

## APPENDIX B – OPTIONS ASSESSMENT

A review of options for each of the 15 Wards within the Borough has been completed to inform the development of preferred options scenarios.

Appendix B: *LBHF\_SWMP\_Options\_Assessment\_v02.pdf*

# SWMP Options Assessment - London Borough of Hammersmith Fulham

| Measures Opportunity Assessment Scoring System |  |
|--|--|
|  | There are opportunities for implementation of this mitigation measure within the Ward Measure should be considered in in options Assessment.   |
|  | There are limited opportunities for implementation of this mitigation measure within the Ward Further investigation of measure will be required prior to confirmation of appropriateness for/within the Ward but should be considered within Options Assessment. |
|  | There are no opportunities for implementation of measure within the Ward. The measure it not suitable or required to address the surface water flood risk within the Ward.   |
| N/A  | Not applicable - to be used where not other measures are identified.   |

| Options Assessment Shortlisting Criteria (see SWMP Technical Guidance for Further Information) |  |  |
|--|--|--|
| Criteria   | Description  | Score  |
| Technical  | <ul style="list-style-type: none"> <li>Is it technically possible and buildable?</li> <li>Will it be robust and reliable?</li> </ul> | -2: Severe negative outcome<br>-1: Moderate negative outcome<br>0: Neutral<br>+1: Moderate positive outcome<br>+2: High positive outcome |
| Economic   | <ul style="list-style-type: none"> <li>Will benefits exceed costs?</li> </ul>  |  |
| Social   | <ul style="list-style-type: none"> <li>Will the community benefit or suffer from implementation of the measure?</li> </ul>           |  |
| Environment  | <ul style="list-style-type: none"> <li>Will the environment benefit or suffer from implementation of the measure?</li> </ul>         |  |
| Objectives   | <ul style="list-style-type: none"> <li>Will it help to achieve the objectives of the SWMP partnership?</li> </ul>                    |  |

| Ward ID  | 1 College Park and Old Oak                        |                             |   |   |          |  |        |   |               |  |            |   |               |                |  |
|----------|---|-----------------------------|---|---|----------|--|--------|---|---------------|--|------------|---|---------------|----------------|--|
| Measure  | Initial Assessment                                | Location / Specific Details | Technical   | Technical Score   | Economic | Economic Score   | Social | Social Score  | Environmental | Env Score  | Objectives | Objectives Score  | Overall Score | Carry forward? |  |
| SOURCE   | Green Roof  | Green                       | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | Minimal suitable buildings within the Ward.   | -2       | Potential costs with modification of structures and installation.                                      | -1     | Aesthetic value with education potential  | 0             | Provision of habitat, water air quality treatment & noise reduction. | 2          | Depending on design, significant quantities of water could be retained locally.                     | 1             | 0 No           |  |
|          | Soakaways   | Yellow                      | Suitability of infiltration SuDS is uncertain. Should be confirmed on a site-by-site basis where geological investigations have been completed.   | Potentially limited by geology of area.   | 0        | Moderate initial and maintenance cost.   | 0      | Below ground, so does not affect land use   | 0             | Potential to discharge to groundwater with treatment measures.       | 0          | Potential to discharge large volumes of water dependent on geology.                                 | 1             | 1 Yes          |  |
|          | Swales  | Yellow                      | Develop within open space running adjacent to roads such as the border of the playing fields along Du Cane Road.  | Potential restricted by slope of land. System would need to be developed to connect to drainage network as infiltration is limited. | -2       | Moderate cost with low maintenance requirements.   | 0      | Intrusion on playing field area.  | 0             | Planting can be used to enhance biodiversity value.                  | 1          | Would attenuate discharge to surface water network: may benefit downstream areas.                   | 0             | -1 No          |  |
|          | Permeable Paving                                  | Green                       | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be re surfaced. Limited Council land available for installation.  | Limited Council land available for installation.  | -1       | Low cost with moderate maintenance requirements.   | 1      | Aesthetic appearance.   | 0             | Water quality treatment through filtration process.                  | 1          | Allow for infiltration of rainfall during less intense, more frequent events.                       | 0             | 1 Yes          |  |
|          | Rainwater Harvesting                              | Green                       | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.  | 0        | Reduced water supply and drainage costs with operational system.                                       | 1      | Potential health & safety issues in public buildings.   | 0             | Reduced water demand for buildings.                                  | 1          | Potential to retain moderate volumes from rainwater.  | 1             | 3 Yes          |  |
|          | Rain gardens and tree planters                    | Green                       | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.   | 1        | Low cost to set up with regular maintenance requirements.  | 1      | Increased green space.  | 0             | Increase biodiversity with water quality benefits.                   | 2          | Minor at individual level, widespread implementation needed to achieve benefits.                    | 1             | 5 Yes          |  |
|          | Detention Basins                                  | Yellow                      | Potential to develop open spaces to have a multifunctional use through lowering of ground levels to form a basin.   | Technically possible depending on location of below ground services.  | 1        | Low cost to construct and maintenance would be that of existing site.                                  | 1      | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. | 0             | No alteration to environmental benefit                               | 0          | Potential to store large volumes of surface water and discharge as appropriate.                     | 2             | 4 Yes          |  |
|          | Ponds and Wetlands                                | Yellow                      | These features tend to require a supply of water. Feasibility would need to be examined.  | Difficult with no regular source of water to replenish systems.   | -2       | Moderate initial cost and high cost to maintain  | -2     | Provide amenity and education resource. Health & Safety concerns.   | 0             | Provide habitat diversity.   | 2          | Potentially could retain large volumes of surface water.  | 1             | -1 No          |  |
| PATHWAY  | Increasing Capacity in Drainage Systems           | Red                         | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.  | -2       | Extensive works with high cost. Minimal maintenance.   | -2     | Reduced flood waters across flooding hotspots.  | 0             | No impact.   | 0          | May only be effective for smaller, less intensive rainfall events.                                  | -1            | -5 No          |  |
|          | Separation of Foul and Surface Water Sewers       | Red                         | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections   | -2       | High cost of intrusive works   | -2     | Disruption during construction,   | 0             | Reduced pressure of combined network through reduced inflow.         | 1          | Would act to provide additional capacity and attenuate flows.                                       | 1             | -2 No          |  |
|          | Improved Maintenance Regimes                      | Green                       | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.   | 2        | Slight modification to existing maintenance regimes.   | 1      | Limited disruption.   | 0             | No impact.   | 0          | Most effective for low magnitude events.  | 1             | 4 Yes          |  |
|          | Managing Overland Flows (Online Storage)          | Yellow                      | Limited potential for online storage as little open space alongside main flow paths.  | Limited space   | -1       | Moderate initial cost with minimal maintenance requirements.   | 1      | Potential disruption during construction.   | 0             | Potential disruption during construction                             | 0          | Potential to retain large volumes of surface water upstream of catchment.                           | 0             | 0 No           |  |
|          | Managing Overland Flows (Preferential Flow paths) | Green                       | Modify streets that already tend to channel surface water, such as Wood Lane & Wulfstan Street through lowering the road, raising pavements, in installation of speed bumps.  | May encounter problems with services and access requirements.   | 0        | Moderate cost with minimal additional maintenance requirements.  | -1     | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. | 0             | No impact.   | 0          | Effective to convey surface water in controlled manner.   | 2             | 1 Yes          |  |
|          | Land Management Practices                         | Green                       | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. Implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into site maintenance regime.   | 2        | Slight modification to existing maintenance regimes.   | 1      | Limited disruption.   | 0             | Increased infiltration, reduced need for irrigation.                 | 1          | Reduced surface water runoff from site during high intensity events.                                | 1             | 5 Yes          |  |
|          | Deculverting Watercourse(s)                       | Red                         | No watercourses in borough to deculvert   | N/A   | 0        | N/A  | 0      | N/A   | 0             | N/A  | 0          | N/A   | 0             | 0 No           |  |
| RECEPTOR | Improved Weather Warning                          | Green                       | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more effective if coupled with community education.   | Utilise existing alert procedures.  | 1        | Develop existing communication systems.  | 1      | Communication issues but will provide valuable warning time.  | 0             | No impact.   | 0          | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0             | 2 Yes          |  |
|          | Planning Policies to Influence Development        | Green                       | Throughout Ward; Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.                                  | 2        | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | -1     | Reduces need for later retrofitting of features.  | 0             | Potential sustainability credits for implementation of features.     | 1          | Management of surface water at site level.  | 1             | 3 Yes          |  |
|          | Temporary or Demountable Flood Defences           | Green                       | Use these in areas where buildings can not be easily made resistant or resilient to flooding. Specifically for buildings modelled to be at risk of surface water flooding.  | Potential issues with presence required to set up defences at short notice.   | 0        | Low cost and can prevent significant damage to properties.   | 2      | Considerations of property blight and responsibility for maintenance and operation.                       | 0             | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0             | 2 Yes          |  |
|          | Social Change, Education and Awareness            | Green                       | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website.                    | 1        | Low cost to update website and provide information.  | 2      | May be issues with language barriers and less mobile residents attendance to information events.          | 0             | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0             | 3 Yes          |  |
|          | Improved Resilience and Resistance Measures       | Green                       | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.  | 2        | Cost will vary depending on the system being implemented.  | 0      | Minimal disruption, but may blight houses if features are obvious. Reduce clean-up time.                  | 0             | No impact.   | 0          | Will reduce damage to properties and help with faster recovery.                                     | 0             | 2 Yes          |  |

| Ward ID                                     | 2 Wormholt and White City                         |   |   |                                    |  |   |   |  |  |            |   |   |               |                |
|---|---|---|---|------------------------------------|--|---|---|--|--|------------|---|---|---------------|----------------|
| Measure                                     | Initial Assessment                                | Location / Specific Details   | Technical   | Technical Score                    | Economic   | Economic Score                          | Social  | Social Score   | Environmental  | Env Score  | Objectives  | Objectives Score  | Overall Score | Carry forward? |
| SOURCE                                      | Green Roof  | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | No suitable buildings within the Ward.  | -2                                 | Potential costs with modification of structures and installation.                                      | -1                                      | Aesthetic value with education potential  | 0  | Provision of habitat, water air quality treatment & noise reduction. | 2          | Depending on design, significant quantities of water could be retained locally.   | 1   | 0             | No             |
|   | Soakaways   | Infiltration SuDs potentially unsuitable. Should be confirmed on a site-by-site basis where geological investigations have been completed.  | Potentially limited by geology of area.   | 0                                  | Moderate initial and maintenance cost.   | 0                                       | Below ground, so does not affect land use   | 0  | Potential to discharge to groundwater with treatment measures.       | 0          | Potential to discharge large volumes of water dependent on geology.               | 0   | 0             | No             |
|   | Swales  | Develop within open space running adjacent to roads such as the border of Wormholt Park.  | Potential restricted by slope of land. System would need to be developed to connect to drainage network as infiltration is limited.   | -2                                 | Moderate cost with low maintenance requirements.   | 0                                       | Intrusion on playing field area.  | 0  | Planting can be used to enhance biodiversity value.                  | 1          | Would attenuate discharge to surface water network: may benefit downstream areas. | 0   | -1            | No             |
|   | Permeable Paving                                  | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be re surfaced.   | Traffic loads may limit this to smaller roads and car parking areas. Method of discharge dependent on geology.  | 1                                  | Low cost with moderate maintenance requirements.   | 1                                       | Aesthetic appearance  | 0  | Water quality treatment through filtration process                   | 1          | Allow for infiltration of rainfall during less intense, more frequent events.     | 0   | 3             | Yes            |
|   | Rainwater Harvesting                              | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.  | 0                                  | Reduced water supply and drainage costs with operational system.                                       | 1                                       | Potential health & safety issues in public buildings.   | 0  | Reduced water demand for buildings.                                  | 1          | Potential to retain moderate volumes from rainwater.                              | 1   | 3             | Yes            |
|   | Rain gardens and tree planters                    | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.   | 1                                  | Low cost to set up with regular maintenance requirements.  | 1                                       | Increased green space.  | 0  | Increase biodiversity with water quality benefits.                   | 2          | Minor at individual level, widespread implementation needed to achieve benefits.  | 1   | 5             | Yes            |
|   | Detention Basins                                  | Potential to develop open spaces to have a multifunctional use through lowering of ground levels to form a basin. Potential in Wormholt park as adjacent to flood hotspot.  | Adjacent to hotspot, so contouring of the land to encourage flow would be required.   | 1                                  | Low cost to construct and maintenance would be that of existing site.                                  | 1                                       | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. | 0  | No alteration to environmental benefit                               | 0          | Potential to store large volumes of surface water and discharge as appropriate.   | 2   | 4             | Yes            |
|   | Ponds and Wetlands                                | These features tend to require a supply of water. Feasibility would need to be examined.  | Difficult with no regular source of water to replenish systems.   | -2                                 | Moderate initial cost and high cost to maintain  | -2                                      | Provide amenity and education resource. Health & Safety concerns.   | 0  | Provide habitat diversity,   | 2          | Potentially could retain large volumes of surface water.                          | 1   | -1            | No             |
| PATHWAY                                     | Increasing Capacity in Drainage Systems           | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.  | -2                                 | Extensive works with high cost. Minimal maintenance.   | -2                                      | Reduced flood waters across flooding hotspots.  | 0  | No impact.   | 0          | May only be effective for smaller, less intensive rainfall events.                | -1  | -5            | No             |
|   | Separation of Foul and Surface Water Sewers       | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections   | -2                                 | High cost of intrusive works   | -2                                      | Disruption during construction,   | 0  | Reduced pressure of combined network through reduced inflow.         | 1          | Would act to provide additional capacity and attenuate flows.                     | 1   | -2            | No             |
|   | Improved Maintenance Regimes                      | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.   | 2                                  | Slight modification to existing maintenance regimes.   | 1                                       | Limited disruption.   | 0  | No impact.   | 0          | Most effective at low magnitude events.   | 1   | 4             | Yes            |
|   | Managing Overland Flows (Online Storage)          | The main flow paths are major roads. In order to reduce volume of water on the road, modify adjoining roads through streetscaping (road humps, raised kerbs etc.) to prevent runoff onto main roads.  | Potentially complex as some roads have moderate gradients.  | 0                                  | Moderate initial cost with minimal maintenance requirements.   | 1                                       | Potential disruption during construction  | 0  | Potential disruption during construction                             | 0          | Potential to retain large volumes of surface water upstream of catchment.         | 2   | 3             | Yes            |
|   | Managing Overland Flows (Preferential Flow paths) | Main flow routes are major roads. Limited potential for online storage of significant volumes that does not affect major transport routes.  | Current flow paths are not desirable. Dense development and defined topography will limit the redirection of overland flow.   | -2                                 | Moderate cost with minimal additional maintenance requirements.  | -1                                      | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. | 0  | No impact.   | 0          | Effective to convey surface water in controlled manner.                           | 2   | -1            | No             |
|   | Land Management Practices                         | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. Implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into site maintenance regime of schools.  | 2                                  | Slight modification to existing maintenance regimes.   | 1                                       | Limited disruption.   | 0  | Increased infiltration, reduced need for irrigation.                 | 1          | Reduced surface water runoff from site during high intensity events.              | 0   | 4             | Yes            |
|   | Deculverting Watercourse(s)                       | No watercourses in borough to deculvert   | N/A   | 0                                  | N/A  | 0                                       | N/A   | 0  | N/A  | 0          | N/A   | 0   | 0             | No             |
|   | RECEPTOR  | Improved Weather Warning  | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more effective if coupled with community education. | Utilise existing alert procedures. | 1  | Develop existing communication systems. | 1   | Communication issues but will provide valuable warning time. | 0  | No impact. | 0   | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0             | 2              |
| Planning Policies to Influence Development  |   | Throughout Ward; Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.  | 2                                  | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | -1                                      | Reduces need for later retrofitting of features.  | 0  | Potential sustainability credits for implementation of features.     | 1          | Management of surface water at site level.  | 1   | 3             | Yes            |
| Temporary or Demountable Flood Defences     |   | Use these in areas where buildings can not be easily made resistant or resilient to flooding.   | Potential issues with presence required to set up defences at short notice.   | 0                                  | Low cost and can prevent significant damage to properties.   | 2                                       | Considerations of property blight and responsibility for maintenance and operation.                       | 0  | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.   | 0   | 2             | Yes            |
| Social Change, Education and Awareness      |   | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website.  | 1                                  | Low cost to update website and provide information.  | 2                                       | May be issues with language barriers and less mobile residents attendance to information events.          | 0  | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.   | 0   | 3             | Yes            |
| Improved Resilience and Resistance Measures |   | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.  | 2                                  | Cost will vary depending on the system being implemented.  | 0                                       | Minimal disruption, but may blight houses if features are obvious. Reduce clean-up time.                  | 0  | No impact.   | 0          | Will reduce damage to properties and help with faster recovery.                   | 0   | 2             | Yes            |

| Ward ID  | 3 Shepherd's Bush Green                           |   |   |                 |  |                |   |              |  |           |   |                  |               |                |
|----------|---|---|---|-----------------|--|----------------|---|--------------|--|-----------|---|------------------|---------------|----------------|
| Measure  | Initial Assessment                                | Location / Specific Details   | Technical   | Technical Score | Economic   | Economic Score | Social  | Social Score | Environmental  | Env Score | Objectives  | Objectives Score | Overall Score | Carry forward? |
| SOURCE   | Green Roof  | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | Potential issues with structures of buildings.  |                 | Potential costs with modification of structures and installation.                                      | -1             | Aesthetic value with education potential  | 0            | Provision of habitat, water air quality treatment & noise reduction. |           | Depending on design, significant quantities of water could be retained locally.                     | 1                | 1             | Yes            |
|          | Soakaways   | Infiltration SuDS potentially unsuitable. Should be confirmed on a site-by-site basis where geological investigations have been completed.  | Potentially limited by geology of area.   |                 | Moderate initial and maintenance cost.   | 0              | Below ground, so does not affect land use   | 0            | Potential to discharge to groundwater with treatment measures.       |           | Potential to discharge large volumes of water dependent on geology.                                 | 0                | 0             | No             |
|          | Swales  | Develop within open space running adjacent to roads such as the border of Shepherd's Bush Common.   | System would need to be developed to connect to drainage network as infiltration is limited. Would coincide with a key overland flow route. |                 | Moderate cost with low maintenance requirements.   | 0              | Intrusion onto park area.   | 0            | Planting can be used to enhance biodiversity value.                  |           | Would attenuate discharge to surface water network: may benefit downstream areas.                   | 0                | 1             | Yes            |
|          | Permeable Paving                                  | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be re surfaced.   | Traffic loads may limit this to smaller roads and car parking areas. Method of discharge dependent on geology.                              |                 | Low cost with moderate maintenance requirements.   | 1              | Aesthetic appearance.   | 0            | Water quality treatment through filtration process.                  |           | Allow for infiltration of rainfall during less intense, more frequent events.                       | 0                | 3             | Yes            |
|          | Rainwater Harvesting                              | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.  |                 | Reduced water supply and drainage costs with operational system.                                       | 0              | Potential health & safety issues in public buildings.   | 0            | Reduced water demand for buildings.                                  |           | Potential to retain moderate volumes from rainwater.  | 1                | 3             | Yes            |
|          | Rain gardens and tree planters                    | Throughout Ward where existing tree pits could be expanded.   | Implementation with slight adjustment of the surface drainage network.  |                 | Low cost to set up with regular maintenance requirements.  | 1              | Increased green space.  | 0            | Increase biodiversity with water quality benefits.                   |           | Minor at individual level, widespread implementation needed to achieve benefits.                    | 1                | 5             | Yes            |
|          | Detention Basins                                  | Potential to develop open spaces to have a multifunctional use through lowering of ground levels to form a basin around Brook Green.  | Technically possible depending on location of below ground services.  |                 | Low cost to construct and maintenance would be that of existing site.                                  | 1              | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. | 0            | No alteration to environmental benefit                               |           | Potential to store large volumes of surface water and discharge as appropriate.                     | 2                | 4             | Yes            |
|          | Ponds and Wetlands                                | Enhance the capacity of the existing pond in Hammersmith Park to be able to attenuate additional volumes of surface water runoff.   | Enhance existing pond.  |                 | Moderate initial cost and high cost to maintain  | 1              | Provide amenity and education resource. Health & Safety concerns.   | 0            | Provide habitat diversity.   |           | Potentially could retain large volumes of surface water.  | 1                | 3             | Yes            |
| PATHWAY  | Increasing Capacity in Drainage Systems           | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.  |                 | Extensive works with high cost. Minimal maintenance.   | -2             | Reduced flood waters across flooding hotspots.  | 0            | No impact.   |           | May only be effective for smaller, less intensive rainfall events.                                  | -1               | -5            | No             |
|          | Separation of Foul and Surface Water Sewers       | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections   |                 | High cost of intrusive works   | -2             | Disruption during construction.   | 0            | Reduced pressure of combined network through reduced inflow.         |           | Would act to provide additional capacity and attenuate flows.                                       | 1                | -2            | No             |
|          | Improved Maintenance Regimes                      | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.   |                 | Slight modification to existing maintenance regimes.   | 2              | Limited disruption.   | 0            | No impact.   |           | Most effective for low magnitude events.  | 1                | 4             | Yes            |
|          | Managing Overland Flows (Online Storage)          | Limited opportunity as main flow paths are defined by road structures. Potential to store water in tanks below ground.  | Storage below road level. Likely to have issues with services.  |                 | High initial cost and maintenance requirements.  | -2             | Potential disruption during construction.   | 0            | Reduced contaminates above ground.                                   |           | Potential to retain large volumes of surface water at critical locations.                           | 2                | -1            | No             |
|          | Managing Overland Flows (Preferential Flow paths) | Main flow routes are major roads. Limited potential for online storage of significant volumes that does not affect major transport routes.  | Construction works are not desirable. Dense development and defined topography will limit the redirection of overland flow.                 |                 | Moderate cost with minimal additional maintenance requirements.  | -2             | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. | 0            | No impact.   |           | Effective to convey surface water in controlled manner.   | 2                | -1            | No             |
|          | Land Management Practices                         | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. Implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Through education and planning policy.  |                 | Minimal  | 2              | Limited disruption.   | 0            | Increased infiltration, reduced need for irrigation.                 |           | Reduced surface water runoff from site during high intensity events.                                | 1                | 5             | Yes            |
|          | Deculverting Watercourse(s)                       | No watercourses in borough to deculvert   | N/A   |                 | 0 N/A  | 0              | N/A   | 0            | N/A  |           | 0   | 0                | 0             | No             |
| RECEPTOR | Improved Weather Warning                          | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more effective if coupled with community education.   | Utilise existing alert procedures.  |                 | Develop existing communication systems.  | 1              | Communication issues but will provide valuable warning time.  | 0            | No impact.   |           | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0                | 2             | Yes            |
|          | Planning Policies to Influence Development        | Throughout Ward; Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.  |                 | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | 2              | Reduces need for later retrofitting of features.  | 0            | Potential sustainability credits for implementation of features.     |           | Management of surface water at site level.  | 1                | 3             | Yes            |
|          | Temporary or Demountable Flood Defences           | Use these in areas where buildings can not be easily made resistant or resilient to flooding.   | Potential issues with presence required to set up defences at short notice.   |                 | Low cost and can prevent significant damage to properties.   | 0              | Considerations on property blight and responsibility for maintenance and operation.                       | 0            | No impact.   |           | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 2             | Yes            |
|          | Social Change, Education and Awareness            | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website.                            |                 | Low cost to update website and provide information.  | 1              | May be issues with language barriers and less mobile residents attendance to information events.          | 0            | No impact.   |           | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 3             | Yes            |
|          | Improved Resilience and Resistance Measures       | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.  |                 | Cost will vary depending on the system being implemented.  | 2              | Minimal disruption, but may blight houses if features are obvious. Reduce clean up time.                  | 0            | No impact.   |           | Will reduce damage to properties and help with faster recovery.                                     | 0                | 2             | Yes            |

