TAG Water Environment Impacts Worksheet for M4 Junction 17 Improvements OBC

| Description of study area/ summary of potential impacts | Key environmental resource | Features | Indicator of quality | Possible Measures | Assessment data availability | Scale | Rarity | Substitutability | Important |
|---|--|----------------------------|---|---|---|--------------|-------------|------------------|-----------|
| Study area: 1km buffer around the alignment | | | l | | | | | | · · |
| Potential Impacts: | Rodbourne Brook | Motor gunnly | Use of water supply | Leastian and number of chatraction points | No abstraction licence information available at the time of reporting. | | | | |
| The increase in impermeable road area as a result of road widening could increase the polluted road runoff entering | WFD reported reach: | Water supply | (potable, industrial or | Location and number of abstraction points Volume of water abstracted | Indicator of quality not used in assessment. | | | | |
| the watercourse (if the road runoff was routed to the | Rodbourne Brook - source | | agricultural) Chemical water quality | Use of water (potable most important) | | | | | |
| watercourse) causing a deterioration in water quality | to conf R Avon (Brist) | | | Existing chemical classification/status and objective | | Regional | Commonplace | Replaceable | Mediur |
| , , , | (GB109053027720) | | | under the WFD. | Chemical objective: Good (2015) | | | · | |
| The potential modification of an existing culvert (due to | | | | Likelihood of a change in classification arising (+ve | No information available to indicate direction of change. | | | | |
| oad widening) could disrupt the natural hydraulic and | | | | or -ve) | | | | | |
| ediment transport processes within the watercourse. | | Transport and | Presence of surface water | 0 1 | No discharge consents information available at the time of reporting | | | | |
| hese impacts can likely be minimised through mitigation. | | dilution of waste products | discharge points Contribution of discharge | Volume of effluent discharged Proportion of flow made up by effluent at different | Indictor of quality and measures not used in assessment. | | | | |
| riese impacts can likely be minimised through mitigation. | | products | to total river flow | times of the year | | | | | |
| at waterbody scale these impact would not be significant. | | | to total fiver now | amos or the your | | | | | |
| | | Biodiversity | Biological water quality | Existing ecological classification/status and | Existing classification: Moderate (2019) | Regional | Commonplace | Replaceable | Mediur |
| | | | | objective under the WFD | Objective: Good (2021) | | | | |
| | | | | 3 , | No information available to indicate direction of change. | | | | |
| | | | =: | or -ve) | | | | | |
| | | | Fisheries quality Conservation value of | EC Fishery designation (Salmonid, Cyprinid or | Not considered in the water environment assessment, refer to Biodiversity assessment. | | | | |
| | | Aesthetics | | undesignated) | Indicator of quality and measure not used in assessment. | | | | |
| | | | | Results of River Habitat Survey | River Habitat Surveys have not been undertaken at the time of reporting. | | | | |
| | | | river corridor | | Indicator of quality and measure not used in assessment. | | | | |
| | | | | Presence of designations (e.g. SSSI, NNR, LNR, | Not considered in the water environment assessment, refer to Biodiversity assessment. Indicator of quality and measure not used in assessment. | | | | |
| | | | | SINCs) | | | | | |
| | | | | | | | | | |
| | | | | Presence of protected species or BAP species | environment assessment, refer to Biodiversity assessment. | | | | |
| | | | | | | | | | |
| | | | | Indicator of quality and measure not used in assessment. Pecults of river landscape assessment. Contribution to landscape character and quality not considered. | Contribution to landscape character and quality not considered in the water | | | | - |
| | | | | environment assessment, refer to landscape assessment. | | | | | |
| | | | | | Feature not used in assessment. | | | | |
| | | | Presence of historic | Results of historic environmental assessment | Presence of historic features associated with river not considered in the water | | | | |
| | | | features associated with | Presence of designations (e.g. SAMs, listed | environment assessment, refer to Culture Heritage assessment. | | | | |
