



South East Strategic Reservoir Option
Preliminary Environmental Information Report

Appendix 10.4 - Preliminary assessment of effects for Geology and soils

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1 Preliminary assessment of effects

1.1 Introduction

- 1.1.1 This Appendix sets out the preliminary assessment of effects for Geology and soils, receptor by receptor, for the construction and operation stages respectively. The appendix is split into tables that list effects that are initially anticipated to be significant and tables that list effects that are not initially anticipated to be significant. The judgement of significance has been made assuming that embedded design mitigation and standard good practice mitigation relevant to Geology and soils is applied (these are summarised in this Appendix with further detail provided in the Draft commitments register in Appendix 2.2). Nevertheless, the assessment assumes that additional mitigation is not applied, as the viability, nature and extent of any additional mitigation measures is not confirmed at this stage in the EIA process. As a result, consideration of residual effects (those that remain after the implementation of all mitigation, including additional mitigation) has not been completed for the PEI report.
- 1.1.2 Each receptor assessed for this aspect in the preliminary assessment is listed in the 'Baseline conditions' section of the associated PEI Report chapter, and also within the tables in this appendix. Each receptor has been assigned an Area ID which relates to the spatial extent of the receptor assessed. Where these have been spatially defined for the PEI Report, these are shown in figures cross-referenced from the 'Baseline conditions' section.
- 1.1.3 Each effect assessed has been assigned a unique identifier, the Effect ID.
- 1.1.4 The tables identify the following for each effect:
- Receptor name, Effect ID and sensitivity category
 - Project components and activities giving rise to the effect
 - Relevant embedded design mitigation and standard good practice mitigation (with unique Commitment ID, which relates to Appendix 2.2: Draft commitments register)
 - Initial category of effect significance, including whether it is adverse, beneficial or neutral (taking account of embedded design mitigation and standard good practice measures)
 - Description and duration of the effect
 - Any additional mitigation and monitoring identified at this stage (with unique Commitment ID, to enable cross reference to the measures noted in Section 10.10: Next steps of applicable aspect chapters).

1.2 Likely significant construction effects

Table 1.1 Initial likely significant effects during construction (with embedded and standard good practice mitigation applied, but prior to additional mitigation)

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Initial significance / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
Soils: ALC Grade 1 and 2 [GS-175] (Very High)	Most / all project components	Material excavation and handling General construction activities Vegetation removal	(ED-24) Seek to increase re-use of excavated materials on site where practicable. (ED-55) Application of circular economy principles and the waste hierarchy during design. (SGP-14) Manage material resources during construction in accordance with good practice. (SGP-15) Manage all soil resources during construction in accordance with standard good practice. (SGP-16) Standard good practice measures to prevent soil pollution.	Significant Adverse	Loss of agricultural land classification Grade 1 and 2 (BMV) soils: Based on the Provisional mapping the Project would result in 1) physical removal or permanent sealing of 1ha - 20ha of agricultural land; or 2) permanent loss / reduction of one or more soil function(s) and restriction to current or approved future use (e.g. through degradation, compaction, erosion of soil resource). (Permanent)	(AM-72) Establish a framework for the reuse of excavated material offsite. (AM-74) Measures to ensure the efficient use of surplus topsoil.
Soils: ALC Grade 3a [GS-173] (High)	Most / all project components	Material excavation and handling General construction activities Vegetation removal	(ED-24) Seek to increase re-use of excavated materials on site where practicable. (ED-55) Application of circular economy principles and the waste hierarchy during design. (SGP-14) Manage material resources during construction in accordance with good practice. (SGP-15) Manage all soil resources during construction in accordance with standard good practice. (SGP-16) Standard good practice measures to prevent soil pollution.	Significant Adverse	Loss of agricultural land classification Grade 3a soils and loss of BMV soils: Based on the provisional mapping we assume all Grade 3 is 3a (BMV), as worse case. The Project would result in physical removal or sealing of 20ha of agricultural land (Permanent)	(AM-72) Establish a framework for the reuse of excavated material offsite. (AM-74) Measures to ensure the efficient use of surplus topsoil.
Soils: non-designated notable or priority habitats [GS-187] (Low)	Most / all project components	Material excavation and handling General construction activities Vegetation removal	(ED-24) Seek to increase re-use of excavated materials on site where practicable. (ED-55) Application of circular economy principles and the waste hierarchy during design.	Significant Adverse	Damage to soil function: Damage to soil function caused by damage to soil structure from handling soils, particularly when wet and damage to soil function from contamination (Long-term)	(AM-72) Establish a framework for the reuse of excavated material offsite. (AM-74) Measures to ensure the efficient use of surplus topsoil.

