# Interim Findings Summary

## A582 Dualling

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Lancashire County Council

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# Introduction

The A582 dualling is one of four major road schemes identified in the Central Lancashire Highways and Transport Masterplan. Its completion will complement the delivery of the Penwortham Bypass and recently completed junction upgrades. It will provide the opportunity to transform existing road space through Preston city centre, local centres and along major public transport routes serving the area. The proposed improvements will support economic development through travel reliability and convenience owing to an increase in road capacity.

Delivery of the dualling is essential to resolving current and foreseeable problems that could result in significant congestion along the transport network in this area, prevent missed opportunities to develop the local economy and reduce potential impacts from vehicle traffic on the environment.

The road network in South Ribble is already at a critical point in terms of the level of vehicle traffic congestion at peak times. As a consequence, the network will not be able to cope with an increase in demand for travel due to sustained economic and housing growth now being delivered via new developments in the area as part of the City Deal agreed with government.

Without an intervention, evidence indicates that the identified problems will be exacerbated in the future and will be a constraint to investment and growth in Central Lancashire.

A summary of the interim findings from the surveys carried out in connection with the preparation of the environmental statement that will support the planning application for the dualling is set out below. The publication of full results and proposals to mitigate any potential impacts will be contained within the environmental statement which will be submitted in support of the planning application in early 2019.

# Traffic and Transport

## Traffic Model

The transport assessment sets out the impact of the proposed scheme on highway users within the study area, including individual junction modelling.

Assessment of future situations is underpinned by exiting traffic information and includes 'with dualling' and 'without dualling' forecast year scenarios for scheme opening year 2022 and the design year 2037 (15 years post opening). The traffic model assessed network performance during three time periods of traffic movement: AM peak; PM peak; and, inter-peak.

Forecast transport assessment scenarios include all housing and employment allocations and supporting infrastructure as per the current South Ribble Local Plan.

The transport assessment confirms the current situation on the A582 and B5254 as having significant traffic delays northbound and southbound directions across both AM and PM peak periods. Delay across peak peaks is higher in the tidal (inbound journey to work / outbound journey home) traffic flow direction however there is the existence of delay in both directions. This suggests that in combination with commuter traffic towards Preston these routes are being impacted by additional peak hour traffic, likely to be travelling to the strategic employment sites in South Ribble such as the Lancashire and Leyland Business Parks or the motorway network. It also suggests that the routes as a whole are less capable of handling peak hour levels of traffic, with the greater numbers of side roads and junctions likely contributing to the congestion.

The transport assessment demonstrates the overall trend of increasing traffic volumes across the forecast years of 2022 and 2037 with or without the A582 dualling scheme in place. The scheme therefore provides additional network capacity to accommodate traffic growth; reducing delay and improving journey times along the A582. As a result there is an overall increase in the volume of traffic using the A582 corridor because of the implementation of the proposed scheme in both the opening year and the design year. This is offset by subsequent reductions in peak hour traffic flows on the parallel B5254 route through Lostock Hall with the scheme in place.

The overall percentage of HGV traffic remains reasonably unchanged with or without the proposed scheme.

## Collision Analysis

A study of potential vehicle collisions has also been undertaken and the analysis forecasts a 29% reduction in collisions each year at all the junctions on the network if the dualling is implemented. The junction which is expected see the highest reduction in incident rates with the dualling is the Flensburg Way / Longmeanygate roundabout which is forecast to see an 89% reduction in incident rates with the dualling. This reduction can be explained by the decision to signalise the junction.

The analysis predicts less than 1 incident per year at all the studied sections in the design year both with and without dualling. Incident rates are predicted to fall by two thirds for all links on the network with the dualling.

# Effects on all travellers

## Pedestrians and Cyclists

A three metre wide shared footway/cycleway will be provided along the entire length of the dualling, along with the provision of pedestrian and cycle signalised toucan crossing points included within the each of the junction upgrades. Currently there is very limited pedestrian and cycle provision along the A582.