| | | | river | buildings) | Feature not used in assessment. | | | | |
| | | Value to economy | Riverside access | Presence of route and importance | Indicator of quality and measure not used in assessment | | | | |
| | | | Use of the river for recreation Value of the uses of the river (e.g. commercial fishing, abstractions, discharges, navigation, leisure and riverside development land) | Presence of facilities and clubs for using the river environment | Indicator of quality and measure not used in assessment | | | | |
| | | | | Use for angling (number of clubs/membership) | Indicator of quality and measure not used in assessment | | | | |
| | | | | Value to local economy (e.g. employment, relative | Indicator of quality and measure not used in assessment | | | | |
| | | | | property prices, cost of alternatives, etc) | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | Conveyance of | - ' | Number and size of watercourse | Indicator of quality and measure used in floodplain resource so as to not | - | | | - |
| | | flows and material | Presence of watercourses | Number and size of watercourse | duplicate scoring. | | | | |
| | | | | Existing flood risk | Indicator of quality and measure used in floodplain resource so as to not | | | | |
| | | | | | duplicate scoring. | | | | |
| The increase in impermeable road area as a result of road | Unnamed watercourse | Water supply | Use of water supply | Location and number of abstraction points | No abstraction licence information available at the time of reporting. | | | | |
| videning could increase the polluted road runoff entering | WFD reported reach: No Within the Rodbourne Brook - source to conf R Avon (Brist) | | (potable, industrial or agricultural) Chemical water quality | Volume of water abstracted | Indicator of quality not used in assessment. | | | | |
| ne watercourse (if the road runoff was routed to the | | | | Use of water (potable most important) | | | | | |
| atercourse) causing a deterioration in water quality | | | | Existing chemical classification/status and objective | Existing chemical classification: Fail (2019) Chemical objective: Good (2015) | Local | Commonplace | Replaceable | Mediun |
| he potential modification of an existing culvert (due to | | | | under the WFD. | No information available to indicate direction of change | | | | |
| pad widening) could disrupt the natural hydraulic and | (GB109053027720) waterbody | | | or -ve) | | | | | |
| ediment transport processes within the watercourse. | Waterbody | Transport and | Presence of surface water | | No discharge consents information available at the time of reporting | | | | |
| oamon aanoport processes mann ano materiolanes. | | dilution of waste products | discharge points | | Indictor of quality and measures not used in assessment | | | | |
| hese impacts can likely be minimised through mitigation. | | | Contribution of discharge | Proportion of flow made up by effluent at different | | | | | |
| | | | to total river flow | times of the year | | | - | | |
| At waterbody scale these impact would not be significant. | | Biodiversity | Biological water quality | Existing ecological classification/status and | Existing classification: Good (2019) | Local | Commonplace | Replaceable | Mediun |
| | | | | objective under the WFD | Objective: Good (2021) No information available to indicate direction of change | | | | |
| | | | | or -ve) | Into information available to indicate direction of change | | | | |
| | | | | | Not considered in the water environment assessment, refer to Biodiversity | | | | |
| | | | | | | | | | |
| | | | | , | Indicator of quality and measure not used in assessment | | | | |
| | | | Conservation value of | Results of River Habitat Survey | River Habitat Surveys have not been undertaken at the time of reporting. | | | | |
| | | | river corridor | | Indicator of quality and measure not used in assessment | | | | |
| | | | | Presence of designations (e.g. SSSI, NNR, LNR, | Not considered in the water environment assessment, refer to Biodiversity | | | | |
| | | | | - / | assessment. | | | | |
| | | | | Presence of protected species or BAP species | Indicator of quality and measure not used in assessment Presence of protected species or BAP species not considered in the water | | | | |
| | | 1 | | 1 10001100 of biologica aboolog of DVI aboolog | | | 1 | | |
| | | 1 | | | environment assessment, refer to Biodiversity assessment. | | | | |

