

## Environment and Net Zero Carbon

### Update for Diocesan Synod, November 2024

At the time of last year's report to Diocesan Synod, record-breaking global temperatures dominated the national headlines, with over 50 degrees centigrade reported in several parts of the world. This year is set to be no different, with 2024 expected to be yet another record-breaker. Added to which, we have witnessed devastating floods across Eastern Europe, and the recent impacts from Hurricane Milton, with lives and livelihoods lost. At a recent meeting of the diocesan Environmental Task Group, a colleague shed tears as she described the scenes she had witnessed in the Caribbean in the wake of Hurricane Beryl earlier in June. Her emotion was in mourning for those affected, but also, because she had worked on the University of Oxford report ten years ago<sup>1</sup> that had forecast these very events - and which had demanded a response. But lack of action, leadership and investment has meant that the predicted impacts from climate change are being realised and felt, usually by the poorest in society – and will continue to be, unless something radical occurs.

The future of God's creation here on earth is a matter for everyone. It is not for a select few who feel tasked with the overwhelming challenge of saving the planet. It is for each of us, to share the work of tending the garden, for the glory of God and out of love for His people and His good creation. For God did so love **the world** that He sent His only Son, Jesus Christ, who spent his short time on earth demonstrating radical courage, justice, and compassion to all people. The climate and biodiversity crisis will worsen poverty, increase migration, reduce resources, fuel conflict, and take lives. Yet the opportunity to divert this pathway still lies in our hands; we are not powerless and we are not hopeless.

We continue to be encouraged and inspired by the example of churches, champions and schools across the diocese offering the radical courage we need. We have good news to celebrate, as carbon emissions across all parts of the diocese are falling, in line with our 2035 target. We thank everyone for their contribution, whether big or small, because every action makes a difference.

#### Net zero carbon by 2035

The work towards achieving net zero carbon by 2035 continues amidst a challenging and complex context - political upheaval, financial constraints and national infrastructure limitations to name a few. The report, to follow, offers hope and encouragement across all parts of the diocese, with emissions down from last year in almost every case. We give thanks for the work of churches and schools in their efforts to improve energy efficiency, and we are aware that often this is driven – quite understandably – by financial pressures. The respective [at this stage to be finalised] gross emissions reductions since last year of 11% in churches and 21% in schools ensure that we remain firmly on track for our 2035 target.

For churches, our progress against our net zero carbon action plan of March 2023 is as follows:

- **Finance:** £155,000 was secured from the Church Commissioners to support a small cohort of churches develop their net zero carbon action plans, match-funded by the diocese which is supporting another cohort with feasibility studies. The learning is being shared between and beyond the churches involved, and will inform future strategy at a diocesan level. A further church, St John's Newbury, has been selected as a national demonstrator church, with a grant to the value of £25,000 to develop their net zero carbon plans. We expect a second demonstrator church from the diocese to be confirmed in the autumn.

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<sup>1</sup> [Climate change report identifies 'the most vulnerable' | University of Oxford](#)

- **Capacity and training:** The Church Buildings Team have welcomed a new Church Buildings Officer, releasing capacity within the team for more focus on net zero carbon. The DAC have approved 12 applications for electric heating systems, of which seven are for under-pew heating.
- **Planning:** Over 280 subsidised energy audits have now been delivered since 2018, and data has been captured via the Articles of Enquiry which tells us that we have c.150 churches with ageing boilers. We are engaging with these churches and seeking to support them ahead of a likely need to replace their heating systems in the shorter-term.
- **Priority churches:** Our forum for larger churches continues to meet twice a year, to share learnings, progress and challenges. This is alongside our funded churches, which have been drawn from the pool of ‘high-emitting’ churches, considered as priorities. Feedback from those participating includes *‘We had a zoom meeting with [our partner church] and have gleaned some great ideas from them particularly on church family engagement.’...‘Our Green Team and Fabric Committee met with our nominated partner... We had a very fruitful meeting and all learned a lot.’*
- **Engagement:** An event will be held in October with experts drawn from various sectors – including the national church, low-carbon heating consultants, architects and energy auditors. We continue to promote case studies of churches implementing measures and are pleased to report an increasing number of churches (39%) taking up renewable energy tariffs.