| Ward ID  | 4 Askw  | Initial Assessment | Location / Specific Details   | Technical  | Technical Score | Economic   | Economic Score | Social  | Social Score | Environmental  | Env Score | Objectives  | Objectives Score | Overall Score | Carry forward? |
|----------|---|--------------------|---|--|-----------------|--|----------------|---|--------------|--|-----------|---|------------------|---------------|----------------|
| SOURCE   | Green Roof  | Green              | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | Potential issues with structures of buildings.   | -1              | Potential costs with modification of structures and installation.                                      | -1             | Aesthetic value with education potential  | 0            | Provision of habitat, water air quality treatment & noise reduction. | 2         | Depending on design, significant quantities of water could be retained locally.                     | 1                | 1             | Yes            |
|          | Soakaways   | Yellow             | Infiltration SuDS potentially unsuitable. Should be confirmed on a site-by-site basis where geological investigations have been completed.  | Potentially limited by geology of area.  | 0               | Moderate initial and maintenance cost.   | 0              | Below ground, so does not affect land use   | 0            | Potential to discharge to groundwater with treatment measures.       | 0         | Potential to discharge large volumes of water dependent on geology.                                 | 0                | 0             | No             |
|          | Swales  | Yellow             | Develop within open space running adjacent to roads such as the border of Wendell Park.   | The road adjacent to the park is less subject to surface water flooding. The likely effect would be minimal.     | -2              | Moderate cost with low maintenance requirements.   | 0              | Intrusion on park area.   | 0            | Planting can be used to enhance biodiversity value.                  | 1         | Would attenuate discharge to surface water network: may benefit downstream areas.                   | 0                | -1            | No             |
|          | Permeable Paving                                  | Green              | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be resurfaced.  | Traffic loads may limit this to smaller roads and car parking areas. Method of discharge dependent on geology.   | 1               | Low cost with moderate maintenance requirements.   | 1              | Aesthetic appearance.   | 0            | Water quality treatment through filtration process.                  | 1         | Allow for infiltration of rainfall during less intense, more frequent events.                       | 0                | 3             | Yes            |
|          | Rainwater Harvesting                              | Green              | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.   | 0               | Reduced water supply and drainage costs with operational system.                                       | 1              | Potential health & safety issues in public buildings.   | 0            | Reduced water demand for buildings.                                  | 1         | Potential to retain moderate volumes from rainwater.  | 1                | 3             | Yes            |
|          | Rain gardens and tree planters                    | Green              | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.                              | 1               | Low cost to set up with regular maintenance requirements.  | 1              | Increased green space.  | 0            | Increase biodiversity with water quality benefits.                   | 2         | Minor at individual level, widespread implementation needed to achieve benefits.                    | 1                | 5             | Yes            |
|          | Detention Basins                                  | Yellow             | Potential to develop open spaces to have a multifunctional use through lowering of ground levels to form a basin. Potential to develop in Wendell Park.   | Technically possible through use of existing flow paths.   | 1               | Low cost to construct and maintenance would be that of existing site.                                  | 1              | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. | 0            | No alteration to environmental benefit                               | 0         | Potential to store large volumes of surface water and discharge as appropriate.                     | 2                | 4             | Yes            |
|          | Ponds and Wetlands                                | Yellow             | These features tend to require a supply of water. Feasibility would need to be examined.  | Difficult with no regular source of water to replenish systems.  | -2              | Moderate initial cost and high cost to maintain  | -2             | Provide amenity and education resource. Health & Safety concerns.   | 0            | Provide habitat diversity.   | 2         | Potentially could retain large volumes of surface water.  | 1                | -1            | No             |
| PATHWAY  | Increasing Capacity in Drainage Systems           | Red                | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.   | -2              | Extensive works with high cost. Minimal maintenance.   | -2             | Reduced flood waters across flooding hotspots.  | 0            | No impact.   | 0         | May only be effective for smaller, less intensive rainfall events.                                  | -1               | -5            | No             |
|          | Separation of Foul and Surface Water Sewers       | Red                | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections  | -2              | High cost of intrusive works   | -2             | Disruption during construction,   | 0            | Reduced pressure of combined network through reduced inflow.         | 1         | Would act to provide additional capacity and attenuate flows.                                       | 1                | -2            | No             |
|          | Improved Maintenance Regimes                      | Green              | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.  | 2               | Slight modification to existing maintenance regimes.   | 1              | Limited disruption.   | 0            | No impact.   | 0         | Suitable for low magnitude events.  | 1                | 4             | Yes            |
|          | Managing Overland Flows (Online Storage)          | Yellow             | Limited opportunity as main flow paths are defined by road structures. Potential to store water in tanks below ground.  | Storage below road level. Likely to have issues with services.   | -2              | High initial cost and maintenance requirements.  | -2             | Potential disruption during construction.   | 0            | Reduced contaminates above ground.                                   | 1         | Potential to retain large volumes of surface water at critical locations.                           | 1                | -2            | No             |
|          | Managing Overland Flows (Preferential Flow paths) | Yellow             | Modify streets that already tend to channel surface water, such as Greenside Road and Westville Road to retain water within the street and prevent flows into basements. Large alterations may be required to contain the anticipated volumes of water.   | May encounter problems with services and access requirements.  | 0               | Moderate cost with minimal additional maintenance requirements.  | -1             | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. | 0            | No impact.   | 0         | Effective to convey surface water in controlled manner.   | 2                | 1             | Yes            |
|          | Land Management Practices                         | Yellow             | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. Implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into site maintenance regime.  | 2               | Slight modification to existing maintenance regimes.   | 1              | Limited disruption.   | 0            | Increased infiltration, reduced need for irrigation.                 | 1         | Reduced surface water runoff from site during high intensity events.                                | 1                | 5             | Yes            |
|          | Deculverting Watercourse(s)                       | Red                | No watercourses in borough to deculvert   | N/A  | 0               | N/A  | 0              | N/A   | 0            | N/A  | 0         | N/A   | 0                | 0             | No             |
| RECEPTOR | Improved Weather Warning                          | Green              | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more affective if coupled with community education.   | Utilise existing alert procedures.   | 1               | Develop existing communication systems.  | 1              | Communication issues but will provide valuable warning time.  | 0            | No impact.   | 0         | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0                | 2             | Yes            |
|          | Planning Policies to Influence Development        | Green              | Throughout Ward: Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.               | 2               | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | -1             | Reduces need for later retrofitting of features.  | 0            | Potential sustainability credits for implementation of features.     | 1         | Management of surface water at site level.  | 1                | 3             | Yes            |
|          | Temporary or Demountable Flood Defences           | Green              | Use these in areas where buildings can not be easily made resistant or resilient to flooding.   | Potential issues with presence required to set up defences at short notice.                                      | 0               | Low cost and can prevent significant damage to properties.   | 2              | Considerations of property blight and responsibility for maintenance and operation.                       | 0            | No impact.   | 0         | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 2             | Yes            |
|          | Social Change, Education and Awareness            | Green              | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website. | 1               | Low cost to update website and provide information.  | 2              | May be issues with language barriers and less mobile residents attendance to information events.          | 0            | No impact.   | 0         | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 3             | Yes            |
|          | Improved Resilience and Resistance Measures       | Green              | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.                       | 2               | Cost will vary depending on the system being implemented.  | 0              | Minimal disruption, but may blight houses if features are obvious. Reduce clean-up time.                  | 0            | No impact.   | 0         | Will reduce damage to properties and help worth faster recovery.                                    | 0                | 2             | Yes            |

| Ward ID  | 5 Ravenscourt Park                                |   |  |                 |   |                |   |              |  |           |   |                  |               |                |  |
|----------|---|---|--|-----------------|---|----------------|---|--------------|--|-----------|---|------------------|---------------|----------------|--|
| Measure  | Initial Assessment                                | Location / Specific Details   | Technical  | Technical Score | Economic  | Economic Score | Social  | Social Score | Environmental  | Env Score | Objectives  | Objectives Score | Overall Score | Carry forward? |  |
| SOURCE   | Green Roof  | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | Potential issues with structures of buildings.   |                 | Potential costs with modification of structures and installation.   | -1             | Aesthetic value with education potential  |              | Provision of habitat, water air quality treatment & noise reduction. | 2         | Depending on design, significant quantities of water could be retained locally.                     | 1                | 1             | Yes            |  |
|          | Soakaways   | Infiltration SuDS potentially unsuitable. Should be confirmed on a site-by-site basis where geological investigations have been completed.  | Potentially limited by geology of area.  |                 | Moderate initial and maintenance cost.  | 0              | Below ground, so does not affect land use   |              | Potential to discharge to groundwater with treatment measures.       | 0         | Potential to discharge large volumes of water dependent on geology.                                 | 0                | 0             | No             |  |
|          | Swales  | Limited open space alongside flow routes to implement these.  | Limited open space alongside flow routes to implement these.   |                 | Moderate cost with low maintenance requirements.  | -2             | Disruption to limited space.  |              | Planting can be used to enhance biodiversity value.                  | 1         | Would attenuate discharge to surface water network: may benefit downstream areas.                   | 0                | -1            | No             |  |
|          | Permeable Paving                                  | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be re surfaced.   | Traffic loads may limit this to smaller roads and car parking areas. Method of discharge dependent on geology.   |                 | Low cost with moderate maintenance requirements.  | 1              | Aesthetic appearance.   |              | Water quality treatment through filtration process/                  | 1         | Allow for infiltration of rainfall during less intense, more frequent events.                       | 0                | 3             | Yes            |  |
|          | Rainwater Harvesting                              | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.   |                 | Reduced water supply and drainage costs with operational system.  | 0              | Potential health & safety issues in public buildings.   |              | Reduced water demand for buildings.                                  | 1         | Potential to retain moderate volumes from rainwater.  | 1                | 3             | Yes            |  |
|          | Rain gardens and tree planters                    | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.                              |                 | Low cost to set up with regular maintenance requirements.   | 1              | Increased green space.  |              | Increase biodiversity with water quality benefits.                   | 2         | Minor at individual level, widespread implementation needed to achieve benefits.                    | 1                | 5             | Yes            |  |
|          | Detention Basins                                  | Temporary flood storage area utilising the playground area of The Godolphin & Latymer School.   | Lower ground levels and allow flow from northern area. Drain at reduced rate from area.                          |                 | Moderate cost to construct and maintenance would be that of existing site. Clean-up following storm required. | 1              | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. |              | No alteration to environmental benefit.                              | 0         | Potential for moderate volumes of storage.  | 1                | 2             | Yes            |  |
|          | Ponds and Wetlands                                | These features tend to require a supply of water. Feasibility would need to be examined.  | Difficult with no regular source of water to replenish systems.  |                 | Moderate initial cost and high cost to maintain   | -2             | Provide amenity and education resource. Health & Safety concerns.   |              | Provide habitat diversity.   | 2         | Potentially could retain large volumes of surface water.  | 1                | -1            | No             |  |
| PATHWAY  | Increasing Capacity in Drainage Systems           | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.   |                 | Extensive works with high cost. Minimal maintenance.  | -2             | Reduced flood waters across flooding hotspots.  |              | No impact.   | 0         | May only be effective for smaller, less intensive rainfall events.                                  | -1               | -5            | No             |  |
|          | Separation of Foul and Surface Water Sewers       | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections  |                 | High cost of intrusive works  | -2             | Disruption during construction.   |              | Reduced pressure of combined network through reduced inflow.         | 1         | Would act to provide additional capacity and attenuate flows.                                       | 1                | -2            | No             |  |
|          | Improved Maintenance Regimes                      | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.  |                 | Slight modification to existing maintenance regimes.  | 2              | Limited disruption.   |              | No impact.   | 0         | Suitable for low magnitude events.  | 1                | 4             | Yes            |  |
|          | Managing Overland Flows (Online Storage)          | Limited opportunity to create bunds along key flow routes.  | Construction of bunds with appropriate drainage.   |                 | Moderate initial cost with minimal maintenance requirements.  | 0              | Potential disruption during construction.   |              | Potential disruption during construction.                            | 0         | Limited opportunity to retain volumes of surface water.   | 0                | 0             | No             |  |
|          | Managing Overland Flows (Preferential Flow paths) | Modify streets that already tend to channel surface water, such as Perrers Road, Atwood Road etc. through lowering the road, raising pavements, in installation of speed humps.   | May encounter problems with services and access requirements.  |                 | Moderate cost with minimal additional maintenance requirements.   | 0              | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. |              | No impact.   | 0         | Effective to convey surface water in controlled manner.   | 2                | 1             | Yes            |  |
|          | Land Management Practices                         | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into site maintenance regime.  |                 | Slight modification to existing maintenance regimes.  | 2              | Limited disruption.   |              | Increased infiltration, reduced need for irrigation.                 | 1         | Reduced surface water runoff from site during high intensity events.                                | 1                | 5             | Yes            |  |
|          | Deculverting Watercourse(s)                       | No watercourses in borough to deculvert   | N/A  |                 | 0 N/A   | 0              | 0 N/A   |              | 0 N/A  | 0         | 0 N/A   | 0                | 0             | No             |  |
| RECEPTOR | Improved Weather Warning                          | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more affective if coupled with community education.   | Utilise existing alert procedures.   |                 | Develop existing communication systems.   | 1              | Communication issues but will provide valuable warning time.  |              | No impact.   | 0         | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0                | 2             | Yes            |  |
|          | Planning Policies to Influence Development        | Throughout Ward: Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.               |                 | Potential cost to the developer for additional measures. Complex to install in highly developed areas.        | -1             | Reduces need for later retrofitting of features.  |              | Potential sustainability credits for implementation of features.     | 1         | Management of surface water at site level.  | 1                | 3             | Yes            |  |
|          | Temporary or Demountable Flood Defences           | Use these in areas where buildings can not be easily made resistant or resilient to flooding.   | Potential issues with presence required to set up defences at short notice.                                      |                 | Low cost and can prevent significant damage to properties.  | 0              | Considerations of property blight and responsibility for maintenance and operation.                       |              | No impact.   | 0         | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 2             | Yes            |  |
|          | Social Change, Education and Awareness            | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website. |                 | Low cost to update website and provide information.   | 1              | May be issues with language barriers and less mobile residents attendance to information events.          |              | No impact.   | 0         | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 3             | Yes            |  |
|          | Improved Resilience and Resistance Measures       | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.                       |                 | Cost will vary depending on the system being implemented.   | 2              | Minimal disruption, but may blight houses if features are obvious. Reduce clean-up time.                  |              | No impact.   | 0         | Will reduce damage to properties and help worth faster recovery.                                    | 0                | 2             | Yes            |  |

