

Comments on Oxfordshire Infrastructure Strategy Draft Consultation

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Unassessed Risk

1. Existential Dangers to Green Infrastructure of Unassessed Risks

In order not to waste money, and in order to protect and enhance our green infrastructure, we need a robust strategy that takes *the range* of population growth forecasts, and hedges against the risk of no, low, medium or high population growth. This paper purports to give a “*Strategic picture of the cost of and risks to growth*” but risks are not clearly assessed.

We are dependent, especially in Oxfordshire, on a thriving natural world. The economic benefits of nature cannot be overstated. Our beautiful, uplifting surroundings have measurable health benefits for residents, and are considered by tourists to be the epitome of Englishness. Natural processes also serve to provide water, food, pollination, and carbon-storage, and protect from flood and pollution.

There is a tension over land-use, between development and biodiversity. Once land has been taken up for transport, industry and housing it is permanently lost as a continuous landscape for nature to flourish. The knock-on effects of infrastructure are normally detrimental to nature, and we must always be alert to the trade-off in terms of what is gained, to what is lost.

Oxfordshire strives for *economic* growth to 2031, and beyond. This should not be confused with growth in the built environment (short-term economic gain) nor with growth in the population (potential for economic liabilities long-term).

We are in danger of damaging the economy of Oxfordshire, and reducing the prosperity and wellbeing of Oxfordshire people by not disentangling these types of growth.

In all aspects of infrastructure, we should be taking a scientific approach to risk, ensuring that infrastructure goes in, in a sequential manner, preserving and protecting underlying natural or farming areas.

Our strategy should be alive and responsive, adapting to altered external factors. There should be stopping rules.

If jobs do not materialise, or if they come on stream slower than expected, or if there is a loss of jobs; or if housing price rises continue because of, for example, investor-acquisitions; then infrastructure should have been brought on in such a way that a coherent community exists at any stopping point.

Conversely, we need acceleration rules, to enable us to respond to faster growth in jobs or successful communities clustered in new homes, occurring at some sites relative to others.

An example of where this Strategy fails to look at statistical spread in a robust manner is over Special Needs school places. With 32,000 additional schoolchildren by 2040, and 1-2% of these requiring SEN places, one would expect a need of 320-640 such places. OXIS assumes 320. All scenarios, worst, best and likeliest should be presented.

Risks must be properly assessed of developing a built environment when *actual* population growth does not require it; or of building housing when infrastructure is not ready to support it. We must be

prepared to adapt to change, with plans ready, to slow or if necessary halt development that is inappropriate in its timing or in its placing.

The alternative is that we risk losing natural spaces and depleting our green infrastructure whilst diminishing the sustainability of Oxfordshire.

2. Population Size Projections and Effects on Nature

Population projections are key to assessing correctly the infrastructure we need. Ambitious growth plans are appealing, but the Strategy here does not allow for a range of potential outcomes in population growth.

The population projections in this strategy are all presented at the highest level of estimates, with projected population growth of 40% by 2040 (267,000 increase in population) over and above the population increase we have had 2011-2016. After that, a further million new homes are anticipated along a new Oxford-Cambridge motorway.

We are now working to far higher population growth figures than previously. 2016-2031 population growth has variously been predicted, by the Office of National Statistics (ONS), the Strategic Housing Market Assessment (SHMA), and Oxfordshire County Council Research and Intelligence Unit (OCC-RIU) as:

ONS	64,400
SHMA	82,200 or 138,000
OCC-RIU	188,600

OCC-RIU population forecasts use ONS methods, and then *“consider how housing availability and growth will affect the population [whereas ONS projections] ignore planned housing growth and simply project past change including past response to housing growth.”*

Thus, figures from ONS show one-third of the population-growth that those we are working to. We argue that our economic boom will increase the population over-and-above ONS, but there comes a point when this is an unreasonable assumption. Risk analysis should allow for the full scope of population projections.

Regardless of local factors, ONS project the annual growth rate for England to reduce from 1% per year (as of 2015), to 0.46% each year, (by 2039). With or without a booming economy, there is little scope for our Oxfordshire population to grow in a country where overall population is levelling off.

No account is taken here of the uncertainties introduced by Brexit. Brexit will be likely, and Government policy is, to reduce net immigration.

Getting population-growth estimates wrong, and not carefully examining the age-profiles of the new population that we invite in, could have devastating consequences on the Oxfordshire economy and on the natural environment in our County.

Even if we could achieve this anticipated population growth, should we encourage it? What is the optimal size of our built environment in Oxfordshire? What is our optimal population? Where and how much can we build whilst enhancing and protecting our natural and farming environments?

3. Projections of Economic Growth based on Analysis of Progress To-Date

“Science Vale is identified as a major growth area with planned growth of up to 20,000 new homes and over 20,000 new jobs”. This is greatly to be welcomed!

The Strategic Economic Plan (SEP) predicted 88,000 new jobs for Oxfordshire. We have now run for 6 years since the Local Plans of 2011. Is there evidence that high-tech ‘knowledge’ jobs are blossoming as we would wish? How many new jobs are there, and in what industries?

What effect is Brexit having on our economic growth? Should growth figures be revised? At the least, we should be working to a spread of likelihood in new jobs. What are the lower limits of estimates? Is 88,000 the higher limit?

The *“major research centres at Harwell and Culham”* are under threat from Brexit and from our withdrawal from Euratom. Whilst the optimistic view is that these areas will still thrive, a full risk analysis of alternative scenarios should be provided.

Some of the economic growth is short-term, merely wrapped up in the building of homes. Indeed, speculative housing applications have been ruled ‘sustainable’ in terms of employment, because the builders that build the homes will be being employed to do so. Even this short-term economic growth is likely to be affected by Brexit.

These are exciting proposals for new science parks. How realistic are they? For example, 4000 jobs in research, innovation and related fields at Osney Mead? Again, Brexit looms - so much of our research funding is through collaborative European programmes.

Employment growth on its own is beneficial for Oxfordshire *only* if it is in high value, high-tech sectors. It necessarily incurs population growth (as there is effective 100% employment in our County), and with more people comes more liabilities in terms of infrastructure to care for the needs of those people.

Population growth on its own is not positive for the County. Thus, *“without significant investment”... we may have “a 50% reduction in employment growth to 2031”.*

How risky are each of the proposals? We should be presented with highest and lowest case estimates.

4. What is the Spread of Likelihood of the Housing Projections?

Predictions of infrastructure need are based on assumptions such as the following:

“Approximately 5100 homes [to be] delivered per annum across the County which is more than double the rate of delivery achieved in the past 5 years from 2011.”

It is not clear, why or how developers would double their rate of building. They have never been able to build so fast, and are unlikely to want to. Has Brexit been factored in? It is likely to reduce skilled labour; and the price of imported resources has risen due to the low pound.

“Another potential risk is if housing requirements are not met. Should housing delivery fall...it is likely that the County would see...house price increases [damaging the economy]”.

This is a circular problem, in that to protect their businesses, developers will prefer house prices to remain buoyed up. How do we incentivise developers to keep building if increased supply were to bring down house prices?

For this very important reason, we should ensure that housing is not permitted to be sold as overseas investment. Housing must be circumscribed to be used by people working in this County. Otherwise we continue to chase our tails and will never have enough homes.

“A slower rate of housing delivery than that assumed in this strategy would subsequently result in a lower population forecast”. What provision is made for that eventuality?

Foreign ownership of property as investment vehicles is causing the hollowing out of once-thriving communities, and the depopulation of parts as of London. Oxfordshire is another target of foreign investment, and this *could* lead to empty estates.

This is especially important, as the housing numbers in the SHMA, to which the local authorities are working, are based on exceptional economic growth. If homes are not occupied by the high-tech scientists that we want to fill the jobs, or indeed if they are left empty, we risk developing ‘ghost towns’.