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Initial significance / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
			(SGP-14) Manage material resources during construction in accordance with good practice. (SGP-15) Manage all soil resources during construction in accordance with standard good practice. (SGP-16) Standard good practice measures to prevent soil pollution.			

1.3 Likely significant operation effects

Table 1.2 Initial likely significant effects during operation (with embedded and standard good practice mitigation applied, but prior to additional mitigation)

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Initial significance / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
Soils: non-designated notable or priority habitats [GS-210] (Low)	New green open space Planting Project Priority Areas for Biodiversity	Presence (of project components)	No embedded design or standard good practice mitigation identified at this stage.	Significant Beneficial	Increase in soil functions: An increase in soil functions in habitat and woodland creation areas. (Permanent)	No additional mitigation has been identified at this stage as the effect is likely to be beneficial.

1.4 Likely non-significant construction effects

Table 1.3 Initial likely non-significant effects during construction (with embedded and standard good practice mitigation applied, but prior to additional mitigation)

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Initial significance / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
Human Health: Residential and allotments [GS-185] (Very High)	Most / all project components	Most / all project activities (construction)	(SGP-14) Manage material resources during construction in accordance with good practice. (SGP-16) Standard good practice measures to prevent soil pollution. (SGP-17) Measures to reduce impacts on the health of construction workers during site preparation and construction. (SGP-31) Control and handling of asbestos. (SGP-43) Ground investigation, risk assessment, and, if required, sustainable remediation, in accordance with standard good practice measures for land contamination.	Not Significant Adverse	Harm to human health: There are limited sources of potential contamination on site. Where it may exist the potential for harm to human health could occur from the mobilisation of existing ground contamination during construction. Disturbance of the ground may result in human exposure to potentially contaminated soils, dust and water. Detailed ground investigations will be undertaken in these areas. The results will be assessed in accordance with good practice, where necessary, appropriate remediation measures will be implemented to mitigate risks and ensure compliance with environmental and health protection standards. These measures will include safety protocols during construction and will be agreed upon with relevant regulatory authorities and verified throughout the construction process. With the implementation of these mitigation measures and compliance with existing regulatory standards the risk of harm to human health is controllable and very low and will not result in any significant effects. (Long-term)	No additional mitigation required as the effect is not significant.
Human Health: Public open space parks and open land near residential areas [GS-176] (High)	Most / all project components	Most / all project activities (construction)	(SGP-14) Manage material resources during construction in accordance with good practice. (SGP-16) Standard good practice measures to prevent soil pollution. (SGP-17) Measures to reduce impacts on the health of construction workers during site preparation and construction. (SGP-31) Control and handling of asbestos. (SGP-43) Ground investigation, risk assessment, and, if required, sustainable remediation, in accordance with standard good practice measures for land contamination.	Not Significant Adverse	Harm to human health: There are limited sources of potential contamination on site. Where it may exist the potential for harm to human health could occur from the mobilisation of existing ground contamination during construction. Disturbance of the ground may result in human exposure to potentially contaminated soils, dust and water. Detailed ground investigations will be undertaken in these areas. The results will be assessed in accordance with good practice, where necessary, appropriate remediation measures will be implemented to mitigate risks and ensure compliance with environmental and health protection standards. These measures will include safety protocols during construction and will be agreed upon with relevant regulatory authorities and verified throughout the construction process. With the implementation of these mitigation measures and compliance with existing regulatory standards the risk of harm to human health is controllable and very low and will not result in any significant effects. (Long-term)	No additional mitigation required as the effect is not significant.
Human Health: Users of commercial and industrial sites [GS-183] (Moderate)	Most / all project components	Most / all project activities (construction)	(SGP-14) Manage material resources during construction in accordance with good practice. (SGP-16) Standard good practice measures to prevent soil pollution. (SGP-17) Measures to reduce impacts on the health of construction workers	Not Significant Adverse	Harm to human health: There are limited sources of potential contamination on site. Where it may exist the potential for harm to human health could occur from the mobilisation of existing ground contamination during construction. Disturbance of the ground may result in human exposure to potentially contaminated soils, dust and water. Detailed ground investigations will be undertaken in these areas. The results will be assessed in accordance with good practice, where necessary, appropriate remediation measures will	No additional mitigation required as the effect is not significant.