The A582 Dualling will have a significant positive benefit for pedestrians and cyclists. This pedestrian and cycle infrastructure can assist in encouraging more journeys to be undertaken on foot or cycle because there will be more safe routes journeys along and across the A582. It will also link together existing cycle and pedestrian routes which can help access residential and work areas.

## Public Rights of Way

The dualling is considered to have a minimal impact upon the existing Public Rights of Way (PRoW) network. The introduction of the shared footway/cycleway and conversion of the Croston Road roundabouts to signalised staggered crossing with pedestrian crossing facilities will provide an improved link across the A582 for local footpaths. Wider benefits realised by the proposal are that the shared footway/cycleway will link existing PRoWs together.

## Public Transport

The provision of the A582 Dualling and subsequent displacement of traffic and alleviation of congestion on the A582 would positively impact bus journeys on existing services within the vicinity of the dualling whilst improving journey times and service reliability.

The proposed A582 Dualling is not considered to have a direct negative impact upon existing or known proposed public transport, particularly buses.

The bus gate on Croston Road / Farington Road is envisaged to further aid bus operation efficiency for buses which use Croston Road.

## Mitigation of construction traffic

During construction the A582 will remain open to traffic to maintain existing travel patterns and a route for emergency services. Details of phasing of construction or traffic management arrangements are not known at the present time as we expect these to be managed by the works contractor.

# Landscape and Visual Impact

A Landscape and Visual Impact Assessment (LVIA) has been carried out to appraise the impacts of the dualling. The LVIA looked at the changes which could occur during the construction period, the first year after construction and 15 years after the dualling is opened.

## Possible impacts during construction

During construction there will be temporary construction compound areas created for materials storage and site offices. The associated construction works will cause temporary visual and landscape impacts to receptors adjacent to the A582 through the works themselves and through the removal of trees and hedgerows.

## Possible impacts with the dualling opened to traffic

On completion of the dualling new landscaping and planting is proposed which takes time to establish. At the beginning of the establishment period the landscaping planting will be least effective. Once established the proposed landscaping is expected to provide a similar roadside landscape to the current form but the new native species planting will provide a more positive visual outcome than at the present time. The Significant beneficial effects are anticipated in areas south of Moss Lane where new mitigation planting would provide additional screening of traffic which are presently open views of the road. Following the establishment of proposed landscaping and planting no significant effects are anticipated.

## How we might avoid or mitigate for these effects

During construction the works contractor will be required to comply with procedures to reduce or eliminate impacts on the environment. An Environmental Manager will be appointed to monitor construction activities that could cause or contribute significant construction impacts. This will be to ensure trees, hedgerows and other important retained landscape features are protected from damage throughout construction.

The design seeks to minimise tree loss through considerate design to avoid trees and replanting those which are lost will be at a higher density with native species suitable for the location. New planting is proposed in gaps with larger trees to improve existing retained landscaping.

Plant varieties and sizes will be chosen to assist maintenance and ensure that establishment is as quick a process as possible. Larger plant sizes will be specified in strategic locations to aid bat crossings and to assist screen highway infrastructure.

We intend to landscape areas of land adjacent to the A582 to ensure there is no net loss of landscape habitat.

Plans illustrating the environmental landscape proposals and how they might establish are shown in the consultation information plans and sections references 001-010 and 011-019.

# Ecology

An Ecological Impact Assessment has been carried out which considers terrestrial and aquatic ecological species and sites designated for their ecological interest.

## Key findings from surveys

Ecology surveys have been undertaken to identify whether or not there are protected species or habitats affected by the dualling. Surveys are required for badger, barn owl, bats, breeding birds (including kingfisher), great crested newt, otter, reptiles, water vole and wintering birds due to the potential presence of habitat for these species.