Funding and infrastructure remain a huge challenge for churches – many are reporting the difficulty and cost of upgrading the electricity supply to support net zero carbon heating solutions, and the cost of net zero carbon technology. These are issues that we are raising at a national level, and all dioceses are facing the same barriers. It is also difficult to find companies with capacity to do the work at speed, with many of our funded churches having to wait a long time for reports. This is common across all departments. Nonetheless in all areas of the diocese, significant progress is being made, both against the action plan and against the national Routemap to Net Zero Carbon.<sup>2</sup>

### Clergy housing

Recognising the positive decision by this Synod in June 2022 to commit £10 million to our clergy houses, it’s been encouraging to see this investment turned into reality. Additional staff have been appointed to the team, and a strategy was taken to Bishop’s Council in December of last year, which prioritised work that would move the 250 properties currently below an EPC C up to that level over the next five years. EPCs offer a close proxy for carbon emissions reductions, and it is estimated that this work will result in a 30 per cent reduction in emissions in that period, keeping us in line for our 2035 target date. Implementation began earlier this year following the appointment of Chris Mariner as Retrofit Lead, and since April, the team have:

- Installed air-source heat pumps (ASHPs) to nine properties with the plan to complete 18 by year end
- Completed 11 solar panel installations
- Insulated 17 properties and replaced nine sets of windows, of which six are triple glazed
- Located new contractors to carry out air tightness testing, to ensuring heat pumps are sized correctly and are therefore efficient to use.

The team are pleased to report the carbon emissions have reduced by 12.5% since the baseline in 2020/21 following the work carried out to properties this year on its retrofit programme. The team will have improved the energy efficiency of over 50 houses by the end of the year through measures including additional insulation. Three properties have been prepared for full deep retrofit to achieve “net zero” and Boiler Upgrade Scheme grants have been successfully claimed with a positive budget contribution of £67.5K.

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<sup>2</sup> [Net zero carbon routemap | The Church of England](#)

## Schools

The significant reduction in emissions among our schools is testament to the work by all schools and ODBE, ODST and ODBST to improve energy efficiency. Data analysis shows us that while one school did make huge reductions, many others have made smaller but overall meaningful reductions over the past year.

A grant of £792K was secured from Salix to contribute to replacing heating systems in three schools, with a £272K local contribution. This work was mainly undertaken over the summer holiday period and will be completed in the autumn. These were three of only nineteen Church of England Schools across the country that were successful. The new school building for St Edburg's in Bicester was handed over for a September 2024 opening. This has been purpose designed as a zero-carbon school and will house the school's 360 nursery and infant pupils.

ODBST is seeking the the installation of solar panels on three schools. Funding bids are going in at the end of this year to support an oil to heat pump project. A further four schools with failing gas and LPG systems are also going in for bids. They are replacing the roof at the Trust office, which will hopefully include a solar installation. Schools are continuing efforts to reduce their energy usage, and ODBST is turning its attention to wider sustainability issues, particularly waste.

ODST has further developed its net zero carbon strategy, focusing funding on potential solar sites and EV charging points. Six priority schools for solar have been identified and conversations underway.

## Plans for the next 12 months

Our focus over the next 12 months will be to support our funded churches develop their projects, share this learning as widely as possible, and equip other churches to join the journey.

We will be exploring funding and fundraising opportunities, both from the Church Commissioners and other areas, and are encouraged that the National Lottery Heritage Fund has announced it wants to make it easier for churches to apply.<sup>3</sup>

We will also be considering where central procurement could play a role in easing the burden on parishes, both administratively, technically and financially, and we will be targeting support towards our priority churches, particularly those with ageing or failing boilers.

We will be offering 'carbon confidence in an hour' training to diocesan staff, to deepen understanding across the diocese and support decision-making, engagement and action.

## Church action for creation care

Net zero carbon is but one part of the story. We are delighted that St John and St Stephen's, Reading became our first Gold Eco Church this summer, thanks to the hard work of committed champions Rosemary Croft and Joanna Laynesmith. Their efforts have also been recognised in the Church Times Green Awards<sup>4</sup>, as they have been shortlisted in the 'green champions' category alongside two other entries from the diocese. Shinfield St Mary's CE Junior School has been shortlisted in the 'training and education' category for their work to embed creation care across the curriculum and in the practical life and work of the school. Additionally, St Peter's, Quarrendon, in Aylesbury has been shortlisted in the 'green health' category for their community garden, which offers a space for nature and for people who can benefit from spending time growing food and gardening.

