign to engage across schools and the public to lobby for commitment from all schools. Use different communication channels (e.g. local news, social media, etc.)	176.3	TBC
				Create a document with criteria for all schools to sign; this could be presented at the secondary federation.		
				Gain commitment from all schools and follow up to see how they are fulfilling the promise, with positive press coverage.		
22.5	Encourage schools to adopt property and operational	Developed a sustained campaign to encourage schools to focus on	Better informed children and school staff on sustainability practices.	Set up a program of termly themed campaigns	TBC	TBC

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
	management practices that reduce carbon emissions and support the environment	environmental issues to promote behavioural change.		The campaigns would aim to be termly, themes such as recycling, the ocean, fast fashion		
22.6	Encourage Wokingham Borough schools to become net zero carbon and embrace sustainability	Create positive partnerships with schools to make the best use of already existing schemes such as the Eco Schools Scheme, UN Climate Accreditation for school staff, etc.	All schools to achieve Eco Schools programme by December 2025	Get all schools to sign up to bronze level of eco schools by December 2021	TBC	TBC
				Set up an incentive for ALL local schools to become green flag level by December 2025		
		Support schools to assess their carbon emissions and sustainability status. The baseline will help schools to take better informed actions in the journey to become net-zero carbon.	Each school to have a sustainability and carbon emissions baseline to guide them in the journey to become net-zero carbon	Produce and online resource on the Council's offering to schools.	Neutral	TBC
				Assessment of sustainability initiatives implemented at schools to identify what they already do and how we can support them to become net-zero carbon.		
				Energy performance assessment for each school		
		Learn from best practices amongst local schools.	Active network of support within schools	Draw up a toolkit for schools to emulate Shinfield, including financial cost, initiative by initiative.	TBC	TBC
				Create our own federation/platform for sustainability within schools with environmental enthusiasts within the school.		
				Within this look into ways where we can use internal school communications systems to nudge users.		
22.7	Support schools to implement carbon sequestration projects	Connect to voluntary sector and the community, such as planting in care homes, working with local allotments and farms.	Children and young adults engaged with carbon sequestration projects	Planting trees and plants to create a small-scale young forest in school grounds or council owned land.	TBC	TBC
				Promote tree planting campaigns in schools grounds as part of education in climate change issues		
				Make more allotment plots available to people on council owned ground to encourage young people to grow their own food.		

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
22.8	Waste reduction	Run competition between schools to promote recycling and reduce waste.	Increased children's awareness about recycling and reduce waste	Set up the competition guidelines and trial competition in an specific school		
		Connect schools and Food Waste Hero volunteers with local businesses, to share surplus food (and other things) rather than produce waste.	Increased children awareness about the value of food and goods and reduce waste.	Investigate Freecycle for food schemes, to reduce food from schools go to waste and gets used, either for food banks or homeless shelters	TBC	TBC
T23	**Target 23. Celebrate schools achievements in climate emergency initiatives and inspire the future generations**					
23.1	Launch sustainability awards for schools	Create an awards scheme to recognise and celebrate the efforts and achievements of local schools and their engagement with the climate emergency agenda	Engaged children with climate emergency initiatives	Establish the criteria for all schools to participate. Promote the school awards	TBC	TBC
23.2	Nurture creativity and resourcefulness amongst children and young adults	Roll out the Dragons Den climate competition across all schools	Create a culture of innovation and enterprise thinking on climate emergency solutions Help develop resourcefulness and creativity that is connected to climate change.	Create a document with criteria for all schools to sign; this could be presented at the secondary federation.	TBC	10,000
23.3	Implement a behavioural change programme within schools that would support the adoption of new behaviours, particularly within sustainability and climate change	The programme is based on the implementation of an engagement platform that functions under a 'butterfly banking' concept. The platform encourages taking daily sustainable actions and is used to reward and report on activity across the schools. Virtual butterflies are used as a representation of the positive activity-taking place.	Initial pilot in three schools will result in engaging 200 children Groups taking part in the competition can be up to 5 pupils 1.59 tCO_2e savings	Identify and propose schools that should be part of the pilot - Autumn to Winter Set up focus groups with children to drive the platform design. Potential to use ECO Councils within schools. Write a Business Case that includes timelines, activities and carbon savings to obtain funding for the scheme implementation.	1.59	20,000