No evidence of badger, great crested newt, reptiles or water vole have been identified. There are no internationally designated sites (Special Protection Areas (SPAs), Wetlands of International Importance (Ramsar sites) and Special Areas of Conservation (SACs)), Sites of Special Scientific Interest or National Nature Reserves within 5km of the dualling (including proposed and candidate sites).

Evidence of otter and kingfisher is restricted to larger watercourses and not associated with any hedgerows. Barn owl roosts and breeding sites and bat roosts have been recorded during the surveys but none of these records are associated with hedgerows or trees within hedgerows.

Bird surveys follow recommendations from phase 1 habitat surveys and comprise breeding birds during summer months and wintering birds during the winter months. During the breeding bird surveys, no notable (including Red Data Book) bird species have been confirmed to be breeding within any of the hedgerows present within the area. There are no documented records of species protected in Schedules 1 or 5 of the Wildlife and Countryside Act 1981 (as amended) or Red Data Book species for any of the surveyed hedgerows.

The wintering bird survey highlights the species identified for example: Black-headed Gull, Corn Bunting, Linnet, Little Egret, Mallard, Redwing, Reed Bunting, Stock Dove and Tree Sparrow, are using a wide range of habitats throughout the survey area. Farington Moss is found to be an important area for key notable species.

No significant impacts have been identified for any ecological habitat during the construction phase. Short-term impacts are predicted for most areas of wildlife habitat on the construction site because of habitat loss or fragmentation. Impact from construction will improve into the medium and long term as proposed compensatory habitats mature.

## How we might avoid or mitigate for these effects

Habitats such as woodland have been avoided though choosing design options during route development to reduce the extent of habitat loss.

Plans for replanting and compensatory habitats and targeted mitigation are illustrated in the consultation information on the A582 website. The layout has been designed to enhance the ecological connectivity and functionality of the existing habitat network in the study area. The combined areas of mitigation and compensatory woodland planting will result in a net gain of woodland in the study area.

# Cultural Heritage

A desktop heritage survey has identified and assessed a total of 109 heritage features, comprising 4 listed buildings, 100 non-designated assets and 5 Historic Landscape types.

## Possible impacts during construction

There is potential for archaeological remains to exist that could date from the pre-historic to post-medieval periods. The large relatively undisturbed areas of land taken up by proposed working areas such as for site compounds could contain buried archaeological remains.

## Possible impacts with the dualling opened to traffic

Our desktop heritage survey has confirmed that none of the historic features identified will be affected by the A582 Dualling. Two of the non-designated assets are situated close to the A582. The first is a Roman Road and the second is Woodcock Hall. These would not be impacted.

There are two listed buildings situated nearby, The Old School House on Old School Lane in Cuerden, and Nutters Platt Farmhouse on Lindle Lane in Hutton. Both are a sufficient distance from the dualling to be unaffected.

## How we might avoid or mitigate for these effects

There may be a need to carry out further archaeological evaluation and assessment to understand the possible impact on the cultural heritage in the proposed working areas and along the footprint of the road works. Any further work in this respect is likely to be confirmed during the determination of the planning application.

# Air Quality

The air quality analysis used the predicted traffic data to estimate the envisaged future impact on emissions. It has taken account of existing air quality management areas (AQMA) in Preston and in South Ribble and the changes which the dualling may have on areas that are most polluted in the opening year and the design year with dualling and without dualling. The assessment also evaluated the level of dust likely to be generated from construction and mitigation measures which could be implemented to avoid nuisance.

There are three air quality management areas (AQMAs) located near to the A582:

- SRBC AQMA No. 3 - Leyland Road and Brownedge Road, near Tardy Gate centre;
- SRBC AQMA No. 4 - Station Road in Bamber Bridge; and,
- SRBC AQMA No. 5 - Golden Hill Lane/Churchill Way/Turpin Green Ln, Leyland.

Data from the AQMAs was used to measure existing on air quality. Our own measurements were taken in other areas along the A582 and in nearby built up areas were separately monitored for a period to inform the assessment.