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<sup>3</sup> [Places of worship | The National Lottery Heritage Fund](#)

<sup>4</sup> [Local creation care champions named Church Times Green Awards finalists - Diocese of Oxford \(anglican.org\)](#)

The Eco Church community continues to grow, with nearly 30% of churches across the diocese involved in the scheme. We celebrated the contributions of churches at a special event in the summer, including:

- Monthly Wild Worship services at St Andrew's Clewer
- The Witney Eco Forum in the parish of Witney
- Planting of thousands of trees by St Lawrence's, Hungerford
- A ground source heat pump at St Andrew's, Sandford-on-Thames
- A Creation Crew missional community at St Andrew's, High Wycombe
- Climate Conversations, community car-sharing and Forest Church at Holy Trinity, Headington Quarry

And these examples are but a snapshot of everything that is taking place. As a diocese, we seek to support parishes to embrace and embed creation care within their life and worship. Since last year, we have:

- Contributed to a course about the Five Marks of Mission on the new learning hub,<sup>5</sup> with a further two courses to follow in 2024 and 2025
- Trained over 20 curates and parish environment champions at opportunities throughout the year
- Created a 'Wilder Churches' certificate for churches caring for wildlife in their churchyards
- Delivered a joint Creationtide service with our link diocese in Sweden, the Diocese of Växjö, attended by c.50 delegates from across the two dioceses
- Worked alongside colleagues in the Property Department to map our Glebe land, to inform future action for biodiversity
- Commissioned 60+ church energy audits and heating surgeries to support churches develop net zero carbon pathways

We are aiming to become a Gold Eco Diocese by 2035, by continuing to resource, train and equip local parishes and champions, sharing inspirational stories of creation care in action, and working with colleagues across mission and schools. Creation care can and should be an enabling factor in our work with children, young people and families, in the growth of new worshipping communities, and in our focus on equality, diversity and inclusion. It cuts across and underpins all these important areas, and we are excited about the opportunities ahead.

### Choosing change

Christians have been caring for creation since the very beginning – it is not a new theme, but we do so with renewed urgency, in the wake of irrefutable science<sup>6</sup> about the current state of God's good creation caused by humanity's consumption of fossil fuels.

Paul Kunert, once apathetic about environmental matters, puts it like this, 'but for us who follow Jesus, the overriding reason to care deeply about the earth is that he does.' Jesus' work on the cross was for 'all things', Paul argues, and this has 'deep implications for our lives.'<sup>7</sup>

As people in the West blessed with relative choice, freedoms, wealth and privilege, we need to make our choices count, for God, for his people, and for his earth. We all have some level of choice, even when sometimes it feels limited, and we can choose a better future for our children, grandchildren, neighbours near and far, in the simple daily acts of love that Christ demonstrated when he dwelt among us. We look forward to continuing this work with determination, urgency – and hope, in the months to come.

*Hannah Mann, Environment Programme Manager, September 2024*

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<sup>5</sup> [learn.oxford.anglican.org](https://learn.oxford.anglican.org)

<sup>6</sup> [Do scientists agree on climate change? - NASA Science](#)

