

M3 Junction 9 proposals – Impacts upon Tranquillity

Tranquillity is a perceptual quality of the landscape, and is influenced by things that people can both see and hear in the landscape around them. It is considered to be a state of calm, quietude and is associated with a feeling of peace. It relates to quality of life, and there is good scientific evidence that it helps to promote health and well-being. As a special quality of the National Park, it is a characteristic of the landscape that visitors and residents greatly value. These are not characteristics that apply uniformly across the whole National Park, some areas are considered more tranquil than others based on a wide number of influences.

As part of our consideration of the impact of the proposals on the National Park we included a site based assessment. This covered a range of visual and audible factors that either add to, or detract from, the tranquillity of the area. This assessment considered the area in the context of the road corridor as it is currently configured, and how tranquillity is currently experienced. We then considered the direct impacts of the scheme on some of the factors that currently enhance the tranquillity of the area – such as landform or screening by existing bands of mature trees. From this we can interpolate how the scheme would impact upon current levels of tranquillity, and the characteristics that are most susceptible to change from increased noise or visual impact.

The site assessment considered five locations that would be affected by the extent of construction, two directly on the road corridor, two more areas immediately adjoining and one that considered more distant impacts (See map X – Plot of survey squares).

EWS2520 – This area includes Abbots Barton, the St Swithuns Way and the influence of the Winnal Moors Nature Reserve.

This area is on the immediate urban edge of Winchester, and looks across to confluence of the A33, A34 and the M3 corridor. In spite of this there is a considerable positive influence from the Nature reserve, with views across the flood-plain grazing marsh within the river valley and visible tree and woodland cover. This area has many good qualities, and has most of the features and factors that score well in terms of a site based Tranquillity assessment. It is a surprisingly natural looking landscape in spite of the proximity of the road network to the North East. The main influence of the road corridor at this location is from road noise, which is fairly constant and intrusive. It is possible to experience more natural sounds here, but the road noise is the most prevalent detractor. At present the more negative visual and auditory impacts of the road are screened or softened by the trees and mature scrub in the distance. It is likely that these will be lost as a result of the proposed scheme. This will have a significant negative impact on tranquillity at this location as the negative visual and auditory impacts of the road corridor will have an increased influence across this area.

EWS2535 – This area includes the section of the Itchen Valley that is bisected by the A34 to Newbury and its junction with the A33 to Basingstoke (northbound) and southbound links to Winchester.

Though this area adjoins, and is crossed by, the major road corridor it is enclosed and wooded. It is still possible to experience a positive experience in terms of tranquillity due to the existing landform, the influence of the river valley, existing tree cover and the way the road network currently sits within the landscape. This softens and mitigates many of the negative visual and auditory impacts of the road. Once again, road noise is the largest detractor in terms of noise which is constant. Existing road lighting will also contribute to overhead pollution at night time and positive experiential factors such as dark night skies. The regrading of the roads, proposed changes in topography, and loss of landscape trees and screening will exacerbate these negative impacts on the tranquillity of the area.

EWS2536 – This area includes the section of the Itchen Valley around Easton Downs (Note: Ref' to mill cottage??) and to the East of Manor Farm.

This area is bisected by the M3 carriageway (northbound) though once again the Itchen River corridor exerts a strong positive influence. Though the road corridor is evident, it is less prominent in terms of noise, and is well screened by both topography and tree cover. As a result the area has a very enclosed feel and exhibits many positive qualities that lessen and mitigate the roads wider impacts upon tranquillity.

EWS2508 - This includes the area immediately adjacent to the M3 Junction 9 and the current layout including access to the northbound A34 and Spitfire Link.

This location is most heavily influenced by the M3 Junction in terms of both visually and auditory factors. It adjoins the industrial estate and the adjoining farmland has modern and heavily modified field patterns with little woodland or tree cover. There are some extensive hedgerows. There is little in the way of positive influence of the river corridor to the north-west and few of the factors that might improve the experience of tranquillity in this location. This scored low in terms of relative tranquillity and was more influenced by the urban fringe area of Winchester. That said the proposals for regrading and the new dumb-bell arrangement for the junction at this point is unlikely to have a positive impact upon the overall tranquillity of this area.

EWS2467 – This includes the open access land on Magdalen Hill Down north of the A31 and overlooking the B3404 Alresford Road.

This area has predominantly open vistas and long-distance views across to M3 Junction 9 to the north-west. The road corridor has much less of an influence on tranquillity at this distance in terms of noise or visual detractors. Road noise from the B3404 is far more intermittent, and road noise from the M3 corridor is far more distant and moderated. It is possible to experience many of the visual and auditory factors that make a positive contribution to tranquillity.