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|--|----------------------------|------------------------------|---|---|---|---|-------------|-------------|--------------|
| | | Aesthetics | | Results of river landscape assessment | Contribution to landscape character and quality not considered in the water | | | | |
| | | | character and quality | | environment assessment, refer to landscape assessment. Feature not used in assessment. | | | | |
| | | Cultural heritage | Presence of historic | Results of historic environmental assessment | Presence of historic features associated with river not considered in the water | | | | |
| | | Cultural Heritage | features associated with | Presence of designations (e.g. SAMs, listed | environment assessment, refer to Culture Heritage assessment. | | | | |
| | | | river | buildings) | Feature not used in assessment. | | | | |
| | | Recreation | Riverside access | Presence of route and importance | Indicator of quality and measure not used in assessment | | | | |
| | | | Use of the river for | Presence of facilities and clubs for using the river | Indicator of quality and measure not used in assessment | | | | |
| | | | recreation | environment | | | | | |
| | | Value to | \/_lf.4b | Use for angling (number of clubs/membership) | Indicator of quality and measure not used in assessment | | | | |
| | | Value to | Value of the uses of the river (e.g. commercial | Value to local economy (e.g. employment, relative property prices, cost of alternatives, etc) | Indicator of quality and measure not used in assessment | | | | |
| | | economy | fishing, abstractions, | property prices, cost or alternatives, etc) | | | | | |
| | | | discharges, navigation, | | | | | | |
| | | | leisure and riverside | | | | | | |
| | | | development land) | | | | | | |
| | | Conveyance of | Presence of watercourses | Number and size of watercourse | Indicator of quality and measure used in floodplain resource so as to not | | | | |
| | | flows and | | | duplicate scoring | | | | |
| | | material | | Existing flood risk | Indicator of quality and measure used in floodplain resource so as to not duplicate scoring | | | | |
| The increase in impermeable road area as a result of road | Unnamed watercourse | Water supply | Use of water supply | Location and number of abstraction points | No abstraction licence information available at the time of reporting. | | | | |
| widening could increase the polluted road runoff entering | WFD reported reach: No | Water supply | (potable, industrial or | Volume of water abstracted | Indicator of quality not used in assessment. | | | | |
| the watercourse (if the road runoff was routed to the | Within the Sutton Benger | | agricultural) | Use of water (potable most important) | | | | | |
| watercourse) causing a deterioration in water quality | Bk - source to conf R Avon | | Chemical water quality | Existing chemical classification/status and objective | \ / | Local | Commonplace | Replaceable | Medium |
| | (Brist) (GB109053027700) | | | under the WFD. | Chemical objective: Good (2015) | | | | |
| This impact can likely be minimised through mitigation. | WFD waterbody | | | • . | No information available to indicate direction of change | | | | |
| At waterbody eagle this impact yould not be similiared | | Transport and | Drecence of curfoce weter | or -ve) Location and number of discharge points | No discharge consents information available at the time of reporting | | | | |
| At waterbody scale this impact would not be significant. | | dilution of waste | | Volume of effluent discharged | Indictor of quality and measures not used in assessment | | | | |
| | | products | | Proportion of flow made up by effluent at different | maister of quality and moudards not ased in assessing it | | | | |
| | | p. o a a o to | to total river flow | times of the year | | | | | |
| | | Biodiversity | Biological water quality | Existing ecological classification/status and | Existing classification: Good (2019) | Local | Commonplace | Replaceable | Medium |
| | | | | objective under the WFD | Objective: Good (2021) | | | | |
| | | | | ÷ . | No information available to indicate direction of change | | | | |
| | | | Fisheries quality | or -ve) EC Fishery designation (Salmonid, Cyprinid or | Not considered in the water environment assessment, refer to Biodiversity | | | | |
| | | | i isrielies quality | undesignated) | assessment. | | | | |
| | | | | a | Indicator of quality and measure not used in assessment | | | | |
| | | | Conservation value of | Results of River Habitat Survey | River Habitat Surveys have not been undertaken at the time of reporting. | | | | |