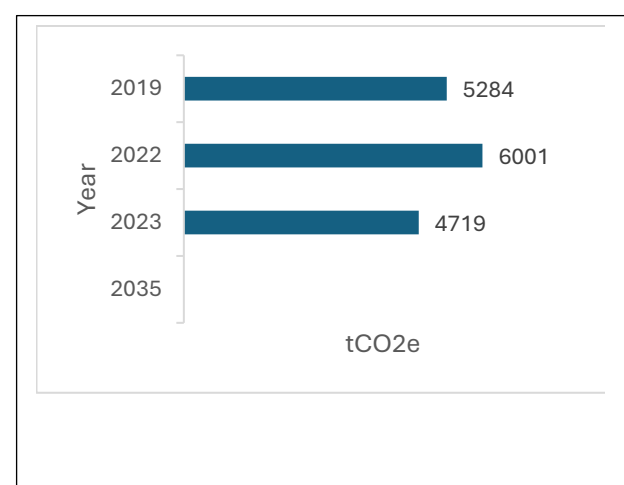
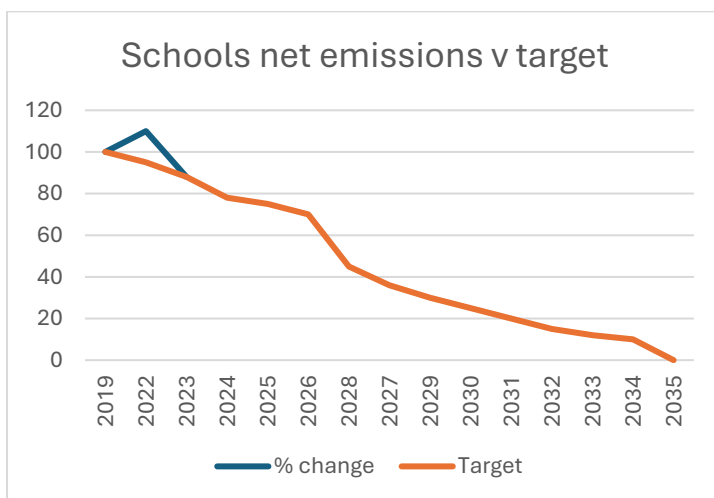
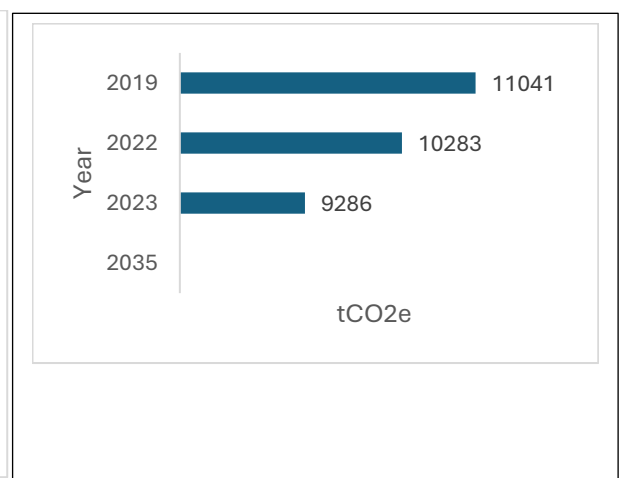
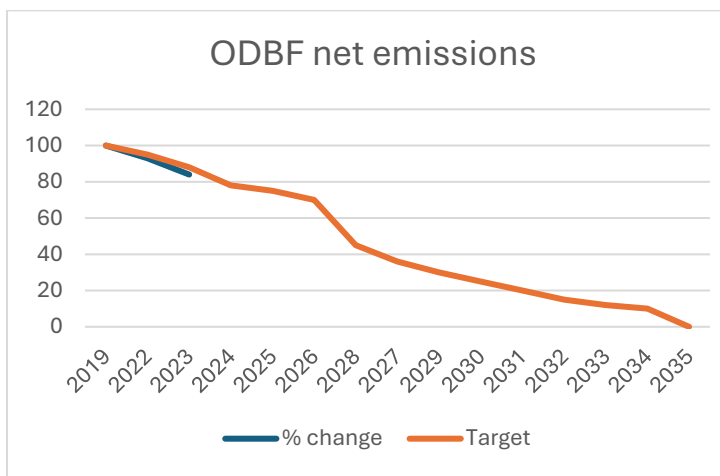
<sup>7</sup> [Jesus Died to Save the Planet | LICC](#)

Diocese of Oxford Carbon Emissions Report (2023 data)

**Headline**

We are encouraged to see that in almost all areas of the diocese, carbon emissions are reducing in line with our target for achieving net zero carbon by 2035. For ODBF, 2023 net emissions have reduced by 10% since 2022, and by 16% since our baseline year in 2019. For ODBE, ODST and ODBST, after a challenging year in 2022 – likely linked to continued heating and ventilation practices following Covid – we welcome 2023 figures that indicate a reduction of 21% since 2022 and 13% against the baseline, for those schools considered in scope to date.