Losing the natural assets of open landscapes to un-useful development should be avoided.

If there is not the growth, but, for example, Thames Water invests billions of global dollars for extra water provision, then who foots the bill? Will it be the existing rate-payers of Oxfordshire?

It is vital that this Strategy has integrity. We need honest appraisal of likely outcomes, not best-case scenarios only.

5. Risk Factor: The Wrong Sort of Population Growth

Our current and anticipated population growth is disproportionately in terms of the over-70s. The analysis here shows that building homes is attracting people in, but not those that will provide prosperity to our County.

Oxfordshire is at great risk of becoming a dormitory County to London. Network Rail anticipates a doubling of mainline passengers into Paddington by 2043, *and this is “without factoring in all of the potential growth in Oxfordshire”*. Again, we have the burden and the liabilities of such residents, without their working-economic input.

Whereas we had hoped that house prices would fall or stabilise due to extra supply, OCC-RIU anticipate that housing growth will greatly increase population, with a 3-fold increase in population relative to ONS figures. This means we are attracting in a large number of people to fill the homes, which would surely indicate that house prices *will continue to rise*.

Our population growth, now highly exacerbated by ambitious housing growth plans, is to be through *“a significant increase in the proportion of the population over the age of 70 years and...a decrease in the proportion of the population in working age”*.

These two factors coming together, a much higher population than expected due to building homes, and yet still an increased proportion of elderly versus working age people, indicates that we are building the wrong sort of homes, or that they are being bought by only the elderly who can afford them.

This bodes very badly for the prosperity of Oxfordshire. We aimed for massive employment and economic growth, are building houses to enable workers to live here, and instead are attracting the elderly.

These very worrying trends are evident from the vast number of homes for the elderly that are being built, certainly in South Oxfordshire. Henley's Neighbourhood Plan was subverted, and their intention to build ordinary homes for ordinary people has been turned upside down with excessive numbers of care-homes being constructed.

There is a temptation for developers to focus on homes for the elderly, as they do not have to make further contributions to the community (CIL and Section 106), and there is a ready market of relatively wealthy incomers. This unforeseen consequence of allowing developer-led planning is not creating the vibrant, cutting edge County that we want.

If our housing growth is failing to attract young entrepreneurial high-tech workers, and instead attracting retired, wealthy folk, then we can see that our plan has gone awry. We need to build the right types of homes, and in the city and conurbations where they are needed.

This cannot be achieved within the Neighbourhood Planning System which is focussed at too small a scale rather than strategically across the County. It also relies on beleaguered locals who are drawing up these plans for the wrong reasons: to prevent speculative development, rather than to provide homes for new workers.

If we were able to change course, and ensure that the right homes are built in the right places at the right price for the right people, our infrastructural needs would change.

6. Risk Factor: Infrastructure Deficit

Currently, Oxfordshire's infrastructure is degrading, even before growth: "*at present Oxfordshire is facing significant constraints on water, power supply and grid capacity*". And, "*Continued reductions in public expenditure are a key risk to delivering critical infrastructure.*"

What should we do to resolve the "*gap between the expected rate of growth and the ability to deliver key infrastructure?*" Either, one should be slowed down or the other should be sped up.

With, for example, the government halting rail electrification (July 2017), it seems unlikely that we can speed up infrastructure.

Slowing down the expected rate of growth (reducing housing targets) would fail to deliver our desired growth. But unsupported housing growth would be catastrophic for economic prosperity in Oxfordshire, and detrimental to the wellbeing of existing and future residents of our County. Business would be deterred from coming to Oxfordshire, and our existing prosperity would be seriously damaged: eg through reduced tourism, and an exodus of businesses to counties that have not over-developed in an unsupported manner.

Unsupported housing growth adds to traffic congestion, carbon emissions from homes, and damage to the natural environment.

For Education, what population forecasts have been used? It is surprising that we currently have a surplus of nearly 8000 places, and would require only 32,000 new school places for an increased

population of 267,000 people. It would appear, again that one extreme (low) value has been used without giving the spread of likelihoods.

The Knowledge Spine has the most housing growth, but existing lack of infrastructure in Oxfordshire must be brought up to scratch and prepare the rest of the County for its growth too. To focus infrastructure projects only on the Knowledge Spine is to set the rest of the County as second class, for flood protection, sewerage, and future-proofed transport systems.

7. Risk Factor: Timing of Infrastructure

This is a super document, and we are very pleased to see a co-ordinated coherent approach to infrastructural need in the County. There are serious issues about funding and timing which are referred to “*There is an increasing gap between the expected rate of growth up to 2031 and the ability to deliver key infrastructure*”.

The redevelopment of Oxfordshire cannot be done on the cheap. There are continual references to constraints on spending that deplete rather than increase resources eg “*The Oxfordshire Healthcare Transformation Programme estimates a potential £200m funding gap if the CCG does not evolve*”.

Do we expect infrastructure revenue costs to continue to be underfunded to 2040?

Successful, grand development plans are usually centrally conceived with clear funding routes available at the outset. The development of Oxfordshire is happening back-to-front.

Over-reliance on developer contributions prevents infrastructure from being there, ready and waiting, to provide for homes when they come. Developer contributions are not equal to the task of big infrastructure projects, and the money is released retrospectively leaving local people devoid of infrastructure for many years.

Examples of Planned Catch 22 Scenarios

- The bridge to be built over the Thames at Culham. Significant numbers of homes to be built before the developer contributions amass to enough to start the bridge. On the other hand, the homes cannot be built and sold without the bridge existing. Worryingly, a representative of the developer (building 2000-3000 homes at Culham) says their contribution could not cover the cost of the new road and bridge, and that that would not happen before the housing.
- 950 homes are to be built at North Abingdon *before* the area receives slip roads onto the A34.
- The 2-track railway going past Culham from Didcot to Oxford: fast trains have to wait on freight. The railway from Reading to Didcot and on west to Swindon is 4-track so that fast trains can overtake slow trains. The large new town planned for Culham requires “*additional tracks and structures between Radley and Didcot, including through Culham to accommodate proposed 2043 timetable*”. It will take at least 20 years for this to come to fruition. Meanwhile, new homes at Culham remain isolated.
- Already, some new Oxfordshire Housing Estates have not been connected to the sewage system, and are reliant on sewage lorries. This is a worrying state of affairs and a health hazard. Sewage removal is the first and foremost requirement of a civilised society, guarding from degrading conditions and disease.

How can we ensure that infrastructure is available in advance of homes?

8. Risk Factor: Money

Developer contributions are not always what we expected them to be. Perhaps the original planning permissions are gained without realistic assessment of the costs. Whatever the reason, it is entirely normal for developers to reduce their infrastructure contributions because their projects would otherwise not be feasible.

Clearly, an enormous money-pot is required to provide infrastructure, and then developer-contributions can repay a rolling fund. This would be beneficial to developers who will be more likely to succeed in selling homes if provision is clearly available.

Without Government backing, we cannot hope to provide a world-class County *“the growth in journeys by road and rail has not been matched by sufficient government investment”*.

“There are instances where identified projects do not have estimated delivery costs...therefore the costs...presented...are minimum figures”. It is a shame that there has been no attempt to put ballpark figures around these costs. In any case, the costs given *“are highly sensitive to the accuracy of the supporting assumptions”* and *“over-reliance on these figures should be avoided”*. As the ‘known’ figures are so fragile, the ‘unknowns’ may as well have been included. Several of the missing figures are likely to be in the billions and their absence seriously underestimates the likely costs.