Waste and Recycling

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
T24	**Target 24. Recover 80% recycling in the form of wet paper by October 2020**				**262.8**	
24.1	Increase awareness amongst residents to keep paper and card dry	Running periodic campaigns on a regular basis (weekly) like 'Stamp out the damp'	High level of awareness amongst residents about the implications of wet recyclables and impact on recycling rate & market reputation This action contributes to prevent loss of recyclable material and therefore prevents 262.8 tCO2e	Successfully ran the 'Stamp out the damp' campaign Information displayed on the website Social media campaign to remind residents to continue keeping their paper & card dry Based on the success of 'Stamp out the Damp' campaign look at the short term measure to keep paper & card dry until a permanent solution is identified and implemented	262.8	TBC
24.2	Implement interim solution for keeping paper and cardboard dry	Provision of interim initiative to residents to protect paper & cardboard from wet weather during autumn & winter periods	Recovery of recyclables, lost income and reduced disposal cost This action contributes to prevent loss of recyclable material and therefore prevents 262.8 tCO_2e	Agreement between the council, Veolia, re3 and members on the interim solution (Exec report) Formal agreement through executive approval Arrangement and delivery of the interim solution to residents by Veolia Communicate with residents about this initiative Brief consumer services and social media on new initiative sampling by re3 to assess moisture content of wet paper Monitoring reduction in the disposal cost		TBC
T25	**Target 25. re3 Pilot project on contamination, 2020**				**131**	
25.1	Implement re3 contamination policy to reduce contamination	Tag and leave contaminated recycle boxes uncollected, communication with residents to educate on correct recycling, monitor impact on the tonnages	Assess effectiveness and ensure compliance with the re3 contamination policy. Better quality recycling and reduce sorting cost. A 2% increase in recycling will save 131 tCO_2e.	Adapt the re3 contamination policy Choose sample area Gather data (Veolia, website, social media and CS) on existing practices Tag and leave contaminated recycling boxes uncollected	131	TBC

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
				Collate & evaluate data, send letters to residents and share data with re3		
				Monitor impact on recycling		
				Phase II and III monitoring continued		
				Report on re3 findings across the three councils		
T26	**Target 26. Achieve 70% recycling target by 2030**				**2,757.7**	
26.1	Establish and implement permanent solution for keeping paper and cardboard dry	Deal with wet paper issue, improved recycling facilities, reduced collection and disposal cost, higher level of participation in recycling and increased awareness amongst residents about environmental issues	Implement a new waste and recycling collection system that will ensure high recycling rate, reduced waste, improved quality of recycling and reduced collection and disposal cost	Prepare consultants briefing	TBC	TBC
				Options appraisal in summer 2020		
				Market research		
				Decision making by 2020		
				Devise and adopt the communications plan by 2020		
				Modelling by Veolia in early 2021		
				Assess impact of the new initiative on the property stock		
				Communication with residents pre-delivery		
				Delivery of receptacles by autumn 2021 (three month)		
				Ongoing communication with residents post delivery		
26.2	Improve residents' engagement with waste and recycling initiatives/issues via Green Redeem	Weekly customer email to subscribers, monthly targeted campaigns to coincide with council's services, needs and initiatives	Better understanding of the global and local environmental issues, greener behaviour and subsequent green actions amongst residents, appropriate recycling	weekly email to prompt residents on presenting their waste / recycling	TBC	TBC
				Waste reduction campaign by GreenRedeem to coincide with the delivery of blue bags		
				Climate Change Emergency campaigns - what residents can do at home to cut their carbon (link to garden waste collection/food waste reduction/recycling & increase in recycling)		

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
				Promote and prompt residents to renew Garden Waste (GW)		
				Promote online bulky waste collection service		
				Food waste collection anniversary – target areas to increase participation above 50% and thank you to residents for the fantastic results already achieved! Along with Easter recycling messages (packaging/foil recycling tips/food waste etc.).		
26.3	Target low participation areas to increase food waste tonnage	Improve uptake in food waste recycling, increased food waste tonnage, reduced general waste	Greener behaviour amongst residents, maintain higher recycling rate, improved income and reduced disposal cost	Identify low participation areas from Veolia crew report	TBC	TBC
				Use of clicker to identify non-participating households		
				Letters sent to residents		
				Monitoring/assess impact on tonnages in monthly meeting		
26.4	Increase & improve facilities for glass recycling	Higher capture rate of glass from general waste, convenience to residents	Introduce 50 new recycling sites for glass	Identify potential site by communicating with parishes & town councils and other private businesses & partners	TBC	TBC
				Assess potential sites via FCC		
				Install bottle banks once approved		
				Update the national database		
26.5	Explore limited kerbside glass collection opportunities	Provide kerbside glass collection to sheltered accommodation	Added convenience to elderly residents, diversion of glass from general waste	Identify potential Sheltered sites eligible to receive this service	TBC	TBC
				Communicate with site management and residents		
				Provide bottle recycling bins		
				Monitor impact on recycling		
26.6	Proactive approach to deliver waste management facilities in new developments	Provide adequate waste and recycling facilities and communicate the system to new residents in new developments	Proactive delivery of waste & recycling facilities to new residents; tap the opportunity to induce better recycling habits amongst new residents; improved recycling rate and high quality recycling	Proactively approach and revive working relationship with sales offices in new development	TBC	TBC
				Work closely with developers to ensure efficient supply of waste management facilities to residents as they move in		