| | | | river corridor | | Indicator of quality and measure not used in assessment | | | | |
| | | | | Presence of designations (e.g. SSSI, NNR, LNR, | Not considered in the water environment assessment, refer to Biodiversity | | | | |
| | | | | SINCs) | assessment. | | | | |
| | | | | Presence of protected species or BAP species | Indicator of quality and measure not used in assessment Presence of protected species or BAP species not considered in the water | | | | |
| | | | | reserice of protected species of BAF species | environment assessment, refer to Biodiversity assessment. | | | | |
| | | | | | Indicator of quality and measure not used in assessment. | | | | |
| | | Aesthetics | Contribution to landscape | Results of river landscape assessment | Contribution to landscape character and quality not considered in the water | | | | |
| | | | character and quality | · | environment assessment, refer to landscape assessment. | | | | |
| | | | | | Feature not used in assessment. | | | | |
| | | Recreation Value to economy | river Riverside access Use of the river for | Results of historic environmental assessment | Presence of historic features associated with river not considered in the water | | | | |
| | | | | Presence of designations (e.g. SAMs, listed | environment assessment, refer to Culture Heritage assessment. | | | | |
| | | | | buildings) Presence of route and importance | Feature not used in assessment. Indicator of quality and measure not used in assessment | | | | |
| | | | | Presence of facilities and clubs for using the river | Indicator of quality and measure not used in assessment | | | | |
| | | | | environment | , | | | | |
| | | | Value of the uses of the river (e.g. commercial | Use for angling (number of clubs/membership) | Indicator of quality and measure not used in assessment | | | | |
| | | | | Value to local economy (e.g. employment, relative | Indicator of quality and measure not used in assessment | | | | |
| | | | | property prices, cost of alternatives, etc) | | | | | |
| | | | fishing, abstractions, | | | | | | |
| | | | discharges, navigation, leisure and riverside | | | | | | |
| | | | development land) | | | | | | |
| | | Conveyance of | , | Number and size of watercourse | Indicator of quality and measure used in floodplain resource so as to not | | | | |
| | Sutton Pangar Prock | flows and material | | | duplicate scoring | | | | |
| | | | | Existing flood risk | Indicator of quality and measure used in floodplain resource so as to not | | | | |
| The increase in improvement and a second sec | | | | Location and number of the territ | duplicate scoring | | | | |
| The increase in impermeable road area as a result of road widening could increase the polluted road runoff entering | | Water supply | Use of water supply (potable, industrial or | Location and number of abstraction points Volume of water abstracted | No abstraction licence information available at the time of reporting. Indicator of quality not used in assessment. | | | | |
| the watercourse (if the road runoff was routed to the | Benger Bk - source to conf | 1 | agricultural) | Use of water (potable most important) | indicator of quality flot used ill assessificit. | | | | |
| watercourse) causing a deterioration in water quality | R Avon (Brist) | | Chemical water quality | Existing chemical classification/status and objective | Existing chemical classification: Fail (2019) | Regional | Commonplace | Replaceable | Medium |
| , 5 | (GB109053027700) WFD | ' | . , | under the WFD. | Chemical objective: Good (2015) | | | <u> </u> | |
| This impact can likely be minimised through mitigation. | waterbody | | | • | No information available to indicate direction of change | | | | |
| | | | | or -ve) | No disabases and disference with the control of | | | | |
| At waterbody scale this impact would not be significant. | | Transport and | ilution of waste discharge points | Location and number of discharge points | No discharge consents information available at the time of reporting | | | | |
| | | products | | Volume of effluent discharged Proportion of flow made up by effluent at different | Indictor of quality and measures not used in assessment | | | | |
| | | products | to total river flow | times of the year | | | | | |
| | | Biodiversity | Biological water quality | Existing ecological classification/status and | Existing classification: Good (2019) | Regional | Commonplace | Replaceable | Medium |
| | | | | objective under the WFD | Objective: Good (2021) | Cliffillinininininininini | | | |
| | | | | • . | No information available to indicate direction of change | | | | |
| | 1 | I | | or -ve) | | | | | |
| | | | | | | | | | |

