

Chideock Bypass Working Group

Proposed Low Emission Zone for Chideock (LEZ) or Ultra Low Emission Zone (ULEZ) Update

Chideock Bypass Working Group (CBPWG) Research
Paper & Conclusions

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Proposed Low Emission Zone for Chideock (LEZ) or (ULEZ) Update

Overview

Our initial report published in November 2017 on the proposed Low Emission Zone (LEZ) for Chideock concluded that while it may suit other areas of the UK such as big cities, Chideock has a unique topography and is one of the major pinch points along the A35.

This report outlines in more detail the issues and problems implementing LEZs and takes account of the latest legislation and Government reports.

The initial report can be viewed at www.chideockbypass.co.uk

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Main report

The ancient village of Chideock lies in a rural setting, with the main A35 Trunk Road running through the heart of the village with steep hills to the East and West and no direct road access North or South. The population of around 550 can double at peak holiday times, especially in summer with visitors to the wonderful countryside and the Jurassic Coast, a World Heritage Site. The only way of avoiding Chideock for through traffic to and from Devon and Cornwall is to use the A37, A303 or A30 to the M5. While most towns and cities have alternative routes and bypasses Chideock has none, so a Low Emission Zone (LEZ) or Ultra Low Emission Zone (ULEZ) is impractical.

Consideration of a Bypass or LEZ?

The introduction of a LEZ or ULEZ would divert some traffic, albeit at a great cost to the motorist, but would it be sufficient to reduce traffic pollution below 20 microgrammes per cubic metre of air (Ug/m³)? Don't forget that the diverted traffic will also take its pollution with it, unless the new routes have gradients of 5% or less. Indeed many roads would have to be improved rather than just building a Chideock bypass, for example; the A37, A30 and the urban roads around Yeovil.

A bypass could generate considerable saving over 30 years, the normal time in which to spread the initial cost and the running costs. A LEZ creates nothing, relying solely on the unpredictable income from those road users contravening the requirements of the LEZ but choosing to pay the charges/fines rather than avoid the zone. There may be significant income generated by charges and fines to offset the initial set up of signs, technology, truck van and car parks for testing and capture of offenders. But is this income sustainable? The experience of the M6 toll road suggests not! After all, a LEZ is essentially a toll road, if the road users do not like the charges and can go around then they probably will.

Potentially a LEZ for Chideock could highlight the costs, advantages and disadvantages of taking a holiday in the South West of England (SW) versus elsewhere in the UK or beyond. Dorset as part of the SW depends on tourists. Tourism is by far the largest Employer and the largest contributor to local GDP of any other regional industry. If tourists or visitors find the LEZ unacceptable they could go elsewhere, as they did in the 1950's and 1960's because of the poor access to the SW. They will do so again and may not return.

The bypass initial cost is written off over 30 years and maintenance will probably be let out privately. But a new road will not require much maintenance in the early years. The existing A35 will have 90% less traffic, therefore the ongoing costs will be much lower and major works (which we know will be required because of drainage, landslips etc.) will not be so important.

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Chideock and those who travel it yearly (5.58million vehicles 2016) will have an escape route in the case of road works, accidents etc. and local roads will not be trafficked by long queues of vehicles trying to get to their holiday destinations and causing grid lock in the one track lanes. Additionally there will be no requirement to close roads for maintenance.

The Inspector for the 1993 bypass of Chideock, by recommending the bypass, quoted that the use of the A37, A303, A30, route to bypass Chideock was no answer to the problem and that figures given to him either by the Highways Agency or the Department of Transport showed that only 7% of traffic would migrate to this route,

According to Department for Transport (DfT) 2017 report freight was up in tonnage by 12% in 2016 and in road miles by 5 %.

These figures have been reduced by 90% to account for the 10% of traffic that will continue to travel through and into Chideock to access its facilities, beach at Seatown and the holiday parks there.

At present visitors are put off coming to Chideock because of the traffic, noise, and pollution. With a bypass and 90% reduction in traffic they will enjoy the experience more and will come in greater numbers, which will be good for the local economy.

Any LEZ or ULEZ will reduce traffic wishing to travel through or even more tradesman will be put off by the charge to enter and the fines if they come through illegally or do not pay.