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
				Regular supply of instruction letters to developers to be included in the induction packs of residents		
				Improved information in the bin stores including posters on wall and recycling stickers on bins		
26.7	Engage school children in recycling via Green Team	Contribute to the toolkit prepared by the Green Team	Investment in the future in the form of raising awareness amongst children about the environmental issues and how they can help	Provide relevant content to the Green Team to support preparing lessons		
				Review information tailored to schools' need upon request		
				Arrange interactive activities		
26.8	Adopt re3 initiative to tackle contamination at the Borough level	Tag and leave contaminated recycle boxes uncollected, communication with residents to educate on appropriate recycling, monitor impact on the tonnages	High quality of recycling, low sorting and disposal cost	Identify low performing areas	TBC	TBC
				Tag and leave contaminated recycling boxes uncollected		
				Communicate with residents		
				Evaluate impact through monitoring		
				Improve recycling in flats and multi occupancies especially around food waste and general contamination		
				Monitoring of campaigns through quarterly reports		
26.9	Explore limited kerbside glass collection opportunities	Provide kerbside glass collection to sheltered accommodation	Added convenience to elderly residents, diversion of glass from general waste	Identify potential Sheltered sites eligible to receive this service	TBC	TBC
				Communicate with site management and residents		
				Provide bottle recycling bins		
				Monitor impact on recycling		
T29	**Target 29. Zero waste going to landfill by 2030**				**2,259.2**	
4.1	Identify, establish & deliver necessary measures to achieve zero waste to landfill from domestic properties	Reuse, recycle and recover 100% of WBC waste from domestic properties	Move waste up the waste hierarchy and potential savings from landfill diversion	Comprehensive communications campaign on "Reuse" and "Appropriate Recycling" including website, social media, GreenRedeem and target campaigns	TBC	TBC
				Tagging contamination recycling and leave uncollected		
				Identify alternate markets for hard to recycle items		

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
				Diversion of as much recycles from waste as possible		
T30	**Target 30. Carbon based recycling targets**					
30.1	Adapt Carbon Matrix for recycling	Assess initiatives on their potential to contribute towards carbon saving and associated financial implications	Realistic assessment of the impacts of reuse, recycling and disposal	Collaboration between re3 and University of Reading and input from WBC	Neutral	Nil

New Development

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
T31	**Target 31. From 2022, major residential development to be designed and built to achieve carbon neutrality**					
31.1	Require major residential development to achieve carbon neutrality	Policy within the new Local Plan will require residential developments of 10 or more dwellings to provide carbon neutral homes. A definition of what carbon neutral means in this context will be provided. Where there is robust evidence that this cannot be achieved on site, the council proposes to accept appropriate carbon offset financial contributions.	Policy in place upon adoption of new Local Plan	Consult on draft policy as part of the Draft Local Plan. Publish draft policy as part of the Pre-Submission Local Plan. Policy included within adopted Local Plan.	Neutral	Nil
31.2	Provide guidance to support major residential development to achieve carbon neutrality	A Supplementary Planning Document (SPD) will support the new Local Plan by providing additional detail on how development of all types is expected to demonstrate the achievement of the policy requirements, including carbon neutrality. The SPD will itself be subject to consultation and formally adopted. Adoption can only follow the adoption of the new Local Plan.	Guidance in place upon adoption of new Supplementary Planning Document	Consult on draft Supplementary Planning Document. Adopt Supplementary Planning Document.	Neutral	Nil
T32	**Target 32. From 2022, major non-residential development to be designed and built to achieve the BREEAM excellent standard**				Neutral	
32.1	Require major non-residential development to achieve BREEAM excellent standard	BREEAM is an internationally recognised certification scheme. It provides a holistic set of criteria to support the delivery of energy efficient developments, which are resilient to the impacts, and mitigate the effects, of climate change. Development proposals will be expected to demonstrate how they have met this standard (or future equivalent) as a minimum.	Policy in place upon adoption of new Local Plan	Consult on draft policy as part of the Draft Local Plan (complete). Publish draft policy as part of the Pre-Submission Local Plan. Policy included within adopted Local Plan.	Neutral	Nil

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
32.2	Provide guidance to support major non-residential development to achieve carbon neutrality	A Supplementary Planning Document (SPD) will support the new Local Plan by providing additional detail on how development of all types is expected to demonstrate the achievement of the policy requirements. The SPD will itself be subject to consultation and formally adopted. Adoption can only follow the adoption of the new Local Plan.	Guidance in place upon adoption of new Supplementary Planning Document	Consult on draft Supplementary Planning Document. Adopt Supplementary Planning Document.	Neutral	Nil
T33	**Target 33. Establish a spatial strategy and design framework which promotes active and sustainable travel, sustainable design and construction and enables biodiversity gain**				Neutral	
33.1	Minimise unnecessary travel from new development, better house design for working from home and better integrated IT capability	The new Local Plan will establish a spatial strategy which secures a pattern of development which allows for more people to live and work where journeys can be undertaken by walking, cycling and public transport. Buildings, services and infrastructure need to be able to respond to new working patterns and needs.	Policy in place upon adoption of new Local Plan	Consult on draft policy as part of the Draft Local Plan (complete). Publish draft policy as part of the Pre-Submission Local Plan. Policy included within adopted Local Plan.	Neutral	Nil
33.2	Require development, including the public realm, to be accessible to all and prioritise walking, cycling and other sustainable modes of transport	Development will be expected to include measures to make walking and cycling the mode of choice for shorter journeys, both within and through the site, including links to facilities, services, bus stops and train stations. They will be designed so that they are easily navigable for people of all ages and physical ability.	Policy in place upon adoption of new Local Plan	Consult on draft policy as part of the Draft Local Plan (complete). Publish draft policy as part of the Pre-Submission Local Plan. Policy included within adopted Local Plan.	Neutral	Nil
33.3	Require allocations for major development to secure smart and sustainable approaches that champion climate change resilience and adaptation	Buildings, services and infrastructure need to be able to respond to the impacts of climate change. Part of this ability relates to ensuring that new development is designed to adapt to more intense rainfall, the possibility of flooding, plus heat waves and droughts. The design of developments, including the use of materials, therefore need to carefully consider matters such as shading, insulation and ventilation, surface	Policy in place upon adoption of new Local Plan	Consult on draft policy as part of the Draft Local Plan (complete). Publish draft policy as part of the Pre-Submission Local Plan. Policy included within adopted Local Plan.	Neutral	Nil