| Ward ID                                     | 6 Hammersmith Broadway                            |                             |   |   |                                    |  |   |   |  |  |            |   |   |                |       |
|---|---|-----------------------------|---|---|------------------------------------|--|---|---|--|--|------------|---|---|----------------|-------|
| Measure                                     | Initial Assessment                                | Location / Specific Details | Technical   | Technical Score   | Economic                           | Economic Score   | Social                                  | Social Score  | Environmental  | Env Score  | Objectives | Objectives Score  | Overall Score   | Carry forward? |       |
| SOURCE                                      | Green Roof  | Green                       | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | Potential issues with structures of buildings.  | -1                                 | Potential costs with modification of structures and installation.                                      | -1                                      | Aesthetic value with education potential below ground, so does not affect land use                        | 0  | Provision of habitat, water air quality treatment & noise reduction. | 2          | Depending on design, significant quantities of water could be retained locally.                           | 1   | 1 Yes          |       |
|   | Soakaways   | Yellow                      | Suitability of infiltration SuDS is uncertain. Should be confirmed on a site-by-site basis where geological investigations have been completed.   | Potentially limited by geology of area.   | 0                                  | Moderate initial and maintenance cost.   | 0                                       |   | 0  | Potential to discharge to groundwater with treatment measures.       | 0          | Potential to discharge large volumes of water dependent on geology.                                       | 1   | 1 Yes          |       |
|   | Swales  | Yellow                      | Limited open space alongside flow routes to implement these.  | Limited open space alongside flow routes to implement these.  | -2                                 | Moderate cost with low maintenance requirements.   | 0                                       | Disruption to limited space.  | 0  | Planting can be used to enhance biodiversity value.                  | 1          | Would attenuate discharge to surface water network: may benefit downstream areas.                         | 0   | -1 No          |       |
|   | Permeable Paving                                  | Green                       | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be resurfaced.  | Traffic loads may limit this to smaller roads and car parking areas. Method of discharge dependent on geology.  | 1                                  | Low cost with moderate maintenance requirements.   | 1                                       | Aesthetic appearance.   | 0  | Water quality treatment through filtration process.                  | 1          | Allow for infiltration of rainfall during less intense, more frequent events.                             | 0   | 3 Yes          |       |
|   | Rainwater Harvesting                              | Green                       | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.  | 0                                  | Reduced water supply and drainage costs with operational system.                                       | 1                                       | Potential health & safety issues in public buildings.   | 0  | Reduced water demand for buildings.                                  | 1          | Potential to retain moderate volumes from rainwater.  | 1   | 3 Yes          |       |
|   | Rain gardens and tree planters                    | Green                       | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.   | 1                                  | Low cost to set up with regular maintenance requirements.  | 1                                       | Increased green space.  | 0  | Increase biodiversity with water quality benefits.                   | 2          | Minor at individual level, widespread implementation needed to achieve benefits.                          | 1   | 5 Yes          |       |
|   | Detention Basins                                  | Yellow                      | Potential to develop open spaces to have a multifunctional use through lowering of ground levels to form a basin. Potential to develop a temporary basin in Lurnivall Gardens.  | Technically possible depending on location of below ground services. Diversion of flows required.   | 0                                  | Moderate cost to construct and maintenance would be that of existing site.                             | 0                                       | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. | 0  | No alteration to environmental benefit.                              | 0          | Potential to store large volumes of surface water however not likely to influence main flooding hotspots. | 0   | 0 No           |       |
|   | Ponds and Wetlands                                | Yellow                      | These features tend to require a supply of water. Feasibility would need to be examined.  | Difficult with no regular source of water to replenish systems.   | -2                                 | Moderate initial cost and high cost to maintain  | -2                                      | Provide amenity and education resource. Health & Safety concerns.   | 0  | Provide habitat diversity.   | 2          | Potentially could retain large volumes of surface water.  | 1   | -1 No          |       |
| PATHWAY                                     | Increasing Capacity in Drainage Systems           | Red                         | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.  | -2                                 | Extensive works with high cost. Minimal maintenance.   | -2                                      | Reduced flood waters across flooding hotspots.  | 0  | No impact.   | 0          | May only be effective for smaller, less intensive rainfall events.  | -1  | -5 No          |       |
|   | Separation of Foul and Surface Water Sewers       | Red                         | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections   | -2                                 | High cost of intrusive works   | -2                                      | Disruption during construction.   | 0  | Reduced pressure of combined network through reduced inflow.         | 1          | Would act to provide additional capacity and attenuate flows.   | -2  | No             |       |
|   | Improved Maintenance Regimes                      | Green                       | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.   | 2                                  | Slight modification to existing maintenance regimes.   | 1                                       | Limited disruption.   | 0  | No impact.   | 0          | Most effective for low magnitude events.  | 1   | 4 Yes          |       |
|   | Managing Overland Flows (Online Storage)          | Green                       | Designate streets that have a high tendency towards surface water ponding (Cambridge Grove, Leamore Street) to flood during extreme events. Pump water away once storm has passed.  | Modification of drainage network and flow to site.  | 1                                  | Minor initial cost with minimal maintenance requirements.  | 1                                       | Potential disruption during construction and safety concerns with deep waters.                            | 0  | No impact.   | 0          | Potential to retain large volumes of surface water in critical areas.                                     | 2   | 4 Yes          |       |
|   | Managing Overland Flows (Preferential Flow paths) | Green                       | Modify streets that already tend to channel surface water, such as Nigel Playfair Avenue, Ravenscourt Road, through lowering the road, raising pavements, in installation of speed humps. To retain water along the road.   | May encounter problems with services and access requirements.   | 0                                  | Moderate cost with minimal additional maintenance requirements.  | -1                                      | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. | 0  | No impact.   | 0          | Effective to convey surface water in controlled manner.   | 2   | 1 Yes          |       |
|   | Land Management Practices                         | Green                       | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into planning   | 2                                  | Slight modification to existing maintenance regimes.   | 1                                       | Limited disruption.   | 0  | Increased infiltration, reduced need for irrigation.                 | 1          | Reduced surface water runoff from site during high intensity events.                                      | 1   | 5 Yes          |       |
|   | Deculverting Watercourse(s)                       | Red                         | No watercourses in borough to deculvert   | N/A   | 0                                  | N/A  | 0                                       | N/A   | 0  | N/A  | 0          | N/A   | 0   | 0 No           |       |
|   | RECEPTOR  | Improved Weather Warning    | Green   | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more effective if coupled with community education. | Utilise existing alert procedures. | 1  | Develop existing communication systems. | 1   | Communication issues but will provide valuable warning time. | 0  | No impact. | 0   | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0              | 2 Yes |
| Planning Policies to Influence Development  |   | Green                       | Throughout Ward; Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.  | 2                                  | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | -1                                      | Reduces need for later retrofitting of features.  | 0  | Potential sustainability credits for implementation of features.     | 1          | Management of surface water at site level.  | 1   | 3 Yes          |       |
| Temporary or Demountable Flood Defences     |   | Green                       | Use these in areas where buildings can not be easily made resistant or resilient to flooding.   | Potential issues with presence required to set up defences at short notice.   | 0                                  | Low cost and can prevent significant damage to properties.   | 2                                       | Considerations of property blight and responsibility for maintenance and operation.                       | 0  | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.                           | 0   | 2 Yes          |       |
| Social Change, Education and Awareness      |   | Green                       | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website.  | 1                                  | Low cost to update website and provide information.  | 2                                       | May be issues with language barriers and less mobile residents attendance to information events.          | 0  | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.                           | 0   | 3 Yes          |       |
| Improved Resilience and Resistance Measures |   | Green                       | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.  | 2                                  | Cost will vary depending on the system being implemented.  | 0                                       | Minimal disruption, but may blight houses if features are obvious. Reduce clean up time.                  | 0  | No impact.   | 0          | Will reduce damage to properties and help worth faster recovery.  | 0   | 2 Yes          |       |



| Ward ID                                     | 7 Addison   |   |   |                                    |  |   |   |  |  |            |   |   |               |                |     |
|---|---|---|---|------------------------------------|--|---|---|--|--|------------|---|---|---------------|----------------|-----|
| Measure                                     | Initial Assessment                                | Location / Specific Details   | Technical   | Technical Score                    | Economic   | Economic Score                          | Social  | Social Score   | Environmental  | Env Score  | Objectives  | Objectives Score  | Overall Score | Carry forward? |     |
| SOURCE                                      | Green Roof  | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | Potential issues with structures of buildings.  |                                    | Potential costs with modification of structures and installation.                                      | -1                                      | Aesthetic value with education potential  |  | Provision of habitat, water air quality treatment & noise reduction. | 2          | Depending on design, significant quantities of water could be retained locally.   | 1   | 1             | Yes            |     |
|   | Soakaways   | Suitability of infiltration SuDS is uncertain. Should be confirmed on a site-by-site basis where geological investigations have been completed.   | Potentially limited by geology of area.   |                                    | Moderate initial and maintenance cost.   | 0                                       | Below ground, so does not affect land use   |  | Potential to discharge to groundwater with treatment measures.       | 0          | Potential to discharge large volumes of water dependent on geology.               | 1   | 1             | Yes            |     |
|   | Swales  | Limited open space alongside flow routes to implement these.  | Limited open space alongside flow routes to implement these.  |                                    | Moderate cost with low maintenance requirements.   | -2                                      | Disruption to limited space.  |  | Planting can be used to enhance biodiversity value.                  | 1          | Would attenuate discharge to surface water network: may benefit downstream areas. | 0   | -1            | No             |     |
|   | Permeable Paving                                  | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be resurfaced.  | Traffic loads may limit this to smaller roads and car parking areas. Method of discharge depended on geology.   |                                    | Low cost with moderate maintenance requirements.   | 1                                       | Aesthetic appearance  |  | Water quality treatment through filtration process                   | 1          | Allow for infiltration of rainfall during less intense, more frequent events.     | 0   | 3             | Yes            |     |
|   | Rainwater Harvesting                              | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.  |                                    | Reduced water supply and drainage costs with operational system.                                       | 0                                       | Potential health & safety issues in public buildings.   |  | Reduced water demand for buildings.                                  | 0          | Potential to retain moderate volumes from rainwater.                              | 1   | 3             | Yes            |     |
|   | Rain gardens and tree planters                    | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.   |                                    | Low cost to set up with regular maintenance requirements.  | 1                                       | Increased green space.  |  | Increase biodiversity with water quality benefits.                   | 2          | Minor at individual level, widespread implementation needed to achieve benefits.  | 1   | 5             | Yes            |     |
|   | Detention Basins                                  | Potential to develop open spaces to have a multifunctional use through lowering of ground levels to form a basin.   | Technically possible depending on location of below ground services.  |                                    | Low cost to construct and maintenance would be that of existing site.                                  | 1                                       | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. |  | No alteration to environmental benefit                               | 0          | Potential to store large volumes of surface water and discharge as appropriate.   | 2   | 4             | Yes            |     |
|   | Ponds and Wetlands                                | These features tend to require a supply of water. Feasibility would need to be examined.  | Difficult with no regular source of water to replenish systems.   |                                    | Moderate initial cost and high cost to maintain  | -2                                      | Provide amenity and education resource. Health & Safety concerns.   |  | Provide habitat diversity,   | 2          | Potentially could retain large volumes of surface water.                          | 1   | -1            | No             |     |
| PATHWAY                                     | Increasing Capacity in Drainage Systems           | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.  |                                    | Extensive works with high cost. Minimal maintenance.   | -2                                      | Reduced flood waters across flooding hotspots.  |  | No impact.   | 0          | May only be effective for smaller, less intensive rainfall events.                | -1  | -5            | No             |     |
|   | Separation of Foul and Surface Water Sewers       | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections   |                                    | High cost of intrusive works   | -2                                      | Disruption during construction,   |  | Reduced pressure of combined network through reduced inflow.         | 1          | Would act to provide additional capacity and attenuate flows.                     | 1   | -2            | No             |     |
|   | Improved Maintenance Regimes                      | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.   |                                    | Slight modification to existing maintenance regimes.   | 2                                       | Limited disruption.   |  | No impact.   | 0          | Most effective at low magnitude events.   | 1   | 4             | Yes            |     |
|   | Managing Overland Flows (Online Storage)          | Limited opportunity as main flow paths are defined by road structures. Potential to store water in tanks below ground.  | Storage below road level. Likely to have issues with services.  |                                    | High initial cost and maintenance requirements.  | -2                                      | Potential disruption during construction.   |  | Reduced contaminates above ground.                                   | 1          | Potential to retain large volumes of surface water at critical locations.         | 2   | -1            | No             |     |
|   | Managing Overland Flows (Preferential Flow paths) | Modify streets that convey surface water, such as Hammersmith Grove, Netherwood Road, Lakeside Road, Addison Gardens etc. through lowering the road, raising pavements, to increase storage capacity within the road.   | May encounter problems with services and access requirements.   |                                    | Moderate cost with minimal additional requirements.  | 0                                       | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. |  | No impact.   | 0          | Effective to convey surface water in controlled manner.                           | 2   | 1             | Yes            |     |
|   | Land Management Practices                         | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into site maintenance regime.   |                                    | Slight modification to existing maintenance regimes.   | 2                                       | Limited disruption.   |  | Increased infiltration, reduced need for irrigation.                 | 1          | Reduced surface water runoff from site during high intensity events.              | 1   | 5             | Yes            |     |
|   | Deculverting Watercourse(s)                       | No watercourses in borough to deculvert   | N/A   |                                    | 0 N/A  | 0                                       | N/A   |  | 0 N/A  | 0          | N/A   | 0   | 0             | No             |     |
|   | RECEPTOR  | Improved Weather Warning  | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more affective if coupled with community education. | Utilise existing alert procedures. |  | Develop existing communication systems. | 1   | Communication issues but will provide valuable warning time. |  | No impact. | 0   | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0             | 2              | Yes |
| Planning Policies to Influence Development  |   | Throughout Ward; Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.  |                                    | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | -1                                      | Reduces need for later retrofitting of features.  |  | Potential sustainability credits for implementation of features.     | 0          | Management of surface water at site level.  | 1   | 3             | Yes            |     |
| Temporary or Demountable Flood Defences     |   | Use these in areas where buildings can not be easily made resistant or resilient to flooding. Specifically for buildings modelled to be at risk of surface water flooding.  | Potential issues with presence required to set up defences at short notice.   |                                    | Low cost and can prevent significant damage to properties.   | 0                                       | Considerations of property blight and responsibility for maintenance and operation.                       |  | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.   | 0   | 2             | Yes            |     |
| Social Change, Education and Awareness      |   | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website.  |                                    | Low cost to update website and provide information.  | 1                                       | May be issues with language barriers and less mobile residents attendance to information events.          |  | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.   | 0   | 3             | Yes            |     |
| Improved Resilience and Resistance Measures |   | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.  |                                    | Cost will vary depending on the system being implemented.  | 2                                       | Minimal disruption, but may blight houses if features are obvious. Reduce clean-up time.                  |  | No impact.   | 0          | Will reduce damage to properties and help with faster recovery.                   | 0   | 2             | Yes            |     |

| Ward ID  | 8 Avonmore and Brook Green                        |   |  |                 |  |                |   |              |  |           |   |                  |               |                |  |
|----------|---|---|--|-----------------|--|----------------|---|--------------|--|-----------|---|------------------|---------------|----------------|--|
| Measure  | Initial Assessment                                | Location / Specific Details   | Technical  | Technical Score | Economic   | Economic Score | Social  | Social Score | Environmental  | Env Score | Objectives  | Objectives Score | Overall Score | Carry forward? |  |
| SOURCE   | Green Roof  | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | Potential issues with structures of buildings.   |                 | Potential costs with modification of structures and installation.                                      | -1             | Aesthetic value with education potential  |              | Provision of habitat, water air quality treatment & noise reduction. | 2         | Depending on design, significant quantities of water could be retained locally.                     | 1                | 1             | Yes            |  |
|          | Soakaways   | Suitability of infiltration SuDS is uncertain. Should be confirmed on a site-by-site basis where geological investigations have been completed.   | Potentially limited by geology of area.  |                 | Moderate initial and maintenance cost.   | 0              | Below ground, so does not affect land use   |              | Potential to discharge to groundwater with treatment measures.       | 0         | Potential to discharge large volumes of water dependent on geology.                                 | 1                | 1             | Yes            |  |
|          | Swales  | Limited open space alongside flow routes to implement these.  | Limited open space alongside flow routes to implement these.   |                 | Moderate cost with low maintenance requirements.   | -2             | Disruption to limited space.  |              | Planting can be used to enhance biodiversity value.                  | 1         | Would attenuate discharge to surface water network: may benefit downstream areas.                   | 0                | -1            | No             |  |
|          | Permeable Paving                                  | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be resurfaced.  | Traffic loads may limit this to smaller roads and car parking areas. Method of discharge depended on geology.    |                 | Low cost with moderate maintenance requirements.   | 1              | Aesthetic appearance  |              | Water quality treatment through filtration process                   | 1         | Allow for infiltration of rainfall during less intense, more frequent events.                       | 0                | 3             | Yes            |  |
|          | Rainwater Harvesting                              | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.   |                 | Reduced water supply and drainage costs with operational system.                                       | 0              | Potential health & safety issues in public buildings.   |              | Reduced water demand for buildings.                                  | 0         | Potential to retain moderate volumes from rainwater.  | 1                | 3             | Yes            |  |
|          | Rain gardens and tree planters                    | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.                              |                 | Low cost to set up with regular maintenance requirements.  | 1              | Increased green space.  |              | Increase biodiversity with water quality benefits.                   | 2         | Minor at individual level, widespread implementation needed to achieve benefits.                    | 1                | 5             | Yes            |  |
|          | Detention Basins                                  | Potential to develop open spaces to have a multifunctional use through lowering of ground levels to form a basin.   | Technically possible depending on location of below ground services.   |                 | Low cost to construct and maintenance would be that of existing site.                                  | 1              | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. |              | No alteration to environmental benefit                               | 0         | Potential to store large volumes of surface water and discharge as appropriate.                     | 2                | 4             | Yes            |  |
|          | Ponds and Wetlands                                | These features tend to require a supply of water. Feasibility would need to be examined.  | Difficult with no regular source of water to replenish systems.  |                 | Moderate initial cost and high cost to maintain  | -2             | Provide amenity and education resource. Health & Safety concerns.   |              | Provide habitat diversity,   | 2         | Potentially could retain large volumes of surface water.  | 1                | -1            | No             |  |
| PATHWAY  | Increasing Capacity in Drainage Systems           | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.   |                 | Extensive works with high cost. Minimal maintenance.   | -2             | Reduced flood waters across flooding hotspots.  |              | No impact.   | 0         | May only be effective for smaller, less intensive rainfall events.                                  | -1               | -5            | No             |  |
|          | Separation of Foul and Surface Water Sewers       | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections  |                 | High cost of intrusive works   | -2             | Disruption during construction,   |              | Reduced pressure of combined network through reduced inflow.         | 1         | Would act to provide additional capacity and attenuate flows.                                       | 1                | -2            | No             |  |
|          | Improved Maintenance Regimes                      | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.  |                 | Slight modification to existing maintenance regimes.   | 2              | Limited disruption.   |              | No impact.   | 0         | Most effective at low magnitude events.   | 1                | 4             | Yes            |  |
|          | Managing Overland Flows (Online Storage)          | Creation of bunds to retain flood water by intercepting main flow routes from the park: west of Braybrook Street, north of the prison and sports centre.  | Construction of bunds with appropriate drainage.   |                 | Moderate initial cost with minimal maintenance requirements.   | 2              | Potential disruption during construction  |              | Potential disruption during construction                             | 0         | Potential to retain large volumes of surface water upstream of catchment.                           | 2                | 5             | Yes            |  |
|          | Managing Overland Flows (Preferential Flow paths) | Limited opportunity to create bunds along key flow routes.  | Construction of bunds with appropriate drainage.   |                 | Moderate initial cost with minimal maintenance requirements.   | 0              | Potential disruption during construction.   |              | Potential disruption during construction.                            | 0         | Limited opportunity to retain volumes of surface water.   | 0                | 0             | No             |  |
|          | Land Management Practices                         | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. Implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into site maintenance regime.  |                 | Slight modification to existing maintenance regimes.   | 2              | Limited disruption.   |              | Increased infiltration, reduced need for irrigation.                 | 0         | Reduced surface water runoff from site during high intensity events.                                | 1                | 5             | Yes            |  |
|          | Deculverting Watercourse(s)                       | No watercourses in borough to deculvert   | N/A  |                 | 0 N/A  |                | 0 N/A   |              | 0 N/A  |           | 0 N/A   | 0                | 0             | No             |  |
| RECEPTOR | Improved Weather Warning                          | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more affective if coupled with community education.   | Utilise existing alert procedures.   |                 | Develop existing communication systems.  | 1              | Communication issues but will provide valuable warning time.  |              | No impact.   | 0         | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0                | 2             | Yes            |  |
|          | Planning Policies to Influence Development        | Throughout Ward; Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.               |                 | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | 2              | Reduces need for later retrofitting of features.  |              | Potential sustainability credits for implementation of features.     | 0         | Management of surface water at site level.  | 1                | 3             | Yes            |  |
|          | Temporary or Demountable Flood Defences           | Use these in areas where buildings can not be easily made resistant or resilient to flooding. Specifically for buildings modelled to be at risk of surface water flooding.  | Potential issues with presence required to set up defences at short notice.                                      |                 | Low cost and can prevent significant damage to properties.   | 0              | Considerations of property blight and responsibility for maintenance and operation.                       |              | No impact.   | 0         | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 2             | Yes            |  |
|          | Social Change, Education and Awareness            | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website. |                 | Low cost to update website and provide information.  | 1              | May be issues with language barriers and less mobile residents attendance to information events.          |              | No impact.   | 0         | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 3             | Yes            |  |
|          | Improved Resilience and Resistance Measures       | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.                       |                 | Cost will vary depending on the system being implemented.  | 2              | Minimal disruption, but may blight houses if features are obvious. Reduce clean-up time.                  |              | No impact.   | 0         | Will reduce damage to properties and help with faster recovery.                                     | 0                | 2             | Yes            |  |