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Initial significance / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
			during site preparation and construction. (SGP-31) Control and handling of asbestos. (SGP-43) Ground investigation, risk assessment, and, if required, sustainable remediation, in accordance with standard good practice measures for land contamination.		be implemented to mitigate risks and ensure compliance with environmental and health protection standards. These measures will include safety protocols during construction and will be agreed upon with relevant regulatory authorities and verified throughout the construction process. With the implementation of these mitigation measures and compliance with existing regulatory standards the risk of harm to human health is controllable and very low and will not result in any significant effects. (Long-term)	
Human Health: Users of highways and railways [GS-181] (Low)	Most / all project components	Most / all project activities (construction)	(SGP-14) Manage material resources during construction in accordance with good practice. (SGP-16) Standard good practice measures to prevent soil pollution. (SGP-17) Measures to reduce impacts on the health of construction workers during site preparation and construction. (SGP-31) Control and handling of asbestos. (SGP-43) Ground investigation, risk assessment, and, if required, sustainable remediation, in accordance with standard good practice measures for land contamination.	Not Significant Adverse	Harm to human health: There are limited sources of potential contamination on site. Where it may exist the potential for harm to human health could occur from the mobilisation of existing ground contamination during construction. Disturbance of the ground may result in human exposure to potentially contaminated soils, dust and water. Detailed ground investigations will be undertaken in these areas. The results will be assessed in accordance with good practice, Where necessary, appropriate remediation measures will be implemented to mitigate risks and ensure compliance with environmental and health protection standards. These measures will include safety protocols during construction and will be agreed upon with relevant regulatory authorities and verified throughout the construction process. With the implementation of these mitigation measures and compliance with existing regulatory standards the risk of harm to human health is controllable and very low and will not result in any significant effects. (Long-term)	No additional mitigation required as the effect is not significant.
Human Health: Users of undeveloped land [GS-184] (Negligible)	Most / all project components	Most / all project activities (construction)	(SGP-14) Manage material resources during construction in accordance with good practice. (SGP-16) Standard good practice measures to prevent soil pollution. (SGP-17) Measures to reduce impacts on the health of construction workers during site preparation and construction. (SGP-31) Control and handling of asbestos. (SGP-43) Ground investigation, risk assessment, and, if required, sustainable remediation, in accordance with standard good practice measures for land contamination.	Not Significant Adverse	Harm to human health: There are limited sources of potential contamination on site. Where it may exist the potential for harm to human health could occur from the mobilisation of existing ground contamination during construction. Disturbance of the ground may result in human exposure to potentially contaminated soils, dust and water. Detailed ground investigations will be undertaken in these areas. The results will be assessed in accordance with good practice, where necessary, appropriate remediation measures will be implemented to mitigate risks and ensure compliance with environmental and health protection standards. These measures will include safety protocols during construction and will be agreed upon with relevant regulatory authorities and verified throughout the construction process. With the implementation of these mitigation measures and compliance with existing regulatory standards the risk of harm to human health is controllable and very low and will not result in any significant effects. (Long-term)	No additional mitigation required as the effect is not significant.