Progress against target:



## ODBF emissions

Source	2019 baseline (Gross tCO <sub>2</sub> e)	2022 data (tCO <sub>2</sub> e)	2023 data (tCO <sub>2</sub> e)	% change 2022 to 23 (%)	% change 2019 to 23 (%)
Churches:	6,150 n/a net	5,858 (gross) 5,448 (net)	5,203 (gross) 4,775 (net)	-11 (gross) - 12 (net)	-15 (gross) -22 (net)
Clergy houses*	2,815	2,815	(2,463)	unknown	-12.5
Offices	96	69	60	-13	-38
Other buildings**	1,750 estimated	1,750 estimated	1,750 Estimated	0	0
Reimbursed staff travel***	160	98 (gross) 78 (net)	155 (gross) 87 (net)	+58 (gross) +12 (net)	- 3 (gross) - 46 (net)
Reimbursed parish travel	No data	53	81	+53	+53
Procurement	70	70	70	0	0
<b>Total gross:</b>	<b>11,041</b>	<b>10,713</b>	<b>9,782</b>	<b>-9</b>	<b>-11</b>
<b>Total net:</b>	<b>11,041</b>	<b>10,283</b>	<b>9,286</b>	<b>-10</b>	<b>-16</b>

\* Monitoring of data for clergy housing for the purposes of net zero carbon only began this year against the baseline, so it is unknown exactly in which year emissions fell, although the majority will be as a result of works implemented in 2023.

\*\*Church halls and other buildings for which PCCs are responsible, see note below 'estimates for scope 3'

\*\*\* The net travel figures represent the offsetting of our flights for travel to our link dioceses

## Schools' emissions

Source	2019 baseline (Gross tCO <sub>2</sub> e)	2022 data (Gross tCO <sub>2</sub> e)	2023 data (Gross tCO <sub>2</sub> e)	% change 2022 to 23 (%)	% change 2019 to 23 (%)
Schools travel	153	134	94	<b>-30</b>	<b>-39</b>
Schools energy	5,282	5,867	4,625	<b>-21</b>	<b>-12</b>
Total	5,435	6,001	4,719	<b>-21</b>	<b>-13</b>

All schools are on renewable electricity tariffs. These come under the following suppliers: Corona, EDF, Npower, Drax, British Gas, E-on, Engie. These are not included in the approved Church of England tariffs, and as such we have not counted them in our net emissions calculations.

## School in scope

We have previously been tracking carbon emissions across schools where we have had a financial ability to influence changes to the fabric of the school buildings. However, moving forwards, we need to align with the national Church of England's definition of those schools which fall into scope.

This definition is that it needs to be schools over which the DBE has a 'significant degree of influence' at a governing body level, i.e. majority membership on the governing board. This means in future, there will be a change in the schools that we will need to report against, with 38 schools moving into scope, and 12 moving out of scope, therefore an overall increase in our reporting of 26 schools. However, we firmly agree that while

this is a useful process for reporting, in principle we hope to see all schools make progress towards net zero carbon and long-term financial and environmental sustainability, and hope to make positive change wherever possible for the future of all our schools.

#### Points to note

**Estimates for scope 3:** In our initial baselining exercise, we felt that it was important to widen the scope for net zero carbon, to include some aspects of procurement, and other buildings over which PCCs have responsibility – for example properties they rent out. However, gathering this data remains enormously challenging. We know of 38 ‘other church buildings’ which reported their energy use separately from their churches in 2022, and in those we have seen a 2% gross decrease in emissions and a 1% net increase – as some have come off a renewable tariff. For procurement, we have made calculations for paper and for diocesan catering – emissions for paper are down slightly by 1% and catering is up by 4%. We are aware that the national church has commissioned carbon accountants to do a full scoping exercise – including some of these scope 3 elements – and their work may support our abilities to identify, report and reduce emissions in other areas.

**Estimates for schools and churches:** Linked to the point above, we have yet to receive full datasets from our churches and schools, meaning we need to use estimates where data is unavailable. 75% of churches returned some form of data to us for 2023 (not always complete data), and for the remaining 25% we use a consistent methodology to enable us to estimate those without data. It is the same for schools; not receiving a full complement of data each year. Recent Display Energy Certificate data is used to fill gaps where available and when not, we use averages from schools of comparable type and heating fuel.