| Ward ID  | 9 Fulham Reach                                    |                             |   |  |          |  |        |   |               |  |            |   |               |                |     |
|----------|---|-----------------------------|---|--|----------|--|--------|---|---------------|--|------------|---|---------------|----------------|-----|
| Measure  | Initial Assessment                                | Location / Specific Details | Technical   | Technical Score  | Economic | Economic Score   | Social | Social Score  | Environmental | Env Score  | Objectives | Objectives Score  | Overall Score | Carry forward? |     |
|          |   |                             |   |  |          |  |        |   |               |  |            |   |               |                |     |
| SOURCE   | Green Roof  | Green                       | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | Potential issues with structures of buildings.   | -1       | Potential costs with modification of structures and installation.                                      | -1     | Aesthetic value with education potential  | 0             | Provision of habitat, water air quality treatment & noise reduction. | 2          | Depending on design, significant quantities of water could be retained locally.                     | 1             | 1              | Yes |
|          | Soakaways   | Yellow                      | Suitability of infiltration SuDS is uncertain. Should be confirmed on a site-by-site basis where geological investigations have been completed.   | Potentially limited by geology of area.  | 0        | Moderate initial and maintenance cost.   | 0      | Below ground, so does not affect land use   | 0             | Potential to discharge to groundwater with treatment measures.       | 0          | Potential to discharge large volumes of water dependent on geology.                                 | 1             | 1              | Yes |
|          | Swales  | Yellow                      | Develop within open space running adjacent to Field Road.   | System would need to be developed to connect to drainage network as infiltration is limited.                     | 0        | Moderate cost with low maintenance requirements.   | 0      | Intrusion on open green area. Health and safety concerns.   | 0             | Planting can be used to enhance biodiversity value.                  | 1          | Would attenuate discharge to surface water network and may benefit downstream areas.                | 1             | 2              | Yes |
|          | Permeable Paving                                  | Green                       | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be re surfaced.   | Traffic loads may limit this to smaller roads and car parking areas. Method of discharge dependent on geology.   | 1        | Low cost with moderate maintenance requirements.   | 1      | Aesthetic appearance.   | 0             | Water quality treatment through filtration process.                  | 1          | Allow for infiltration of rainfall during less intense, more frequent events.                       | 0             | 3              | Yes |
|          | Rainwater Harvesting                              | Green                       | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.   | 0        | Reduced water supply and drainage costs with operational system.                                       | 1      | Potential health & safety issues in public buildings.   | 0             | Reduced water demand for buildings.                                  | 1          | Potential to retain moderate volumes from rainwater.  | 1             | 3              | Yes |
|          | Rain gardens and tree planters                    | Green                       | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.                              | 1        | Low cost to set up with regular maintenance requirements.  | 1      | Increased green space.  | 0             | Increase biodiversity with water quality benefits.                   | 2          | Minor at individual level, widespread implementation needed to achieve benefits.                    | 1             | 5              | Yes |
|          | Detention Basins                                  | Yellow                      | Potential to develop open spaces to have a multifunctional use through lowering of ground levels to form a basin. Car park along Field Road, green space around Strode Road & Purcell Crescent.   | Technically possible depending on location of below ground services.   | 1        | Low cost to construct and maintenance would be that of existing site.                                  | 1      | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. | 0             | Increase biodiversity with water quality benefits.                   | 2          | Potential to store large volumes of surface water and discharge as appropriate.                     | 2             | 6              | Yes |
|          | Ponds and Wetlands                                | Yellow                      | These features tend to require a supply of water. Feasibility would need to be examined.  | Difficult with no regular source of water to replenish systems.  | -2       | Moderate initial cost and high cost to maintain  | -2     | Provide amenity and education resource. Health & Safety concerns.   | 0             | Provide habitat diversity.   | 2          | Potentially could retain large volumes of surface water.  | 1             | -1             | No  |
| PATHWAY  | Increasing Capacity in Drainage Systems           | Red                         | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.   | -2       | Extensive works with high cost. Minimal maintenance.   | -2     | Reduced flood waters across flooding hotspots.  | 0             | No impact.   | 0          | May only be effective for smaller, less intensive rainfall events.                                  | -1            | -5             | No  |
|          | Separation of Foul and Surface Water Sewers       | Red                         | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections  | -2       | High cost of intrusive works   | -2     | Disruption during construction,   | 0             | Reduced pressure of combined network through reduced inflow.         | 1          | Would act to provide additional capacity and attenuate flows.                                       | 1             | -2             | No  |
|          | Improved Maintenance Regimes                      | Green                       | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.  | 2        | Slight modification to existing maintenance regimes.   | 1      | Limited disruption.   | 0             | No impact.   | 0          | Most effective for low magnitude events.  | 1             | 4              | Yes |
|          | Managing Overland Flows (Online Storage)          | Green                       | Creation of bunds to retain flood water by intercepting main flow routes in Bayonne Park.   | Construction of bunds with appropriate drainage.   | 1        | Moderate initial cost with minimal maintenance requirements.   | 1      | Potential disruption during construction.   | 0             | Potential disruption during construction.                            | 0          | Potential to retain large volumes of surface water upstream of catchment.                           | 1             | 3              | Yes |
|          | Managing Overland Flows (Preferential Flow paths) | Green                       | Modify streets that already tend to channel surface water, such as Lugran Avenue & Aspenlea Road through lowering the road, raising pavements.  | May encounter problems with services and access requirements.  | 0        | Moderate cost with minimal additional maintenance requirements.  | -1     | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. | 0             | No impact.   | 0          | Effective to convey surface water in controlled manner.   | 1             | 0              | No  |
|          | Land Management Practices                         | Green                       | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. Implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into planning  | 2        | Slight modification to existing maintenance regimes.   | 1      | Limited disruption.   | 0             | Increased infiltration, reduced need for irrigation.                 | 1          | Reduced surface water runoff from site during high intensity events.                                | 1             | 5              | Yes |
|          | Deculverting Watercourse(s)                       | Red                         | No watercourses in borough to deculvert   | N/A  | 0        | N/A  | 0      | N/A   | 0             | N/A  | 0          | N/A   | 0             | 0              | No  |
| RECEPTOR | Improved Weather Warning                          | Green                       | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more effective if coupled with community education.   | Utilise existing alert procedures.   | 1        | Develop existing communication systems.  | 1      | Communication issues but will provide valuable warning time.  | 0             | No impact.   | 0          | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0             | 2              | Yes |
|          | Planning Policies to Influence Development        | Green                       | Throughout Ward; Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.               | 2        | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | -1     | Reduces need for later retrofitting of features.  | 0             | Potential sustainability credits for implementation of features.     | 1          | Management of surface water at site level.  | 1             | 3              | Yes |
|          | Temporary or Demountable Flood Defences           | Green                       | Use these in areas where buildings can not be easily made resistant or resilient to flooding.   | Potential issues with presence required to set up defences at short notice.                                      | 0        | Low cost and can prevent significant damage to properties.   | 2      | Considerations of property blight and responsibility for maintenance and operation.                       | 0             | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0             | 2              | Yes |
|          | Social Change, Education and Awareness            | Green                       | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website. | 1        | Low cost to update website and provide information.  | 2      | May be issues with language barriers and less mobile residents attendance to information events.          | 0             | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0             | 3              | Yes |
|          | Improved Resilience and Resistance Measures       | Green                       | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.                       | 2        | Cost will vary depending on the system being implemented.  | 0      | Minimal disruption, but may blight houses if features are obvious. Reduce clean up time.                  | 0             | No impact.   | 0          | Will reduce damage to properties and help with faster recovery.                                     | 0             | 2              | Yes |

| Ward ID  | 10 North End                                      |   |  |  |  |  |  |              |  |  |   |                  |               |                |  |
|----------|---|---|--|--|--|--|--|--------------|--|--|---|------------------|---------------|----------------|--|
| Measure  | Initial Assessment                                | Location / Specific Details   | Technical  | Technical Score                                      | Economic   | Economic Score                                 | Social   | Social Score | Environmental  | Env Score  | Objectives  | Objectives Score | Overall Score | Carry forward? |  |
| SOURCE   | Green Roof  | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | Potential issues with structures of buildings.   |  | Potential costs with modification of structures and installation.                                      | -1   | Aesthetic value with education potential   |              | Provision of habitat, water air quality treatment & noise reduction. | 2  | Depending on design, significant quantities of water could be retained locally.                     | 1                | 1             | Yes            |  |
|          | Soakaways   | Suitability of infiltration SuDS is uncertain. Should be confirmed on a site-by-site basis where geological investigations have been completed.   | Potentially limited by geology of area.  |  | Moderate initial and maintenance cost.   | 0  | Below ground, so does not affect land use  |              | Potential to discharge to groundwater with treatment measures.       | 0  | Potential to discharge large volumes of water dependent on geology.                                 | 1                | 1             | Yes            |  |
|          | Swales  | Limited open space adjacent to flow paths and roads.  | Limited by space.  |  | Moderate cost with low maintenance requirements.   | -2   | Loss of space. Provision of urban greening.  |              | Planting can be used to enhance biodiversity value.                  | 1  | Would attenuate discharge to surface water network: may benefit downstream areas.                   | 0                | -1            | No             |  |
|          | Permeable Paving                                  | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be re surfaced.   | Traffic loads may limit this to smaller roads and car parking areas. Method of discharge dependent on geology.   |  | Low cost with moderate maintenance requirements.   | 1  | Aesthetic appearance.  |              | Water quality treatment through filtration process.                  | 1  | Allow for infiltration of rainfall during less intense, more frequent events.                       | 0                | 3             | Yes            |  |
|          | Rainwater Harvesting                              | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.   |  | Reduced water supply and drainage costs with operational system.                                       | 0  | Potential health & safety issues in public buildings.  |              | Reduced water demand for buildings.                                  | 1  | Potential to retain moderate volumes from rainwater.  | 1                | 3             | Yes            |  |
|          | Rain gardens and tree planters                    | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.                              |  | Low cost to set up with regular maintenance requirements.  | 1  | Increased green space.   |              | Increase biodiversity with water quality benefits.                   | 0  | Minor at individual level, widespread implementation needed to achieve benefits.                    | 1                | 5             | Yes            |  |
|          | Detention Basins                                  | Potential to develop open spaces to have a multifunctional use through lowering of ground levels to form a basin. Space available includes Gibbs Green School car park / playground.  | Technically possible depending on location of below ground services.   |  | Moderate cost to construct and maintenance would be that of existing site.                             | 1  | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants.                            |              | No alteration to environmental benefit.                              | -1   | Limited benefit provided to hotspot areas.  | 0                | 0             | No             |  |
|          | Ponds and Wetlands                                | These features tend to require a supply of water. Feasibility would need to be examined. Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect. | Difficult with no regular source of water to replenish systems.  |  | Moderate initial cost and high cost to maintain  | -2   | Provide amenity and education resource. Health & Safety concerns.  |              | Provide habitat diversity.   | 0  | Potentially could retain large volumes of surface water.  | 1                | -1            | No             |  |
| PATHWAY  | Increasing Capacity in Drainage Systems           | Complex as numerous connections to combined network.  |  | Extensive works with high cost. Minimal maintenance. | -2   | Reduced flood waters across flooding hotspots. |  | No impact.   | 0  | May only be effective for smaller, less intensive rainfall events. | -1  | -5               | No            |                |  |
|          | Separation of Foul and Surface Water Sewers       | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.   | Complex sewer network with multiple connections  |  | High cost of intrusive works   | -2   | Disruption during construction.  |              | Reduced pressure of combined network through reduced inflow.         | 0  | Would act to provide additional capacity and attenuate flows.                                       | 1                | -2            | No             |  |
|          | Improved Maintenance Regimes                      | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.  |  | Slight modification to existing maintenance regimes.   | 2  | Limited disruption.  |              | No impact.   | 0  | Most effective for low magnitude events.  | 1                | 4             | Yes            |  |
|          | Managing Overland Flows (Online Storage)          | Adjust road structures to retain surface water within the road for a temporary period.  | May encounter problems with services and access requirements.  |  | Moderate initial cost with minimal additional maintenance requirements.                                | 0  | Potential disruption during construction.  |              | Potential disruption during construction.                            | 0  | Potential to retain volumes away from properties.   | 1                | 1             | Yes            |  |
|          | Managing Overland Flows (Preferential Flow paths) | Modify streets that already tend to channel surface water, such as Mund Road, Sun Road, Star Road etc. through lowering the road, raising pavements, in installation of speed humps to retain water.  | May encounter problems with services and access requirements.  |  | Moderate cost with minimal additional maintenance requirements.  | 0  | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants.                            |              | No impact.   | 0  | Effective to convey surface water in controlled manner.   | 2                | 2             | Yes            |  |
|          | Land Management Practices                         | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into planning  |  | Slight modification to existing maintenance regimes.   | 2  | Limited disruption.  |              | Increased infiltration, reduced need for irrigation.                 | 1  | Reduced surface water runoff from site during high intensity events.                                | 1                | 5             | Yes            |  |
|          | Deculverting Watercourse(s)                       | No watercourses in borough to deculvert   | N/A  |  | 0 N/A  |  | 0 N/A  |              | 0 N/A  |  | 0 N/A   | 0                | 0             | No             |  |
| RECEPTOR | Improved Weather Warning                          | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more affective if coupled with community education.   | Utilise existing alert procedures.   |  | Develop existing communication systems.  | 1  | Communication issues but will provide valuable warning time.   |              | No impact.   | 0  | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0                | 2             | Yes            |  |
|          | Planning Policies to Influence Development        | Throughout Ward: Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.               |  | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | 2  | Reduces need for later retrofitting of features. Considerations of property blight and responsibility for maintenance and operation. |              | Potential sustainability credits for implementation of features.     | 0  | Management of surface water at site level.  | 1                | 3             | Yes            |  |
|          | Temporary or Demountable Flood Defences           | Use these in areas where buildings can not be easily made resistant or resilient to flooding.   | Potential issues with presence required to set up defences at short notice.                                      |  | Low cost and can prevent significant damage to properties.   | 0  | No impact.   |              | No impact.   | 0  | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 2             | Yes            |  |
|          | Social Change, Education and Awareness            | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another.                               | Utilise existing communication strategies and public events as well as providing updates on the council website. |  | Low cost to update website and provide information.  | 1  | May be issues with language barriers and less mobile residents attendance to information events.                                     |              | No impact.   | 0  | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 3             | Yes            |  |
|          | Improved Resilience and Resistance Measures       | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.                       |  | Cost will vary depending on the system being implemented.  | 2  | Minimal disruption, but may blight houses if features are obvious. Reduce clean-up time.   |              | No impact.   | 0  | Will reduce damage to properties and help worth faster recovery.                                    | 0                | 2             | Yes            |  |

| Ward ID  | 11 Palace Riverside                               |                             |   |  |          |  |        |   |               |  |            |   |               |                |  |
|----------|---|-----------------------------|---|--|----------|--|--------|---|---------------|--|------------|---|---------------|----------------|--|
| Measure  | Initial Assessment                                | Location / Specific Details | Technical   | Technical Score  | Economic | Economic Score   | Social | Social Score  | Environmental | Env Score  | Objectives | Objectives Score  | Overall Score | Carry forward? |  |
| SOURCE   | Green Roof  | Green                       | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | Potential issues with structures of buildings.   | -1       | Potential costs with modification of structures and installation.                                      | -1     | Aesthetic value with education potential  | 0             | Provision of habitat, water air quality treatment & noise reduction. | 2          | Depending on design, significant quantities of water could be retained locally.                     | 1             | 1 Yes          |  |
|          | Soakaways   | Yellow                      | Suitability of infiltration SuDS is uncertain. Should be confirmed on a site-by-site basis where geological investigations have been completed.   | Potentially limited by geology of area.  | 0        | Moderate initial and maintenance cost.   | 0      | Below ground, so does not affect land use   | 0             | Potential to discharge to groundwater with treatment measures.       | 0          | Potential to discharge large volumes of water dependent on geology.                                 | 1             | 1 Yes          |  |
|          | Swales  | Yellow                      | Limited open space adjacent to flow paths and roads.  | Limited by space.  | 0        | Moderate cost with low maintenance requirements.   | 0      | Intrusion on open green area. Health and safety concerns.   | 0             | Planting can be used to enhance biodiversity value.                  | 1          | Would attenuate discharge to surface water network and may benefit downstream areas.                | 1             | 2 Yes          |  |
|          | Permeable Paving                                  | Green                       | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be re surfaced.   | Traffic loads may limit this to smaller roads and car parking areas. Method of discharge dependent on geology.   | 1        | Low cost with moderate maintenance requirements.   | 1      | Aesthetic appearance.   | 0             | Water quality treatment through filtration process.                  | 1          | Allow for infiltration of rainfall during less intense, more frequent events.                       | 0             | 3 Yes          |  |
|          | Rainwater Harvesting                              | Green                       | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.   | 0        | Reduced water supply and drainage costs with operational system.                                       | 1      | Potential health & safety issues in public buildings.   | 0             | Reduced water demand for buildings.                                  | 1          | Potential to retain moderate volumes from rainwater.  | 1             | 3 Yes          |  |
|          | Rain gardens and tree planters                    | Green                       | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.                              | 1        | Low cost to set up with regular maintenance requirements.  | 1      | Increased green space.  | 0             | Increase biodiversity with water quality benefits.                   | 2          | Minor at individual level, widespread implementation needed to achieve benefits.                    | 1             | 5 Yes          |  |
|          | Detention Basins                                  | Yellow                      | Potential to develop open spaces such as recreation ground, school playing fields, sports fields, Hurlingham Park, to have a multifunctional use through lowering of ground levels to form a basin.   | Technically possible depending on location of below ground services.   | 1        | Low cost to construct and maintenance would be that of existing site.                                  | 1      | Disruption during construction and use. Health & Safety issues associated with volumes of water and contaminants. | 0             | Increase biodiversity with water quality benefits.                   | 2          | Potential to store large volumes of surface water and discharge as appropriate.                     | 2             | 6 Yes          |  |
|          | Ponds and Wetlands                                | Yellow                      | These features tend to require a supply of water. Feasibility would need to be examined.  | Difficult with no regular source of water to replenish systems.  | -2       | Moderate initial cost and high cost to maintain  | -2     | Provide amenity and education resource. Health & Safety concerns.   | 0             | Provide habitat diversity.   | 2          | Potentially could retain large volumes of surface water.  | 1             | -1 No          |  |
| PATHWAY  | Increasing Capacity in Drainage Systems           | Red                         | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.   | -2       | Extensive works with high cost. Minimal maintenance.   | -2     | Reduced flood waters across flooding hotspots.  | 0             | No impact.   | 0          | May only be effective for smaller, less intensive rainfall events.                                  | -1            | -5 No          |  |
|          | Separation of Foul and Surface Water Sewers       | Red                         | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections  | -2       | High cost of intrusive works   | -2     | Disruption during construction,   | 0             | Reduced pressure of combined network through reduced inflow.         | 1          | Would act to provide additional capacity and attenuate flows.                                       | 1             | -2 No          |  |
|          | Improved Maintenance Regimes                      | Green                       | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.  | 2        | Slight modification to existing maintenance regimes.   | 1      | Limited disruption.   | 0             | No impact.   | 0          | Most effective for low magnitude events.  | 1             | 4 Yes          |  |
|          | Managing Overland Flows (Online Storage)          | Yellow                      | Creation of bunds to retain flood water by intercepting main flow routes near sports ground and Bishops Park recreation ground.   | Construction of bunds with appropriate drainage.   | 1        | Moderate initial cost with minimal maintenance requirements.   | 1      | Potential disruption during construction.   | 0             | Potential disruption during construction.                            | 0          | Potential to retain large volumes of surface water upstream of catchment.                           | 1             | 3 Yes          |  |
|          | Managing Overland Flows (Preferential Flow paths) | Green                       | Modify streets that already tend to channel surface water, such as Stevenage Road through lowering the road, raising pavements.   | May encounter problems with services and access requirements.  | 0        | Moderate cost with minimal additional maintenance requirements.  | -1     | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants.         | 0             | No impact.   | 0          | Effective to convey surface water in controlled manner.   | 1             | 0 No           |  |
|          | Land Management Practices                         | Green                       | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. Implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into planning  | 2        | Slight modification to existing maintenance regimes.   | 1      | Limited disruption.   | 0             | Increased infiltration, reduced need for irrigation.                 | 1          | Reduced surface water runoff from site during high intensity events.                                | 1             | 5 Yes          |  |
|          | Deculverting Watercourse(s)                       | Red                         | No watercourses in borough to deculvert   | N/A  | 0        | N/A  | 0      | N/A   | 0             | N/A  | 0          | N/A   | 0             | 0 No           |  |
| RECEPTOR | Improved Weather Warning                          | Green                       | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more affective if coupled with community education.   | Utilise existing alert procedures.   | 1        | Develop existing communication systems.  | 1      | Communication issues but will provide valuable warning time.  | 0             | No impact.   | 0          | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0             | 2 Yes          |  |
|          | Planning Policies to Influence Development        | Green                       | Throughout Ward: Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.               | 2        | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | -1     | Reduces need for later retrofitting of features.  | 0             | Potential sustainability credits for implementation of features.     | 1          | Management of surface water at site level.  | 1             | 3 Yes          |  |
|          | Temporary or Demountable Flood Defences           | Green                       | Use these in areas where buildings can not be easily made resistant or resilient to flooding.   | Potential issues with presence required to set up defences at short notice.                                      | 0        | Low cost and can prevent significant damage to properties.   | 2      | Considerations of property blight and responsibility for maintenance and operation.                               | 0             | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0             | 2 Yes          |  |
|          | Social Change, Education and Awareness            | Green                       | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website. | 1        | Low cost to update website and provide information.  | 2      | May be issues with language barriers and less mobile residents attendance to information events.                  | 0             | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0             | 3 Yes          |  |
|          | Improved Resilience and Resistance Measures       | Green                       | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.                       | 2        | Cost will vary depending on the system being implemented.  | 0      | Minimal disruption, but may blight houses if features are obvious. Reduce clean-up time.                          | 0             | No impact.   | 0          | Will reduce damage to properties and help worth faster recovery.                                    | 0             | 2 Yes          |  |