Projected Increase in Nitrogen Dioxide Pollution in Chideock

At current rates of traffic increases and without taking any action to address the problems the projection of Nitrogen Dioxide (NO₂) levels for Chideock is that by 2030 it will be average 80 UG/M³ and by 2046 will be 100UG/M³ (microgrammes/Cubic metre of air) which is over twice the recommended maximum level of 40 UG/M³.

The Dilemma of Petrol vs Diesel vs Electric

The EU push is for electric cars and vans and they predict that their strategy will force major EU car manufacturers to concentrate on reducing emissions of manufacture by up to 7g of CO₂ per km, and produce vehicles that are smaller, use less fuel and emit less CO₂. The EU and UK have a problem in that the greater use of petrol increases CO₂ and lowers NO₂, whereas diesel does the opposite. Will UK follow EU or go the opposite way?

EU define zero emission vehicles as 0 to 50 G/KM of CO₂. This should be the case for all cars which will stop most hybrids and should be used by DVLA to police ULEZ/LEZ. How will the DVLA classify a hybrid car? One problem is that the maximum range for electric only vehicles is low. The Land Rover Sport Plug-in Hybrid P400e is 30 miles; the new Eco-taxi plug-in electric TX is only 80 miles; the top selling Nissan Leaf 2.Zero is 124 miles; while the BMW electric i3s City Car with Range Extender does 264 miles on electric only. How is anyone to know if the car is in electric mode or petrol or diesel? The manufacturers are selling these cars as if they will get around the LEZ, some might, and some might not.

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¹The EU is concentrating on the reduction of CO2 because of their commitment to the United Nations Paris Agreement to reduce greenhouse gases², the UK supports this target. The EU are not dealing with the dangers to plants, our ECO system and Human health caused by NO2, PM10 and PM2.5 emissions.

From 2020 to 2030 the EU believes that NO2 will reduce by 2 to 8 percent and PM2.5 by 10 percent. For Chideock this would mean that pollution by NO2 would be reduced by 6-6.4 Ug/m3 to 73.6-78.4 Ug/m3.

EU will introduce Euro 6 RWE (real world emissions) September 2017 and tighten them further in September 2019.

New regulations 2020 onwards.

By 2030 CO2 has to be 40% lower than 1990 and in 2050 60% lower than 1990.

In EU 22% of CO2 comes from Transport of which 73% are cars.

In 2018 EU will target CO2 produced by HGVs and will have to be 30% lower by 2030 compared to 2005.

New targets for cars and vans to be stricter between 2025 and 2030.

EU cars and vans by 2020 to be down to CO2 of 95G/KM for cars and 147G/KM for light vans until 2022.

The UK will continue producing new petrol and diesel cars or vans until 2040 which we believe will result in the continuing manufacture and sale of polluting vehicles until this date, therefore not reducing pollution UNLESS electric cars become:


- smaller, travel further, have sufficient power outlets to service daily or twice daily re-fuels and these re-refuels are quick (say less than one hour); and
- as cheap as carbon fueled vehicles possibly with large credits given to encourage the change to electric.

Government figures suggest that ownership of petrol/diesel cars will equal that of fully electric cars by 2035 at 17.5million each. By 2040 there will still be 7.5 million petrol and diesel cars in the UK available to be driven and which will not be fully phased out until well after 2045 or later.

The Problem of HGV Pollutants and Emulators

The TV programme "Fighting for Air" broadcast on BBC2 on 10 January 2018 compared measurements of pollution from trucks as follows;
Country road no traffic - Reading 600

¹ EU Current and future policy document.

² The Paris Agreement  entered into force on 4 November 2016, thirty days after the date on which at least 55 Parties to the Convention accounting in total for at least an estimated 55 % of the total global greenhouse gas emissions have deposited their instruments of ratification, acceptance, approval or accession with the Depository.

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“Add blue” truck (over 18t) 2017 Registered - Reading 1500

Old truck (over 18t) Not registered - Reading 15,000 (10 times greater than newer trucks)

Only old trucks manufactured before 2007 are heavy pollutants unless they are poorly maintained or have illegal Catalytic converters or filters fitted and use emulators to imitate the “Add Blue” that all diesel truck drivers have to add when filling up. “Fighting for Air” showed DVSA Inspectors checking trucks at motorway stops and other vehicle parks particularly to find whether Emulators had been fitted. If so the driver is warned and a notice sent to the owner of the truck giving them 14 days to remove the Emulator and carry out any other work deemed necessary otherwise the truck will be taken off the road. No immediate fine, no mention what fines they will get. This is all good practice BUT the vehicle is not “quarantined” and therefore stopped from driving so it continues to pollute for another 14days.

