



# **Preliminary Environmental Information Report**

## **Volume 4 Appendix 16.1**

Soils and Land Summary Tables for Likely Significant and Non-Significant Environmental Effects

## Soils and Land Summary Tables

### 1 Potential Likely Significant Construction Effects

**Table 1: Potential Likely Significant Construction Effects**

Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Arable and Pasture Land	Runnymede Channel; Spelthorne Channel; Abbey Meads Floodway; Priority areas for habitat creation, enhancement or mitigation; New green open spaces	Material excavation (natural ground); Material excavation (contaminated); Construction of new pedestrian / cycle bridges at Chertsey and Desborough; General construction activities (land)	Negative  Land take of characteristic arable and pasture farmland as a result of construction of the channels, new green open spaces, and priority areas for habitat enhancement, mitigation or creation. The loss, whilst limited to areas of the project, will be permanent.  Permanent duration.	No secondary mitigation has been able to be identified at this Preliminary Environmental Information Report (PEIR) stage. The need for mitigation will be considered further as design and assessment work continues to progress as part of the Environmental Impact Assessment (EIA), and any secondary mitigation developed will be reported in the Environmental Statement.
All receptors	Off-site car parks for construction workers	Establishment and use of off-site car parks including associated traffic movements	Potential effects during construction on all receptors	No further mitigation identified  The selection and design of these car parks is yet to be undertaken, at which point the need for and nature of any secondary mitigation will be considered

## 2 Potential Likely Significant Operational Effects

**Table 2: Potential Likely Significant Operational Effects**

Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Superficial Geology Deposits - Shepperton Gravel Member	Runnymede Channel; Spelthorne Channel	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	Positive  Reduced flood risk of contaminated land, reduced mobilisation of contaminants into highly vulnerable geological formation and groundwater. Locally to regionally reduced mobilisation of contaminants due to reduced flood risk.  Permanent duration.	No secondary mitigation required as the effect is positive.
Principal Aquifer - Shepperton Gravel Member	Runnymede Channel; Spelthorne Channel; Flow Control Structures	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	Positive  Reduced flood risk of contaminated land, reduced mobilisation of contaminants into highly vulnerable groundwater.  Permanent duration.	No secondary mitigation required as the effect is positive.
Groundwater Abstraction Source Protection Zones	Runnymede Channel; Spelthorne Channel; Flow Control Structures	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	Positive  Reduced flood risk of contaminated land, reduced mobilisation of contaminants into highly vulnerable groundwater, aquifers, and source protection zones. Locally to regionally reduced mobilisation of contaminants due to reduced flood risk.  Permanent duration.	No secondary mitigation required as the effect is positive.

### 3 Non-Significant Construction Effects

**Table 3: Non-Significant Construction Effects**

Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Agricultural Soils	Spelthorne Channel	Material excavation (contaminated); Material excavation (natural ground)	Negative  Land take of the edge of Agricultural Land Classification Grade 2 on the northern edge of the Spelthorne Channel at Laleham Farm. Localised small areas of land take on the northern extents of Littleton North and Littleton East lakes on the Spelthorne Channel.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation is required.
Bedrock Geology - Bagshot Formation	Spelthorne Channel; Temporary materials processing sites; Temporary material storage sites; Construction compounds; New green open spaces; New Landforms	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials	Negative  Pollution of uncontaminated soils by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping. Pollution of uncontaminated soils and groundwater due to excavation of landfill and made ground outside of landfill areas. Limited or no contaminant pathway linkage with mitigation in place. Potential to migrate over local areas.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Bedrock Geology - Claygate Member	Runnymede Channel; Spelthorne Channel; Bed lowering downstream of Desborough Cut; Temporary materials processing sites; Temporary material storage sites; Construction compounds; New Landforms; New green open spaces	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials; Bed lowering	Negative  Pollution of uncontaminated soils by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping. Pollution of uncontaminated soils and groundwater due to excavation of landfill, made ground outside of landfill areas, and material from River Thames bed lowering. Limited or no contaminant pathway linkage with mitigation in place. Potential to migrate over local areas.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.

Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Bedrock Geology - London Clay Formation	Runnymede Channel; Temporary materials processing sites; Temporary material storage sites; Construction compounds; New green open spaces; New Landforms	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials	Negative  Pollution of uncontaminated soils by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping. Pollution of uncontaminated soils and groundwater due to excavation of landfill and made ground outside of landfill areas. Limited or no contaminant pathway linkage with mitigation in place. Low risk of contamination entering geological formation. Unlikely to affect formation or groundwater.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Human Health - Residential: Contaminated Soil and Leachate	Runnymede Channel; Temporary materials processing sites; Temporary material storage sites; Construction compounds; New green open spaces; New Landforms	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials	Negative  Excavation and processing of landfill materials and other potentially contaminated land materials. Migration of contaminants from unexcavated landfills due to compression resulting from placement of materials on landfill.  Limited or no contaminant pathway linkage with mitigation in place.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Human Health - Commercial / industrial: Contaminated Soil and Leachate	Runnymede Channel; Temporary materials processing sites; Temporary material storage sites; Construction compounds; New green open spaces; New Landforms	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials	Negative  Excavation and processing of landfill materials and other potentially contaminated land materials. Migration of contaminants from unexcavated landfills due to compression resulting from placement of materials on landfill. Limited or no contaminant pathway linkage with mitigation in place.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.

Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Human Health - Public open spaces: Contaminated Soil and Leachate	Runnymede Channel; Temporary materials processing sites; Temporary material storage sites; Construction compounds; New green open spaces; New Landforms	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials	Negative  Excavation and processing of landfill materials and other potentially contaminated land materials. Migration of contaminants from unexcavated landfills due to compression resulting from placement of materials on landfill. Limited or no contaminant pathway linkage with mitigation in place  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Human Health - Residential: Landfill Gas and Vapour	Runnymede Channel; Temporary materials processing sites; Temporary material storage sites; Construction compounds; New green open spaces; New Landforms	Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Use of excavated material on-site; Temporary stockpiling of materials	Negative  Migration of landfill gas and vapour due to compression of unexcavated landfills by placement of materials.  Temporary (medium-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Human Health - Public open spaces: Landfill Gas and Vapour	Runnymede Channel; Temporary materials processing sites; Temporary material storage sites; Construction compounds; New green open spaces; New Landforms	Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Use of excavated material on-site; Temporary stockpiling of materials	Negative  Migration of landfill gas and vapour due to compression of unexcavated landfills by placement of materials.  Temporary (medium-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Human Health - Commercial / industrial: Landfill Gas and Vapour	Runnymede Channel; Temporary materials processing sites; Temporary material storage sites; Construction compounds; New green open spaces; New Landforms	Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Use of excavated material on-site; Temporary stockpiling of materials	Negative  Migration of landfill gas and vapour due to compression of unexcavated landfills by placement of materials.  Temporary (medium-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.



Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Occupied buildings and underground infrastructure (residential and commercial)	Runnymede Channel; Spelthorne Channel; Temporary materials processing sites; Temporary material storage sites; Construction compounds; New Landforms; New green open spaces	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials; Demolition of buildings	Negative  Buildings, services and underground infrastructure at potential risk from chemical attack from migration of ground contamination and ground gas intrusion due to compression of landfill by overlying site compounds, materials stockpiles, and new landscaping. Limited or no contaminant pathway linkage with mitigation in place, and likely localised, low impact on materials with some inherent chemical resistance and buildings with ground gas protection.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.  Existing ground investigation data currently being processed to create a detailed ground model to inform mitigation.
Soil structure	Runnymede Channel; Spelthorne Channel; Temporary materials processing sites; Temporary material storage sites; Construction compounds; Flood embankments and Erosion prevention; New Landforms	Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Construction of new pedestrian / cycle bridges at Chertsey and Desborough	Negative  Over-compaction and alteration of physical properties of soil. Physical properties unlikely to significantly change with standard practice soil handling mitigation in place. Compaction is temporary and reversible, and localised in construction and material storage / processing areas. Potential negative effect from poor stockpiling management and weathering during long-term storage, likely mitigated by standard practice soil handling.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation is required.  Existing ground investigation data currently being processed to create detailed ground model.
Stability of soil	Runnymede Channel; Spelthorne Channel; Temporary materials processing sites; Temporary material storage sites; Construction compounds; Flood embankments and Erosion prevention; New Landforms	Material excavation (natural ground); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Construction of new pedestrian / cycle bridges at Chertsey and Desborough	Negative  Potential de-stabilisation of existing earthworks, embankments, or other earth structures. Limited to no impact from project activities (such as creating flood channel beneath existing road embankment) assuming standard practice safe distances and temporary works during project activities for existing embankments / structures e.g. road embankments and bridges.  Temporary (short-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation is required.  Existing ground investigation data currently being processed to create detailed ground model.

Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Superficial Geology Deposits – Alluvium	Runnymede Channel; Spelthorne Channel; Bed lowering downstream of Desborough Cut; Temporary materials processing sites; Temporary material storage sites; Construction compounds; New green open spaces; New Landforms	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials; Bed lowering	Negative  Pollution of uncontaminated soils by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping. Pollution of uncontaminated soils and groundwater due to excavation of landfill, made ground outside of landfill areas, and material from River Thames bed lowering. Limited or no contaminant pathway linkage with mitigation in place  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Superficial Geology Deposits - Shepperton Gravel Member	Runnymede Channel; Spelthorne Channel; Bed lowering downstream of Desborough Cut; Temporary materials processing sites; Temporary material storage sites; Construction compounds; New green open spaces; New Landforms	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials; Bed lowering	Negative  Pollution of uncontaminated soils by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping.  Pollution of uncontaminated soils and groundwater due to excavation of landfill, made ground outside of landfill areas, and material from River Thames bed lowering.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Superficial Geology Deposits - Langley Silt Member	Spelthorne Channel; Bed lowering downstream of Desborough Cut; Temporary materials processing sites; Temporary material storage sites; Construction compounds	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials; Bed lowering	Negative  Pollution of uncontaminated soils by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping. Pollution of uncontaminated soils and groundwater due to excavation of landfill, made ground outside of landfill, and material from River Thames bed lowering. Limited or no contaminant pathway linkage with mitigation in place. Low risk of contamination entering geological formation.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.



Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Topsoil and Subsoil	Runnymede Channel; Spelthorne Channel; Abbey Meads Floodway; Permanent maintenance compounds; Temporary materials processing sites; Construction compounds; Temporary material storage sites; New Landforms	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Creation/use of construction compounds; Use of materials processing sites; Temporary stockpiling of materials; Construction of new pedestrian / cycle bridges at Chertsey and Desborough	Negative  Loss of topsoil and subsoil due to contamination or land take. Chemical properties likely to remain largely unchanged with standard practice soil handling mitigation in place. Potential land take from excavation of channel routes. Soils will be reused following removal and long-term storage. Damage and carbon release from excavation not considered here.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation is required.
Topsoil and Subsoil	Runnymede Channel; Spelthorne Channel; Bed lowering downstream of Desborough Cut; Temporary materials processing sites; Temporary material storage sites; Construction compounds	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials	Negative  Pollution of uncontaminated soils by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping. Pollution of uncontaminated soils and groundwater due to excavation of landfill and made ground outside of landfill areas. Limited or no contaminant pathway linkage with mitigation in place.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Secondary A Aquifer - Bagshot Formation	Runnymede Channel; Spelthorne Channel; Temporary materials processing sites; Construction compounds; Temporary material storage sites; New Landforms	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials; Dewatering / over-pumping of waterbodies	Negative  Pollution of uncontaminated soils leading to pollution of aquifers by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping.  Pollution of uncontaminated soils and groundwater due to excavation of landfill and made ground outside of landfill areas.  Limited or no contaminant pathway linkage with primary and tertiary mitigation in place.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.

Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Secondary A Aquifer - Claygate Member	Runnymede Channel; Spelthorne Channel; Bed lowering downstream of Desborough Cut; New Landforms	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials; Dewatering / over-pumping of waterbodies	Negative  Pollution of uncontaminated soils leading to pollution of aquifers by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping.  Pollution of uncontaminated soils and groundwater due to excavation of landfill and made ground outside of landfill areas.  Limited or no contaminant pathway linkage with primary and tertiary mitigation in place.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Principal Aquifer - Shepperton Gravel Member	Runnymede Channel; Spelthorne Channel; Temporary materials processing sites; Construction compounds; Temporary material storage sites; New Landforms	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials; Dewatering / over-pumping of waterbodies	Negative  Pollution of uncontaminated soils leading to pollution of aquifers by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping.  Pollution of uncontaminated soils and groundwater due to excavation of landfill and made ground outside of landfill areas.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Secondary A Aquifer - Alluvium	Runnymede Channel; Spelthorne Channel; Temporary materials processing sites; Construction compounds; Temporary material storage sites; New Landforms	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-	Negative  Pollution of uncontaminated soils leading to pollution of aquifers by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping.  Pollution of uncontaminated soils and groundwater due to excavation of landfill	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.

Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
		site; Temporary stockpiling of materials; Dewatering / over-pumping of waterbodies	and made ground outside of landfill areas.  Limited or no contaminant pathway linkage with primary and tertiary mitigation in place.  Temporary (long-term) duration.	
Groundwater Abstraction Source Protection Zones	Runnymede Channel; Spelthorne Channel; Temporary materials processing sites; Construction compounds; Temporary material storage sites; New Landforms	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials; Dewatering / over-pumping of waterbodies	Negative  Pollution of uncontaminated soils leading to pollution of aquifers by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping.  Pollution of uncontaminated soils and groundwater due to excavation of landfill and made ground outside of landfill areas.  De-watering, treatment of water, and discharge into River Thames. Potential to migrate over large-scale areas. Water source for large population.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Mineral Safeguarding Areas	Runnymede Channel; Spelthorne Channel; Temporary materials processing sites; Construction compounds; Temporary material storage sites; New Landforms; New green open spaces	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials	Negative  Pollution of uncontaminated soils by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping.  Pollution of uncontaminated soils and groundwater due to excavation of landfill and made ground outside of landfill areas. Limited or no contaminant pathway linkage with primary and tertiary mitigation in place. Potential to impact resource in localised areas.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.

Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Unproductive Aquifer - Langley Silt Member	Spelthorne Channel; Temporary materials processing sites; Construction compounds; Temporary material storage sites; New Landforms	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials; Dewatering / over-pumping of waterbodies; Sheet piling	<p>Negative</p> <p>Pollution of uncontaminated soils leading to pollution of aquifers by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping.</p> <p>Pollution of uncontaminated soils and groundwater due to excavation of landfill and made ground outside of landfill areas. Limited or no contaminant pathway linkage with mitigation in place. Unlikely to impact groundwater resource.</p> <p>Temporary (long-term) duration.</p>	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Unproductive Aquifer - London Clay Formation	Runnymede Channel; Temporary materials processing sites; Construction compounds; Temporary material storage sites	Material excavation (contaminated); Material excavation (natural ground); General construction activities (land); Movement of construction vehicles, equipment and operatives (on site); Processing / placement of hazardous waste; Processing / placement of non-hazardous waste; Sheet piling; Creation/use of construction compounds; Use of materials processing sites; Temporary changes in land levels; Construction of road bridges; Use of excavated material on-site; Temporary stockpiling of materials; Dewatering / over-pumping of waterbodies	<p>Negative</p> <p>Pollution of uncontaminated soils leading to pollution of aquifers by migration of contaminants from landfills due to compression from overlying site compounds, materials stockpiles, and new landscaping.</p> <p>Pollution of uncontaminated soils and groundwater due to excavation of landfill and made ground outside of landfill areas. Limited or no contaminant pathway linkage with mitigation in place. Unlikely to impact groundwater resource.</p> <p>Temporary (long-term) duration.</p>	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.