| Ward ID  | 12 Munster  |   |  |                 |  |                |   |              |  |           |   |                  |               |                |  |
|----------|---|---|--|-----------------|--|----------------|---|--------------|--|-----------|---|------------------|---------------|----------------|--|
| Measure  | Initial Assessment                                | Location / Specific Details   | Technical  | Technical Score | Economic   | Economic Score | Social  | Social Score | Environmental  | Env Score | Objectives  | Objectives Score | Overall Score | Carry forward? |  |
| SOURCE   | Green Roof  | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | No suitable buildings in the Ward.   |                 | Potential costs with modification of structures and installation.                                      | -1             | Aesthetic value with education potential  |              | Provision of habitat, water air quality treatment & noise reduction. | 2         | Depending on design, significant quantities of water could be retained locally.                     | 1                | 1             | Yes            |  |
|          | Soakaways   | Suitability of infiltration SuDS is uncertain. Should be confirmed on a site-by-site basis where geological investigations have been completed.   | Potentially limited by geology of area.  |                 | Moderate initial and maintenance cost.   | 0              | Below ground, so does not affect land use   |              | Potential to discharge to groundwater with treatment measures.       | 0         | Potential to discharge large volumes of water dependent on geology.                                 | 1                | 1             | Yes            |  |
|          | Swales  | Limited open space available for this.  | Limited open space.  |                 | Moderate cost with low maintenance requirements.   | -2             | Intrusion on playing field area.  |              | Planting can be used to enhance biodiversity value.                  | 1         | Would attenuate discharge to surface water network: may benefit downstream areas.                   | 0                | -1            | No             |  |
|          | Permeable Paving                                  | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be re surfaced. Limited Council land available for installation.  | Limited Council land available for installation.   |                 | Low cost with moderate maintenance requirements.   | -1             | Aesthetic appearance.   |              | Water quality treatment through filtration process.                  | 1         | Allow for infiltration of rainfall during less intense, more frequent events.                       | 0                | 1             | Yes            |  |
|          | Rainwater Harvesting                              | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.   |                 | Reduced water supply and drainage costs with operational system.                                       | 0              | Potential health & safety issues in public buildings.   |              | Reduced water demand for buildings.                                  | 1         | Potential to retain moderate volumes from rainwater.  | 1                | 3             | Yes            |  |
|          | Rain gardens and tree planters                    | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.                              |                 | Low cost to set up with regular maintenance requirements.  | 1              | Increased green space.  |              | Increase biodiversity with water quality benefits.                   | 2         | Minor at individual level, widespread implementation needed to achieve benefits.                    | 1                | 5             | Yes            |  |
|          | Detention Basins                                  | Potential to develop open spaces to have a multifunctional use through lowering of ground levels to form a basin. Utilise space of Fulham College Boys School and/or space off Dawes Road.  | Technically possible depending on location of below ground services.   |                 | Low cost to construct and maintenance would be that of existing site.                                  | 1              | Construction during construction. Health & Safety issues associated with volumes of water and contaminants. |              | No alteration to environmental benefit.                              | 0         | Potential to store large volumes of surface water and discharge as appropriate.                     | 2                | 4             | Yes            |  |
|          | Ponds and Wetlands                                | These features tend to require a supply of water. Feasibility would need to be examined.  | Difficult with no regular source of water to replenish systems.  |                 | Moderate initial cost and high cost to maintain  | -2             | Provide amenity and education resource. Health & Safety concerns.   |              | Provide habitat diversity.   | 2         | Potentially could retain large volumes of surface water.  | 1                | -1            | No             |  |
| PATHWAY  | Increasing Capacity in Drainage Systems           | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.   |                 | Extensive works with high cost. Minimal maintenance.   | -2             | Reduced flood waters across flooding hotspots.  |              | No impact.   | 0         | May only be effective for smaller, less intensive rainfall events.                                  | -1               | -5            | No             |  |
|          | Separation of Foul and Surface Water Sewers       | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections  |                 | High cost of intrusive works   | -2             | Disruption during construction,   |              | Reduced pressure of combined network through reduced inflow.         | 1         | Would act to provide additional capacity and attenuate flows.                                       | 1                | -2            | No             |  |
|          | Improved Maintenance Regimes                      | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.  |                 | Slight modification to existing maintenance regimes.   | 2              | Limited disruption.   |              | No impact.   | 0         | Most effective at low magnitude events.   | 1                | 4             | Yes            |  |
|          | Managing Overland Flows (Online Storage)          | Limited open space alongside flow routes.   | Limited open space.  |                 | Moderate initial cost with minimal maintenance requirements.   | -2             | Potential disruption during construction  |              | Potential disruption during construction                             | 0         | Potential to retain large volumes of surface water upstream of catchment.                           | 0                | -1            | No             |  |
|          | Managing Overland Flows (Preferential Flow paths) | Modify streets that already tend to channel surface water, such as Orbain Road, St Olaf's Road and Sherbrooke Road through lowering the road, raising pavements, in installation of speed humps.  | May encounter problems with services and access requirements.  |                 | Moderate cost with minimal additional maintenance requirements.  | 0              | Construction during construction. Health & Safety issues associated with volumes of water and contaminants. |              | No impact.   | 0         | Effective to convey surface water in controlled manner.   | 2                | 1             | Yes            |  |
|          | Land Management Practices                         | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. Implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into site maintenance regime.  |                 | Slight modification to existing maintenance regimes.   | 2              | Limited disruption.   |              | Increased infiltration, reduced need for irrigation.                 | 0         | Reduced surface water runoff from site during high intensity events.                                | 1                | 5             | Yes            |  |
|          | Deculverting Watercourse(s)                       | No watercourses in borough to deculvert   | N/A  |                 | 0 N/A  | 0              | 0 N/A   |              | 0 N/A  | 0         | 0 N/A   | 0                | 0             | No             |  |
| RECEPTOR | Improved Weather Warning                          | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more affective if coupled with community education.   | Utilise existing alert procedures.   |                 | Develop existing communication systems.  | 1              | Communication issues but will provide valuable warning time.  |              | No impact.   | 0         | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0                | 2             | Yes            |  |
|          | Planning Policies to Influence Development        | Throughout Ward; Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.               |                 | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | 2              | Reduces need for later retrofitting of features.  |              | Potential sustainability credits for implementation of features.     | 0         | Management of surface water at site level.  | 1                | 3             | Yes            |  |
|          | Temporary or Demountable Flood Defences           | Use these in areas where buildings can not be easily made resistant or resilient to flooding.   | Potential issues with presence required to set up defences at short notice.                                      |                 | Low cost and can prevent significant damage to properties.   | 0              | Considerations of property blight and responsibility for maintenance and operation.                         |              | No impact.   | 0         | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 2             | Yes            |  |
|          | Social Change, Education and Awareness            | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website. |                 | Low cost to update website and provide information.  | 1              | May be issues with language barriers and less mobile residents attendance to information events.            |              | No impact.   | 0         | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 3             | Yes            |  |
|          | Improved Resilience and Resistance Measures       | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.                       |                 | Cost will vary depending on the system being implemented.  | 2              | Minimal disruption, but may blight houses if features are obvious. Reduce clean-up time.                    |              | No impact.   | 0         | Will reduce damage to properties and help with faster recovery.                                     | 0                | 2             | Yes            |  |

| Ward ID  | 13 Fulham Broadway                                |   |  |                 |  |                |   |              |  |           |   |                  |               |                |  |
|----------|---|---|--|-----------------|--|----------------|---|--------------|--|-----------|---|------------------|---------------|----------------|--|
| Measure  | Initial Assessment                                | Location / Specific Details   | Technical  | Technical Score | Economic   | Economic Score | Social  | Social Score | Environmental  | Env Score | Objectives  | Objectives Score | Overall Score | Carry forward? |  |
| SOURCE   | Green Roof  | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | Potential issues with structures of buildings.   |                 | Potential costs with modification of structures and installation.                                      | -1             | Aesthetic value with education potential  |              | Provision of habitat, water air quality treatment & noise reduction. | 2         | Depending on design, significant quantities of water could be retained locally.                     | 1                | 1             | Yes            |  |
|          | Soakaways   | Suitability of infiltration SuDS is uncertain. Should be confirmed on a site-by-site basis where geological investigations have been completed.   | Potentially limited by geology of area.  |                 | Moderate initial and maintenance cost.   | 0              | Below ground, so does not affect land use   |              | Potential to discharge to groundwater with treatment measures.       | 0         | Potential to discharge large volumes of water dependent on geology.                                 | 1                | 1             | Yes            |  |
|          | Swales  | Limited space within Ward to develop these.   | Limited space  |                 | Moderate cost with low maintenance requirements.   | -2             | Intrusion on playing field area.  |              | Planting can be used to enhance biodiversity value.                  | 1         | Would attenuate discharge to surface water network: may benefit downstream areas.                   | 0                | -1            | No             |  |
|          | Permeable Paving                                  | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be resurfaced. Limited Council land available for installation.   | Limited Council land available for installation.   |                 | Low cost with moderate maintenance requirements.   | -1             | Aesthetic appearance.   |              | Water quality treatment through filtration process.                  | 1         | Allow for infiltration of rainfall during less intense, more frequent events.                       | 0                | 1             | Yes            |  |
|          | Rainwater Harvesting                              | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.   |                 | Reduced water supply and drainage costs with operational system.                                       | 0              | Potential health & safety issues in public buildings.   |              | Reduced water demand for buildings.                                  | 1         | Potential to retain moderate volumes from rainwater.  | 1                | 3             | Yes            |  |
|          | Rain gardens and tree planters                    | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.                              |                 | Low cost to set up with regular maintenance requirements.  | 1              | Increased green space.  |              | Increase biodiversity with water quality benefits.                   | 2         | Minor at individual level, widespread implementation needed to achieve benefits.                    | 1                | 5             | Yes            |  |
|          | Detention Basins                                  | Limited space within Ward to develop these.   | Limited space  |                 | Low cost to construct and maintenance would be that of existing site.                                  | -2             | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. |              | No alteration to environmental benefit                               | 0         | Potential to store large volumes of surface water and discharge as appropriate.                     | 0                | -1            | No             |  |
|          | Ponds and Wetlands                                | These features tend to require a supply of water. Feasibility would need to be examined.  | Difficult with no regular source of water to replenish systems.  |                 | Moderate initial cost and high cost to maintain  | -2             | Provide amenity and education resource. Health & Safety concerns.   |              | Provide habitat diversity.   | 2         | Potentially could retain large volumes of surface water.  | 1                | -1            | No             |  |
| PATHWAY  | Increasing Capacity in Drainage Systems           | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.   |                 | Extensive works with high cost. Minimal maintenance.   | -2             | Reduced flood waters across flooding hotspots.  |              | No impact.   | 0         | May only be effective for smaller, less intensive rainfall events.                                  | -1               | -5            | No             |  |
|          | Separation of Foul and Surface Water Sewers       | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections  |                 | High cost of intrusive works   | -2             | Disruption during construction,   |              | Reduced pressure of combined network through reduced inflow.         | 1         | Would act to provide additional capacity and attenuate flows.                                       | 1                | -2            | No             |  |
|          | Improved Maintenance Regimes                      | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.  |                 | Slight modification to existing maintenance regimes.   | 2              | Limited disruption.   |              | No impact.   | 0         | Most effective for low magnitude events.  | 1                | 4             | Yes            |  |
|          | Managing Overland Flows (Online Storage)          | Limited space alongside flow paths for implementation.  | Limited space  |                 | Moderate initial cost with minimal maintenance requirements.   | -2             | Potential disruption during construction  |              | Potential disruption during construction                             | 0         | Potential to retain large volumes of surface water upstream of catchment.                           | 0                | -1            | No             |  |
|          | Managing Overland Flows (Preferential Flow paths) | Modify streets that already tend to channel surface water, such as Anselm Road and Racton Road through lowering the road, raising pavements, in installation of speed humps.  | May encounter problems with services and access requirements.  |                 | Moderate cost with minimal additional maintenance requirements.  | 0              | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. |              | No impact.   | 0         | Effective to convey surface water in controlled manner.   | 2                | 1             | Yes            |  |
|          | Land Management Practices                         | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. Implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into site maintenance regime.  |                 | Slight modification to existing maintenance regimes.   | 2              | Limited disruption.   |              | Increased infiltration, reduced need for irrigation.                 | 0         | Reduced surface water runoff from site during high intensity events.                                | 1                | 5             | Yes            |  |
|          | Deculverting Watercourse(s)                       | No watercourses in borough to deculvert   | N/A  |                 | 0 N/A  | 0              | 0 N/A   |              | 0 N/A  | 0         | 0 N/A   | 0                | 0             | No             |  |
| RECEPTOR | Improved Weather Warning                          | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more effective if coupled with community education.   | Utilise existing alert procedures.   |                 | Develop existing communication systems.  | 1              | Communication issues but will provide valuable warning time.  |              | No impact.   | 0         | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0                | 2             | Yes            |  |
|          | Planning Policies to Influence Development        | Throughout Ward; Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.               |                 | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | 2              | Reduces need for later retrofitting of features.  |              | Potential sustainability credits for implementation of features.     | 0         | Management of surface water at site level.  | 1                | 3             | Yes            |  |
|          | Temporary or Demountable Flood Defences           | Use these in areas where buildings can not be easily made resistant or resilient to flooding.   | Potential issues with presence required to set up defences at short notice.                                      |                 | Low cost and can prevent significant damage to properties.   | 0              | Considerations of property blight and responsibility for maintenance and operation.                       |              | No impact.   | 0         | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 2             | Yes            |  |
|          | Social Change, Education and Awareness            | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website. |                 | Low cost to update website and provide information.  | 1              | May be issues with language barriers and less mobile residents attendance to information events.          |              | No impact.   | 0         | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 3             | Yes            |  |
|          | Improved Resilience and Resistance Measures       | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.                       |                 | Cost will vary depending on the system being implemented.  | 2              | Minimal disruption, but may blight houses if features are obvious. Reduce clean-up time.                  |              | No impact.   | 0         | Will reduce damage to properties and help with faster recovery.                                     | 0                | 2             | Yes            |  |

| Ward ID                                     | 14 Town   |                             |   |   |                                    |  |   |   |  |  |            |   |   |                |
|---|---|-----------------------------|---|---|------------------------------------|--|---|---|--|--|------------|---|---|----------------|
| Measure                                     | Initial Assessment                                | Location / Specific Details | Technical   | Technical Score   | Economic                           | Economic Score   | Social                                  | Social Score  | Environmental  | Env Score  | Objectives | Objectives Score  | Overall Score   | Carry forward? |
| SOURCE                                      | Green Roof  | Green                       | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | Potential issues with structures of buildings.  | -1                                 | Potential costs with modification of structures and installation.                                      | -1                                      | Aesthetic value with education potential below ground, so does not affect land use                        | 0  | Provision of habitat, water air quality treatment & noise reduction. | 2          | Depending on design, significant quantities of water could be retained locally.   | 1   | 1 Yes          |
|   | Soakaways   | Yellow                      | Suitability of infiltration SuDS is uncertain. Should be confirmed on a site-by-site basis where geological investigations have been completed.   | Potentially limited by geology of area.   | 0                                  | Moderate initial and maintenance cost.   | 0                                       |   | 0  | Potential to discharge to groundwater with treatment measures.       | 0          | Potential to discharge large volumes of water dependent on geology.               | 1   | 1 Yes          |
|   | Swales  | Yellow                      | Limited space within Ward to develop these.   | Limited space .   | -2                                 | Moderate cost with low maintenance requirements.   | 0                                       | Intrusion on playing field area.  | 0  | Planting can be used to enhance biodiversity value.                  | 1          | Would attenuate discharge to surface water network: may benefit downstream areas. | 0   | -1 No          |
|   | Permeable Paving                                  | Green                       | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be re surfaced.   | Traffic loads may limit this to smaller roads and car parking areas. Method of discharge dependent on geology.  | 1                                  | Low cost with moderate maintenance requirements.   | 1                                       | Aesthetic appearance.   | 0  | Water quality treatment through filtration process.                  | 1          | Allow for infiltration of rainfall during less intense, more frequent events.     | 0   | 3 Yes          |
|   | Rainwater Harvesting                              | Green                       | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.  | 0                                  | Reduced water supply and drainage costs with operational system.                                       | 1                                       | Potential health & safety issues in public buildings.   | 0  | Reduced water demand for buildings.                                  | 1          | Potential to retain moderate volumes from rainwater.                              | 1   | 3 Yes          |
|   | Rain gardens and tree planters                    | Green                       | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.   | 1                                  | Low cost to set up with regular maintenance requirements.  | 1                                       | Increased green space.  | 0  | Increase biodiversity with water quality benefits.                   | 2          | Minor at individual level, widespread implementation needed to achieve benefits.  | 1   | 5 Yes          |
|   | Detention Basins                                  | Yellow                      | Limited open space in areas where surface water tends to pond. Water would need to be diverted.   | Technically possible depending on location of below ground services.  | -2                                 | Low cost to construct and maintenance would be that of existing site.                                  | 1                                       | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. | 0  | No alteration to environmental benefit.                              | 0          | Potential to store large volumes of surface water and discharge as appropriate.   | 0   | -1 No          |
|   | Ponds and Wetlands                                | Yellow                      | These features tend to require a supply of water. Feasibility would need to be examined.  | Difficult with no regular source of water to replenish systems.   | -2                                 | Moderate initial cost and high cost to maintain  | -2                                      | Provide amenity and education resource. Health & Safety concerns.   | 0  | Provide habitat diversity.   | 2          | Potentially could retain large volumes of surface water.                          | 1   | -1 No          |
| PATHWAY                                     | Increasing Capacity in Drainage Systems           | Red                         | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.  | -2                                 | Extensive works with high cost. Minimal maintenance.   | -2                                      | Reduced flood waters across flooding hotspots.  | 0  | No impact.   | 0          | May only be effective for smaller, less intensive rainfall events.                | -1  | -5 No          |
|   | Separation of Foul and Surface Water Sewers       | Red                         | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections   | -2                                 | High cost of intrusive works   | -2                                      | Disruption during construction,   | 0  | Reduced pressure of combined network through reduced inflow.         | 1          | Would act to provide additional capacity and attenuate flows.                     | 1   | -2 No          |
|   | Improved Maintenance Regimes                      | Green                       | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.   | 2                                  | Slight modification to existing maintenance regimes.   | 1                                       | Limited disruption.   | 0  | No impact.   | 0          | Most effective for low magnitude events.  | 1   | 4 Yes          |
|   | Managing Overland Flows (Online Storage)          | Green                       | Creation of bunds to retain flood water by intercepting main flow routes from the park and playing fields.  | Construction of bunds with appropriate drainage.  | 1                                  | Moderate initial cost with minimal maintenance requirements.   | 1                                       | Potential disruption during construction  | 0  | Potential disruption during construction                             | 0          | Potential to retain large volumes of surface water upstream of catchment.         | 2   | 4 Yes          |
|   | Managing Overland Flows (Preferential Flow paths) | Green                       | Modify streets that already tend to channel surface water, such as Crookham Road, Mimosa Street, Lettice Street and Whittinghall Road through lowering the road, raising pavements, in installation of speed humps.   | May encounter problems with services and access requirements.   | 0                                  | Moderate cost with minimal additional maintenance requirements.  | -1                                      | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants. | 0  | No impact.   | 0          | Effective to convey surface water in controlled manner.                           | 2   | 1 Yes          |
|   | Land Management Practices                         | Green                       | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into site maintenance regime.   | 2                                  | Slight modification to existing maintenance regimes.   | 1                                       | Limited disruption.   | 0  | Increased infiltration, reduced need for irrigation.                 | 1          | Reduced surface water runoff from site during high intensity events.              | 1   | 5 Yes          |
|   | Deculverting Watercourse(s)                       | Red                         | No watercourses in borough to deculvert   | N/A   | 0                                  | N/A  | 0                                       | N/A   | 0  | N/A  | 0          | N/A   | 0   | 0 No           |
|   | RECEPTOR  | Improved Weather Warning    | Green   | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more effective if coupled with community education. | Utilise existing alert procedures. | 1  | Develop existing communication systems. | 1   | Communication issues but will provide valuable warning time. | 0  | No impact. | 0   | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0              |
| Planning Policies to Influence Development  |   | Green                       | Throughout Ward; Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.  | 2                                  | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | -1                                      | Reduces need for later retrofitting of features.  | 0  | Potential sustainability credits for implementation of features.     | 1          | Management of surface water at site level.  | 1   | 3 Yes          |
| Temporary or Demountable Flood Defences     |   | Green                       | Use these in areas where buildings can not be easily made resistant or resilient to flooding.   | Potential issues with presence required to set up defences at short notice.   | 0                                  | Low cost and can prevent significant damage to properties.   | 2                                       | considerations of property blight and responsibility for maintenance and operation.                       | 0  | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.   | 0   | 2 Yes          |
| Social Change, Education and Awareness      |   | Green                       | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website.  | 1                                  | Low cost to update website and provide information.  | 2                                       | May be issues with language barriers and less mobile residents attendance to information events.          | 0  | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.   | 0   | 3 Yes          |
| Improved Resilience and Resistance Measures |   | Green                       | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring . Applicable to all new developments and could be retrofitted to vulnerable properties.  | Relatively simple to retrofit features to properties and incorporate into building design.  | 2                                  | Cost will vary depending on the system being implemented.  | 0                                       | Minimal disruption, but may blight houses if features are obvious. Reduce clean up time.                  | 0  | No impact.   | 0          | Will reduce damage to properties and help worth faster recovery.                  | 0   | 2 Yes          |