| | | | Fisheries quality | EC Fishery designation (Salmonid, Cyprinid or | Not considered in the water environment assessment, refer to Biodiversity | | | | |
|---|--|---|---|---|---|-------------------|--------------|----------------------------|------------------|
| | | | | undesignated) | assessment. | | | | |
| | l | | | | Indicator of quality and measure not used in assessment | | | | |
| | | | Conservation value of river corridor | Results of River Habitat Survey | River Habitat Surveys have not been undertaken at the time of reporting. Indicator of quality and measure not used in assessment | | | | |
| | | | | Presence of designations (e.g. SSSI, NNR, LNR, SINCs) | Not considered in the water environment assessment, refer to Biodiversity assessment. | | | | |
| | | | | , | Indicator of quality and measure not used in assessment | | | | |
| | | | | Presence of protected species or BAP species | Presence of protected species or BAP species not considered in the water environment assessment, refer to Biodiversity assessment. | | | | |
| | | | | | Indicator of quality and measure not used in assessment. | | | | |
| | | Aesthetics | Contribution to landscape character and quality | Results of river landscape assessment | Contribution to landscape character and quality not considered in the water | | | | |
| | | | | | environment assessment, refer to landscape assessment. Feature not used in assessment. | | | | |
| | | Cultural heritage | Presence of historic | Results of historic environmental assessment | Presence of historic features associated with river not considered in the water | | | | |
| | Recreation Value to economy | | | Presence of designations (e.g. SAMs, listed | environment assessment, refer to Culture Heritage assessment. | | | | |
| | | Pecreation | river Riverside access | buildings) Presence of route and importance | Feature not used in assessment. Indicator of quality and measure not used in assessment | | | | |
| | | | Use of the river for | Presence of facilities and clubs for using the river | Indicator of quality and measure not used in assessment | | | | |
| | | | recreation | environment | | | | | |
| | | | Value of the uses of the | Use for angling (number of clubs/membership) Value to local economy (e.g. employment, relative | Indicator of quality and measure not used in assessment Indicator of quality and measure not used in assessment | | | | |
| | | river (e.g. commercial | property prices, cost of alternatives, etc) | Indicator of quality and measure not used in assessment | | | | | |
| | | | fishing, abstractions, | | | | | | |
| | | | discharges, navigation, leisure and riverside | | | | | | |
| | | | development land) | | | | | | |
| | flows | Conveyance of flows and material | Presence of watercourses | Number and size of watercourse | Indicator of quality and measure used in floodplain resource so as to not duplicate scoring | | | | |
| | | | Presence of flood zones | Existing flood risk | Indicator of quality and measure used in floodplain resource so as to not | | | | |
| There is a potential increases in flood risk as a result of: | | | | Existing flood risk/flood return period | duplicate scoring Flood Zones 2 and 3 are associated with the watercourse. | Local | Rare | Limited no | High |
| The road widening potentially encroaching into Flood Zones | | flood flows | | | | Local | Naic | substitution | riigii |
| 2 and 3. The potential increase in surface water runoff as a result of an increase in impermeable road area (caused by road | Biodiversity | | Flood flow routes | Location / importance of flood flow routes | Unknown at the time of reporting. Indicator of quality not used in assessment. | | | | |
| | | Surface water flooding | Location of surface water flooding | Unknown at the time of reporting. | | | | | |
| widening). The potential modification to an existing culvert could result | | Piodivorcity | Conservation value of | Results of River Habitat Survey | Indicator of quality not used in assessment. River Habitat Surveys have not been undertaken at the time of reporting. | | | | |
| in flow constrictions and cause water to back during times | | blodiversity | | Presence of designations (e.g. SSSI, NNR, LNR, | Presence of designations is not considered under the floodplain resource. | | | | |
| of flooding and raise peak water levels. | | | | SINCs) | Feature not used in assessment. | | | | |
| These impacts can likely be minimised through mitigation. | | | | Presence of protected species or BAP species | Presence of protected species or BAP species not considered in the water environment assessment, refer to Biodiversity assessment. Feature not used in assessment. | | | | |
| | | A (1 (*) | Contribution to landscape | Results of river landscape assessment | | | | | |
| | | Aesthetics | character and quality | Results of fiver landscape assessment | Contribution to landscape character and quality not considered in the water environment assessment, refer to landscape assessment. | | | | |
| The increase in impermeable road area as a result of road | Secondary A Bedrock | Water supply | | Location and number of abstraction points | | | | | |
| widening could increase the polluted road runoff entering | Aquifer | | Use for water supply (potable, industrial or | Location and number of abstraction points Volume of water abstracted | environment assessment, refer to landscape assessment. Feature not used in assessment. | | | | |
| widening could increase the polluted road runoff entering the aquifer (if the road runoff was routed to ground) causing | Aquifer Located in the Malmesbury | | Use for water supply (potable, industrial or agricultural) | Location and number of abstraction points Volume of water abstracted Use of water (potable most important) | environment assessment, refer to landscape assessment. Feature not used in assessment. No abstraction licence information available at the time of reporting. Indicator of quality not used in assessment. | | | | |
| widening could increase the polluted road runoff entering | Aquifer Located in the Malmesbury groundwater body | | Use for water supply (potable, industrial or | Location and number of abstraction points Volume of water abstracted | environment assessment, refer to landscape assessment. Feature not used in assessment. No abstraction licence information available at the time of reporting. Indicator of quality not used in assessment. No Source Protection Zones. | | | | |