## 4 Non-Significant Operational Effects

**Table 4: Non-Significant Operational Effects**

Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Agricultural Soils	Runnymede Channel; Spelthorne Channel; Flow Control Structures	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	<p>Positive</p> <p>Reduction in flood risk. Control of groundwater levels. Localised areas, infrequent short duration flood events. Reduction in nutrient loss such as nitrates and phosphates by leaching, and erosion of the top layers of soil as a result of reduced flood risk. Reduction of contamination. Increase in quality of soils. Re-use of soils in landscaping.</p> <p>Permanent duration.</p>	No secondary mitigation required as the effect is positive.
Arable and Pasture Land	Runnymede Channel; Spelthorne Channel; Flow Control Structures	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	<p>Positive</p> <p>Reduction in flood risk. Control of groundwater levels. Reduction in nutrient loss such as nitrates and phosphates by leaching, and erosion of the top layers of soil as a result of reduced flood risk. Reduction of contamination. Increase in quality of soils. Re-use of soils in landscaping.</p> <p>Permanent duration.</p>	No secondary mitigation required as the effect is positive.
Superficial Geology Deposits - Shepperton Gravel Member	Runnymede Channel; Spelthorne Channel; Permanent maintenance compounds; New Landforms	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	<p>Negative</p> <p>Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, mobilising contaminants.</p> <p>Permanent duration.</p>	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Superficial Geology Deposits - Shepperton Gravel Member	Runnymede Channel; Spelthorne Channel	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	<p>Positive</p> <p>Reduced flood risk of contaminated land, reduced mobilisation of contaminants into highly vulnerable geological formation and groundwater. Locally to regionally reduced mobilisation of contaminants due to reduced flood risk.</p> <p>Permanent duration.</p>	No secondary mitigation required as the effect is positive.



Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Bedrock Geology - Bagshot Formation	Runnymede Channel; Spelthorne Channel; Permanent maintenance compounds; New Landforms; New green open spaces	Placed material on landfill areas; New landforms	Negative  Migration of contaminants from landfills due to compression from overlying materials and new landscaping. Limited or no contamination pathway linkage with mitigation. Long-term residual effect of lateral migration of contaminants.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Bedrock Geology - Bagshot Formation	Runnymede Channel; Spelthorne Channel; Flood embankments and Erosion prevention	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	Positive  Reduced flood risk of contaminated land, reduced mobilisation of contaminants into geological formation and groundwater.  Permanent duration.	No secondary mitigation required as the effect is positive.
Bedrock Geology - Claygate Member	Runnymede Channel; Spelthorne Channel	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	Positive  Reduced flood risk of contaminated land, reduced mobilisation of contaminants into geological formation and groundwater.  Permanent duration.	No secondary mitigation required as the effect is positive.
Bedrock Geology - Claygate Member	Spelthorne Channel; Bed lowering downstream of Desborough Cut; Permanent maintenance compounds; Runnymede Channel; New Landforms	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	Negative  Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, potentially mobilising contaminants. Migration of contaminants from landfills due to compression from overlying materials and new landscaping. Long-term residual effect of lateral migration of contaminants.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Bedrock Geology - London Clay Formation	Runnymede Channel; Permanent maintenance compounds; New Landforms; New green open spaces	Placed material on landfill areas; New landforms	Negative  Migration of contaminants from landfills due to compression from overlying materials and new landscaping. Limited or no contamination pathway linkage with mitigation. Long-term residual effect of lateral migration of contaminants. Low risk of contamination leaching into formation. Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.



Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Bedrock Geology - London Clay Formation	Runnymede Channel; Flood embankments and Erosion prevention	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	Positive  Reduced flood risk of contaminated land, reduced mobilisation of contaminants into geological formation and groundwater.  Permanent duration.	No secondary mitigation required as the effect is positive.
Mineral Safeguarding Areas	Runnymede Channel; Spelthorne Channel; Permanent maintenance compounds; New Landforms	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	Negative  Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, mobilising contaminants.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Human Health - Residential: Contaminated Soil and Leachate	Permanent maintenance compounds; Runnymede Channel; New Landforms	Placed material on landfill areas; New landforms	Negative  Migration of contaminants from landfills due to compression from overlying materials and new landscaping.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Human Health - Commercial / industrial: Contaminated Soil and Leachate	Permanent maintenance compounds; Runnymede Channel; Spelthorne Channel; New Landforms	Placed material on landfill areas; New landforms	Negative  Migration of contaminants from landfills due to compression from overlying materials and new landscaping. Long-term residual effect of lateral migration of contaminants.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Human Health - Public open spaces: Contaminated Soil and Leachate	Permanent maintenance compounds; Runnymede Channel; Spelthorne Channel; New Landforms	Placed material on landfill areas; New landforms	Negative  Migration of contaminants from landfills due to compression from overlying materials and new landscaping. Long-term residual effect of lateral migration of contaminants.  Temporary (long-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.

Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Human Health - Residential: Landfill Gas and Vapour	Permanent maintenance compounds; Runnymede Channel; Spelthorne Channel; New Landforms	Placed material on landfill areas; New landforms	Negative  Migration of contaminants from landfills due to compression from overlying materials and new landscaping. Residual effect of lateral migration of gas and vapour.  Temporary (medium-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.  Existing ground investigation data currently being processed to create detailed ground model to aid with development of mitigation for permits.
Human Health - Public open spaces: Landfill Gas and Vapour	Permanent maintenance compounds; Runnymede Channel; Spelthorne Channel; New Landforms	Placed material on landfill areas; New landforms	Negative  Migration of contaminants from landfills due to compression from overlying materials and new landscaping. Residual effect of lateral migration of gas and vapour.  Temporary (medium-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.  Existing ground investigation data currently being processed to create detailed ground model to aid with development of mitigation for permits.
Human Health - Commercial / industrial: Landfill Gas and Vapour	Permanent maintenance compounds; Runnymede Channel; Spelthorne Channel; New Landforms	Placed material on landfill areas; New landforms	Negative  Migration of contaminants from landfills due to compression from overlying materials and new landscaping. Residual effect of lateral migration of gas and vapour.  Temporary (medium-term) duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.  Existing ground investigation data currently being processed to create detailed ground model to aid with development of mitigation for permits.
Occupied buildings and underground infrastructure (residential and commercial)	Runnymede Channel; Spelthorne Channel; Permanent maintenance compounds	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	Negative  Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, mobilising contaminants. Migration of contaminants from landfills due to compression from overlying materials and new landscaping.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.

Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
			Limited or no contaminant pathway linkage with mitigation in place, and likely localised, low impact on materials with some inherent chemical resistance and buildings with ground gas protection.  Permanent duration.	
Principal Aquifer – Shepperton Gravel Member	Runnymede Channel; Spelthorne Channel; Permanent maintenance compounds; New Landforms	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	Negative  Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, mobilising contaminants to aquifer.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Secondary A Aquifer - Alluvium	Runnymede Channel; Spelthorne Channel; Flow Control Structures	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	Positive  Reduced flood risk of contaminated land, reduced mobilisation of contaminants into groundwater. Permanent duration.	No secondary mitigation required as the effect is positive.
Secondary A Aquifer - Alluvium	Runnymede Channel; Spelthorne Channel; Permanent maintenance compounds; New Landforms	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	Negative  Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, mobilising contaminants to aquifer. Migration of contaminants from landfills due to compression from overlying materials and new landscaping. Limited or no contaminant pathway linkage with mitigation in place. Potential to migrate over local area.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Secondary A Aquifer - Bagshot Formation	Runnymede Channel; Spelthorne Channel; Flow Control Structures	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	Positive  Reduced flood risk of contaminated land, reduced mobilisation of contaminants into groundwater.  Permanent duration.	No secondary mitigation required as the effect is positive.