We accept that it is difficult to estimate costs of factors from other authorities, but some of the figures in Figure 3 seem remarkably small. Potable water comes in at £200 million, drainage at barely anything, and waste water at £200 million. We will need a new reservoir and serious attention to our sewage systems. What if these cost billions rather than millions?

Similarly, Green Infrastructure shows at around £300 million, and cycle paths at only £200 million; small sums for such vital parts of our survival mechanism.

9. Risk Factor: Fractured Lines of Authority

Have findings been used that contradict local infrastructure delivery plans? If so, we need to know what these are.

With no control by the County Governance over local health authority plans, we do not know how realistic their plans are. What we already know is that there are incredible pressures on the John Radcliffe and the Churchill Hospitals, and local provision is to be massively scaled back. Meanwhile, 523 additional hospital beds are required.

In particular, the Sustainability and Transformation Plans for the NHS, over the whole country, will cost £9 billion. This money has not been secured.

It is of great concern that *“The planning for provision of schools is no longer under sole control of the local education authority”*. It is essential, at this Strategy level, that a clear mapping out of school requirement is made.

Whilst growth in bordering counties is *“likely to impact on service demand in Oxfordshire”* this is not factored into calculations.

To balance what is good for Oxfordshire in terms of growth versus the wellbeing of its citizens, we should be taking a holistic view of the County as part of a Nation. It is discordant to discuss “*competing for employment growth with other successful areas*”. Provided the UK is successful we should all be able to reap the fruits.

10. Risk Factor: Adaptability to Innovation

We strongly welcome the commitment to innovative infrastructure provision. “*Technological innovation over [the next 25 years] is inevitable*”. How will we make our strategy adaptable enough to cope with this change?

“*Centralised monitoring of clients and properties*” for assisted living and social care will be a welcome forward-step. This enables people to live within communities rather than be herded together into centralised institutions. Currently, we are not working towards such an end. All homes built should be disabled-access ‘homes for life’, and care homes and institutions would not be required.

11. Risk Factor: Maintenance of Infrastructure

New growth must of course be supported by infrastructure, and the funds being sought are to enable that. What *revenue* sources are there to maintain future infrastructure? Growth is hoped to produce revenue which will enable us to reverse recent trends in closing down and cutting provisions in the public realm (children’s centres, road maintenance, the NHS, colleges of higher and further education). There is a sense in which we will never be able to catch up, as new growth creates requirement for increased services.

An example is from further and higher education, “*the availability of funding (e.g. from the Department of Education and other sources) is projected to decline over this period [to 2026] with little opportunity for new investment into the estates.*”

An issue for the environment, is the maintenance of Sustainable Drainage Systems, which is the responsibility of the County Council, but the County Council has no funds for such maintenance.

12. Risk Factor: Contraction of Services and Minimised Forecasting

Most services (education, health, social care, waste etc) are undergoing reductions in funding at the current time, with projections made into the future to attempt to deal with this (closing colleges, local GP facilities, children’s centres, subsidised buses, waste sites etc). The corollary of this is that staff recruitment is becoming difficult eg “*a key issue raised by the CCG (Clinical Commissioning Group) was the need to encourage retention of primary care staff.*”

Infrastructure in this Strategy is based on projections of contracted services, which may prove inadequate. It is possible that future prosperity may enable us to restore services. If so, should we be striving for greater levels of infrastructure? This is especially important, when the population being attracted to Oxfordshire, through the house-building choices, is the elderly.

4.2 Transport

Effects on Nature

One of the greatest concerns for the natural world in Oxfordshire is the cutting up of habitats of plants and animals. Where a barrier prevents normal movement patterns, including re-seeding and vegetative reproduction, islands are formed which are too small for species to survive in. Further damage is done to biodiversity.

Where new roads and railways pass through virgin land, the more that can be put underground the better. Failing that, very wide underpasses for natural movement should be created.

Air pollution is mentioned four times, but no priority strategy is presented to address this important health issue, which kills 100 residents per year, in Oxford alone.

Minimising person-movement

Transport is responsible for serious levels of carbon emissions, and for air, soil and water pollution. We should seek to minimise unnecessary travel by bringing communities together with resources, jobs and services.

However, there is a theme running through OXIS, that provisions should be centralised: for example, halving the number of Further and Higher education colleges, reducing local GP provision, closing local hospitals, closing police stations, and bringing the elderly into purpose-built assisted living centres. These systems may reduce costs for the institutions but have a large social and environmental cost.

There are critical parking issues at the John Radcliffe and Churchill Hospitals as well as other resource issues. Air pollution, congestion and stress are exacerbated by reducing local provisions. Need for a further 523 hospital beds is anticipated. Where are they to go?

We should be aiming to use new communications technologies to disperse provision, so that citizens can travel less, rather than requiring them to travel more. It is easier to manage traffic flows (in terms of people-movements) in a dispersed rather than a centralised form.

We feel that we could show greater ambition in exploiting the high-tech forward-thinking nature of Oxfordshire industry, in terms of deploying state-of-the-art and future-proofed modalities for all aspects of development.

Most especially, this comes to the fore in the consideration of transport. The document briefly mentions future travel methods such as the Hyperloop, and the future for autonomous EVs, likely to be in place by 2030 (if not before). Discussions of looking forward (Ecobuild 2017) pointed to predicting and preparing for future autonomous mass transit.

Roads

As history has shown us, adding to and widening roads *always* leads to increased traffic, and necessarily creates new pinch-points at other places. It encourages new traffic and unnecessary person-movements, swiftly catching up on the carbon and pollution savings that are made by reducing congestion and creating new routes.

The example of the A40 west of Oxford is a good one. Here is a possibility for adding serious cycle provision and dedicated bus routes. In time bus tracks may adapt to those required for autonomous electric transport. All widening schemes of roads should include dedicated, physically separated streams for bicycles, walkers and personal electric transports such as mobility scooters, and a further physically separated route for buses (rapid transport).

Furthermore, if roads could be placed underground, they would not interfere so much with natural expanses of land, cutting up and reducing the productivity of the natural environment. Thus, could Didcot Science Bridge be a Didcot Science Tunnel. Or, to be truly 'scientific', a hyperloop? The same goes for the Culham to Didcot River Crossing.

There are "*Poor facilities for non-motorised users on A34 north of Oxford*". These should be a priority to improve to ensure a modal shift to cycling and walking.

Transport improvements should not be focussing on motorised transport, we would welcome improvements to major routes to provide physically separated tracks for bikes and walkers.

Rail Network

We welcome new railways which ensure low-carbon efficient transport of people and freight.

We seek to enhance the rail network in order to "*increase labour market catchment areas*" for example for the Oxfordshire Knowledge Spine. This really should not be needed with the number of homes being built exactly to serve that Spine. Are the homes being built for the right people? Should there not be rules in force to ensure that homes are available for relevant workers?

It is of concern that increased train capacity is to be achieved by refranchising, but only likely in that instance if the "*payback can be achieved within the term of the franchise*". With the national importance of an excellent railway system, it should be the responsibility of government to ensure such investment is made.

Didcot Parkway station has only recently been redeveloped (completion 2014), and a multi-storey carpark is proposed for it in this Strategy. A true Garden Town would ensure that there are better ways to get to the station than by car. Recent bicycle provision at the Station appeared to be very generous, but like that in Oxford, it has quickly been filled. There should be levels of the carpark for bikes. What has Didcot Garden Town to say on this subject?

Will the redevelopment of Didcot Parkway ensure that it is no longer prone to flash floods which have devastating economic consequences (16th September 2016)?

Electrification of Railways

We would very much welcome electrification of the tracks and the introduction of higher capacity electric trains by 2019 outlined in this Strategy. But the Government has cancelled electrification. Is this for aesthetic or financial reasons? The electrification to-date seems to have gone very badly on both counts.