Can the UK Actually Provide Sufficient Electricity by 2040?

There is a very significant problem with the production of electricity by 2040 to service the proposed change to electric vehicles by 2040. It has been predicted that the UK will need a further 10 power stations producing the same amount of electricity as the new Hinckley Point “C” (3260MW capacity at 90% load) which will not be completed until 2026. This is part of a Nuclear Energy programme to build 16GW (the equivalent of 5 Hinckley Points) of Nuclear power stations by 2033 to replace existing power stations which will be decommissioned by then.

Nuclear power stations take some 25 years to plan, finance and build, so even if work started now these would not come on load until 2043.

The alternative of importing electricity to meet this greater demand is questionable; most of the EU (and the world) will have this same problem, especially Germany who now have a non-nuclear policy.

It also seems impossible, in the time span given that “renewable energy” will be a viable alternative for the UK to build and rely upon wind, water, sea and the sun to supply our needs, unless a major breakthrough on non-fossil fuels is made soon

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Table 1 - LEZ, ULEZ and Bypass Comparison

EXPLANATION / EVIDENCE

FOR LEZ London model	FOR ULEZ London model	FOR BYASS
Reduce emissions *1	Reduce greater emissions*1	Reduce emissions under 10/12Ug/m3*2
Produce funds(fines)*3	Produce more funds(fines)*3	Produce funds from speeding*4
Reduce traffic(unknown)	Reduce more traffic(unknown)	Reduce traffic by 90%*2
Costs to set up (unknown)	Greater cost to set up (unknown)	Known cost but repairs
Still noise *5	Still noise but less*5	Reduce noise *2 *6
Still vibration*5	Still vibration but less*5	Reduce vibration *2 *6
Still Accidents*5	Still accidents but less*5	Reduce accidents *2 *6
Still Safety problems*5	Still Safety problems*5	Safety much improved *2 *6
Little improvement in time*5	Better improvement in time*5	Saves 5,68 to 9.88 MVH/YR *2 *7
Less visitors to shop/pubs	Even less visitors to shop/pubs	Visitors will increase
Where does traffic go	Where does traffic go	No through traffic using minor roads
EU will tighten rules	EU will tighten rules even further	No EU affects
Still dangerous for cyclists *5	Still dangerous for cyclists *5	New off road cycle and foot path
Euro 4 petrol Trucks allowed *8	Euro 6 trucks allowed *8	All Trucks Ok (5% gradient, no stops)
All cars allowed *8	Euro 6 diesel Euro 4 petrol cars only *8	Any Vehicle

Notes and Sources for Table 1:

*1 Unknown due to major part of reduction could be the use of fines / fees for Traffic management

*2 Chideock Bypass Working Group (CBWG) RIS2 submission February 2018

*3 Fines, also emission charges raising millions of pounds used by London to improve life / traffic management

*4 Speeding fines on a bypass go to Police; Government or Dorset safety – no income to Chideock

*5 Unknown traffic reduction

*6 Reductions resulting from 90% less traffic

*7 MVH/YR – Million Vehicle Hours per year

*8 London LEZ / ULEZ

Chideock v London LEZ/ULEZ

The report attempts to compare the small village circumstance of Chideock with the only other properly documented LEZ currently in the UK which is the metropolis of London.

The problem with Chideock, unlike London, is that traffic can bypass London and it has many alternative routes.

London has large HGV parking sites; Chideock has no such facility.

Charges and fines go to London where it is used to pay for more emissions monitoring; changing junctions; diverting traffic away from Schools, Hospitals; improving safety with wider pavements, no go zones for traffic.

A scheme for buses and cycles only at the Bank (an accident black spot) has raised, in 3 months, £6.913million with 106,357 fines of £130(£65 if paid in 14 days). Unpaid fines at £1.997million. For some years trucks have been manufactured to EU standards and are allowed in London as shown above and since most fleets renew every 5 years most trucks are within EU standards.

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Costs of setting up a LEZ/ULEZ as yet are unknown, will require, expensive technical kit, staff to administer, land near Dorchester, Chideock and Honiton for checks and tests. Easy for London to do this they have the Mayor's resources which are considerable. Who is going to monitor and staff this in Chideock? Will it be WDDC, HE, DCC?