### Possible impacts during construction

Additional traffic during construction is considered unlikely to affect air quality from emissions.

Dust emissions from a construction site may be generated due to land preparation (e.g. demolition, land clearing and earthworks) or as a result of release from site plant and movement of road vehicles on temporary roads, and open ground and haul routes.

### Possible impacts after opening

The assessment shows that with the dualling there will be an overall measurable reduction in vehicle emissions pollution by 2037 when compared with 2017 emissions measurements.

The main change is the predicted significant reduction in vehicle congestion with dualling on Farington Road in opening year which will lead to a large improvement in air quality compared to the current situation. The A582 Penwortham Way at Chain House Lane junction are predicted to experience a small to moderate increase in emissions. Minor roads to the north east in Lower Penwortham are expected to experience some reduction in emissions. The junction at Longmeanygate is expected to have a moderate increase in emissions whereas the B5253 Flensburg Way (south of the Flensburg Way Household Recycling Centre) is predicted to show minor improvement.

### How we might avoid or mitigate for these effects

During construction dust and emissions from the site (including plant and delivery vehicles) will be controlled and minimised by the contractor's adherence to a Construction Environmental Management Plan (CEMP). This will ensure that dust and emission control methods are employed on site throughout construction.

One aims of the A582 Dualling is to reduce levels of vehicle congestion on (and on roads linking with) the A582. This is expected to be achieved by increasing road capacity which in turn will create freer flowing traffic conditions on the A582 itself and, because traffic on parallel routes will use the A582 in preference, in turn this will reduce the level of vehicle emissions in built up areas. Consequently the highest levels of pollution closer to homes and workplaces in built up areas like Tardy Gate / Lostock Hall are predicted to reduce as vehicles transfer to the A582 in place of local roads. We consider that in the operational phase of the A582 Dualling any further mitigation measures relating to air pollution will not be required.

# Noise and Vibration

A noise and vibration assessment examines the direct effects of traffic using the A582 and the effects of traffic change in the existing road network surrounding the dualling. It also considers the effect of construction activity and describes how noise and vibration will be controlled. Noise changes associated with the dualling have been assessed using the following comparisons:

1. Short Term Impact with and without dualling in opening year (2022);
2. Long Term Impact without dualling - opening year compared to design year (2037); and,
3. Long Term Impact with dualling - design year compared to opening year

## Possible impacts during construction

Noise levels from construction activities has been broken down into major phases and tasks for noise assessment purposes as follows, site clearance; earthworks; and, Road formation and surfacing. The type of noise emitted is dependent upon the type of activity and the machinery used.

## Possible impacts with the dualling opened to traffic

Compared to the existing situation the dualling would create both perceptible increases and decreases in noise in both the short and long term. The dualling is expected to reduce the number of dwellings which are subjected to higher levels of noise in the design year compared to a situation where the A582/B5253 dualling is not constructed. Noise and airborne vibration nuisance in 2037 would be lower with the dualling in place than without it.

There will be an increase in noise levels at Sage Court, Pope Lane, Chain House Lane, Flensburg Way and near Gower Court. However the noise modelling in the long term predicts lower noise levels to the east of Broad Oak roundabout at Penwortham, on Farington Road near the junction with Centurion Way, Farington and also the housing site on land between Heatherleigh and Moss Lane in Farington Moss.

In 2037 the newly built housing areas around Lower Penwortham and adjacent to the B5253 Flensburg Way will themselves further reduce the level of road noise in areas beyond which is currently open land.

## How we might avoid or mitigate for its effects

During construction the control of noise could include:

- Maintaining vehicles and mechanical plant in good order;
- Switching off machines when not in use;
- Site static machines as far as is practicable from residential properties;
- Establishment of agreed criteria and monitoring near to sensitive locations to ensure compliance and to identify any problems;
- Avoiding working outside normal working hours;
- Ensure workers are briefed on the requirement to minimise nuisance; and,
- Use temporary noise screens or partial enclosures around noisy activities in close proximity to dwellings.