The stripping out of expertise at Network Rail, with design work going out to consultants, has caused the most expensive hammer-to-crack a nut version of electrification that could be achieved. The massive gantries have all been built to the maximal size and specification without adaptation along the railway, and without regard to Areas of Outstanding Natural Beauty (AONBs).

That has caused great distress in rural Oxfordshire, where the beauty of the natural landscape is one of its chief tourism attractions, providing the natural awe and wonder that is good for people and good for the economy.

Specifically, Network Rail (NR) was found not to have consulted correctly (by the Save the Goring Gap campaign). NR have stated that the line going through the AONB (most of Reading to Didcot, especially at the Goring Gap), is a 'test' line. They have agreed to retrofit better mixed designs to improve the visual impact of electrification. Goring has not heard from NR at all, this year (2017).

These terrible experiences must not stop electrification. It is wrong that old track needs retrospective electrification whilst new non-electric track is being built.

As for electrification of the proposed Oxford to Cambridge line, in July 2017, the Department for Transport told Network Rail to 'remove electrification from the scope of the project'. Similarly, electrification will not now happen between Oxford and Oxford Parkway.

The new fleet of electric InterCity Express trains, all ready to run, will have to be fitted with bi-mode technology to turn on to diesel for old-tech lines. Old diesel technology will continue to plague residents of North Oxford, Wolvercote and beyond.

Buses outside Oxford

We welcome the concept of an integrated effective network of buses. There is a chicken-and-egg issue with providing buses so reliably that people will start to use them. Previously, buses have been taken off and put on and it is difficult for people to know how to use them (as you suggest with your statement about reliability). Here, technology may help, as you suggest, with systems such as Maas.

In rural Oxfordshire, routes that were not commercially viable were previously subsidised by the County, but austerity has led to a cancellation of all such routes. This has led to hardship in existing communities. An example is of the 70 residents at Shillingford Park in South Oxfordshire. The cancellation of the bus into Wallingford left them imprisoned in their own homes. Going Forward Bus CIC set up a route to help these people out, but it may not be viable as there is no subsidy to get the route off the ground so that people start to use it regularly.

Reading and Oxford are linked via the transport hub at Wallingford by the A40 and A39. These were effective for travel between Wallingford and Oxford, and a very good alternative to Park and Ride, when there was a fast bus taking 30 minutes to Oxford Centre. But buses now all take over 40 minutes and the buses go at 30 minute intervals. If the fast bus was brought back, and Thames Travel met their original intention for buses to go at 10 - 15 minute intervals, making them an easy choice that requires no planning, they clearly become a better option than Park and Ride.

The Oxford to Wallingford bus runs into the early hours, (at very long intervals), but the late bus from Reading to Wallingford was cancelled and the last bus returns from Reading at 23.05. This makes it extremely difficult to go to London and stay into the evening. One has to use a car or a bike and park at Cholsey or Didcot.

These examples show that with start-up money and a real push to provide a service that people find convenient and quick, a good network of buses would be used for travel from the market towns and villages.

Fares need to be kept low to encourage use. Currently, it is cheaper (if one disregards the cost of running a car, as people do) to drive from Wallingford to the Park and Ride to get to Oxford, than to take the bus. This should not be the case.

Real-time information at bus stops should occur. It is not happening outside Oxford. Is it happening in Oxford? Modern communications systems *will come*.

Buses Inside Oxford

Why expand Gloucester Green carpark when we should be aiming to keep cars out of the City?

Electric buses are the answer to noise and pollution from buses, not only in Oxford City, but throughout the County.

We potentially welcome the Rapid Transit Lines in Oxford, but would need more detail as to what these are. Would they exceed the 20mph limit in the town centre? Transit tunnels are a very good idea, but why not have a Metro?

In what way would “*high quality commercial services and improved interchange facilities*” be introduced into South Oxfordshire and Vale of the White Horse?

“*Scheduled and flexible demand responsive routes via shuttle-bus*” for low-demand areas would be an excellent solution, for example to the needs of the people at Shillingford Park. Modern comms should facilitate such shuttle buses. These are “to be delivered between 2016 and 2020” at a cost of £5.8 million. What has so far been achieved?

Are rapid transit routes (existing pipeline and aspirational) through Oxford and elsewhere the best solution? Better than trams? If we truly wanted to see an economic boom in Oxford, it would be a metro that we would be building.

Car Parks and Park and Ride

Park and Rides, further out of Oxford, *are not the solution* to reducing congestion in Oxford. It is not a flexible approach in the same way that an excellent bus network would be. It is right that we look at getting people out of their cars and onto the bus as early as possible in the journey. But much better for all, if we need never get into our cars in the first place. What is the evidence that drivers would choose to use Park and Rides further out of Oxford? We prefer to stay in our cars as long as possible, and would be more likely to drive right into the City.

Lewknor in particular requires excellent shuttle buses to the M40 from surrounding towns and villages to enable people of Eastern Oxfordshire to access the buses in to Heathrow, Gatwick and London. There is a clear ‘line of desire’ already laid out, and an informal bus transport hub (with untidy, dangerous car-parking).

“*Intercepting trips close to their origin before reaching the ring road*” is clearly beneficial too but is *not* best achieved with new Park and Rides. It extends the built environment out to the new Park and Ride points, and will create traffic congestion to these points. This is again, the risk of “over-centralisation”. People of the villages may well need to drive to the major bus route, but small distributed carparks along the route would minimise their car journeys and spread out the congestion load.

Distributed car parks, built along the main routes and served by frequent buses, takes public transport much closer to people's homes. This is a neater solution than continually pushing Park and Rides further and further out of Oxford.

Far better even than distributed car parks would be a comprehensive grid of shuttle buses from residential estates to main bus routes. What then the need for Park and Rides?

Autonomous vehicles and an expected decrease in car ownership indicate that taxi-ing small EVs are more likely to be used to take people to and from train stations in the future. What impact does that have on the Park and Ride concepts around Oxford and on a multi-storey carpark at Didcot?

Park and Rides in other countries are underground and multi-tier. Why is this not so in Oxfordshire? The blot on the landscape, and the damage to the natural world can be minimised by putting car parks underground.

Moving the Park and Rides because passengers have to 'use the strategic road network' (is this the ringroad?) is very destructive of the surrounding countryside. These new Park and Rides are plomped fair and square in the Green Belt.

In general, there is a push for larger car parks throughout the County in all sorts of facilities, driven by centralisation of services to fewer larger facilities (in response to funding reductions). Thus, "*Oxford University Hospitals Trust [responsible for four major hospitals] is currently working on proposals for car parking in all hospital sites*".

Closures at Horton Hospital are having tremendous knock-on effects on the three Headington Hospitals. It is unfortunate that we require such short-term responses to our transport crisis. If we were to achieve a thorough-going network of efficient transport accessible to all citizens throughout the County (eg autonomous vehicles on-demand), the requirement for car parks should reduce.

Active Modes: Walking and cycling

We welcome the intention to '*invest in a transport system that enables*' change to walking and cycling, and taking fewer journeys by car. For such a strategy we need:

- a) a coherent and complete network of safe and pleasant bicycle and walking routes at the large-scale across the whole County to enable movement between towns and villages and across the countryside, and
- b) safe and pleasant towns and villages, with a focus on pedestrianised centres. Outside those centres we should be promoting shared streets with single-surface spaces giving equality of precedence to all road users.

It is well-understood that pedestrianised areas promote growth and prosperity, enabling shopping and leisure pursuits in urban areas. We also know that our market towns, and Oxford itself, are suffering under illegal levels of air pollution.

The Strategy is unambitious in developing active modes of transport.

It focusses on bike lanes for Oxford City and its suburbs, and for Science Vale and Bicester. It mentions that '*A series of Local Road improvements include key pedestrian and cycle elements*'. What are these improvements? Do they produce dedicated cycle lanes, or shared streets?