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
		water runoff and storage and the use of appropriate tree and other planting.				
33.4	Provide positive policy framework for retrofitting existing buildings	Existing domestic buildings contribute around 34% of carbon dioxide emissions from within Wokingham Borough, whilst existing non-domestic buildings contribute around 20%. A permissive policy approach to retrofitting the existing building stock with measures that enhance sustainability and energy efficiency will assist in reducing emissions.	Policy in place upon adoption of new Local Plan	Consult on draft policy as part of the Draft Local Plan (complete). Publish draft policy as part of the Pre-Submission Local Plan. Policy included within adopted Local Plan.	Neutral	Nil
T34	**Target 34. Support low carbon and renewable energy generation**				Neutral	Nil
34.1	Provide positive policy supporting low carbon and renewable energy generation	Due to the benefits which low carbon and renewable energy generation bring to tackling climate change, development proposals for these will be supported unless there are unacceptable impacts that outweigh the benefits.	Policy in place upon adoption of the new Local Plan. An increase of renewable energy generation projects being developed across the Borough by local businesses and community energy groups.	Consult on draft policy as part of the Draft Local Plan (complete). Publish draft policy as part of the Pre-Submission Local Plan. Policy included within adopted Local Plan.	Neutral	Nil
T35	**Target 35. From 2022, all new residential and non-residential buildings to be designed and built to be EV ready**					
35.1	Ensure new developments make adequate provision for EV	Electric and hybrid vehicle ownership is increasing, and likely to become more prevalent. Lack of charging infrastructure is a principal barrier to increased use of low-emissions vehicles. Therefore, all new developments will be expected to design in electric vehicle charging facilities from the outset.	Policy in place upon adoption of new Local Plan	Consult on draft policy as part of the Draft Local Plan (complete). Publish draft policy as part of the Pre-Submission Local Plan. Policy included within adopted Local Plan.	Neutral	Nil

Procurement

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
T36	**Target 36. By 2022, achieve sustainable procurement practice throughout the council as part of Corporate Procurement Strategy**				**Neutral**	**Nil**
36.1	Include a drafted approach to sustainable procurement within review of Procurement Strategy	Goods contracts will consider whole-life costing including disposal. Service and works contracts will include carbon neutrality or reduction measures either directly or indirectly by their design.	Procuring in line with business needs and climate emergency targets	Procurement to draft update to procurement strategy	Neutral	Nil
				Procurement to seek consultation of strategy with SLT	Neutral	Nil
				Procurement achieve sign off of strategy	Neutral	Nil
				Procurement and CEM implementation and communication of strategy	Neutral	Nil
36.2	Develop a sustainable procurement culture and associated skills for green procurement	Design of an e-learning module training people in green procurement techniques	All staff members who procure will have completed training	Procurement complete E-learning design	Neutral	Nil
				All staff in council who procure to complete training	Neutral	Nil
36.3	Assess suppliers on sustainable procurement standards	Evaluation of all suppliers to promote sustainability proportionate to contract and financial constraints	Use of the Standard SQ / inclusion of a pass/fail phase in all contract evaluations	All buyers/commissioners in the council to impose carbon targets on our suppliers including reporting back of carbon production	Neutral	Nil
				All buyers/commissioners taking embedded carbon into account when purchasing goods and services	Neutral	Nil
				Performance Team to name the top 20 carbon producers from our suppliers	Neutral	Nil
36.4	Implementation of sustainable procurement KPIs amongst suppliers	Contracts have sustainability KPIs included where suitable to contracts scope	All contracts with sustainability KPIs will be performing within the 'green' threshold (or equivalent) for these KPIs	All buyers/commissioners embed carbon KPI targets into all suitable council contracts	Neutral	Nil
36.5	Informed suppliers of the councils sustainable procurement requirements	Consult local and national business during the development of council's sustainable procurement policy. Provide clear and detailed instructions to suppliers on the council's sustainability requirements	Reduce carbon through agreed more sustainable procurement contracts.	CEM and procurement / place commissioning / community, insight and change complete business consultation event	Neutral	Nil
T37	**Target 37. By 2023, the council will consider social value, including carbon neutrality, in all its procurement cycles**				Neutral	**Nil**
37.1	Introducing a culture of carbon neutrality in all council procurement activities	For environmental social value, include carbon impact into the council's principal business activities: • Business Needs Analysis and Case Approval.	Social Value will be considered at all appropriate stages of the procurement cycle relevant to project's scope, risk and value	All buyers/commissioners ensure that the corporate strategy themes of carbon neutrality is embedded in each procurement cycle	Neutral	Nil