| Ward ID  | 15 Parsons Green and Walham                       |   |  |                 |  |                |   |  |  |            |   |   |               |                |     |
|----------|---|---|--|-----------------|--|----------------|---|--|--|------------|---|---|---------------|----------------|-----|
| Measure  | Initial Assessment                                | Location / Specific Details   | Technical  | Technical Score | Economic   | Economic Score | Social  | Social Score   | Environmental  | Env Score  | Objectives  | Objectives Score  | Overall Score | Carry forward? |     |
| SOURCE   | Green Roof  | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | Potential issues with structures of buildings.   |                 | Potential costs with modification of structures and installation.                                      | -1             | Aesthetic value with education potential  |  | Provision of habitat, water air quality treatment & noise reduction. | 2          | Depending on design, significant quantities of water could be retained locally.                     | 1   | 1             | Yes            |     |
|          | Soakaways   | Suitability of infiltration SuDS is uncertain. Should be confirmed on a site-by-site basis where geological investigations have been completed.   | Potentially limited by geology of area.  |                 | Moderate initial and maintenance cost.   | 0              | Below ground, so does not affect land use   |  | Potential to discharge to groundwater with treatment measures.       | 0          | Potential to discharge large volumes of water dependent on geology.                                 | 1   | 1             | Yes            |     |
|          | Swales  | Develop within open space running adjacent to roads such as along New Kings Road and Pearscroft Road.   | System would need to be developed to connect to drainage network as infiltration is limited.                     |                 | Moderate cost with low maintenance requirements.   | 1              | Intrusion on playing field area.  |  | Planting can be used to enhance biodiversity value.                  | 1          | Would attenuate discharge to surface water network: may benefit downstream areas.                   | 1   | 3             | Yes            |     |
|          | Permeable Paving                                  | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be re surfaced.   | Traffic loads may limit this to smaller roads and car parking areas. Method of discharge dependent on geology.   |                 | Low cost with moderate maintenance requirements.   | 1              | Aesthetic appearance.   |  | Water quality treatment through filtration process.                  | 1          | Allow for infiltration of rainfall during less intense, more frequent events.                       | 0   | 3             | Yes            |     |
|          | Rainwater Harvesting                              | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.   |                 | Reduced water supply and drainage costs with operational system.                                       | 0              | Potential health & safety issues in public buildings.   |  | Reduced water demand for buildings.                                  | 1          | Potential to retain moderate volumes from rainwater.  | 1   | 3             | Yes            |     |
|          | Rain gardens and tree planters                    | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.                              |                 | Low cost to set up with regular maintenance requirements.  | 1              | Increased green space.  |  | Increase biodiversity with water quality benefits.                   | 2          | Minor at individual level, widespread implementation needed to achieve benefits.                    | 1   | 5             | Yes            |     |
|          | Detention Basins                                  | Potential to develop open spaces to have a multifunctional use through lowering of ground levels to form a basin. Opportunities in Eel Brook Common or William Parnell Park.  | Technically possible depending on location of below ground services.   |                 | Low cost to construct and maintenance would be that of existing site.                                  | 1              | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants.           |  | No alteration to environmental benefit.                              | 0          | Potential to store large volumes of surface water and discharge as appropriate.                     | 2   | 4             | Yes            |     |
|          | Ponds and Wetlands                                | These features tend to require a supply of water. Feasibility would need to be examined.  | Difficult with no regular source of water to replenish systems.  |                 | Moderate initial cost and high cost to maintain  | -2             | Health & Safety concerns.   |  | Provide habitat diversity.   | 2          | Potentially could retain large volumes of surface water.  | 1   | -1            | No             |     |
| PATHWAY  | Increasing Capacity in Drainage Systems           | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.   |                 | Extensive works with high cost. Minimal maintenance.   | -2             | Reduced flood waters across flooding hotspots.  |  | No impact.   | 0          | May only be effective for smaller, less intensive rainfall events.                                  | -1  | -5            | No             |     |
|          | Separation of Foul and Surface Water Sewers       | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections  |                 | High cost of intrusive works   | -2             | Disruption during construction,   |  | Reduced pressure of combined network through reduced inflow.         | 1          | Would act to provide additional capacity and attenuate flows.                                       | 1   | -2            | No             |     |
|          | Improved Maintenance Regimes                      | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.  |                 | Slight modification to existing maintenance regimes.   | 2              | Limited disruption.   |  | No impact.   | 0          | Most effective for low magnitude events.  | 1   | 4             | Yes            |     |
|          | Managing Overland Flows (Online Storage)          | Creation of bunds to retain flood water by intercepting main flow routes from the park: northern edge of Eel Brook Common and/or Southern side of William Parnell Park.   | Construction of bunds with appropriate drainage.   |                 | Moderate initial cost with minimal maintenance requirements.   | 2              | Potential disruption during construction. Health & Safety issues associated with volumes of water and contaminants. |  | Potential disruption during construction                             | 0          | Potential to retain large volumes of surface water upstream of catchment.                           | 2   | 5             | Yes            |     |
|          | Managing Overland Flows (Preferential Flow paths) | Modify streets that already tend to channel surface water, such as Linver Road and Alderville Road through lowering the road, raising pavements, in installation of speed humps.  | May encounter problems with services and access requirements.  |                 | Moderate cost with minimal additional maintenance requirements.  | 0              | No impact.  |  | No impact.   | 0          | Effective to convey surface water in controlled manner.   | 2   | 1             | Yes            |     |
|          | Land Management Practices                         | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. Implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into site maintenance regime.  |                 | Slight modification to existing maintenance regimes.   | 2              | Limited disruption.   |  | Increased infiltration, reduced need for irrigation.                 | 1          | Reduced surface water runoff from site during high intensity events.                                | 1   | 5             | Yes            |     |
|          | Deculverting Watercourse(s)                       | No watercourses in borough to deculvert   | N/A  |                 | 0 N/A  | 0              | N/A   |  | 0 N/A  | 0          | N/A   | 0   | 0             | No             |     |
| RECEPTOR | Improved Weather Warning                          | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more effective if coupled with community education.   | Utilise existing alert procedures.   |                 | Develop existing communication systems.  | 1              | Communication issues but will provide valuable warning time.  |  | No impact.   | 0          | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0   | 2             | Yes            |     |
|          | Planning Policies to Influence Development        | Throughout Ward; Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.               |                 | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | 2              | Reduces need for later retrofitting of features.  |  | Potential sustainability credits for implementation of features.     | 0          | Management of surface water at site level.  | 1   | 3             | Yes            |     |
|          | Temporary or Demountable Flood Defences           | Use these in areas where buildings can not be easily made resistant or resilient to flooding.   | Potential issues with presence required to set up defences at short notice.                                      |                 | Low cost and can prevent significant damage to properties.   | 0              | Considerations of property blight and responsibility for maintenance and operation.                                 |  | No impact.   | 0          | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0   | 2             | Yes            |     |
|          | Social Change, Education and Awareness            | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website. |                 | Low cost to update website and provide information.  | 1              | 2   | May be issues with language barriers and less mobile residents attendance to information events. |  | No impact. | 0   | No effect on flood volumes, however will help minimise damage and risk to life. | 0             | 3              | Yes |
|          | Improved Resilience and Resistance Measures       | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.                       |                 | Cost will vary depending on the system being implemented.  | 2              | Minimal disruption, but may blight houses if features are obvious. Reduce clean-up time.                            |  | No impact.   | 0          | Will reduce damage to properties and help with faster recovery.                                     | 0   | 2             | Yes            |     |

| Ward ID  | 16 Sands End                                      |   |  |                 |  |                |   |              |  |           |   |                  |               |                |  |
|----------|---|---|--|-----------------|--|----------------|---|--------------|--|-----------|---|------------------|---------------|----------------|--|
| Measure  | Initial Assessment                                | Location / Specific Details   | Technical  | Technical Score | Economic   | Economic Score | Social  | Social Score | Environmental  | Env Score | Objectives  | Objectives Score | Overall Score | Carry forward? |  |
| SOURCE   | Green Roof  | Potential to retrofit to council owned properties including schools. Encourage use in new developments where possible through planning policy.  | Potential issues with structures of buildings.   |                 | Potential costs with modification of structures and installation.                                      | -1             | Aesthetic value with education potential  |              | Provision of habitat, water air quality treatment & noise reduction. | 2         | Depending on design, significant quantities of water could be retained locally.                     | 1                | 1             | Yes            |  |
|          | Soakaways   | Suitability of infiltration SuDS is uncertain. Should be confirmed on a site-by-site basis where geological investigations have been completed.   | Potentially limited by geology of area.  |                 | Moderate initial and maintenance cost.   | 0              | Below ground, so does not affect land use   |              | Potential to discharge to groundwater with treatment measures.       | 0         | Potential to discharge large volumes of water dependent on geology.                                 | 1                | 1             | Yes            |  |
|          | Swales  | Develop within open space running adjacent Peterborough Road within South Park, or William Parnell Park.  | System would need to be developed to connect to drainage network as infiltration is limited.                     |                 | Moderate cost with low maintenance requirements.   | 1              | Intrusion on playing field area.  |              | Planting can be used to enhance biodiversity value.                  | 1         | Would attenuate discharge to surface water network: may benefit downstream areas.                   | 1                | 4             | Yes            |  |
|          | Permeable Paving                                  | Generic measure: throughout smaller roads and paved open spaces within the Ward. Incorporate across the borough when roads are due to be re surfaced.   | Traffic loads may limit this to smaller roads and car parking areas. Method of discharge dependent on geology.   |                 | Low cost with moderate maintenance requirements.   | 1              | Aesthetic appearance.   |              | Water quality treatment through filtration process.                  | 1         | Allow for infiltration of rainfall during less intense, more frequent events.                       | 0                | 3             | Yes            |  |
|          | Rainwater Harvesting                              | Potentially applicable to all new development and can be introduced retrospectively. Encourage use in new developments where possible through planning policy.  | Can be easily designed into new build. More difficult to retrofit.   |                 | Reduced water supply and drainage costs with operational system.                                       | 0              | Potential health & safety issues in public buildings.   |              | Reduced water demand for buildings.                                  | 0         | Potential to retain moderate volumes from rainwater.  | 1                | 3             | Yes            |  |
|          | Rain gardens and tree planters                    | Throughout Ward where existing tree pits could be expanded.   | Above ground implementation with slight adjustment of the surface drainage network.                              |                 | Low cost to set up with regular maintenance requirements.  | 1              | Increased green space.  |              | Increase biodiversity with water quality benefits.                   | 0         | Minor at individual level, widespread implementation needed to achieve benefits.                    | 1                | 5             | Yes            |  |
|          | Detention Basins                                  | Limited open space in areas where surface water accumulates. Surface water would need to be directed to available areas.  | Technically possible depending on location of below ground services.   |                 | Low cost to construct and maintenance would be that of existing site.                                  | -1             | Disruption during construction. Health & Safety issues associated with volumes of water and contaminants.           |              | No alteration to environmental benefit.                              | 0         | Limited opportunity to retain volumes in key areas.   | -1               | -1            | No             |  |
|          | Ponds and Wetlands                                | These features tend to require a supply of water. Feasibility would need to be examined.  | Difficult with no regular source of water to replenish systems.  |                 | Moderate initial cost and high cost to maintain  | -2             | Provide amenity and education resource. Health & Safety concerns.   |              | Provide habitat diversity.   | 0         | Potentially could retain large volumes of surface water.  | 1                | -1            | No             |  |
| PATHWAY  | Increasing Capacity in Drainage Systems           | Increase pipe sizes to provide additional capacity within the sewer network. From analysis of the Thames Water sewer network, it can be seen that in extreme events capacity is quickly reached therefore this is unlikely to have a notable effect.  | Complex as numerous connections to combined network.   |                 | Extensive works with high cost. Minimal maintenance.   | -2             | Reduced flood waters across flooding hotspots.  |              | No impact.   | 0         | May only be effective for smaller, less intensive rainfall events.                                  | -1               | -5            | No             |  |
|          | Separation of Foul and Surface Water Sewers       | Areas could be connected to a separate surface water network, which is discharged to detention basin, or other large SuDS feature, prior to reconnection to the Thames network. Could be used to temporarily divert rainwater from sites, where surface water cannot be retained at site level.                 | Complex sewer network with multiple connections  |                 | High cost of intrusive works   | -2             | Disruption during construction,   |              | Reduced pressure of combined network through reduced inflow.         | 0         | Would act to provide additional capacity and attenuate flows.                                       | 1                | -2            | No             |  |
|          | Improved Maintenance Regimes                      | Throughout Ward concentrating on flooding hotspots. More regular inspection and maintenance of the current sewer system to remove debris and increase conveyance.   | Adjust existing maintained regime to focus on key flooding areas.  |                 | Slight modification to existing maintenance regimes.   | 2              | Limited disruption.   |              | No impact.   | 0         | Most effective for low magnitude events.  | 1                | 4             | Yes            |  |
|          | Managing Overland Flows (Online Storage)          | Limited open space alongside flow paths. Surface water would need to be directed to available areas.  | Limited space  |                 | Moderate initial cost with minimal maintenance requirements.   | -1             | Potential disruption during construction. Health & Safety issues associated with volumes of water and contaminants. |              | Potential disruption during construction                             | 0         | Limited opportunity to retain volumes in key areas.   | -1               | -1            | No             |  |
|          | Managing Overland Flows (Preferential Flow paths) | Modify streets that already tend to channel surface water, such as Ashcombe Street, Hugin Road and De Morgan Road through lowering the road, raising pavements, in installation of speed humps.   | May encounter problems with services and access requirements.  |                 | Moderate cost with minimal additional maintenance requirements.  | 0              | No impact.  |              | No impact.   | 0         | Effective to convey surface water in controlled manner.   | 2                | 1             | Yes            |  |
|          | Land Management Practices                         | Encouraging greening of impermeable areas where possible: driveways, ground adjacent to walkways, school grounds etc. Implement requirement into planning policy. Encourage aeration of parks and sports fields.  | Incorporate into site maintenance regime.  |                 | Slight modification to existing maintenance regimes.   | 2              | Limited disruption.   |              | Increased infiltration, reduced need for irrigation.                 | 0         | Reduced surface water runoff from site during high intensity events.                                | 1                | 5             | Yes            |  |
|          | Deculverting Watercourse(s)                       | No watercourses in borough to deculvert   | N/A  |                 | 0 N/A  | 0              | 0 N/A   |              | 0 N/A  | 0         | 0 N/A   | 0                | 0             | No             |  |
| RECEPTOR | Improved Weather Warning                          | Develop upon existing warning systems to alert properties at risk from heavy rainfall. Make use of Met Office forecast services. This measure is likely to be more effective if coupled with community education.   | Utilise existing alert procedures.   |                 | Develop existing communication systems.  | 1              | Communication issues but will provide valuable warning time.  |              | No impact.   | 0         | Will help to minimise damage and risk to life provided it is accompanied with suitable information. | 0                | 2             | Yes            |  |
|          | Planning Policies to Influence Development        | Throughout Ward; Set policy requirements for attenuation from properties throughout the Ward, and resilience measures for properties in flooding hotspots.  | Policy requirement for attenuation in the Ward and resilience measures for properties in hotspots.               |                 | Potential cost to the developer for additional measures. Complex to install in highly developed areas. | 2              | Reduces need for later retrofitting of features.  |              | Potential sustainability credits for implementation of features.     | 0         | Management of surface water at site level.  | 1                | 3             | Yes            |  |
|          | Temporary or Demountable Flood Defences           | Use these in areas where buildings can not be easily made resistant or resilient to flooding.   | Potential issues with presence required to set up defences at short notice.                                      |                 | Low cost and can prevent significant damage to properties.   | 0              | Considerations of property blight and responsibility for maintenance and operation.                                 |              | No impact.   | 0         | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 2             | Yes            |  |
|          | Social Change, Education and Awareness            | Update website, leaflet drops, classes at local schools to enhance knowledge and understanding of flood risk. Will be dependent on community engagement opportunities. In areas with a large migration of population it may be difficult to undertake / pass on information from one property owner to another. | Utilise existing communication strategies and public events as well as providing updates on the council website. |                 | Low cost to update website and provide information.  | 1              | May be issues with language barriers and less mobile residents attendance to information events.                    |              | No impact.   | 0         | No effect on flood volumes, however will help minimise damage and risk to life.                     | 0                | 3             | Yes            |  |
|          | Improved Resilience and Resistance Measures       | Individual property flood resistance / resilience measures could be installed such as demountable flood barriers, air brick covers, tiled flooring. Applicable to all new developments and could be retrofitted to vulnerable properties.   | Relatively simple to retrofit features to properties and incorporate into building design.                       |                 | Cost will vary depending on the system being implemented.  | 2              | Minimal disruption, but may blight houses if features are obvious. Reduce clean-up time.                            |              | No impact.   | 0         | Will reduce damage to properties and help with faster recovery.                                     | 0                | 2             | Yes            |  |

## **APPENDIX C – SPATIAL PLANNER INFORMATION PACK**

A Spatial Planning Information Pack has been produced as part of the SWMP and is provided electronically alongside this report.

Appendix C: *LBHF\_SWMP\_AppendixC\_Spatial\_Planner\_Info\_Pack\_v04.pdf*

# Appendix C – Spatial Planning Information Pack

## 1.1 Background

The National Planning Policy Framework (NPPF)<sup>1</sup> and the accompanying Planning Practice Guidance<sup>2</sup> set out national planning guidance for development in relation to flood risk. It takes a risk based approach and categorises land uses into different vulnerabilities, which are appropriate to different flood zones.

The NPPF applies to all forms of flood risk; however, surface water, groundwater and ordinary watercourse flood risks are generally less well understood than fluvial or coastal flood risk. In part this is due to the much faster response times of surface water flooding, a perception that the impacts are relatively minor and the highly variable nature of influences, e.g. storm patterns, local drainage blockages and interactions with the sewer system.

However, climate change models are predicting more frequent heavy storms and there is emerging evidence that this is already happening. It is also clear from the flooding that occurred in several parts of England in summer 2007 that surface water flooding can have major impacts. In the heavily urbanised area of London, the risks are significant and it is important that appropriate consideration is given to these risks when new development is proposed.

The planning system is a key tool in reducing flood risk, and by using information included within this SWMP the potential to use planning to reduce flood risk can apply to the surface water risk as well as fluvial and tidal risk.

Whilst this document is titled a Surface Water Management Plan (SWMP), it also includes consideration of groundwater flood risk through the identification of a map showing “Increased Potential for Elevated Groundwater” (IPEG).

## 1.2 Using the SWMP to update the borough SFRA

Most borough SFRA contain little or no historic analysis of surface water, groundwater and ordinary watercourse flood risk. The mapping within this SWMP (Figures 3.4-1 and 3.4-2) show some areas that are vulnerable to extensive deep accumulations of water (>0.5m) during the 1% AEP event. These areas have a high certainty of flooding during extreme storms and the damage occurring is likely to be significant. The mapping also shows some small areas of potentially deep flooding (>0.5m), these areas may have particular risks associated with them, but may also occur due to irregularities in mapping and modelling. The mapping also shows areas of shallower flooding (<0.5m), some isolated and some more extensive flooding. Maps show general flow directions and approximate velocities (in the form of ‘hazard’ maps) as even relatively shallow water flowing at high velocities can be a threat to life and can cause damage.