Currently, there are *“Poor facilities for non-motorised users on A34 north of Oxford”*. This is true of most roads in the County. In the UK we have extremely low levels of older women cycling at all. Reasons cited are to do with safety. We lag behind other European countries in safe cycling provision, and suffer the economic and health consequences.

Missing then, is a Strategy for safe pleasant routes for bicycles and walkers creating a coherent network across the County; and upgrading of villages and towns outside Oxford, the Science Vale and Bicester to make active modes of transport the modes of choice.

Road Freight

The Road Freight section would do better to focus on developing excellent rail links to take freight off the roads.

Aviation

Aviation is one field where centralisation is beneficial.

Oxfordshire suffers from noise pollution by aircraft, and dangerous levels of air pollution. From a sustainability angle, we do better to improve provision of rapid transit buses to Heathrow and Birmingham. Heathrow is set to expand dramatically. To ensure the sustainability of that expansion, we should support Heathrow. So as not to increase traffic difficulties, we should focus on improved links to existing commercial airports.

4.3 Education

The headline summaries, of 6527 spare primary education places and 8903 secondary places should not be shown as such, when the text states that better accounting shows 3881 and 6751 spare places respectively.

How have these projects been identified? Four new primary schools are shown for South Oxfordshire, all in Didcot. There is one planned for Wallingford, and possible proposals for a second one. Why are these not shown? What other schools have been missed off the list?

“Considerable expansion of early year facilities will also be required” - why is this not shown in the Strategy?

Secondary schools are spread out in rural areas, and can be some distance from homes (Education Section). For further and adult education *“to 2026, the existing estates of a number of colleges are due to be consolidated, with the potential to reduce these by up to half, compared with 2016”*. This will mean more travel for students. It is the young that should be encouraged into active modes of transport, but it is unsafe for them to cycle, or even to walk.

Primary schools should be at the heart of the community and not centralised. There is a breakdown in society when people cannot access schools for their children. An example is the new Fairmile Development at Cholsey, 1.5 miles from the primary school, the journey starting with the crossing of a major road. There are high levels of truancy as it is difficult for parents without cars to get their children to school.

We should ensure that the Strategy for education encompasses non-car transport as the norm for students to get to school. The closure of local education facilities and the decline in "the availability of funding" for further education, should be resisted.

4.4 Health and Social Care

"Consultation has revealed...a desire to deliver primary care services 'at scale'". Is this the notorious consultation on the NHS Sustainability and Transformation Plans? It is accepted that that consultation was very poor and opaque. It is unlikely that the populace have a desire to lose their local doctors.

It is worrying that *"existing, smaller GP practices...are becoming less viable"*. Reducing local provision increases car use.

This is an odd statement *"there is only a need for additional GPs if the model of primary care does not change"*. Unless we do away with GPs altogether, even a changed model of primary care will require additional GPs. The expectation currently is that GPs will be used more, not less.

We welcome the statement *"addressing health and wellbeing comprises more than just health and social care...Sports, recreation and green infrastructure also play a big part in ensuring a healthy population."*

"one of the impacts on acute health services is likely to be from an ageing population". This is the major impact looked at under social care also. Social care infrastructure looks only at provision of beds and homes, for the elderly. No consideration is given of the health crises such as obesity that will result in much greater provision of facilities for the disabled.

There is no consideration given to other aspects of social care, such as children's services. Is there no intent to re-instate the much-missed children's centres?

4.5 Emergency Services

Police services have been drastically cut in recent years, and yet *"overall crime rates...have declined"*. It has been noted by commentators that reduced police numbers means reduced ability to record crime, and some of the perceived reduction in crime may be due to under-reporting.

We now have to deal with previously unrecognised levels of slavery, child abuse and radicalisation, all creating new challenges for the police which will require funding, and might benefit from a reverse in the closure of local police stations. As with other aspects of this whole Strategy, centralisation of resources runs counter to local provision. Service delivery is compromised if it is not at a local level; and citizens are forced to make more journeys; usually by car.

No assessment is made of future ambulance service requirement.

4.6 Utilities

Electricity

Where is the strategy to upgrade the grid? “*Scottish and Southern Energy Power Distribution’s Long Term Development Statement (Nov 2016) covers the period 2015/16 - 2019/20*”. This is remarkably un-long-term. Do they plan further ahead as well?

“The Oxfordshire’s Electricity Grid Market Failure Report [Grid Failure Report], Low Carbon Hub (August 2015) states that in general, all SSE Oxfordshire substations are constrained for new renewable energy schemes above 50kW. By 2015, 22 renewable schemes from the Low Carbon Hub, Oxford City and Oxford University were cancelled.”

“The constraint on network capacity also has an impact on existing renewable energy generators. An example is the Ardley Energy Recovery Facility operated by Viridor, which is restricted to exporting 26MW where it could be exporting more than this. This means that possible increased environmental and financial benefits are being missed due to the network constraints.”

“The [Grid Failure Report] identifies that there is no common strategic view on how and when the Oxfordshire grid should develop. The report calls for an energy masterplan to assess the risks to the delivery of the Strategic Market Housing Assessment and the Strategic Economic Plan, and wider innovation and growth strategies such as Oxford University’s growth plan. The Low Carbon Hub (LCH) expresses concerns as to whether the pace and scale of grid improvements can support Oxfordshire’s plans for economic development and growth to 2030.”

SSE’s current plans seem to be designed to deal with short-term issues with managing demand resulting from existing and new development. There is no strategic plan to produce a robust system of decentralised and renewable generation, and to cope with the anticipated increase in demand from the movement to electric-based transport and heating. Despite a desire and requirement (under the Climate Change Act and Paris Accord) substantially to reduce carbon emissions, no infrastructure investment is identified here to facilitate this.

Even the modest plans outlined here rely solely on developer contributions, despite the recognition that the cost is often too high for a single developer to bare, the likelihood of substantial co-ordination seems low, and the risks of insufficient funding for the network developments are high.

There should be, here, the same costed Strategy to upgrade the grid as we have for roads.

Gas

“There is an expected UK supply capacity surplus that is forecast to be sustained over the period of the LTDS (2016-2025)”. (LTDS is SSE’s Long Term Development Statement). “Forecasted demand is projected to decline by approximately 10% between 2016 and 2025”. “There is large potential and benefit from the development of alternative sources of gas, specifically bio-methane.”

To meet our climate change commitments, fossil fuel gas use should be being phased out, not in. New developments should not be incorporating gas as the means of heating.

“a full roll-out of smart meters, which are an effective means to reduce domestic energy demand, planned for the end of 2020.”

The current performance of roll out of smart meters (for gas, electricity and water) has been woefully slow – a higher priority need to be put to this.

Renewable Energy

“Oxfordshire will not meet its target of reducing greenhouse gas emissions to 50% by 2030” in the Executive Summary, and “Oxfordshire needs to invest a minimum of £100 million / year until 2030 to achieve carbon reduction targets and meet the climate commitments set by national policy” in this section.

How would £100 million a year be deployed to ensure that the target is met? Crucially, this section does not refer to the known limitations on the electricity grid which require a full overhaul of the grid. Whose responsibility is this?

“According to the Low Carbon Economy Report, Environmental Change Institute - University of Oxford and Low Carbon Oxford (Oct 2014), Oxfordshire is well positioned to become a low carbon economy leader. Within the county, the low carbon sectors already generate £1.15 billion / year and employ 8,800 people, making up 7% of Oxfordshire’s economy.”

We know that since 2015, when Government withdrew meaningful support for renewables, many firms working in renewables have gone out of business; there has been a catastrophic collapse in the solar industry for example. Thus, the situation may be worse than we think. Please may we be presented with an up-to-date picture of renewable energy deployment in the County.