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
		• Contract and Specification Design. • Bid Submission Evaluations. • Contract and Supplier Management.				
37.2	Adopt a WBC Social Value Policy	Generation of a WBC Social Value policy	Policy links to corporate procurement strategy	Place commissioning / community, insight and change draft social value policy	Neutral	Nil
				Place commissioning / community, insight and change (with CEM) complete consultation of policy with businesses	Neutral	Nil
				Place commissioning / community, insight and change complete consultation of policy with SLT	Neutral	Nil
				Place commissioning / community, insight and change implement communication of policy via CEM	Neutral	Nil
37.3	Engage with businesses to successfully guarantee a transition to the new requirements	Consultation and market event with external stakeholders	Business will be informed in how to successful meet our requirements; Investigate opportunities from big businesses to train SME and VCSE in bid writing / social value etc.	As 37.2 Milestone 2	Neutral	Nil
37.4	Promote local skills and employment	Where appropriate, locally-based suppliers will be used for all direct award and quotation processes	Increased local usage of SMEs and tradespeople/businesses to reduce carbon impact from logistics and travel where compliant	All buyers / commissioners to impose SME/local supply targets on suppliers including reporting back of SME/local supplier subcontracting and carbon reduction	Neutral	Nil
		Improve Skills for low carbon transition	Support a just transition for workers by supporting those in traditional 'high carbon industries to retrain	Performance Team name the top 20 suppliers supporting scheme		

Engagement and Behavioural Change

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
38	**Target 38. Raise awareness in the community about the climate emergency agenda**					
38.1	Actively communicate the progress of the climate emergency initiatives delivered borough-wide	Raise awareness of the issues of climate emergency amongst residents and local businesses. Continually promote achievements of the climate emergency agenda to maintain engagement levels and increase awareness.	Deliver a sustained campaign to support the delivery of the Climate Emergency Action Plan and ensure ongoing engagement.	Adopt easily communicable and understandable messages with a strong ongoing campaign to raise awareness.	TBC	Nil
38.2	Provide and share information with residents on how to reduce their carbon emissions. Inform on economic incentives 'Green Bank' that will support the adoption of carbon neutral technologies.	Develop a sustained campaign to provide information, advice, and signposting to promote behavioural change amongst residents and local businesses. Engage residents and local businesses with opportunities to improve energy performance of homes and buildings, reduce carbon emissions from transport, adopt new behaviours.	This campaign will have a direct impact on residents' engagement with council initiatives such as the Green Bank funding for retrofitting homes, installing solar PV to generate electricity, switching to more sustainable modes of transport such as walking, cycling, public transport, Liftshare or replacing their vehicles with electric.	Residents and local businesses are more aware of energy efficiency and decarbonisation practices	TBC	Nil
38.3	Support behavioural change programs at schools	Develop a sustained campaign to provide information, advice, and signposting to promote behavioural change amongst schoolchildren and staff. This includes training on how to manage equipment efficiently, benefits of eating more plant based foods and fewer animal proteins, minimising food lost and wastage, looking after trees and the natural environment.	Schoolchildren and staff will be better informed on how to use energy more sustainably and apply best practices.	Align engagement campaigns to the climate emergency program designed for schools and deliver engagement campaigns to inspire children and school staff to adopt new behaviours.	TBC	Nil
38.4	Support changes in work practices and behavioural change amongst council staff	Provide information, advice, signposting to promote behavioural change amongst council employees (e.g. active and sustainable travel, increased plant based food)	WBC staff better informed on how to use energy more sustainably and best practices.	Deliver a sustained campaign to inspire people to reduce energy consumption and provide energy advice for the home, helping tenants switch energy supplier.	TBC	Nil
38.5	Support changes in work practices and behavioural change amongst local businesses	Provide information, advice, signposting to promote new behaviours amongst local businesses (e.g. remote working, retrofitting buildings, solar PV installation)		Deliver energy campaigns to inspire council staff to reduce energy consumption.	TBC	Nil

REF	Action	Description	Outcome	Milestone	Carbon Savings tCO_2e	Project Cost
		Promote working from home practices to reduce the amount of staff at corporate sites	More efficient use of corporate sites	Assessment of unintended consequences from the national lockdown (COVID-19) and the effects to energy consumption and site occupancy of corporate sites.		Nil

Appendix 1. Data Sources

Table 5: Summary GHG inventory table Breakdown of building emissions, tCO_2e as split by SCATTER

SUB-SECTOR	DIRECT tCO_2e	INDIRECT tCO_2e
Residential buildings	183,166.06	99,577.44
Commercial buildings & facilities	13,027.75	14,354.91
Institutional buildings & facilities	23,252.87	72,538.35
Industrial buildings & facilities	16,254.81	42,049.14
Agriculture	2,629.53	0.38
Fugitive emissions	-	n/a
On-road	314,677.83	IE
Rail	12,728.94	IE
Waterborne navigation	-	NO
Aviation	NO	IE
Off-road	3,146.78	IE
Solid waste disposal	7,158.52	n/a
Biological treatment	-	n/a
Incineration and open burning	-	n/a
Wastewater	10,257.00	n/a
Industrial process	9,256.61	n/a
Industrial product use	0.00	n/a
Livestock	6,588.01	n/a
Land use	27,008.36	n/a
Other AFOLU	-	n/a
Electricity-only generation	NO	n/a
CHP generation	133.83	n/a
Heat/cold generation	NO	n/a
Local renewable generation	1.95	n/a