The production of this SWMP provides new updated data and the SFRA<sup>3</sup> has therefore been updated to account for this.

<sup>1</sup> Communities and Local Government. (March 2012) National Planning Policy Framework.

<sup>2</sup> Communities and Local Government. (March 2014) Planning Practice Guidance.

<sup>3</sup> London Borough of Hammersmith & Fulham (2015) Strategic Flood Risk Assessment

### 1.3 Using the SWMP to update policies in Development Plan Documents

Ideally the review of the borough SFRA should be a pre-cursor to any significant change to the Core Strategy and development control policies. Therefore reference to the SFRA should automatically update the approach to local flood risks.

### 1.4 Using the SWMP to influence major areas of redevelopment

Where major development areas are proposed, either in the London Plan or within the Core Strategy DPD, these should be examined for:

- Flooding hotspots within the area;
- Areas identified as having an increased Potential for Elevated Groundwater;
- Contribution of run-off to flooding hotspots beyond the actual redevelopment area.

Given the large scale of major developments, it is unlikely that the local flood risk would prevent redevelopment taking place, but it may affect the location, uses, design and resilience of the proposals. Therefore, a site specific Flood Risk Assessment needs to be undertaken and should consider:

- the location of different types of land use within the site(s);
- the layout and design of buildings and open spaces to take account of flood risk, for example by identifying particular flow routes or flood storage areas;
- measures to reduce the impact of any flood, through flood resistance/resilience measures/materials;
- incorporating sustainable drainage and rainwater storage to reduce run-off to adjacent areas;
- linkages or joint approaches for groups of sites, possibly including those in surrounding areas.

### 1.5 Using the SWMP to influence specific development proposals

Whilst some small scale developments may not be appropriate in high risk areas, in most cases it will be a matter of ensuring that the Flood Risk Assessment considers those items listed under major developments above and also considers some or all of the following site specific issues:

- Are the flow paths and areas of ponding correct, and will these be altered by the proposed development?
- Has the site been planned sequentially to keep major surface water flow paths clear?
- Has exceedance of the site's drainage capacity been adequately dealt with? Where will exceedance flows run off the site?
- Could there be benefits to existing properties at risk downstream of the site if additional storage could be provided on the site?
- In the event of surface water flooding to the site, have safe access to / egress from the site been adequately considered.

- Have the site levels been altered, or will they be altered during development? Consider how this will impact surface water flood risk on the site and to adjacent areas.
- Have inter-dependencies between utilities and the development been considered? (for example, the electricity supply for building lifts or water pumps).

Further guidance on requirements relating to assessment and mitigation of surface water flood risk will be developed and published by London Borough of Hammersmith and Fulham Council as part of the Local Plan Supplementary Planning Document.

## 1.6 Specific Locational Considerations

Within the London Borough of Hammersmith and Fulham, a number of opportunity areas have already been identified for major development. Table C-1 provides a summary of the areas of major redevelopment along with the relevant wards which they cover and the corresponding number of flooding hotspots. The details of flood risk for these areas can be found in Section 3.8 of the SWMP report.

**Table C-1: Opportunity Areas**

| Redevelopment Area   | Wards and number of flooding hotspots   |
|--|---|
| White City opportunity area  | Ward 1 College Park and Old Oak, 39 flooding hotspots<br>Ward 2 Wormholt and White City, 26 flooding hotspots<br>Ward 3 Shepherd's Bush Green, 19 flooding hotspots                     |
| Hammersmith Town Centre & Riverside regeneration Area                                | Ward 6 Hammersmith Broadway, 34 flooding hotspots   |
| Fulham regeneration area (including Earls Court & West Kensington opportunity areas) | Ward 10 North End, 11 flooding hotspots<br>Ward 13 Fulham Broadway, 10 flooding hotspots<br>Ward 14 Town, 21 flooding hotspots<br>Ward 15 Parsons Green and Walham, 8 flooding hotspots |
| Park Royal opportunity area  | Ward 16 Sands End, 9 flooding hotspots  |
| South Fulham Riverside   | Ward 11 Palace Riverside, 11 flooding hotspots<br>Ward 16 Sands End, 9 flooding hotspots  |

### Mapping Checklist

The table below indicates the SWMP maps which are of potential use for spatial planning. It should be noted that as part of the SWMP deliverables, the GIS datasets used to produce the maps below have been provided to the London Borough of Hammersmith and Fulham and should be used in any future mapping of surface water flood risk.

**Table C-2: SWMP maps of potential use to spatial planners**

| Issue  | SWMP Maps                                     |
|--|---|
| Surface water flood risk (depth and hazard)  | 3.4-1 – 3.4-2<br>3.4-8 – 3.4-15<br>A.6 – A.13 |
| Increased potential for elevated groundwater | 3.7-1   |
| Infiltration SUDs suitability map            | A-4   |

| Issue                                | SWMP Maps |
|--------------------------------------|-----------|
| Recorded incidents of sewer flooding | 3.5-2     |



## **APPENDIX D – FLOOD RESILIENCE FORUM AND EMERGENCY PLANNER INFORMATION PACK**

A Resilience Forum and Emergency Planner Information Pack has been produced as part of the SWMP and is provided electronically alongside this report.

*Appendix D: LBHF\_SWMP\_AppendixD\_Emergency\_Planning\_v02.pdf*

# Appendix D – Resilience Forum and Emergency Planner Information Pack

## 1.1 Introduction

Presently, surface water flooding is less well understood than other sources of flooding, partly because surface water events tend to happen and disperse quickly meaning that there is a lack of accurate and consistent records and partly because they are not tied to readily identifiable features such as rivers or the sea. Therefore this Surface Water Management Plan (SWMP) offers an opportunity to communicate up to date information about locations at risk from surface water flooding to those with an interest. Responses in an emergency will be informed by known surface water flooding locations, especially near public buildings and major transport routes and important infrastructure.

The purpose of this information pack is to assist in communicating surface water flood risk to the London Local Resilience Forum and Emergency Planners within the London Resilience Partnership to enable them to ensure that incident management plans are updated based on the improved understanding of surface water flooding. SWMP mapping outputs and knowledge will be used to:

- Update Community Risk Registers (CRR); and
- Update Multi-Agency Flood Plans (MAFP).

This pack is presented as a Frequently Asked Questions (FAQ) document and contains information that addresses the following points:

1. How can SWMP outputs improve Community Risk Registers?
2. How can SWMP outputs improve Multi-Agency Flood Planning?
3. How do SWMP outputs compliment the Flood Forecasting Centre's Extreme Rainfall Alert (ERA)?
4. Examples of Good Practice

In updating MAFPs, the London Borough of Hammersmith and Fulham, as well as the neighbouring boroughs, has a responsibility to partner with other key stakeholders and risk management authorities, who share the responsibility for decisions and actions. Ideally, the informal relationships established within the context of the Drain London programme should be formalised to ensure clear lines of communication and continued mutual cooperation through the development of a Memorandum of Understanding. This should include appropriate aspects for Surface Water Flood Risk Management.

### 1.2 HOW CAN SWMP OUTPUTS IMPROVE COMMUNITY RISK REGISTERS (CRRs)?

CRRs are prepared by Category 1 responders and are required as part of the Civil Contingencies Act (CCA) 2004. The CCA requires that Category 1 responders undertake risk assessments and maintain these risks in a CCR. In this context risks are defined as events which could result in major consequences, and they include risks from flooding.

Outputs from the SWMP can be used to reduce the uncertainties associated with assessing the likelihood and impact of surface water flooding (see CRR HL18 for more information on current risk assessment). The SWMP presents an opportunity for the identification of

vulnerable sites and populations which may be at increased risk, and allows for risk-based prevention or mitigation actions to be taken.

1.3 How can SWMP outputs improve Multi-Agency Flood Plans (MAFPs)?

MAFPs are specific emergency plans which should be developed by Local Resilience Forums, to deliver a coordinated plan to respond to flood incidents. MAFP recognise the need for specific flooding emergency plans, due to the complex nature of flooding and the consequences that arise. Guidance on producing a MAFP is available at [http://www.ukresilience.gov.uk/media/ukresilience/assets/flooding\\_ma\\_planning\\_guidance\\_0208.pdf](http://www.ukresilience.gov.uk/media/ukresilience/assets/flooding_ma_planning_guidance_0208.pdf).

Outputs from SWMPs should inform the development of, or update, the MAFP.

The SWMP surface water mapping should be used as an initial indicator of a possible risk. A Flood Risk Assessment at a site shown as being at risk of surface water flooding should consider:

- Impacts on flood receptor sites;
- The degree of receptor vulnerability; and
- In the event of surface water flooding to the site, has safe access to / egress from the site been adequately considered?

Table D-1 indicates the SWMP maps which are of potential use to emergency planning, and which maps may be suitable for updating existing MAFP maps.

**Table D-1: SWMP maps of potential use to emergency planners**

| Issue  | SWMP maps                                     | Consider updating existing MAFP maps?  |
|--|---|--|
| Surface water flood risk (depth and hazard)  | 3.4.1 – 3.4.2<br>3.8.1 – 3.8.30<br>A-6 – A-13 | Yes – more detailed methodology to that used for the MAFP. Hazard maps also provide indicative flow paths. |
| Increased potential for elevated groundwater | 3.7.1   | Yes – more detailed methodology to that used for the MAFP.   |

1.4 HOW DO SWMP OUTPUTS COMPLEMENT THE FLOOD FORECASTING CENTRE’S EXTREME RAINFALL ALERT (ERA)?

In 2008 the Met Office and the Environment Agency set up the Flood Forecasting Centre to provide services to emergency and professional partners. The Flood Forecasting Centre provides an Extreme Rainfall Alert (ERA) service to Category 1 and Category 2 responders. The ERA is issued at county level and is used to forecast and warn for extreme rainfall that could lead to surface water flooding, particularly in urban areas. It is designed to help local response organisations manage the impact of flooding via two products:

1. Guidance – issued when there is a 10% or greater chance of extreme rainfall; and
2. Alert – issued when there is a greater than 20% chance of extreme rainfall.

The ERA cannot provide site-specific real-time surface water flood forecast, but does offer a county level alert of impending rainfall. The alert is based on the probability of rainfall occurring, rather than being a definitive forecast.

Surface water flooding has very short lead times and is hard to predict in real time because local topography and drainage infrastructure affect the direction of runoff and location of flooding. However, the assessment carried out as part of this SWMP study has taken an important step towards the likely flow pathways and locations of ponding of surface water. Used in parallel with the ERA, this can be used to improve emergency planning and responses for surface water flooding events.

#### 1.5 EXAMPLES OF GOOD PRACTICE FOR EMERGENCY PLANNERS

- **Ensure that a programme of engagement on flood risk awareness is initiated within the Borough.** Meet with key corporate communications teams to agree an approach to social change, education and awareness raising inline with the needs of the Borough.
- **Build trust** - Public and stakeholder trust in authorities through **long term, transparent engagement.**
  - Ensure there are key messages that encourage attitude and behaviour change with the public. This will help to address misconceptions that flooding results from a failure on someone's part.
  - Educate the public to help them better understand where responsibilities lie, changes they can make to their own lifestyles, and actions they can take to physically reduce personal flood risk.
  - Encourage communities towards creating their own community action/response plans to support wider ownership of risk and responsibilities
  - Consider holding face to face interviews with at -risk families and groups to better inform your Community Risk Register. This will help both you and them to better understand risk and plan to manage it.
- Establish a **common baseline for flood data** and information in line with EA requirements. Set up a Borough '**One-Stop Shop**' to enable efficient information consolidation and data sharing. This will support efficient planning and updating of the MAFP.
- **Develop a surface water flooding response plan with vulnerable receptors as external partners.** Vulnerable receptors could include hospitals, schools and care homes. Identify these through Emergency Planning and other relevant forums and build into stakeholder engagement. This will assist with prioritisation decisions. For example 'early warning' processes, appropriate measures, funding and resourcing.
- Link the actions from the SWMP directly to the Flood Risk Management Strategy for the Borough such that a programme of work is visible.

- Link with the Planning Department's **Strategic Flood Risk Assessment** (SRFA) to ensure that Emergency Planners are involved in land use decisions for new development.
- Create a key facts and 'what to do' section for surface water flooding in **emergency handbooks**. Provide easy-to-reach contact points, and regularly update your website.
- Work with other agencies, such as the **Environment Agency flood alert/warning schemes**, in the interests of cost effectiveness and good communication - but still own the responsibility for your borough. Use others' information to reinforce your own process.

## APPENDIX E – ACTION PLAN

Appendix E: *LBHF\_SWMP\_AppendixE\_Action\_Plan\_v03.pdf*

Draft SWMP Action Plan - London Borough of Hammersmith Fulham

| ID     | Action  |  |                                      | Priority Ranking | Cost                        |         |         | Benefit   | Potential Funding Source | Timing    |            |  | Action Type   | Responsibility    |   |   |  | Review      |           |                  |
|--------|---|--|--------------------------------------|------------------|-----------------------------|---------|---------|---|--------------------------|-----------|------------|--|---|-------------------|---|---|--|-------------|-----------|------------------|
|        | What?   | How?   | Where?                               |                  | Investigation / Feasibility | Capital | Other   |   |                          | Timeframe | Start Date | Approx. Duration   |   | Lead Organisation | LLFA Dept.                                | Primary Support   | Other Stakeholders   | EU Related? | Frequency | Next Review Date |
| LBHF1  | Implement and populate a standardised Asset Register for the LBHF, prioritising surface water assets in those areas that are known to regularly flood       | Implement a standardised asset register structure as per the suggested template provided by Defra. Educate departments involved in filling in the register, need to ensure everyone involved understands the register, its purpose and the methodology. Populate Asset Register with Council-owned Surface Water / Drainage Assets | Borough Wide                         | High             |                             |         | <£25k   | Improved procedures and protocol for recording surface water assets in the Borough and improved understanding and record of surface water assets in the Borough.  | LBHF / Defra             | Short     |            | 6 months   | Flood and Water Management Act / Flood Risk Regulations | LBHF              | Transport / Highways (Flood Risk Manager) | GIS Team & Transport / Highways Team                                    | EA, TIL, Network Rail, TWUL, London Underground, Energy Operators + others as appropriate  | Yes         |           |                  |
| LBHF2  | Revise & improve Asset Register   | Revise the Asset Register as required to incorporate more information, i.e. survey details and develop a GIS/web based-compatible database to create a spatial representation of the surface water assets.   | Borough Wide                         | Low              |                             |         | <£25k   | Improved information and access / visualisation of surface water assets in the Borough.   | LBHF / Defra             | Medium    |            | Ongoing  | Flood and Water Management Act / Flood Risk Regulations | LBHF              | Transport / Highways (Flood Risk Manager) | GIS Team & Transport / Highways Team                                    |  | Yes         |           |                  |
| LBHF3  | Implement a standardised Flood Incident Log to record and investigate future flooding incidents within the LBHF   | Implement a standardised flood incident log to record flood events. Educate departments involved in filling in the spreadsheet to ensure everyone involved understands the log and the methodology. It is recommended that the source of flooding be recorded, e.g. gully surcharging, to inform maintenance priorities.           | Borough Wide                         | High             |                             |         | <£25k   | Improved procedures and protocol for recording flood events and flood risk in the Borough. Will provide improved historically flood information to support ongoing and future flood mitigation schemes.               | LBHF / Defra             | Short     |            | 6 months to implement the log - this could be done immediately. The training of staff may take more time to formulate and action but it should be completed within 6 months. | Flood and Water Management Act / Flood Risk Regulations | LBHF              | Transport / Highways (Flood Risk Manager) | Emergency Planning Team   |  | Yes         |           |                  |
| LBHF4  | Establish a Flood Risk Management Group for LBHF  | Set up a LBHF Flood Management Group with key departments and stakeholders in the Borough included.  | Borough Wide                         | High             |                             |         | <£25k   | Will encourage a partnership approach to FRM and help to improve communication between different departments to create a more integrated approach and strategy for managing flood risk within the Borough.            | LBHF / Defra             | Short     |            | 3 months   | Flood and Water Management Act / Flood Risk Regulations | LBHF              | Transport / Highways (Flood Risk Manager) | All Teams in Council  | EA, TWUL, TIL  | Yes         |           |                  |
| LBHF5  | Develop a Local Flood Risk Management Strategy for the LBHF   | Develop, maintain, apply and monitor a Strategy for local flood risk management of the area.   | Borough Wide                         | High             |                             |         | <£25k   | A strategy will be in place to determine how local flood risk should be managed across the Borough  | LBHF / Defra             | Short     |            | 6 months   | Flood and Water Management Act / Flood Risk Regulations | LBHF              | Transport / Highways (Flood Risk Manager) | Spatial Planning Team   | TWUL, TFL, EA, Local Residents   | Yes         |           |                  |
| LBHF6  | Take forward existing and future Local Flood Risk Management Actions (under FWMA 2010 and from SWMP) in collaboration with multiple Boroughs / stakeholders | Take forward existing and future local actions in the SWMP through the LBHF Flood Risk Management Group and South West London Strategic Flood Group. Take forward existing and future strategic actions in the SWMP, including those involving multiple Boroughs or other flood risk management authorities.                       | Borough Wide                         | High             |                             |         | <£25k   | Co-ordinated delivery of local flood risk management within the Borough and across the region   | LBHF / Defra             | Medium    |            | Ongoing  | Flood and Water Management Act / Flood Risk Regulations | LBHF, RBKC        | Transport / Highways (Flood Risk Manager) |   | TWUL, TFL, EA  | Yes         |           |                  |
| LBHF7  | Develop a Flood Risk Management Plan for the LBHF as required under FRR 2009. Engage with the Environment Agency as required.                               | Produce and submit to the EA a Flood Risk Management Plan for the LBHF by 22 June 2015.  | Borough Wide                         | High             |                             |         | <£25k   | Identification of flood risk management across the Borough and compliance with FRR 2009   | LBHF / Defra             | Medium    |            | 6 months   | Flood and Water Management Act / Flood Risk Regulations | LBHF              | Transport / Highways (Flood Risk Manager) | EA  | TWUL, TFL, EA, Local Residents   | Yes         |           |                  |
| LBHF8  | Actively engage with members of the public regarding local flood risk management and formulation of the LFRM Strategy.                                      | Undertake a survey to determine public opinion regarding flood risk.   | Borough Wide                         | High             |                             |         | <£25k   | Identification of key public concerns and potential additional flooding locations.  | LBHF / Defra             | Medium    |            | 6 months   | Flood and Water Management Act / Flood Risk Regulations | LBHF              | Transport / Highways (Flood Risk Manager) | All Teams in Council  |  | Yes         |           |                  |
| LBHF9  | Work with the EA to record and investigate groundwater flooding incidents and mechanisms  | Record and investigate groundwater flooding incidents (initially in conjunction with the EA) to identify flooding mechanisms and risk across the Borough.  | Borough Wide                         | Medium           |                             |         | <£25k   | Improved understanding of groundwater flood risk across the Borough. Evidence of management and recording of groundwater flooding events (now the responsibility of LLFAs).   | LBHF / Defra             | Medium    |            | Ongoing  | Flood and Water Management Act / Flood Risk Regulations | LBHF              | Transport / Highways (Flood Risk Manager) | EA  |  | Yes         |           |                  |
| LBHF10 | Work with the EA to incorporate any findings from the SWMP into other fluvial / pluvial modelling projects  | Ensure the findings and recommendations from the SWMP are incorporated into other fluvial / pluvial modelling projects.  | Borough Wide                         | Medium           |                             |         | <£25k   | Improved evidence of surface water flooding within statutory planning documents e.g. SFRA and any future modelling projects in the Borough.   | LBHF / Defra             | Medium    |            | Ongoing  | Flood and Water Management Act / Flood Risk Regulations | LBHF              | Transport / Highways (Flood Risk Manager) | EA  |  | Yes         |           |                  |
| LBHF11 | Consider the incorporation of Thames Water Pumping Station rates into the SWMP when data becomes available.   | Work with Thames Water to incorporate the combined sewer overflow pumping station losses from the baseline model once the data is made available.  | Borough Wide                         | Medium           | <£25k                       |         |         | Reduce limitations to the baseline model and allows for a more representative account of the sewer networks within the baseline model.  | LBHF / Thames Water      | Medium    |            | 1 Year   | Investigation / Feasibility / Design                    | LBHF              | Transport / Highways (Flood Risk Manager) | Service Providers   | EA (Fluvial), TWUL (Sewer), TIL (Highways), Network Rail (Railways), Others as appropriate | No          |           |                  |
| LBHF12 | Work with Thames Water to identify where areas of surface water and sewer flooding coincide.  | Utilise the modelled data available from the Thames Water Counters Creek Model and LBHF SWMP model to identify areas where both surface water and sewer flooding are a concern.  | Flooding hotspots across the Borough | High             | <£25k                       |         |         | Joint partnership approach to flood risk management.  | LBHF / Thames Water      | Short     |            | 1 Year   | Investigation / Feasibility / Design                    | LBHF              | Transport / Highways (Flood Risk Manager) | TWUL  | EA (Fluvial), TWUL (Sewer), TIL (Highways), Network Rail (Railways), Others as appropriate | No          |           |                  |
| LBHF13 | Work with Thames water to develop integrated solutions to manage flood risk.  | In areas identified to be at risk of both surface water and sewer flooding, develop integrated solutions to manage flood risk from both sources.   | Flooding hotspots across the Borough | Medium           |                             | Unknown |         | Joint partnership approach to flood risk management.  | LBHF / Thames Water      | Medium    |            | 2 Years  | Investigation / Feasibility / Design                    | LBHF              | Transport / Highways (Flood Risk Manager) | Spatial Planning Team   | EA (Fluvial), TWUL (Sewer), TIL (Highways), Network Rail (Railways), Others as appropriate | No          |           |                  |
| LBHF14 | Develop, update and maintain the draft Action Plan  | Review and update the draft Action Plan yearly to review and agree ongoing and future flood management actions for the LBHF.   | Borough Wide                         | High             |                             |         | <£25k   | Established procedure for managing and agreeing on future flood mitigation and management across LBHF.  | LBHF / Defra             | Short     |            | Ongoing  | Flood and Water Management Act / Flood Risk Regulations | LBHF              | Transport / Highways (Flood Risk Manager) | Other Teams as required   |  | Yes         |           |                  |
| LBHF15 | Ensure required skills and technical capability is in place to deliver FWMA 2010 / FRR 2009 requirements  | Upskilling training programme for appropriate individuals or departments (as determined by the partnership structure) alongside Consultancy Support in the short-term where required   | Borough Wide                         | High             |                             |         | Unknown | Increase skills in Council to deliver requirements under FWMA   | LBHF / Defra             | Medium    |            | 2 Years  | Financial / Resourcing                                  | LBHF              | Transport / Highways (Flood Risk Manager) | Other Teams as required   | EA   | Yes         |           |                  |
| LBHF16 | Identify local flood risk management funding opportunities through internal and external, existing and future, funding initiatives and mechanisms           | Collation and documenting of all potential funding routes (including Defra funding), including application requirements and timeframes.  | Borough Wide                         | High             |                             |         | <£25k   | Improved understanding and identification of opportunities and mechanisms for acquiring future funding for local flood risk management activities and assist in identifying a programme for flood mitigation actions. | LBHF / Defra             | Short     |            | 6 months   | Financial / Resourcing                                  | LBHF              | Transport / Highways (Flood Risk Manager) | Other Teams as required   | EA   | Yes         |           |                  |
| LBHF17 | Design and gain buy-in to a Communication and Engagement Plan   | Produce a Communication Plan to identify how to effectively communicate and raise awareness of risk to different audiences using a clearly defined process for internal and external communication with stakeholders and the public.   | Borough Wide                         | High             |                             |         | <£25k   | Greater transparency within the Borough on role as LLFA and greater collective communication approach to community  | LBHF / Defra             | Short     |            | Initially 3 months - Ongoing review as part of LFRM Strategy Review  | Communication / Partnerships                            | LBHF              | Transport / Highways (Flood Risk Manager) | Communication s Team, EA under Strategic Overview Role, London Councils | EA, TWUL, TIL, GLA and other parties required as external partners                         | No          |           |                  |
| LBHF18 | Internal proactive awareness raising of Local Flood Risk Management   | Include planners and planning policy influencers in awareness raising activities as set out in the Communications Plan.  | Borough Wide                         | High             |                             |         | <£25k   | Raise awareness of surface water flood risk (and flooding hotspots) amongst Planners and influence planning policies to prevent the creation of new risk areas.   | LBHF / Defra             | Short     |            | 6 months   | Communication / Partnerships                            | LBHF              | Transport / Highways (Flood Risk Manager) | Spatial Planning Team   | London Councils, GLA, EA, TWUL   | No          |           |                  |
| LBHF19 | Actively engage with professional stakeholders to communicate findings of SWMP and local flood risk management.   | Engage professional stakeholder as appropriate to communicate findings of the SWMP.  | Borough Wide                         | High             |                             |         |         | Raise awareness of surface water flood risk and generate opportunities for joint partnership for future flood mitigation works.   | LBHF / Defra             | Short     |            | 6 months   | Communication / Partnerships                            | LBHF              | Transport / Highways (Flood Risk Manager) | Communication s   | EA, TWUL   | No          |           |                  |
| LBHF20 | Actively engage political stakeholders  | Engage political stakeholders as appropriate within formal political structures and communication protocols as determined in the Communication Plan  | Borough Wide                         | High             |                             |         | <£25k   | Ensure political acceptance and buy in is achieved and that political influence is used positively to support and fund flood risk actions   | LBHF / Defra             | Short     |            | 6 months   | Communication / Partnerships                            | LBHF              | Transport / Highways (Flood Risk Manager) | London Councils, GLA  | Transport, Environment and Resident's Services Scrutiny Committee                          | No          |           |                  |
| LBHF21 | Continue to validate SWMP model outputs   | Investigate whether flooding incidents have occurred in flooding hotspots through undertaking a survey of local residents (e.g. mail drop, door knocking) and confirming drainage capacity assumptions with third party asset owners   | Flooding hotspots across the Borough | High             | <£25k                       |         |         | Validate model outputs and gain resident buy in' to surface water flood risk in areas. Opportunities raise awareness of surface water flood risk with residents.  | LBHF / Defra             | Medium    |            | 1 Year   | Investigation / Feasibility / Design                    | LBHF              | Transport / Highways (Flood Risk Manager) | Local Residents   | EA (Fluvial), TWUL (Sewer), TIL (Highways), Network Rail (Railways), Others as appropriate | No          |           |                  |