Meanwhile, current deployment has been wrongly presented in Figure 49 (which is also out-of-date), eg Westmill Solar Farm is shown in a variety of locations.

As with Green Infrastructure, renewable energy here is presented as a means to producing its own growth and GDP, as opposed to a vital piece of infrastructure to support growth and to improve conditions for existing residents.

No strategy is presented for local production of green electricity, eg windfarms (Didcot Power Station to be decommissioned, would make a perfect site; hydroelectric, several schemes have been proposed and some undertaken in The Thames; and widescale deployment of solar panels on ‘dead’ roof spaces, particularly on warehouses and other large commercial roofs. All new homes should be capable of significant solar generation.

De-centralisation green electricity provision, with localised grids, often run by community groups, is a good model that has been used in other countries, notably Germany.

The report on Oxfordshire’s Low Carbon Economy forecasts that with significant investment of £200 million/year, we could have 56% of electricity and 40% of heat provided from local renewables by 2030.

Even since this report, battery technology has progressed amazingly, and batteries are now being provided as part of household solar kits.

Where is the costed Strategy for local green electricity generation?

Energy Efficiency Retrofitting

We should have a SEPARATE SECTION on Energy Efficiency as this is key. How will Oxfordshire's old homes be retrofitted to reduce their carbon burden? New development should be to carbon-zero standard as is being done in London. (This is achieved to some extent by offsetting where full passivhaus standard cannot be met).

We urgently need a strategy to retrofit existing homes. Scotland has recently started a programme, with local authorities providing substantial grants, plus loans repayable at zero interest for upgrading homes. This is a benign version of the Green Deal, omitting the bureaucratic mountain of private agencies, and the indebting of home-owners with punitive interest payments.

Potable Water

Thames Water has added up all of the SHMAs and come up with a very very high level of water requirement that differs markedly from what that would result using conventional population predictions.

For the Swindon and Oxfordshire Water Resource Zone: *“Under dry year average conditions, a deficit is forecast from 2024/25 growing to 15Ml/d by the end of the planning period. Under peak conditions a deficit is forecast from 2019/20 growing to 32 Ml/d by 2040. This growing deficit is driven by the impact of population growth and climate change on groundwater sources.”*

Note the primary driver for the proposed new Abingdon reservoir is not the needs of Oxfordshire but the needs of London and Southern Water. Oxfordshire's water needs could be met by improved sewerage treatment and reservoir operations; or be achieved by a more aggressive leak reduction programme (including renewing mains pipes) and more stringent requirements for new-build to get down to 100 L/person/day.

Waste Water

Our *“Wastewater Treatment Plants...are close to capacity”*. Treatment plants cannot be further upgraded or adapted with current technology; they are as good as it gets, and further pressure on this resource will mean breaching clean river limits. What is the strategy to deal with this?

Note Table 1.38 and figure 55 are not consistent.

This section is complacent – it ignores current sewerage transmission and treatment issues (for example in Steventon) and the failure of the Thames in the Water Framework Directive.

Broadband and Telecommunications

“Plans are being finalised to extend the programme coverage to approximately 97% by 2019. Over the course of the planning period to 2031, future technology is likely to lead to demand for higher speeds in both residential and commercial premises. This in turn is predicted to lead to a continuous requirement for infrastructure improvements and investment to satisfy this. The next

stage is likely to be ultrafast technology, which is defined as delivering between 300Mbps and 1,000 Mbps and will be the next step in providing broadband service to customers.”

3% of Oxfordshire, in terms of people, is 20,640. The plan currently leaves over 20,000 people without broadband by 2019.

There is no plan beyond 2019, despite the recognition there will be continuing and increasing demand for broadband services into the future. What is the strategy to 2040 to ensure broadband for everyone? What is the cost? Who will bear the cost?

What is the strategy to bring at least existing best practice to Oxfordshire? It is astonishing that mobile coverage is still not available in many areas in Oxfordshire.

Broadband and modern telecommunications are crucial for the success of Oxfordshire’s business and civil life. It is through efficient communication that we can enable rural businesses and the more remote communities to survive. With efficient communications, people need travel less. This in turn, takes the pressure off the congested, polluted roads.

4.7 Waste

“Current HWRC [Household Waste Recycling Centre] capacity modelling is indicating that the existing size and location of HWRC sites is not fit for purpose to serve housing growth and the associated predicted increase in waste arisings.”

“The total capital funding currently available is... unlikely to be sufficient to meet the full capital requirements for meeting waste growth, facilitating waste reduction recycling and reuse and therefore not assisting towards relieving revenue pressure.”

“Oxfordshire’s infrastructure does not have sufficient capacity to handle, process and distribute or repair, refurbish and re-manufacture waste for reuse and repair.”

“The Oxfordshire County Council 2015 [HWRC] Strategy recommended 3-4 larger, centrally located sites to enable shorter travelling times to sites by most residents, create more opportunity to reduce residual waste, allow capacity for increasing waste arisings and to increase the repair and reuse of items. The capital budget to do this is not sufficient.”

This section paints a bleak picture for the future: with insufficient money to develop or run existing or new waste facilities; and existing HWRC facilities “*not fit for purpose*” in terms of reuse and repair.

The 2015 HWRC Strategy was generally regarded as inadequate. By closing sites, and centralising management to very few sites, would actually increase distances to be travelled and reduce convenience (and hence recycling rates). That strategy was driven by cost saving. The Key Findings do not address the chronic funding issues.

What is the strategy to 2040? What will it cost? (Why has this not been analysed, when, for example, roads, has)?

4.8 Flood Defences and Drainage

“Surface water and sewer flooding is becoming more prevalent with additional demands from new development” “flood risk... is set to worsen due to the combination of climate change and urban development”.

On the 16th of September 2016, Didcot Station flooded and a line was closed. Didcot is a vitally important strategic point on the Great Western route and such a closure bears economic consequences. In 2014, an £8 million revamp and hard-surfacing of the forecourt and the carpark, with the carpark above the level of the station, was completed. Would lines have been closed and the station have flooded prior to these improvements? We cannot recall this having happened before.

New infrastructure including roads, add to flood risk as part of urban development. What are the risks of exacerbated flooding from the strategy for roads?

There are specific plans to protect Oxford and Abingdon, but what is the strategy to prevent flooding everywhere else?

The report under-represents the importance of *pluvial* flooding: ie flash floods from rain. Recent events have shown many regions are now susceptible to flooding following heavy rain. It is very likely this has been exacerbated by increasing urbanisation.

The report ignores the vital importance of flood plain areas and the use of ‘natural’ flood prevention. There should be a strong commitment to preserving the natural flood plains of the Thames and its tributaries, and enhancing these where appropriate.

SUDS and Natural Flood Management

“It is often the case that the responsibility for maintaining Sustainable Drainage Infrastructure is not well defined and the maintenance regime itself is not quite as comprehensive as it should be. Therefore, a system to record and monitor such assets would be beneficial across the County to help ensure the level of protection they provide is maintained.” (Page 181)

We need more than a system to ‘*record and monitor*’, we need a robust mechanism to ensure maintenance is financed into the future.

What should we do in clay areas where SUDS may not be appropriate?

Natural flood management (recreating natural processes rather than SUDS) is given only a single paragraph and it is suggested that it “*its long-term cost should be relatively low*”. It may be true that the cost is relatively low compared to the £120 million Oxford Flood Alleviation Scheme but costs will be significant: there will be capital costs and there could be on-going costs (for example paying farmers to manage their land differently).

The ‘Key Findings’ in this section are inadequate.