The dualling includes the construction of noise barriers such as fencing to reduce significant traffic noise. Where noise fencing is proposed it is shown on the consultation information drawings published on the A582 website.

# Soils, Geology and Hydrogeology

The potential impacts of existing ground conditions on the dualling have been considered as well as the potential impacts of the dualling on the geological and hydrogeological characteristics of the ground. A high level materials assessment for the dualling has been carried out. A number of site surveys have been carried out including drilling boreholes at a number of locations.

**Possible impacts during construction**

Construction works may impact on soil quality by introducing contamination, reducing the potential for soil re-use. The value of the soil in the area is generally considered to be high being uncontaminated agricultural soil suitable for re-use in public open space.

Underlying alluvial deposits of sand and gravel associated with the River Lostock are identified as potential mineral resources and therefore classed as a Mineral Safeguarding Area in the Joint Lancashire Minerals and Waste Local Plan.

Construction work has the potential to negatively impact upon human health if not managed appropriately. Given the semi-rural location and construction management systems in place, construction workers are considered to be the most relevant concern. The construction workers' direct contact with the soil carries the potential for direct exposure to contaminants.

The water bodies which could be affected by construction works include the River Lostock, Mill Brook and their tributaries. Avoidance of impact will be achieved through implementing safe working practices when working close to existing watercourses.

Impacts on groundwater from construction could occur if poor construction practices are maintained, e.g. allowing leaks and spills from poorly maintained plant and equipment, leading to contaminants entering groundwater; or disturbing of groundwater flow by earthworks.

**Possible impacts with the dualling opened to traffic**

Soil adjacent to the road may also be affected by airborne fallout of contaminants from exhaust fumes but this is considered to be a slight impact.

Maintenance workers may come into direct contact with the soil as part of their work and site users may frequently visit the site as part of a daily commute.

Impacts on groundwater to aquifers from the operation of the road include the potential contamination of surrounding water or soil from spillages, leaking drainage or escaped road run-off and the re-use of chemically unsuitable site-won or imported materials that have the potential to cause contamination of the aquifer.

**How we might avoid or mitigate for its effects**

Soil beneath areas of hardstanding can be removed and re-used elsewhere within the dualling.

Where the construction works include land overlying these deposits, principally in the vicinity of the River Lostock, access to these resources will be lost during construction works. The footprint of the dualling only covers a relatively small proportion of the

identified resources and so sterilisation will be limited to only a negligible part of the resource.

Given the previous land-uses of the area there is only a moderate risk of workers coming into contact with material which poses a health risk. This can be avoided through pre-start surveys and safe working practices during the construction process.

The proposed road drainage will be designed to capture surface water from the road and discharge it into nearby watercourses. The surface water flow rates will be slowed to avoid flooding by using attenuating ponds. The ponds will be stocked with plants which help to filter pollutants from the water before it is carried to watercourses. Therefore, a permanent reduction in water quality close to the shallow aquifer is not anticipated.

# Road Drainage and Water Environment

The A582 crosses the River Lostock and Mill Brook which are main rivers. Several minor drainage ditches are also located close to and are crossed by the A582.

**Possible impacts during construction**

Temporary impacts during construction are those which have the potential to affect the water environment through general earthworks and construction materials being moved.

**Possible impacts with the dualling opened to traffic**

The water environment may be impacted during operation through contamination from vehicles or spills entering surface water.

There are potential impacts to surface water and water flow volumes owing to the increase in road surface area and risks associated with road runoff and pollution. On all roads, there is also a risk that a spillage may lead to an acute pollution incident. Potential surface water abstractions downstream (for watering crops) could be affected by the additional road surface water discharge.