**Clergy housing measurement:** The calculations made for clergy housing have been made by looking at the retrofit projects delivered in properties since the original auditing exercise that was carried out in 2020/2021. The team will have improved the energy efficiency of over 50 houses by the end of the year through measures including additional insulation.

**Reimbursed parish travel:** In 2022 we started collecting data for reimbursed parish travel, which we were unable to do when developing the baseline. Not everyone submitted data, so we have extrapolated up based on available data.

#### Key observations

**Energy procurement:** We are pleased that an increasing number of churches – just under 40%, up from 21% last year – are choosing to adopt a renewable energy tariff. By choosing these tariffs, churches have reduced emissions by 428 tonnes of carbon, the equivalent to 240 flights to Australia. We understand that schools are likely to move away from renewable tariffs in coming years, so that they can invest their precious and finite resource into capital improvements, but as they have thus far been on tariffs that haven’t counted within our definitions, this is unlikely to make a significant difference in reporting.

Parish Buying’s green energy basket has not been a product we have felt able to promote to churches, but we believe that this is likely to change sometime next year. We have explored the opportunity for local procurement options, but these would come at a cost to the diocese – either in terms of staff-time or direct costs, and it was felt these options are not yet viable.

**Finances:** The challenging financial context has shaped this year’s emissions report both positively and negatively. School travel has reduced considerably, but this is a sobering statistic that reflects the current state of school finances and cuts to school trips made via coaches and minibuses. Similarly, many churches will be making cuts in energy consumption out of financial necessity, as the cost-of-living impacts continue to be felt.

Conversely, travel within ODBF is up, as staff re-engage in onsite meetings after the Covid pandemic. It is encouraging to see more staff are using electric vehicles for their journeys, and that train travel has also increased.

Financial constraints are a considerable factor in the difficult decisions churches are making about the future of their buildings, and their heating. Churches and schools seeking to make low-carbon choices are often faced with extortionate associated infrastructure costs to enable sufficient electricity supply. One church has been quoted £162,000 for a new substation that would be required to power their heat pumps, while a school has been quoted a similar figure for a new electricity tower. This is on top of the high costs of the technology itself, which has yet to come down in price enough to make it a comparable option to fossil fuels.

Where we have seen changes of heating systems in churches, these tend to be in smaller churches where under-pew heating can offer a cost-effective solution. Our net zero carbon action plan indicated costs of over £40 million to decarbonize our churches and we have yet to develop a robust plan that would address this financial challenge.

#### Net zero carbon case studies:

##### **Shinfield St Mary's CE Junior School**

Shinfield St Mary's was shortlisted as a finalist in the Church Times Green Awards this year, for their efforts to not only cut carbon emissions, but also to embed creation care within the life and the work of the whole school. Since planting a community orchard, hosting a tree nursery and growing wildflower spaces, the school has become a carbon sink, and will add an air source heat pump to its building, which, along with the existing solar panels, will make it one of the most sustainable schools in the diocese.

##### **New Hinskey, St John the Evangelist Church**

A failed boiler meant that St John's in New Hinksey was unable to heat the church. The PCC has subsequently grasped the net zero carbon challenge head on, and has successfully been granted permission to install 71 under-pew heaters, several sets of supplementary infrared panel heaters and an overdoor heater, and will take out the old gas boiler. There is still some work to do to complete the works but the church has demonstrated courage and determination in its efforts to seek a solution without using fossil fuels.

##### **Wokingham, All Saints – Vicarage**

The measures completed at Wokingham All Saints' vicarage have the potential to reduce carbon emissions from nearly 10 tCO<sub>2</sub> down to 0.2 tCO<sub>2</sub>. Monitoring of bills and usage will confirm this achievement over time, along with the comfort of the tenants, and the property has improved from an EPC D to an EPC B.

#### Further information

For details on how we arrived at these calculations, please contact the [Environment Team](#). Emissions were calculated using best available data, weather-adjusted, and extrapolating from a reliable sample where necessary, and working with UK government carbon emissions conversion factors for 2023. We are using the national Church of England definition for net zero calculations, which can be found in the [Routemap to Net Zero Carbon](#) on page 68; and therefore, we are not including parish scope 3 (indirect) emissions.

*Hannah Mann and Alison Riggs, October 2024*