- There is no reference to risk that new developments will increase surface runoff, with an absolute necessity for these developments to include suitably designed SUDS to ensure flooding is not exacerbated.
- There is no reference to the serious issue of who maintains the SUDS.
- There is little recognition of the vital role played by the river flood plains and the absolute necessity (which also presents opportunities) that these are protected and enhanced.

Technology

Table 1.11 suggests that technological innovation will protect from flood, with “*more advance warning of flooding, more time to prepare appropriate response*”, and better catchment management.

Whereas technology can produce real advances in other areas (such as autonomous vehicles), there is no real technological ‘fix’ for flood risk. Flood risk requires working with the natural environment, and having respect to where development should be to work with the environment, not against it.

4.9 Green Infrastructure

Conserving Nature

We welcome the recognition of Oxfordshire’s green infrastructure as providing the “*basis for agriculture...ecology...and an attractive character*”; and the understanding that it provides *ecosystem services, such as air quality and climate regulation, flood mitigation and space for recreation [promoting] physical activity [and improving] health and wellbeing*”.

The “*three broad cross-cutting remits: landscape-scale assets, strategic ecological resources, and strategic recreational resources*” is a fair way to arrange the discussion of green infrastructure. The ensuing discussion of landscape-scale assets however, does not take into account the *crucial* importance for nature, of uninterrupted contiguous habitats. Ecologically speaking, it is not possible to preserve green-infrastructure ‘assets’ without them having a coherent hinterland.

Nature does not work in small islands; it requires swathes of clean, unpolluted land, air and water. These *must* be joined up and not interrupted by roads. One of the greatest concerns for the natural world in Oxfordshire is the cutting up of habitats of plants and animals. Where a barrier prevents normal movement patterns, including re-seeding and vegetative reproduction, islands are formed which are too small for species to survive in. Further damage is done to biodiversity.

It is hard to appreciate how fragile our Oxfordshire ecosystem is. In Britain, there has been an 80% decline in the abundance of animals since 1968. Worse still for hedgehogs! For every 40 hedgehogs in the 1950s, there is now only one: a 97% decline.

We Need Nature Beyond its GDP Potential

There is an interesting philosophical split clearly evidenced here, with regards to infrastructure. All aspects of infrastructure (transport, health and social care, education, water, communication, waste, fossil fuel utilities etc) are seen here as required to support growth; they are needed services for civilised life. They are not in and of themselves, expected to contribute to the economy.

In the cases of green infrastructure and of renewables, however, they are expected to justify themselves through their own growth potential; they are valued chiefly in so far as they bring in more money. This flies in the face of our understanding that, just as with other services, nature and clean energy are essential, in their own right, to underpin our society. A healthy ecosystem provides flood relief, clean water, clean air, pollinators, food, carbon absorption and storage; indeed the fundamentals for life.

Green infrastructure furthermore provides “*recreational value*”. Human health and wellbeing is measurably improved by a healthy natural environment.

To develop Oxfordshire in the way we wish, we should go beyond considering nature as having potential economic benefits, and appreciate that a functioning ecosystem must not be impaired by growth, because it is *as essential* to us as transport, health, social services and other infrastructure.

As it is fragile, we should allow ‘nature to go first’, overlaying our infrastructural requirements on the landscape in such a way as to protect and enhance our natural world.

Agriculture

The same may be said of the loss of land from farming. Whilst farming contributes little in terms of GDP it has the vital function of providing food. Food production, from growing to processing, is threatened by Brexit. Already, food production workers are eschewing working here. Aside from politics, and whether buying-in food from the EU becomes more difficult post-Brexit (we import half our food), climate change is having an effect on worldwide food production.

As an island, although we already cannot feed ourselves, we should protect the food sources we have. Additionally, the carbon cost in food miles is one that we would all seek to reduce. Local food is a desirable outcome and is a very popular concept in Oxfordshire. Agriculture is forecast to grow 126%, 2011-2031. Is this happening?

It is a shame that food-production gets such short-shrift here.

Mapping Natural Processes to Underlay New Infrastructure Provision

It should be noted, that whilst houses themselves have a relatively small footprint, the associated built environment for the infrastructure to support them creates large ‘no-go’ areas for nature.

Crucially “*although significant impacts from development on internationally recognised sites of ecological interest are likely to be limited and manageable, the impact of development on the wider ecology is less well understood*”. The term “*ecological mosaic*” is a good description of the piecemeal understanding that we have of Oxfordshire’s understanding.

The upshot of the foregoing, is that infrastructure to support housing growth should take into account the underlying ecological structure of Oxfordshire. South Oxfordshire and Vale have already taken a stab at mapping out the green spaces in their Green Infrastructure Plan and identifying areas of especial biological worth. There are some serious deficiencies in the report, for example roads are identified as ‘green corridors’.

(Roads are not green corridors. Many have no vegetation on them, but those that do, may have only patches of grass at the road verges. This may work for some flying insects but not for most animals and plants that are cut off by hard landscaping, buildings, people, traffic etc. Once cut off and living in pockets of green space, their populations wither away and die off.)

Nevertheless, such a map for the whole of Oxfordshire would be beneficial. It should be taken as the starting point from which to draw up continuous swathes of land that can be protected and enhanced for the natural world.

“The South Oxfordshire and Vale of the White Horse Green Infrastructure Strategy...suggest that investment...of £50 million per annum over... 15 years [would]... achieve a 10% reduction in negative social costs...without even considering the primarily ecological costs”.

A limitation of South and Vale’s green infrastructure plan, is that it focuses primarily on the recreational value of green spaces, and their accessibility. Recreation is important, and has knock-on effects on human health and wellbeing. More important still is conservation of the underlying ecology. Without it, the land loses its recreational function.

We would very much welcome a full ecological mapping for Oxfordshire, which would show us more coherently, how our ecological systems inter-relate with the landscape. This would help resolve the problem of *“limited forward planning for green infrastructure...in part due to a relative lack of evidence”*.

State-of-the-art mapping of this type, is conducted here, locally in Oxfordshire, by the Centre for Ecology and Hydrology (CEH). **The Glastir Monitoring and Evaluation Programme** (<https://gmep.wales> and <https://www.ceh.ac.uk/our-science/projects/glastir-monitoring-and-evaluation-programme>) is the Welsh Government’s sustainable land management scheme which pays for environmental goods and services aimed at:

- Combating climate change
- Improving water quality and managing water resources
- Improving soil quality and management
- Halting biodiversity loss
- Managing landscapes and historic environment and improving public access to the countryside
- Woodland creation and management

In addition, CEH have led on the Countryside Survey (<http://www.countryside.gov.uk/content/about>), a broader brush surveying of our natural assets in the UK. The last of these was conducted in 2007. Although they have been conducted every 7 to 8 years since 1978, the Government has not commissioned the next in the series.

By auditing what we have to start with, we take an essential first step in protecting and enhancing our natural processes.

Outstanding Natural Beauty, and Blue Infrastructure

Many problems are identified in this section.

At the landscape perspective for example, the Area of Outstanding Natural Beauty (AONB), the North Wessex Downs *“is already exhibiting some detrimental impacts on the character from development, which could be exacerbated by the significant planned growth around Didcot”*. This damage is not aided by our intent that *“the multi-functional nature of AONBs is promoted so that...economic development can take place”*.

“the growing population across Oxfordshire is likely to increase pressure on the AONBs...additional measures will be needed to support the AONBs in accommodating additional visitors”

The AONBs suffer “*damaging land management practices...habitat and species decline associated in part with habitat fragmentation...inappropriate extraction of natural materials...concentration of pollutants [in some water bodies]*”.

Our rivers are at risk...”*significant pressure due to areas of growth*”.

What strategy are we developing to mitigate these risks?