| widening could increase the polluted road runoff entering the aquifer (if the road runoff was routed to ground) causing | Aquifer Located in the Malmesbury | | Use for water supply (potable, industrial or agricultural) | Location and number of abstraction points Volume of water abstracted Use of water (potable most important) | environment assessment, refer to landscape assessment. Feature not used in assessment. No abstraction licence information available at the time of reporting. Indicator of quality not used in assessment. | Local | Rare | Limited no substitution | Medium |
| widening could increase the polluted road runoff entering the aquifer (if the road runoff was routed to ground) causing a deterioration in water quality | Aquifer Located in the Malmesbury groundwater body | | Use for water supply (potable, industrial or agricultural) | Location and number of abstraction points Volume of water abstracted Use of water (potable most important) Location and grade of source protection zone | environment assessment, refer to landscape assessment. Feature not used in assessment. No abstraction licence information available at the time of reporting. Indicator of quality not used in assessment. No Source Protection Zones. Measure not used in assessment. | Local Regional | Rare Rare | | Medium Medium |
| widening could increase the polluted road runoff entering the aquifer (if the road runoff was routed to ground) causing a deterioration in water quality This impact can likely be minimised through mitigation. | Aquifer Located in the Malmesbury groundwater body | | character and quality Use for water supply (potable, industrial or agricultural) Groundwater vulnerability Presence of discharge | Location and number of abstraction points Volume of water abstracted Use of water (potable most important) Location and grade of source protection zone Classification of aquifer vulnerability Classification/status and objective under WFD Location and number of discharge points | environment assessment, refer to landscape assessment. Feature not used in assessment. No abstraction licence information available at the time of reporting. Indicator of quality not used in assessment. No Source Protection Zones. Measure not used in assessment. Groundwater vulnerability classification: Minor Aquifer Existing classification (overall water body): Good (2019) | | | substitution Limited no | |
| widening could increase the polluted road runoff entering the aquifer (if the road runoff was routed to ground) causing a deterioration in water quality This impact can likely be minimised through mitigation. | Aquifer Located in the Malmesbury groundwater body | Water supply Transport and dilution of waste products | character and quality Use for water supply (potable, industrial or agricultural) Groundwater vulnerability Presence of discharge points | Location and number of abstraction points Volume of water abstracted Use of water (potable most important) Location and grade of source protection zone Classification of aquifer vulnerability Classification/status and objective under WFD Location and number of discharge points Location and number of discharge points | environment assessment, refer to landscape assessment. Feature not used in assessment. No abstraction licence information available at the time of reporting. Indicator of quality not used in assessment. No Source Protection Zones. Measure not used in assessment. Groundwater vulnerability classification: Minor Aquifer Existing classification (overall water body): Good (2019) Objective (overall water body): Good (2015) No discharge consents information available at the time of reporting. Feature not used in assessment. | Regional | | substitution Limited no | |
| widening could increase the polluted road runoff entering the aquifer (if the road runoff was routed to ground) causing a deterioration in water quality This impact can likely be minimised through mitigation. | Aquifer Located in the Malmesbury groundwater body | Water supply Transport and dilution of waste products Value to the | character and quality Use for water supply (potable, industrial or agricultural) Groundwater vulnerability Presence of discharge | Location and number of abstraction points Volume of water abstracted Use of water (potable most important) Location and grade of source protection zone Classification of aquifer vulnerability Classification/status and objective under WFD Location and number of discharge points Location and number of discharge points Value to local economy (e.g. employment, cost of | environment assessment, refer to landscape assessment. Feature not used in assessment. No abstraction licence information available at the time of reporting. Indicator of quality not used in assessment. No Source Protection Zones. Measure not used in assessment. Groundwater vulnerability classification: Minor Aquifer Existing classification (overall water body): Good (2019) Objective (overall water body): Good (2015) No discharge consents information available at the time of reporting. Feature not used in assessment. | Regional | | substitution Limited no | |
| widening could increase the polluted road runoff entering the aquifer (if the road runoff was routed to ground) causing a deterioration in water quality This impact can likely be minimised through mitigation. | Aquifer Located in the Malmesbury groundwater body | Water supply Transport and dilution of waste products | character and quality Use for water supply (potable, industrial or agricultural) Groundwater vulnerability Presence of discharge points Value of the uses of the groundwater (e.g. abstractions and | Location and number of abstraction points Volume of water abstracted Use of water (potable most important) Location and grade of source protection zone Classification of aquifer vulnerability Classification/status and objective under WFD Location and number of discharge points Location and number of discharge points | environment assessment, refer to landscape assessment. Feature not used in assessment. No abstraction licence information available at the time of reporting. Indicator of quality not used in assessment. No Source Protection Zones. Measure not used in assessment. Groundwater vulnerability classification: Minor Aquifer Existing classification (overall water body): Good (2019) Objective (overall water body): Good (2015) No discharge consents information available at the time of reporting. Feature not used in assessment. | Regional | | substitution Limited no | |
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Reference Sources