**How we might avoid or mitigate for its effects**

Construction methods are currently being developed and mitigation measures which the appointed contractor could include:

- All works to be undertaken with regards to Pollution Prevention Guidelines. These detail good practice advice for undertaking works which may have the potential to cause water pollution;
- Temporary works sites, haul roads and other associated works will be designed and maintained to minimise impact;
- Where temporary watercourse diversions are required or in-channel working, specific measures may be needed to ensure the temporary design is in line with the Water Framework Directive and temporary impacts are minimised;
- Areas which may generate contaminated water, such as oil storage areas, would be surrounded by bunds and have water discharged to self-contained units with treatment facilities. There would be no discharge to groundwater;
- Tests would be undertaken to ensure contaminated material is identified, isolated and reworked or removed to special landfill to avoid any leachate problems; and,
- Temporary land–take required for construction will include adequate areas of land set aside for drainage control.

The design of the drainage system will comply with all current standards and will feature sustainable urban drainage best practice during operation to ensure that surface water does not harm existing watercourses. Attenuation ponds which also provide mitigation for water quality have been included in the design.

# Flood Risk

The appraisal of flood risk impacts associated with the dualling has considered the following:

- Increases in upstream water levels caused by restrictions in flow;
- Loss of floodplain storage due to new carriageway and associated engineering occupying areas previously available for flood storage or flows;
- Loss of floodplain conveyance due to road infrastructure crossing a floodplain and forming a barrier to flow or modifying existing hydraulic links between channel and floodplain;
- Impediment of water flow caused by road infrastructure crossing existing drainage channels, causing potential blockage and altering local catchment area boundaries; and,
- The diversion of watercourses and drains causing changes in catchment boundaries, channel flow capacities and floodplain storage.

**Impacts during Construction**

The construction of the dualling will include the upgrade, replacement, extension and/or new watercourse crossings, which may include construction of crossings offline in the dry. Some watercourses may be diverted through temporary channels and/or via pumping, which could result in flows being:

- conveyed more effectively downstream increasing the flood risk to the site and third parties; or
- water backing up due to insufficient capacity resulting in washout to the construction area and increased flood risk to receptors upstream.

Excavation and construction works on the site could lead to blockage and or severance of surface water that could lead to localised flooding to the site and the surroundings. The operation of plant may result in compaction of soils, which may reduce the infiltration capacity. This could result in an increase in surface water runoff leading to localised flooding and runoff into the receiving watercourse. The size of impact and the significance of flood risk connected with construction of the dualling is likely to be temporary and mitigation will be possible.

**Impacts after construction with the dualling opened to traffic**

The dualling will see the extension and/or replacement of four existing watercourse crossings. In addition to the A582 crossings, there are a number of footbridges adjacent to the earthworks which may need replacing and a number of small drains, which will require crossings.

There are areas of floodplain along the route of the dualling. Encroachment of new engineered embankments could result in displacement of flood waters increasing flood risk. There are locations where the existing A582 is at risk of surface ponding and locations where the proposed embankments encroach on existing surface water ponding areas and could result in displacement of flood waters increasing flood risk.

The dualling will result in an increase in impermeable hardstanding increasing surface water runoff and discharge into the adjacent drainage systems and outfall into the

water courses. There are two areas of the River Lostock and Mill Brook floodplains where embankment is proposed to encroach and have a moderate impact.

**How we might avoid and mitigate for its effects**

During Construction the construction site will be listed on the Environment Agency flood warning register. A flood warning and emergency evacuation plan will be prepared and submitted to Lancashire County Council for approval before construction work commences. The work will be undertaken when flood events are unlikely and not predicted, to ensure the effects of flood risk are minimised during construction.

Owing to the location the dualling could result in an increase in flood risk, however, it will be constructed in a way so that in operation flood risks will be avoided to ensure that the existing flood plains are not prevented from fulfilling their function.

Surface water flowing from the larger surface area of the A582 Dualling will be slowed by the use of attenuation ponds formed at various locations along the route.