Notation keys:		
NO - Not Occurring	IE - Integrated Elsewhere	NE - Not Estimated

Table 6: Summary GHG inventory table Breakdown of building emissions, tCO_2e as split by SCATTER

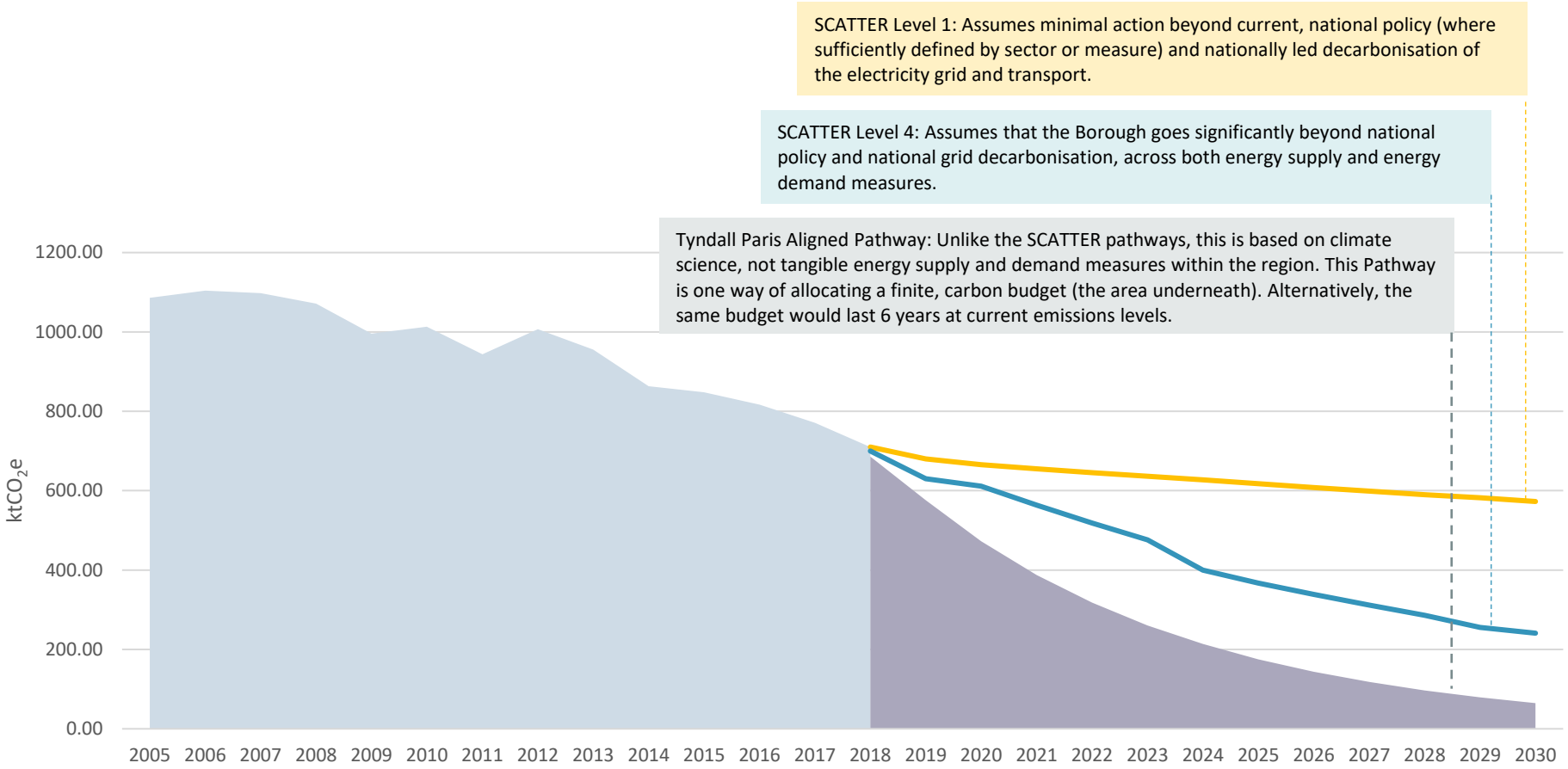
Wokingham Carbon footprint 580 $KtCO_2e$	$KtCO_2e$
Industry and Commercial Electricity	93.71
Industry and Commercial Gas	39.75
Large Industrial Installations	0.01
Industrial and Commercial Other Fuels	17.30
Agriculture	3.92
Domestic Electricity	71.47
Domestic Gas	177.23
Domestic 'Other Fuels'	10.17
Road Transport (A roads)	85.51
Road Transport (Minor roads)	88.73
Transport Other	8.30
LULUCF Net Emissions	-15.19

Notes:

- BEIS data (right-hand table) and SCATTER data are compiled using different methodologies. The SCATTER model (Setting City Area Targets and Trajectories for Emissions Reductions) operates on 2016 data. BEIS data is from 2017. See page 52 for further notes on why the data differs between SCATTER & BEIS.

Future pathways – Scenarios from SCATTER and Tyndall Centre

Figure 1. Wokingham Borough Carbon Budget and Pathways for 2030 – **This data was used for analysis only**



Local Authority emissions & energy consumption data is published 2 years in arrears. SCATTER Tool operates from 2015 Base year, with adjustments made using 2016 & 2017 BEIS Local Authority Emissions data. Tyndall budget assumes 6 years at current levels from 2020[2].