Design drawing - M4 Junction 17
Environmental datasets held on Defra's MAGIC website https://magic.defra.gov.uk/home.htm
Environment Agency - Catchment Data Explorer http://environment.data.gov.uk/catchment-planning/
British Geological Survey's Geology of Britain Viewer http://mapapps.bgs.ac.uk/geologyofbritain/home.html

Summary Assessment Score (with mitigation)

Neutral

Qualitative Comments

The M4 Junction 17 Improvements Scheme will result in an increase in impermeable road area. This could potentially impact the water quality of Rodbourne Brook, Sutton Benger Brook and two unnamed watercourses and/or the underlying aquifer's water quality (depending on when potential for the increase in impermeable road area to cause an increase in flood risk as a result of an increase in surface water runoff. Sustainable drainage measures that attenuate runoff volumes could be implemented to mitigate an increase in surface water flood risk or fluvial floc watercourse. These measures can also be designed to remove suspended solids, dissolved copper and dissolved zinc and they are also effective for spillage control. The exact choice of system is dependent on the physical environment of the Scheme and needs to consider the available soil permeability and topography.

There is the possibility that the road widening could encroach into Flood Zones 2 and 3. If this were the case then floodplain storage compensation would be required.

Also potential modifications to an existing culvert could potentially impact the hydromorphology of Rodbourne Brook and increase flood risk by causing flow constrictions at times of flooding. Potential impacts on hydromorphology could be mitigated by following environmentally sensitive potential for enhancements up and downstream where practical. Potential impacts on flood risk.

As there is a potential impact which is highly significant the overall assessment score for the operation of the M4 Junction 17 Improvements Scheme is large adverse. This has been determined with reference to sections 5.3.15 – 5.3.20 and 10.2 of TAG UNIT A3 - Environmental Impact which is highly significant the overall assessment score for the operation of the M4 Junction 17 Improvements Scheme is large adverse. This has been determined with reference to sections 5.3.15 – 5.3.20 and 10.2 of TAG UNIT A3 - Environmental Impact which is highly significant the overall assessment score for the operation of the M4 Junction 17 Improvements Scheme is large adverse. This has been determined with reference to sections 5.3.15 – 5.3.20 and 10.2 of TAG UNIT A3 - Environmental Impact which is highly significant the overall assessment score for the operation of the M4 Junction 17 Improvements Scheme is large adverse.

• Most adverse category. The scheme as a whole is assessed according to the most adverse assessment of the features affected i.e. if a single feature scores 'large adverse' and this is the highest individual assessment score for all features then the overall assessment score should

However, applying water quality and flood risk mitigation will reduce the significance of effect to neutral.