M3 Junction 9 proposals – Ecosystem Service Impacts

In terms of the potential impacts upon Ecosystem Services by the scheme, we considered a range of landscape functions and associated public benefits. Using the EcoServ GIS tool, we generated maps of capacity, demand and service flows for the following functions:

- Air purification
- Carbon Storage
- Local Climate Regulation
- Noise Regulation
- Pollination
- Water Purification
- Accessible Nature
- Environmental Education

From these initial output maps, and based on our analysis of the evidence, we consider the following services to be the most significantly impacted by the scheme. In these cases we would expect some form of mitigation to either directly address or try to off-set the impacts resulting from the scheme.

Noise Regulation

Capacity – the existing bands of trees along the line of the A34 to Newbury and its junction with the A33 provide some capacity to screen and regulate noise from the road. This is helped to a degree by the existing topography and current un-elevated nature of the road. The M3 is more elevated, but again is screened by bands of trees and mature scrub vegetation along the fringes of Easton Down.

Demand – The need for noise regulation in this location is fairly high particularly for the urban fringe areas of Winchester at Abbotts Barton and Winnal. These are highlighted as areas that need to be improved in terms of noise regulation, through screening or planting.

Impact of the proposals on the current situation – The proposed scheme would firstly cause the loss of many of the mature trees and areas of scrub that currently provide this service benefit. This would increase the current issue around road noise. In addition by raising some sections of the A34/A33 onto an embankment across the Itchen Valley this will be further exacerbated. The M3 corridor at this section will also become more prominent both visually and in terms of noise impact. There is a strong case to either retain, or replant, tree and vegetation that would be lost within the red-line of the scheme.

Air Purification

Capacity - There is significant capacity within the existing tree and woodland cover to help intercept and absorb the airborne pollutants produced by road traffic. The highest scoring areas (medium to high quartile) being the areas of mature trees and scrub that adjoin the existing junction and the confluence of the A33/A34.

Demand - Most of the demand for this service is within the urban fringe areas of Winchester immediately adjoining the existing M3 Junction 9 layout – particularly Winnal and the Industrial Estate to the west.

Impact of the proposal – The loss of existing mature trees and scrub will impact upon the capacity of the landscape to provide this service. To deal with issue of poor air quality as a result of pollution caused by road traffic at a local level effort should be made to either retain or replace tree cover and vegetation that can help to mitigate this impact.

Local Climate Regulation

Capacity – Local climate regulation is the ability that different habitats exhibit to absorb or intercept direct sunlight and reflected heat. It helps to control local temperatures, particularly within the built environment and helps to reduce the urban heat island effect. In terms of adaptation to the future impacts of climate change impacts it is an important consideration.

Demand – In relation to this scheme the highest demand scores are for the heavily populated urban areas to the west of the proposed schemes. The highest scores being for Winnal, Hyde and the core of the urban development of Abbotts Barton.

Impact of the proposal - The loss of existing mature trees and scrub will impact upon the capacity of the landscape to provide this service. The potential impacts upon human health and well-being of higher temperatures, especially when combined with low level ozone and localised air pollution is significant. To ensure the capacity for local climate regulation is maintained or enhanced efforts should be made to either retain or replace tree cover and vegetation that can help to provide this service.

Water Purification

Capacity – This area is a significant watershed, with the Itchen River valley and the grazing marshes and riparian habitats within the Winnal Moors Nature Reserve. The habitats and vegetation adjoining the road corridor already provide this capacity (within the ‘high’ to ‘very high’ percentage quartile). This helps to regulate water quality and to reduce pollution impacts before they reach watercourses. Given the proximity of the road corridor, and existing drainage, this is a vital landscape function and one that should be considered as part of the scheme.

Demand – Aside from the wider public demand for regulating water quality and the associated costs of dealing with water pollution or contamination from roads and surface run-off, there are also the direct impacts upon important riparian habitats and species. It is likely that the Winnal Moors Nature Reserve is already impacted by these issue (**Note: Need to check if there is evidence/history of pollution impacts**)

Impact of the proposal - The loss of existing mature trees and scrub will impact upon the capacity of the landscape to provide this service. In addition very careful attention need to be made to the design, function and layout of the drainage associated with the Junction proposals. There is a very significant risk that this will exacerbate the existing problems. Every effort should be made to mitigate the impact upon water quality that might result from surface run-off from the road network. This can be by way of careful design of the scheme to mitigate these measures, as well as a focus on retaining and enhancing the landscapes natural ability to mitigate these impact. This could be achieved by either retaining, or supplementing, tree and surface vegetation that would be lost within the red-line of the scheme.