[2] Mitigation pathways compatible with 1.5°C in the context of sustainable development

Data Sources. Frequent Ask Questions

What do the different emissions categories mean within the SCATTER Inventory?

Direct = GHG emissions from sources located within the Local Authority Boundary (also referred to as Scope 1). For example petrol, diesel or natural gas.

Indirect = GHG emissions occurring as a consequence of the use of grid-supplied electricity, heat, steam and/or cooling within the city boundary (also referred to as Scope 2).

Other = All other GHG emissions that occur outside the city boundary as a result of activities taking place within the city boundary (also referred to as Scope 3). This category is not complete and only shows sub-categories required for CDP / Global Covenant of Mayors reporting. Other Scope 3 emissions are however explored within Sections 2 and 3.

The BEIS Local Emissions Summary does not differentiate between direct/indirect/other (or the various 'scopes'

What do the different sectors and subsectors represent within the SCATTER Inventory?

• The Direct Emissions Summary and Subsector categories are aligned to the World Resource Institute's Global Protocol for Community-Scale Greenhouse Gas Emission Inventories ("GPC"), as accepted by CDP and the Global Covenant of Mayors.

• The BEIS Local Emissions Summary represents Local Authority level data published annually by the Department for Business Energy & Industrial Strategy (BEIS).

• Stationary energy includes emissions associated with industrial buildings and facilities (e.g. gas & electricity).

• IPPU specifically relates to emissions that arise from production of products within the following industries: Iron and steel, Non-ferrous metals, Mineral products, Chemicals. These are derived from DUKES data (1.1-1.3 & 5.1).

• Waterborne Navigation and Aviation relate to trips that occur within the region. The figures are derived based on national data (Civil Aviation Authority & Department for Transport) and scaled to the City of Oxford region.

Why does the BEIS summary differ from the SCATTER summary?

• The BEIS summary represents CO_2 only; SCATTER also includes emissions factors for other greenhouse gases such as Nitrous Oxide (N_20) and Methane (CH_4). These are reported as a CO_2 'equivalents (e)'.

• The BEIS summary does not provide scope split; SCATTER reports emissions by scope 1, 2, and 3 (i.e. direct, indirect or other categories).

• The BEIS summary categories are not directly consistent or mapped to the BEIS LA fuel data which is available as a separate data set. SCATTER uses published fuel data and applies current-year emissions factors, whereas the BEIS data calculations scale down national emissions in each transport area. Specifically with regard to road transport, BEIS data splits total emissions across road type; SCATTER uses fuel consumption for on-road transport per LA.

• Different treatment of 'rural' emissions i.e. Agriculture, Forestry and Other Land Use (AFOLU) and Land Use, Land Use Change & Forestry (LULUCF) categories are derived from different underlying data sets and have been explored further within section 3 of this report.

Appendix 2. Glossary

Term	*Definition*
Carbon Baseline	The year against which target decreases in emissions are measured.[3]
Carbon dioxide (CO_2)	Carbon dioxide is a gas in the Earth's atmosphere. It occurs naturally and is also a by-product of human activities such as burning fossil fuels. It is the principal greenhouse gas produced by human activity.
Carbon Budget	A tolerable quantity of greenhouse gas emissions that can be emitted in total over a specified time. The budget needs to be in line with what is scientifically required to keep global warming and thus climate change "tolerable."
Carbon dioxide equivalent (CO_2e)	Six greenhouse gases are limited by the Kyoto Protocol and each has a different global warming potential. The overall warming effect of this cocktail of gases is often expressed in terms of carbon dioxide equivalent - the amount of CO2 that would cause the same amount of warming. For consistency in this climate emergency action plan, the figures on carbon dioxide emissions have been presented in tonnes **tCO_2e**
Carbon footprint	The amount of carbon emitted by an individual, organisation, geographical area or during the manufacture of a product in a given period of time.
Carbon neutral	A process where there is no net release of CO2. For example, growing biomass takes CO2 out of the atmosphere, while burning it releases the gas again. The process would be carbon neutral if the amount taken out and the amount released were identical. A company or country can also achieve carbon neutrality by means of carbon offsetting in limiting quantities not all together.
Carbon offsetting	A way of compensating for emissions of CO2 by participating in, or funding, efforts to take CO2 out of the atmosphere. Offsetting often involves paying another party, somewhere else, to save emissions equivalent to those produced by your activity.
Carbon Sequestration	The process of storing carbon dioxide. This can happen naturally, as growing trees and plants turn CO2 into biomass (wood, leaves, and so on). It can also refer to the capture and storage of CO2 produced by industry.
Climate Change	A pattern of change affecting global or regional climate, as measured by yardsticks such as average temperature and rainfall, or an alteration in frequency of extreme weather conditions. This variation may be caused by both natural processes and human activity. Global warming is one aspect of climate change.
Climate Change Act (2008)	At the core of the Act is the 2050 target to reduce UK greenhouse gas emissions by at least 80% relative to 1990, and the system of carbon budgets that provide five-year stepping stones to the 2050 target[4]. In 2019 this target was altered to achieve net zero emissions by 2050[5].
Climate Emergency	A situation in which urgent action is required to reduce or halt climate change and avoid potentially irreversible environmental damage resulting from it.[6]
Climate Emergency Declaration	The recognition of the urgency of the Climate Emergency by organisations, businesses or government at any level, often resulting in setting a target date to become carbon neutral.
The Committee on Climate Change (CCC)	An independent, statutory body established under the Climate Change Act 2008 whose purpose is to advise the UK and devolved governments on emissions targets and to report to Parliament on progress made in reducing greenhouse gas emissions and preparing for and adapting to the impacts of climate change.[7]
Decarbonise	To replace fossil fuels as fuel source with a fuel that is less harmful to the environment such as solar power. See Renewable energy.
Emission Trading Scheme (ETS)	A scheme set up to allow the trading of emissions permits between business and/or countries as part of a cap and trade approach to limiting greenhouse gas emissions by businesses or countries buying or selling