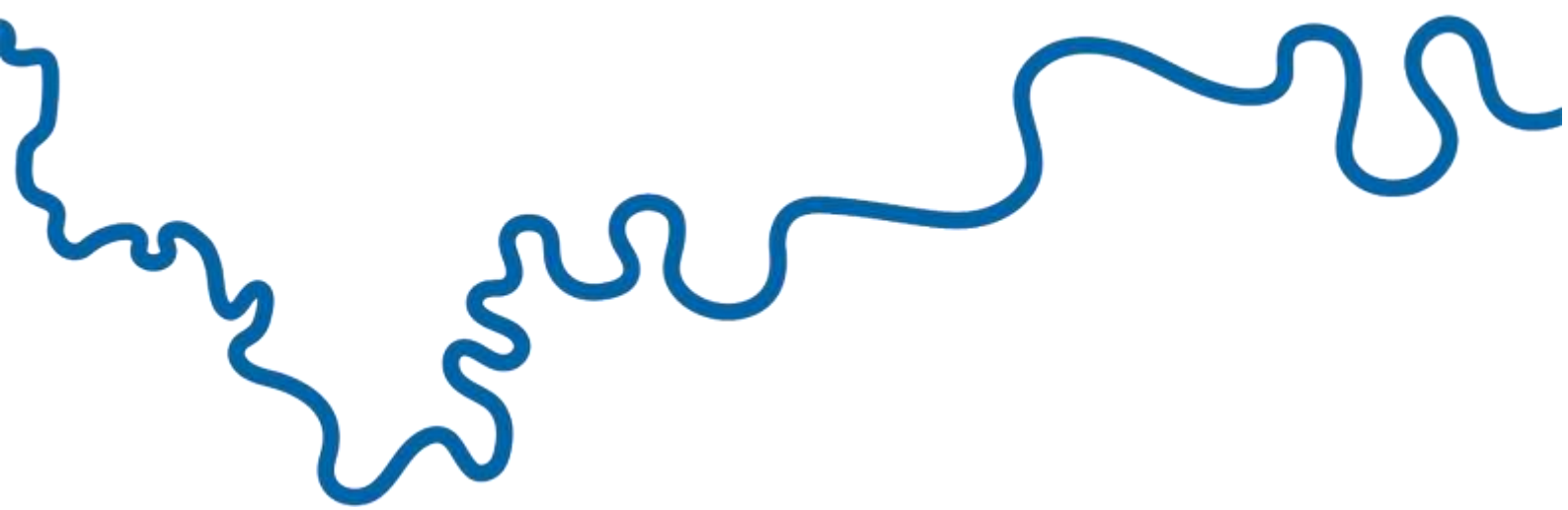
Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Secondary A Aquifer - Bagshot Formation	Runnymede Channel; Spelthorne Channel; Permanent maintenance compounds; New Landforms	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	Negative  Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, mobilising contaminants to aquifer. Migration of contaminants from landfills due to compression from overlying materials and new landscaping. Long-term residual effect of lateral migration of contaminants from landfills. Limited or no contamination pathway linkage with mitigation.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Secondary A Aquifer - Claygate Member	Runnymede Channel; Spelthorne Channel; Permanent maintenance compounds; New Landforms	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	Negative  Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, mobilising contaminants to aquifer. Migration of contaminants from landfills due to compression from overlying materials and new landscaping. Long-term residual effect of lateral migration of contaminants from landfills. Limited or no contamination pathway linkage with mitigation.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Secondary A Aquifer - Claygate Member	Runnymede Channel; Spelthorne Channel; Flow Control Structures	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	Positive  Reduced flood risk of contaminated land, reduced mobilisation of contaminants into groundwater.  Permanent duration.	No secondary mitigation required as the effect is positive.
Principal Aquifer - Shepperton Gravel Member	Runnymede Channel; Spelthorne Channel; Permanent maintenance compounds; New Landforms	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	Positive  Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, mobilising contaminants to aquifer.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.

Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Superficial Geology Deposits - Alluvium	Runnymede Channel; Spelthorne Channel	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	Positive  Reduced flood risk of contaminated land, reduced mobilisation of contaminants into geological formation and groundwater.  Permanent duration.	No secondary mitigation required as the effect is positive.
Superficial Geology Deposits - Alluvium	Runnymede Channel; Spelthorne Channel; Permanent maintenance compounds; New Landforms	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	Negative  Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, mobilising contaminants.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Superficial Geology Deposits - Langley Silt Member	Spelthorne Channel; Permanent maintenance compounds; New Landforms	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	Negative  Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, mobilising contaminants.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Superficial Geology Deposits - Langley Silt Member	Spelthorne Channel	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	Positive  Reduced flood risk of contaminated land, reduced mobilisation of contaminants into geological formation and groundwater.  Permanent duration.	No secondary mitigation required as the effect is positive.
Topsoil and Subsoil	Runnymede Channel; Spelthorne Channel; Flow Control Structures	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	Positive  Reduction in flood risk. Control of groundwater levels. Reduction in nutrient loss such as nitrates and phosphates by leaching, and erosion of the top layers of soil as a result of reduced flood risk. Reduction of contamination. Increase in quality of soils. Re-use of soils in landscaping.  Permanent duration.	No secondary mitigation required as the effect is positive.

Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Topsoil and Subsoil	Runnymede Channel; Spelthorne Channel; Permanent maintenance compounds; New Landforms	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	Negative  Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, mobilising contaminants.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Groundwater Abstraction Source Protection Zones	Runnymede Channel; Spelthorne Channel; Permanent maintenance compounds; New Landforms	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	Negative  Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, mobilising contaminants to aquifer.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Unproductive Aquifer - Langley Silt Member	Runnymede Channel; Spelthorne Channel; Permanent maintenance compounds; New Landforms	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	Negative  Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, mobilising contaminants to aquifer. Migration of contaminants from landfills due to compression from overlying materials and new landscaping. Long-term residual effect of lateral migration of contaminants from landfills. Limited or no contamination pathway linkage with mitigation.  Permanent duration.	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Unproductive Aquifer - Langley Silt Member	Runnymede Channel; Spelthorne Channel; Flow Control Structures	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	Positive  Reduced flood risk of contaminated land, reduced mobilisation of contaminants into groundwater.  Permanent duration.	No secondary mitigation required as the effect is positive.



Receptor Name	Project Component	Project Activity	Description of Effects	Secondary Mitigation
Unproductive Aquifer - London Clay Formation	Runnymede Channel; Spelthorne Channel; Permanent maintenance compounds; New Landforms	Placed material on landfill areas; New landforms; Channel maintenance to restore design profile	<p>Negative</p> <p>Localised periodic channel maintenance in areas of significant sediment deposition to maintain design bed level, mobilising contaminants to aquifer. Migration of contaminants from landfills due to compression from overlying materials and new landscaping. Long-term residual effect of lateral migration of contaminants from landfills. Limited or no contamination pathway linkage with mitigation.</p> <p>Permanent duration.</p>	The identified primary and tertiary mitigation is sufficient in reducing this effect so that it is not significant. No secondary mitigation required with waste environmental permits in place, an environmental permit will only be granted if effects on human health and the environment associated with contamination are within acceptable limits.
Unproductive Aquifer - London Clay Formation	Runnymede Channel; Flow Control Structures	Existence of the flood channel and other components; Operation during flood events; Use of flow control structures	<p>Positive</p> <p>Reduced flood risk of contaminated land, reduced mobilisation of contaminants into groundwater.</p> <p>Permanent duration.</p>	No secondary mitigation required as the effect is positive.



The River Thames Scheme represents a new landscape-based approach to creating healthier, more resilient and more sustainable communities by reducing the risk of flooding and creating high quality natural environments.