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Initial significance / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
Secondary (undifferentiated) Aquifer: (Superficial) Head Deposits [GS-178] (Moderate)	Most / all project components	Most / all project activities (construction)	(SGP-14) Manage material resources during construction in accordance with good practice. (SGP-16) Standard good practice measures to prevent soil pollution. (SGP-17) Measures to reduce impacts on the health of construction workers during site preparation and construction. (SGP-31) Control and handling of asbestos. (SGP-43) Ground investigation, risk assessment, and, if required, sustainable remediation, in accordance with standard good practice measures for land contamination.	Not Significant Adverse	Pollution of controlled waters: There are limited sources of potential contamination on site. There may be existing groundwater contamination in a few areas on site. Where contamination exists construction might result in mobilisation of contaminants and new pathways to sensitive receptors. The scheme presents an opportunity to deal with the legacy of historic contamination. Detailed ground investigations will be undertaken in these areas. The results will be assessed in accordance with good practice, and where necessary, appropriate remediation measures will be implemented. This will be agreed with regulators and verified during construction. With the implementation of these mitigation measures and compliance with existing regulatory standards the risk of pollution of waters or harm to other environmental receptors is controllable and very low and will not result in any significant effects. (Long-term)	No additional mitigation required as the effect is not significant.
Secondary A Aquifer: (Superficial) Alluvium [GS-182] (Moderate)	Most / all project components	Most / all project activities (construction)	(SGP-14) Manage material resources during construction in accordance with good practice. (SGP-16) Standard good practice measures to prevent soil pollution. (SGP-17) Measures to reduce impacts on the health of construction workers during site preparation and construction. (SGP-31) Control and handling of asbestos. (SGP-43) Ground investigation, risk assessment, and, if required, sustainable remediation, in accordance with standard good practice measures for land contamination.	Not Significant Adverse	Pollution of controlled waters: There are limited sources of potential contamination on site. There may be existing groundwater contamination in a few areas on site. Where contamination exists construction might result in mobilisation of contaminants and new pathways to sensitive receptors. The scheme presents an opportunity to deal with the legacy of historic contamination. Detailed ground investigations will be undertaken in these areas. The results will be assessed in accordance with good practice, and where necessary, appropriate remediation measures will be implemented. This will be agreed with regulators and verified during construction. With the implementation of these mitigation measures and compliance with existing regulatory standards the risk of pollution of waters or harm to other environmental receptors is controllable and very low and will not result in any significant effects. (Long-term)	No additional mitigation required as the effect is not significant.
Secondary A Aquifer: (Superficial) River Terrace Deposits [GS-179] (Moderate)	Most / all project components	Most / all project activities (construction)	(SGP-14) Manage material resources during construction in accordance with good practice. (SGP-16) Standard good practice measures to prevent soil pollution. (SGP-17) Measures to reduce impacts on the health of construction workers during site preparation and construction.	Not Significant Adverse	Pollution of controlled waters: There are limited sources of potential contamination on site. There may be existing groundwater contamination in a few areas on site. Where contamination exists construction might result in mobilisation of contaminants and new pathways to sensitive receptors. The scheme presents an opportunity to deal with the legacy of historic contamination. Detailed ground investigations will be undertaken in these areas. The results will be assessed in accordance with good practice, and where necessary, appropriate remediation measures will be implemented. This will be agreed with regulators and verified during construction. With the implementation of these mitigation measures	No additional mitigation required as the effect is not significant.

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Initial significance / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
			(SGP-31) Control and handling of asbestos. (SGP-43) Ground investigation, risk assessment, and, if required, sustainable remediation, in accordance with standard good practice measures for land contamination.		and compliance with existing regulatory standards the risk of pollution of waters or harm to other environmental receptors is controllable and very low and will not result in any significant effects (Long-term)	
Secondary A Aquifer: (Bedrock) Lower Greensand Group, Stanford Formation and Kingston Formation [GS-180] (Moderate)	Most / all project components	Most / all project activities (construction)	(SGP-14) Manage material resources during construction in accordance with good practice. (SGP-16) Standard good practice measures to prevent soil pollution. (SGP-17) Measures to reduce impacts on the health of construction workers during site preparation and construction. (SGP-31) Control and handling of asbestos. (SGP-43) Ground investigation, risk assessment, and, if required, sustainable remediation, in accordance with standard good practice measures for land contamination.	Not Significant Adverse	Pollution of controlled waters: There are limited sources of potential contamination on site. There may be existing groundwater contamination in a few areas on site. Where contamination exists construction might result in mobilisation of contaminants and new pathways to sensitive receptors. The scheme presents an opportunity to deal with the legacy of historic contamination. Detailed ground investigations will be undertaken in these areas. The results will be assessed in accordance with good practice, and where necessary, appropriate remediation measures will be implemented. This will be agreed with regulators and verified during construction. With the implementation of these mitigation measures and compliance with existing regulatory standards the risk of pollution of waters or harm to other environmental receptors is controllable and very low and will not result in any significant effects. (Long-term)	No additional mitigation required as the effect is not significant.
Surface water bodies (WFD) [GS-198] (High)	Most / all project components	Most / all project activities (construction)	(SGP-14) Manage material resources during construction in accordance with good practice. (SGP-16) Standard good practice measures to prevent soil pollution. (SGP-17) Measures to reduce impacts on the health of construction workers during site preparation and construction. (SGP-31) Control and handling of asbestos. (SGP-43) Ground investigation, risk assessment, and, if required, sustainable remediation, in accordance with standard good practice measures for land contamination.	Not Significant Adverse	Pollution of controlled waters: There are limited sources of potential contamination on site. There may be existing groundwater contamination in a few areas on site. Where contamination exists construction might result in mobilisation of contaminants and new pathways to sensitive receptors. The scheme presents an opportunity to deal with the legacy of historic contamination. Detailed ground investigations will be undertaken in these areas. The results will be assessed in accordance with good practice, and where necessary, appropriate remediation measures will be implemented. This will be agreed with regulators and verified during construction. With the implementation of these mitigation measures and compliance with existing regulatory standards the risk of pollution of waters or harm to other environmental receptors is controllable and very low and will not result in any significant effects. (Long-term)	No additional mitigation required as the effect is not significant.
Surface water bodies (non-WFD) [GS-197] (Moderate)	Most / all project components	Most / all project activities (construction)	(SGP-14) Manage material resources during construction in accordance with good practice.	Not Significant Adverse	Pollution of controlled waters: There are limited sources of potential contamination on site. There may be existing groundwater contamination in a few areas on site. Where contamination exists	No additional mitigation required