[3] https://www.bbc.co.uk/news/science-environment-11833685
[4] https://www.theccc.org.uk/2014/03/04/the-climate-change-act-a-retrospective/
[5] https://commonslibrary.parliament.uk/insights/acting-on-climate-change-the-plan-for-net-zero-emissions-in-the uk/#:~:text=Net%20zero%20is%20a%20statutory,emissions%20by%2080%25%20by%202050.
[6] https://www.oxfordlearnersdictionaries.com/
[7] https://www.theccc.org.uk/about/

	allowances to emit greenhouse gases via an exchange. The volume of allowances issued adds up to the limit, or cap, imposed by the authorities. The best-developed example is the EU's trading system, launched in 2005.
Fossil fuels	Natural resources, such as coal, oil and natural gas, containing hydrocarbons. These fuels are formed in the Earth over millions of years and produce carbon dioxide when burnt.
Global warming	The steady rise in global average temperature in recent decades, which experts believe is largely caused by man-made greenhouse gas emissions. The long-term trend continues upwards, even though the warmest year on record, according to the UK's Met Office, is 1998.
Grandfathering	A form of carbon budgeting which allocates a higher carbon budget to those organisations or regions, which emit at a higher levels. In other words, high emitting areas will be allowed to emit at higher levels than those with lower existing emissions.
Greenhouse gases (GHGs)	Natural and industrial gases that trap heat from the Earth and warm the surface. The Paris Agreement, following The Kyoto Protocol restricts emissions of six greenhouse gases: natural (carbon dioxide, nitrous oxide, and methane) and industrial (perfluorocarbons, hydrofluorocarbons, and sulphur hexafluoride).
The Intergovernmental Panel on Climate Change (IPCC)	A scientific body established by the United Nations Environment Programme and the World Meteorological Organization. It reviews and assesses the most recent scientific, technical, and socio-economic work relevant to climate change, but does not carry out its own research. The IPCC was honoured with the 2007 Nobel Peace Prize.
Kyoto Protocol	A protocol attached to the UN Framework Convention on Climate Change, which sets legally binding commitments on greenhouse gas emissions. Industrialised countries agreed to reduce their combined emissions to 5.2% below 1990 levels during the five-year period 2008-2012. It was agreed by governments at a 1997 UN conference in Kyoto, Japan, but did not legally come into force until 2005. A different set of countries agreed a second commitment period in 2013 that will run until 2020.

Land Use, Land-Use Change, and Forestry (LULUCF)	Activities in this category provide a method of offsetting emissions, either by increasing the removal of greenhouse gases from the atmosphere (i.e. by planting trees or managing forests), or by reducing emissions (i.e. by curbing deforestation and the associated burning of wood).
Mitigation	Action that will reduce man-made climate change. This includes action to reduce greenhouse gas emissions or absorb greenhouse gases from the atmosphere.
Net zero carbon	A target to achieving net zero carbon dioxide emissions by balancing carbon emissions with carbon offsets and/or eliminating carbon emissions altogether.
Paris Agreement (2015)	The Agreement's central aim is to strengthen the global response to the threat of climate change by 21 countries agreeing to keep the global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius[8].
Per-capita emissions	The total amount of greenhouse gas emitted by a country per unit of population.
Renewable energy	Energy created from sources that can be replenished in a short period of time. The five renewable sources used most often are: biomass (such as wood and biogas), the movement of water, geothermal (heat from within the earth), wind, and solar.
SCATTER	Standing for Setting City Area Targets and Trajectories for Emissions Reductions, SCATTER is a local authority focussed emissions tool, built to help create low-carbon local authorities. SCATTER provides local authorities and city regions with the opportunity to standardise their greenhouse gas reporting and align to international frameworks, including the setting of targets in line with the Paris Climate Agreement.
Tyndall Centre	A partnership of universities bringing together researchers from the social and natural sciences and engineering to develop sustainable responses to climate change, working with leaders from the public and private sectors to promote informed decisions on mitigating and adapting to climate change[9].

[8] https://unfccc.int/process-and-meetings/the-paris-agreement/what-is-the-paris-agreement

[9] https://tyndall.ac.uk/about

The United Nations Framework Convention on Climate Change (UNFCCC)	One of a series of international agreements on global environmental issues adopted at the 1992 Earth Summit in Rio de Janeiro. The UNFCCC aims to prevent "dangerous" human interference with the climate system. It entered into force on 21 March 1994 and has been ratified by 192 countries.