Green Belt

It is good to see the Oxfordshire AONBs, River corridors and Green Belt recognised as an essential part of the Oxfordshire landscape. Many studies have shown the economic values of easily accessed green space, in terms of health and wellbeing of the population. Indeed the green character of Oxfordshire is what will attract high quality business to the region.

However, it is incorrect that “*A Green Belt has been designated to restrain development around the City of Oxford*”. The purpose of the Green Belt is clearly defined in law:

1. to check the unrestricted sprawl of large built-up areas;
2. to prevent neighbouring towns merging into one another;
3. to assist in safeguarding the countryside from encroachment;
4. to preserve the setting and special character of historic towns; and
5. to assist in urban regeneration, by encouraging the recycling of derelict and other urban land.

At least two recent studies in Oxfordshire have shown that all parts the Oxford Green Belt fulfil at least one of these purposes. It is a pity the report does not reference these studies fully. In addition, surveys show the majority of Oxfordshire residents support the preservation of the Green Belt.

It is true that parts of the Green Belt do not realise their full potential in terms of biodiversity and accessibility, and this could, and should, be improved but this not the primary function of the Green Belt designation.

We note the most recent proposals for the Didcot Garden Town are not directly referenced here; the May 2017 estimate is that over £600 million is required for infrastructure.

Strategic Ecological Resources

“*Oxford has significant areas of strategic green space that are primarily ecologically valuable and...should be protected from development and significant recreation pressure*”. (Presumably, this is a misprint, it should refer to Oxfordshire).

Habitat Regulations Assessment shows endangerment from growth, to some of our seven Special Areas of Conservation. For example at Aston Rowan “*significant impacts could not be ruled out due to increase air pollution from vehicle traffic linked to population growth at Henley, Thame and Wallingford...[therefore] mitigation measures in order to make development acceptable*” must be set out.

And yet “*Although the HRAs provide details as to the likely significant impacts from growth, the specific mitigation measures...are not clearly identified*”. This Strategy does identify (sticking with Aston Rowan as the example) that “*there will need to be development specific quality improvement measures and wider transport policy related measures to reduce pollution levels*”.

Surely it is the role of this Strategy to give direction on how wider transport policy measures will reduce pollution? These should be reflected in the transport section, and costed.

“Overall although these areas have legal and policy protection, they will come under pressure from growth across the county including from recreation as well as air pollution and water quality impacts”. What is the strategy to deal with this?

We Need a Clearer Strategy

This is not a strategic review of the infrastructure needed in the next 30 years. The report is posited on a 40-50% increase in population and business activity (40 to 50%). At the same time we face challenges that seem almost insurmountable, in reducing carbon emissions, preserving and enhancing biodiversity and improving public health.

What we have here is a piecemeal approach fixing some existing problems with few proposals looking beyond five years. The reliance on the utility companies and developers for initiatives and finance is clearly flawed because they cannot, or will not, make the big strategic investments required.

There is no clear cross-referencing to other areas of Strategy. The Transport Strategy, with its increase in roads and motorways receives most attention in this document. And yet, it is not shown how Transport Strategy will mitigate negative effects on natural spaces.

6. Proposed Prioritisation Criteria

“Given the inevitable funding gap, the Oxfordshire Growth Board will have to prioritise clusters or portfolios of projects to focus on those that have the greatest impact and contribution to growth alongside socio-economic and environmental objectives.”

Thus, prioritisation will be of *“projects, focusing on their deliverability, scale of growth enabled and potential to leverage funding”.*

This extremely worrying statement indicates that areas of the County, whether by geography or other factors, will be deprived of sufficient infrastructure. The infrastructure required as shown in this Strategy is at the bare minimum (eg school places), and less than the bare minimum would be a deficiency. If it is necessary to phase, or slow, growth until finances are accrued to support it, then a safe and realistic plan would be do just that. The alternative is for this exciting time of growth to be accompanied by degraded services for our citizens. Economic growth with reduced prosperity and wellbeing.

This extremely welcome document has revealed to us large deficiencies in our current infrastructure which has been severely depleted, presumably by a lack of investment over the past 7 years of austerity and reduced council budgets.

Already, prosperity is not equally distributed and infrastructure improvements have stalled. At our current population, there is no plan to deliver basic broadband to over 20,000 people, no plan to improve the electricity grid which is stopping the production of local renewable energy, no plan to improve the sewage system which is at breaking point, no coherent plan to improve green infrastructure and protect our landscape.

This is something of a wake-up call. How can we ensure we have the necessary infrastructure to keep pace with our *current* circumstances?

7. Next Steps Stage 2

This Strategy document shows that infrastructure is not keeping pace with growth in Oxfordshire. Such important underpinning of our living conditions (eg sewage) should not be compromised or left as an afterthought. For significant, strategic infrastructure, we cannot rely on sporadic payments from developers. Particularly, it is noted “*the cumulative impact on infrastructure provision as a result of multiple smaller scale housing sites*”, does not get dealt with by developer contributions.

This endangers prosperity in the County, and there is a risk that new development will be abandoned, left empty or uninhabited by deprived communities.

There is one aspect of infrastructure that is always damaged by unsupported growth, and always irreparably so. Once natural landscapes, or even low-yield agricultural fields, have been build upon, there is no going back.

As a matter of extreme urgency, we should be surveying our ecological assets at a thoroughgoing level similar to Wales’s Glastir Monitoring and Evaluation Programme. We have the expertise in Crowmarsh at the Centre for Ecology and Hydrology. Such a survey would inform future growth ensuring that it is supported by green infrastructure, and preventing unnecessary destruction of landscapes and of our natural assets.

Comments on the Report

How independent is this report?

What is AECOM’s past and future relationship with Oxfordshire County? Similarly (P6) what is the reference to, “Oxfordshire infrastructure providers and their partners”? Has it already been identified who would provide infrastructure? Would work ultimately go out to tender?

What is OCC Research and Intelligence Unit? Is this an in-house facility or is the work actually done by a contracted-out company? If the latter, who are they?

Executive Summary Misses Important Points

Most readers do not go beyond the Executive Summary. It should include all important points, but some vital points are missing.

For example, housing growth is extrapolated forward from 2031 continuing at the same rate. The text says this is “*strictly a modelling assumption and does not suggest that it will in fact be undertaken*”. In the Executive Summary, this caveat is not included.

In the Transport Section, there are three Key Findings concerning Local Roads. The first is that we have congestion. The third is that we plan numerous capacity improvements. The SECOND states that there are Air Quality Management Areas throughout Oxfordshire. But this is not mentioned in the text, nor in the Executive Summary. How will the strategy address Air Pollution when we plan to increase road traffic?

In one respect, the Summary gives more telling information than the text. On SEN requirement, it says 1-2% of pupils require places in Special Needs Schools. It is unclear from the body of the text how the number 320 is arrived at; in the Summary it *is* clear that this is 1% of the increased number of schoolage children.

Errors in the Document

Figure 21 shows a railway station at Wallingford. This is simply a hobbyist station for steam trains. It is not infrastructure.

Figure 49 on Renewable Energy is wildly wrong! It shows Westmill Windfarm in several locations dotted around the County.

Misprints

Page 76 “The M40 Junction 9 connects with the A43”. This in fact is Junction 10.

P76 “£44m - Estimated cost to deliver a new junction on the M40 to provide access to the new Garden Town at Didcot”. Surely, this is the new junction at Bicester?

P85: “Figure 34 shows the average load factor” This should read “Figure 32”.

Some of the nomenclature is difficult to understand here. Does *Strategic Rapid Transit* have a meaning beyond ‘bus’ eg Figure 28. The *Oxford-Milton Keynes - Cambridge East-West Expressway* - does this have a meaning beyond Motorway?

P111 missing data in the text. “*there will be a requirement for an additional XX FE places*”