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Initial significance / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
			(SGP-16) Standard good practice measures to prevent soil pollution. (SGP-17) Measures to reduce impacts on the health of construction workers during site preparation and construction. (SGP-31) Control and handling of asbestos. (SGP-43) Ground investigation, risk assessment, and, if required, sustainable remediation, in accordance with standard good practice measures for land contamination.		construction might result in mobilisation of contaminants and new pathways to sensitive receptors. The scheme presents an opportunity to deal with the legacy of historic contamination. Detailed ground investigations will be undertaken in these areas. The results will be assessed in accordance with good practice, and where necessary, appropriate remediation measures will be implemented. This will be agreed with regulators and verified during construction. With the implementation of these mitigation measures and compliance with existing regulatory standards the risk of pollution of waters or harm to other environmental receptors is controllable and very low and will not result in any significant effects. (Long-term)	as the effect is not significant.
Soils: ALC Grade 4 [GS-174] (Low)	Most / all project components	Material excavation and handling General construction activities Vegetation removal	(ED-24) Seek to increase re-use of excavated materials on site where practicable. (ED-55) Application of circular economy principles and the waste hierarchy during design. (SGP-14) Manage material resources during construction in accordance with good practice. (SGP-15) Manage all soil resources during construction in accordance with standard good practice. (SGP-16) Standard good practice measures to prevent soil pollution. (SGP-43) Ground investigation, risk assessment, and, if required, sustainable remediation, in accordance with standard good practice measures for land contamination.	Not Significant Adverse	Loss of agricultural land classification Grade 4 soils.: Based on the provisional mapping Grade 4 is present. The Project would result in 1) physical removal or permanent sealing of 1ha - 20ha of agricultural land; or 2) permanent loss / reduction of one or more soil function(s) and restriction to current or approved future use (e.g through degradation, compaction, erosion of soil resource). (Permanent)	No additional mitigation required as the effect is not significant.
Soils: ALC Urban land [GS-177] (Negligible)	Highways improvements A34 Marcham Interchange	Material excavation and handling General construction activities Vegetation removal	(ED-24) Seek to increase re-use of excavated materials on site where practicable. (ED-55) Application of circular economy principles and the waste hierarchy during design. (SGP-14) Manage material resources during construction in accordance with good practice.	Not Significant Adverse	Loss of non-agricultural soils: Construction activities may result in the disturbance, displacement, or permanent loss of non-agricultural soils, including made ground and previously developed substrates. Where land is classified as Urban Land under the Agricultural Land Classification (ALC) system, it is not considered to have agricultural value and is therefore not subject to grading or protection under agricultural land policies. As such, the loss of these soils is not considered significant in terms of agricultural land use. Prior to construction, soil resources will be characterised and, where appropriate, managed or reused in accordance with industry	No additional mitigation required as the effect is not significant.