London LEZ Problems

An increase of Nitrogen Dioxide from 1993 (when records began) to 2011 of 146 percent and a reduction from 2014 (peak) to 2017 of 48 percent³

An overall increase in 24 years of 66 percent.

London LEZ "Rules"

The London LEZ was introduced 3rd January 2012.

London allows cars in the LEZ but only Euro 6 diesel and Euro 4 petrol in the ULEZ.

London allows small vans under 1.205 tonnes. in the LEZ but not the ULEZ unless Euro6.

London allows Euro 4 HGVs in the LEZ but only Euro 6 in the ULEZ with new HGV fleets this will mean most HGVs would pass.

London residents in the ULEZ have up to 2023 to change their vehicles or will be charged.

London bans HGVs over 18 tonnes maximum gross weight at night and weekends within the Red boundary and travel over approved routes. They have a large truck park to stay before entering.

London has decreased CO2 emissions but failed to reduce NO2.

Other LEZs in UK

Aberdeen, Dundee, Edinburgh - by 2020

Glasgow - by 2018

Brighton - one street and bus routes only

Durham - all vehicles £2 per day between 10am-4pm; penalties unknown

Nottingham - public buses only

Norwich - bus routes

Oxford - bus routes

Reading - five streets with restrictions to motor vehicles between 7-11 am and 4-7pm (buses and wheelchair taxis exempt); Eight streets with buses and wheelchair taxis only; Pedestrian only zone.

The latest Government initiative is to increase the above numbers from 21 to 51 following the High Court ruling that 31 other named towns and cities should be included for LEZ / ULEZ status but NOT Chideock.

Chideock was the first village to have speed cameras; will it be the first to have a LEZ/ULEZ? Would that be a leap of faith or just madness and a waste of Taxpayers money?

³ Not necessarily due to LEZ Fines / fees used to pay for traffic management – Percentages extrapolated from London University Graph and Visualisation by Mehdi-Koury

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Conclusion

Except for London other towns and cities seem to be slow to consider LEZs and as yet there are no villages listed in the DfT /DEFRA Report “**UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations**” dated June 2017 (updated December 2017).

Referring to the London LEZ problems - the levelling out and reductions identified in the London University study may not necessarily be due solely to the LEZ but rather to a number of factors including very high readings peaking; vehicles becoming cleaner and numbers of vehicles getting to saturation point - **If the same results were achieved in Chideock the LEZ would have been of no use at all.**

The comparisons in Table 1 (above) show very few advantages of LEZs; more for ULEZs but still nothing compares with the advantages of a bypass. Out of the 15 “criteria” listed, 13 found favour with the bypass and only 1 for the LEZ/ULEZ (which was the fines produced). The remaining criteria of costs cannot be compared since they are unknown.

London still has its problems which will not be addressed until they ban all cars under Euro 6. If London continues to adopt EU policy it will only reduce NO₂ by 8-10 percent by 2030 (published EU figures). **In Chideock, this would only amount to between 6.4-8Ug/m³.**

What will happen in 2045 when it is hoped that only electric cars, vans and HGVs will be allowed to pass through Chideock? This may reduce NO₂ levels but does **NOT** solve the increase in vehicles to a forecast average of 22,500 (low) to 23,500 (high) per day (DfT Table TR9905) travelling through Chideock, causing massive traffic jams and not solving vibration and the safety of residents. Only 7 percent of traffic would migrate to the A37, A303, A30 route. **There is no justification to rely solely on a LEZ/ULEZ to improve traffic related problems in Chideock.**

In the December 2017 update to the DfT /DEFRA Report “**UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations**” dated June 2017 UK Government accept that the High Court has stated that 51 named towns and cities should now be granted CAZ/LEZ Status with 5 areas in the South West England, all to be put in place as soon as possible. All other areas and regions (including Chideock) will be unable to introduce measures to combat this pollution as they will not be funded. HE are instructed not to introduce CAZ/LEZs on any of their roads unless a CAZ/LEZ is to be implemented by the above mentioned which will be put in to Law. Neither must HE introduce a CAZ/LEZ on a road that has through traffic but does not lead to a city. However HE intend to carry out a one off desk based assessment of the CAZ/LEZ for Chideock and have applied for funding.

In other words CHIDEOCK WILL NOT GET A CAZ/LEZ.

. The only answer is a bypass.