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Initial significance / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
			(SGP-15) Manage all soil resources during construction in accordance with standard good practice. (SGP-16) Standard good practice measures to prevent soil pollution. (SGP-32) Pause earthworks during the winter months if appropriate. (SGP-43) Ground investigation, risk assessment, and, if required, sustainable remediation, in accordance with standard good practice measures for land contamination.		good practice guidance to minimise environmental impacts and support sustainable site development. (Permanent)	
Soils: non-statutory designated sites [GS-186] (Moderate)	Most / all project components	Most / all project activities (construction)	(ED-24) Seek to increase re-use of excavated materials on site where practicable. (ED-55) Application of circular economy principles and the waste hierarchy during design. (SGP-14) Manage material resources during construction in accordance with good practice. (SGP-15) Manage all soil resources during construction in accordance with standard good practice. (SGP-16) Standard good practice measures to prevent soil pollution. (SGP-32) Pause earthworks during the winter months if appropriate. (SGP-43) Ground investigation, risk assessment, and, if required, sustainable remediation, in accordance with standard good practice measures for land contamination.	Not Significant Adverse	Damage to soil functions, to include ALC all grades and non ALC soils: Construction offsite may mobilise contaminants and create pathways to the LWS and soil receptors which may damage soil functions. (Long-term)	No additional mitigation required as the effect is not significant.

1.5 Likely non-significant operation effects

Table 1.4 Initial likely non-significant effects during operation (with embedded and standard good practice mitigation applied, but prior to additional mitigation)

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Initial significance / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
Human Health: Residential and allotments [GS-209] (Very High)	Most / all project components	Presence (of project components)	(SGP-16) Standard good practice measures to prevent soil pollution.	Not Significant Neutral	Harm to human health: Remediation will be implemented and verified during construction. Long term operation and maintenance plans will be included, where necessary. The development will provide new open space and visitor facilities. The remediation during construction will deal with any historic legacy, including remediation and clean cover layers, soil habitats and water features. These, and other measures will ensure that the risk of harm to maintenance workers, site users and neighbours during operation will very low or negligible during operation. There will be no significant environmental effects. (Permanent)	No additional mitigation required as the effect is not significant.
Human Health: Public open space [GS-205] (High)	Most / all project components	Presence (of project components)	(SGP-16) Standard good practice measures to prevent soil pollution.	Not Significant Neutral	Harm to human health: Remediation will be implemented and verified during construction. Long term operation and maintenance plans will be included, where necessary. The development will provide new open space and visitor facilities. The remediation during construction will deal with any historic legacy, including remediation and clean cover layers, soil habitats and water features. These, and other measures will ensure that the risk of harm to maintenance workers, site users and neighbours during operation will very low or negligible during operation. There will be no significant environmental effects. (Permanent)	No additional mitigation required as the effect is not significant.
Human Health: Users of commercial and industrial sites [GS-207] (Moderate)	Most / all project components	Presence (of project components)	(SGP-16) Standard good practice measures to prevent soil pollution.	Not Significant Neutral	Harm to human health: Remediation will be implemented and verified during construction. Long term operation and maintenance plans will be included, where necessary. The development will provide new open space and visitor facilities. The remediation during construction will deal with any historic legacy, including remediation and clean cover layers, soil habitats and water features. These, and other measures will ensure that the risk of harm to maintenance workers, site users and neighbours during operation will very low or negligible during operation. There will be no significant environmental effects. (Permanent)	No additional mitigation required as the effect is not significant.
Human Health: Users of highways and railways [GS-206] (Low)	Most / all project components	Presence (of project components)	(SGP-16) Standard good practice measures to prevent soil pollution.	Not Significant Neutral	Harm to human health: Remediation will be implemented and verified during construction. Long term operation and maintenance plans will be included, where necessary. The development will provide new open space and visitor facilities. The remediation during construction will deal with any historic legacy, including remediation and clean cover layers, soil habitats and water features. These, and other measures will ensure that the risk of harm to maintenance workers, site users and neighbours during operation will very low or negligible during operation. There will be no significant environmental effects. (Permanent)	No additional mitigation required as the effect is not significant.
Human Health: Users of undeveloped land [GS-208] (Negligible)	Most / all project components	Presence (of project components)	(SGP-16) Standard good practice measures to prevent soil pollution.	Not Significant Neutral	Harm to human health: Remediation will be implemented and verified during construction. Long term operation and maintenance plans will be included, where necessary. The development will provide new open space and visitor facilities. The remediation during construction	No additional mitigation required as the effect is not significant.

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Initial significance / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
					will deal with any historic legacy, including remediation and clean cover layers, soil habitats and water features. These, and other measures will ensure that the risk of harm to maintenance workers, site users and neighbours during operation will very low or negligible during operation. There will be no significant environmental effects. (Permanent)	
Secondary (undifferentiated) Aquifer: (Superficial) Head Deposits [GS-204] (Moderate)	Most / all project components	Presence (of project components)	No embedded design or standard good practice mitigation identified at this stage.	Not Significant Beneficial	Pollution of controlled waters: Remediation will be implemented and verified during construction. Long term operation and maintenance plans will be included, where necessary. The remediation during construction will deal with any historic legacy, including remediation and clean cover layers, soil habitats and water features. These and other measures will ensure that the risk of harm to controlled waters will very low or negligible during operation. (Permanent)	No additional mitigation has been identified at this stage as the effect is likely to be beneficial.
Secondary A Aquifer: (Superficial) Alluvium [GS-202] (Moderate)	Most / all project components	Presence (of project components)	No embedded design or standard good practice mitigation identified at this stage.	Not Significant Beneficial	Pollution of controlled waters: Remediation will be implemented and verified during construction. Long term operation and maintenance plans will be included, where necessary. The remediation during construction will deal with any historic legacy, including remediation and clean cover layers, soil habitats and water features. These and other measures will ensure that the risk of harm to controlled waters will very low or negligible during operation. (Permanent)	No additional mitigation has been identified at this stage as the effect is likely to be beneficial.
Secondary A Aquifer: (Superficial) River Terrace Deposits [GS-201] (Moderate)	Most / all project components	Presence (of project components)	No embedded design or standard good practice mitigation identified at this stage.	Not Significant Beneficial	Pollution of controlled waters: Remediation will be implemented and verified during construction. Long term operation and maintenance plans will be included, where necessary. The remediation during construction will deal with any historic legacy, including remediation and clean cover layers, soil habitats and water features. These and other measures will ensure that the risk of harm to controlled waters will very low or negligible during operation. (Permanent)	No additional mitigation has been identified at this stage as the effect is likely to be beneficial.
Secondary A Aquifer: (Bedrock) Lower Greensand Group, Stanford Formation and Kingston Formation [GS-203] (Moderate)	Most / all project components	Presence (of project components)	No embedded design or standard good practice mitigation identified at this stage.	Not Significant Beneficial	Pollution of controlled waters: Remediation will be implemented and verified during construction. Long term operation and maintenance plans will be included, where necessary. The remediation during construction will deal with any historic legacy, including remediation and clean cover layers, soil habitats and water features. These and other measures will ensure that the risk of harm to controlled waters will very low or negligible during operation. (Permanent)	No additional mitigation has been identified at this stage as the effect is likely to be beneficial.
Surface water bodies (WFD) [GS-211] (High)	Most / all project components	Presence (of project components)	No embedded design or standard good practice mitigation identified at this stage.	Not Significant Beneficial	Pollution of controlled waters: Remediation will be implemented and verified during construction. Long term operation and maintenance plans will be included, where necessary. The remediation during construction will deal with any historic legacy, including remediation and clean cover layers, soil habitats and water features. These and other measures will ensure that the risk of harm to controlled waters will very low or negligible during operation. (Permanent)	No additional mitigation has been identified at this stage as the effect is likely to be beneficial.

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Initial significance / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
Surface water bodies (Non- WFD Q95 >0.001m3/s) [GS-212] (Moderate)	Most / all project components	Presence (of project components)	No embedded design or standard good practice mitigation identified at this stage.	Not Significant Beneficial	Pollution of controlled waters from nearby sources of contamination: Remediation will be implemented and verified during construction. Long term operation and maintenance plans will be included, where necessary. The remediation during construction will deal with any historic legacy, including remediation and clean cover layers, soil habitats and water features. These and other measures will ensure that the risk of harm to controlled waters will very low or negligible during operation. (Permanent)	No additional mitigation has been identified at this stage as the effect is likely to be beneficial.
Soils: non-statutory designated sites [GS-214] (Moderate)	New green open space Project Priority Areas for Biodiversity Planting	Presence (of project components)	(SGP-12) Standard good practice measures for establishment of trees and other planting. (SGP-42) Management and maintenance of plants and habitats to ensure soil health and functions are sustained.	Not Significant Beneficial	Increase in soil biodiversity: An increase in biodiversity and BNG surrounding the Local Wildlife Site has the potential to increase soil biodiversity and improve soil functions and structure. (Permanent)	No additional mitigation has been identified at this stage as the effect is likely to be beneficial.



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