| ID     | Action   |  |  | Priority Ranking | Cost                        |         |         | Benefit   | Potential Funding Source | Timing    |            |                  | Action Type                          | Responsibility    |   |                            |  | Review      |           |                  |
|--------|--|--|--|------------------|-----------------------------|---------|---------|---|--------------------------|-----------|------------|------------------|--------------------------------------|-------------------|---|----------------------------|--|-------------|-----------|------------------|
|        | What?  | How?   | Where?   |                  | Investigation / Feasibility | Capital | Other   |   |                          | Timeframe | Start Date | Approx. Duration |                                      | Lead Organisation | LLFA Dept.                                | Primary Support            | Other Stakeholders   | EU Related? | Frequency | Next Review Date |
| LBHF22 | Determine resilience of Critical Services  | Determine whether services (e.g. power, telecommunications) are resilient to surface water flooding through providing outputs of Drain London to critical services providers (including energy providers) and meet to discuss the overall resilience of service  | Borough Wide   | Medium           | <£25k                       |         |         | Refine understanding of flood risk to critical services. Improved evidence to prioritise localised drainage improvements.                                     | LBHF / Defra             | Medium    |            | 6 months         | Investigation / Feasibility / Design | LBHF              | Emergency Planning / Civil Contingencies  | Service Providers          | Transport / Highways   | No          |           |                  |
| LBHF23 | Review Emergency Response procedures   | Determine whether current emergency response to Borough-wide surface water flooding are appropriate through reviewing the Multi-Agency Flood Plan in the context of the Drain London outputs and involving key transport providers such as TfL and Network Rail  | Borough Wide   | Medium           | <£25k                       |         |         | Emergency Response procedures are based on best available information   | LBHF / Defra             | Short     |            | 3 months         | Investigation / Feasibility / Design | LBHF              | Emergency Planning / Civil Contingencies  | Local Resilience Forum     | EA, TWUL, TfL, Network Rail                                      | No          |           |                  |
| LBHF24 | Consider opportunities for Raising Community Awareness   | Increase awareness of flooding within communities at risk through letter drop, information portal and/or preparation of a Community Flood Plan for example   | Borough Wide   | High             |                             |         | <£25k   | Increase awareness of flood risk in communities, therefore improving resilience to flooding and encouragement to implement property-level mitigation measures | LBHF / Defra             | Medium    |            | Ongoing          | Communication / Partnerships         | LBHF              | Transport / Highways (Flood Risk Manager) | Communication s Team       | Local Residents  | No          |           |                  |
| LBHF25 | Raise Community Awareness - undertake a letter drop  | Undertake a letter drop to highlight the improvement works that have been implemented as well as works that are planned for the future.  | Borough Wide   | Low              |                             |         | <£25k   | Increase awareness of flood risk in communities, therefore improving resilience to flooding and encouragement to implement property-level mitigation measures | LBHF / Defra             | Medium    |            | 3 months         | Communication / Partnerships         | LBHF              | Transport / Highways (Flood Risk Manager) | Communication s Team       | Local Residents  | No          |           |                  |
| LBHF26 | Raise Community Awareness - hold a public meeting  | Hold a public meeting following the letter drop where residents can highlight any issues. This could include a talk on the work that is being undertaken and who is responsible. Such a meeting should also outline how residents can help themselves and highlight their responsibility for maintaining private drainage, soakaways, driveway drainage etc. | Borough Wide   | Low              |                             |         | <£25k   | Increase awareness of flood risk in communities, therefore improving resilience to flooding and encouragement to implement property-level mitigation measures | LBHF / Defra             | Medium    |            | 3 months         | Communication / Partnerships         | LBHF              | Transport / Highways (Flood Risk Manager) | Communication s Team       | Local Residents  | No          |           |                  |
| LBHF27 | Raise Community Awareness - develop an 'Information portal'  | Develop an 'Information Portal' via the LBHF website, for local flood risk information including links to the relevant EA web pages that provide advice on measures that can be taken by residents to mitigate surface water flooding to / around their property.  | Borough Wide   | Low              |                             |         | Unknown | Increase awareness of flood risk in communities, therefore improving resilience to flooding and encouragement to implement property-level mitigation measures | LBHF / Defra             | Medium    |            | 1 year           | Communication / Partnerships         | LBHF              | Transport / Highways (Flood Risk Manager) | Communication s Team       |  | No          |           |                  |
| LBHF28 | Raise Community Awareness - Identify areas where Community Flood Plans may be effective and consider opportunities to develop these, in conjunction with the local community | Consider preparing a Community Flood Plan for those communities identified to be at high risk.   | Communities identified to be at risk throughout the Borough (flooding hotspots). | Low              |                             |         | <£25k   | Increase awareness of flood risk in communities, therefore improving resilience to flooding and encouragement to implement property-level mitigation measures | LBHF / Defra             | Medium    |            | 1 year           | Communication / Partnerships         | LBHF              | Transport / Highways (Flood Risk Manager) | EA (Fluvial), TWUL (Sewer) | Local Residents  | No          |           |                  |
| LBHF29 | Consider opportunities for Ongoing Improvements to the Maintenance of the Drainage Network   | Identify opportunities for improving the maintenance of the drainage network through, for example, targeting known problem areas (e.g. flooding hotspots, blocked gullies), improving the coordination and timing of gully cleansing, or increasing infiltration for sports grounds through aerating pitches.  | Borough Wide   | High             |                             |         | <£25k   | Existing drainage systems are maximised and operating at full potential, to ensure flooding is not exacerbated through blocked or part-working networks       | LBHF / Defra             | Short     |            | 6 months         | Flooding Mitigation Action           | LBHF              | Transport / Highways (Flood Risk Manager) | Operations                 | TWUL, TfL  | No          |           |                  |
| LBHF30 | Ongoing Improvements to the Maintenance of the Drainage Network - improving gully visibility   | Gullies that are known to flood could be painted yellow to encourage residents to check if they are blocked and to avoid parking directly over them thereby preventing access for gully clearing team.   | Borough Wide   | Low              |                             |         | Unknown | Existing drainage systems are maximised and operating at full potential, to ensure flooding is not exacerbated through blocked or part-working networks       | LBHF / Defra / Other     | Medium    |            | Ongoing          | Flooding Mitigation Action           | LBHF              | Transport / Highways (Flood Risk Manager) | Operations                 | TWUL, TfL  | No          |           |                  |
| LBHF31 | Ongoing Improvements to the Maintenance of the Drainage Network - targeted maintenance of drainage network   | Improved and targeted maintenance. Ensure flooding hotspots are targeted for cleaning at least once a year, prior to 'rainfall' season. Focus attention on the maintenance of gully pots in the identified flooding hotspots which are considered to be high risk and on those areas identified as being at risk from blocked                                | Borough Wide   | Medium           |                             |         | Unknown | Existing drainage systems are maximised and operating at full potential, to ensure flooding is not exacerbated through blocked or part-working networks       | LBHF / Defra / Other     | Medium    |            | Ongoing          | Flooding Mitigation Action           | LBHF              | Transport / Highways (Flood Risk Manager) | Operations                 | TWUL, TfL  | No          |           |                  |
| LBHF32 | Consider opportunities for the implementation of Green Roofs across the LBHF owned buildings.  | Utilise the modelled data and knowledge of green roof suitability to undertake a detailed assessment of green roof suitability and feasibility.  | Borough Wide   | Medium           |                             |         | Unknown | Flood risk mitigation & additional environmental benefits in the long term.   | LBHF / Defra             | Medium    |            | 1 year           | Investigation / Feasibility / Design | LBHF              | Transport / Highways (Flood Risk Manager) | Spatial Planning Team      | Council Property Management Team                                 | No          |           |                  |
| LBHF33 | Consider opportunities for the modification of existing tree planters and development of new tree planters across the borough.   | Feasibility study to determine suitable tree planter areas to be modified.   | Borough Wide   | Medium           |                             |         | Unknown | Flood risk mitigation & additional environmental benefits in the long term.   | LBHF / Defra             | Medium    |            | 1 year           | Investigation / Feasibility / Design | LBHF              | Transport / Highways (Flood Risk Manager) | Parks/Street Maintenance   | Local residents groups   | No          |           |                  |
| LBHF34 | Liaise with relevant council departments to determine process for implementation of tree planters.   | Utilise maintenance regimes in place within other council departments to outline a phase approach to implementation and potential funding arrangements.  | Borough Wide   | Medium           |                             |         | Unknown | Flood risk mitigation & additional environmental benefits in the long term.   | LBHF / Defra             | Medium    |            | 1 year           | Communication / Partnerships         | LBHF              | Transport / Highways (Flood Risk Manager) | Parks/Street Maintenance   | Local residents groups   | No          |           |                  |
| LBHF35 | Undertake feasibility study for potential incorporation of detention basins.   | Use SWMP modelled outputs as an indication of potential flood mechanisms. Undertake a detailed analysis of a specific areas to determine feasibility.  | Flooding hotspots across the Borough   | Medium           |                             |         | <£25k   | Potential flood risk mitigation to flooding hotspots.   | LBHF / Defra             | Medium    |            | 1 year           | Investigation / Feasibility / Design | LBHF              | Transport / Highways (Flood Risk Manager) | TWUL                       | Parks Team; residents groups                                     | No          |           |                  |
| LBHF36 | Undertake feasibility study for potential incorporation of permeable paving systems across council owned open space.   | Undertake feasibility study, incorporating local geology, to determine the type and location of permeable paving measures.   | Borough Wide   | Medium           |                             |         | <£25k   | Potential for flood mitigation with wide scale implementation.  | LBHF / Defra             | Medium    |            | 1 year           | Investigation / Feasibility / Design | LBHF              | Transport / Highways (Flood Risk Manager) |                            | Council Property Management Team, Parks Team, other as required. | No          |           |                  |
| LBHF37 | Liaise with relevant council departments to determine process for implementation of permeable paving.  | Utilise maintenance regimes in place within other council departments to outline a phase approach to implementation and potential funding arrangements.  | Borough Wide   | Medium           |                             |         | Unknown | Flood risk mitigation & additional environmental benefits in the long term.   | LBHF / Defra             | Medium    |            | 1 year           | Communication / Partnerships         | LBHF              | Transport / Highways (Flood Risk Manager) | Spatial Planning Team      | Council Property Management Team, Parks Team, other as required. | No          |           |                  |
| LBHF38 | Ensure appropriate Development Control Policy for repaving of gardens / driveways  | Ensure that policies are in place (where possible) to provide permeable surfaces when driveways / patios / other property-level hard surfaces are being repaved, or gardens are being paved over. Where possible, follow up repaving post implementation to ensure it has been completed to the correct specifications.                                      | Borough Wide   | Medium           |                             |         | <£25k   | Flood risk to properties and surrounding properties is not exacerbated through implementing hardstanding, impermeable surfaces                                | LBHF / Defra             | Medium    |            | LDF Plan Period  | Policy Action                        | LBHF              | Development Control                       | Spatial Planning Team      |  | No          |           |                  |
| LBHF39 | Development Control Policy - Driveway / Garden Repaving - surface water runoff within property boundary  | Encourage residents to ensure that paved areas in front gardens drain onto flower beds rather than running onto the highway.   | Borough Wide   | Low              |                             |         | <£25k   | Flood risk to properties and surrounding properties is not exacerbated through implementing hardstanding, impermeable surfaces                                | LBHF / Defra             | Medium    |            | Ongoing          | Communication / Partnerships         | LBHF              | Development Control                       | Spatial Planning Team      |  | No          |           |                  |
| LBHF40 | Development Control Policy - Driveway / Garden Repaving - raise awareness of options   | Raise awareness of the options for installation and maintenance of permeable surfaces within property grounds.   | Borough Wide   | Low              |                             |         | <£25k   | Flood risk to properties and surrounding properties is not exacerbated through implementing hardstanding, impermeable surfaces                                | LBHF / Defra             | Medium    |            | Ongoing          | Communication / Partnerships         | LBHF              | Development Control                       | Communication s Team       | Spatial Planning Team  | No          |           |                  |
| LBHF41 | Development Control Policy - Driveway / Garden Repaving - information portal   | Provide an information portal that residents can consult for further information on permeable paving and other SuDS measures, including links to other organisations (e.g. EA) who can provide 'best practice' guidance and examples   | Borough Wide   | Low              |                             |         | Unknown | Flood risk to properties and surrounding properties is not exacerbated through implementing hardstanding, impermeable surfaces                                | LBHF / Defra             | Medium    |            | Ongoing          | Communication / Partnerships         | LBHF              | Development Control                       | Communication s Team       | Spatial Planning Team  | No          |           |                  |

| ID     | Action  |   |  | Priority Ranking | Cost                        |         |         | Benefit  | Potential Funding Source                                 | Timing    |            |                  | Action Type                | Responsibility    |   |  |                       | Review      |           |                  |
|--------|---|---|--|------------------|-----------------------------|---------|---------|--|--|-----------|------------|------------------|----------------------------|-------------------|---|--|-----------------------|-------------|-----------|------------------|
|        | What?   | How?  | Where?   |                  | Investigation / Feasibility | Capital | Other   |  |  | Timeframe | Start Date | Approx. Duration |                            | Lead Organisation | LLFA Dept.                                | Primary Support  | Other Stakeholders    | EU Related? | Frequency | Next Review Date |
| LBHF42 | Development Control Policy - Driveway / Garden Repaving - education of Council staff  | Education/training of Council staff to ensure that planning officers:<br>• are aware of the existing planning permissions, guidance and best practice;<br>• are in a position to educate the public if enquiries are made regarding planning permission to change their drive/garden; and<br>• can identify/enforce for non-compliance or non-permitted conversion (in particular in flooding hotspots where it exacerbates the problem). | Borough Wide                                   | Low              |                             |         | Unknown | Flood risk to properties and surrounding properties is not exacerbated through implementing hardstanding, impermeable surfaces   | LBHF / Defra   | Medium    |            | Ongoing          | Financial / Resourcing     | LBHF              | Development Control                       | Communications Team  | Spatial Planning Team | No          |           |                  |
| LBHF43 | Ensure Development Control Policy Incorporates Surface Water Flood Risk   | Through Development Control Policy, ensure that in flooding hotspots, SWMP mapped outputs are used to require developers to demonstrate compliance with NPPF by ensuring development will remain safe and will not increase risk to others, where necessary supported by more detailed integrated hydraulic modelling.  | Flooding hotspots across the Borough           | High             |                             |         | <£25k   | Mid-long term reduction in the consequences of flooding  | LBHF / Defra   | Medium    |            | LDF Plan Period  | Policy Action              | LBHF              | Development Control                       | Spatial Planning Team  | EA, TWUL              | No          |           |                  |
| LBHF44 | Ensure development Control Policy incorporates Surface Water Management   | Through Development Control Policy, ensure that new developments are achieving the required surface water attenuation measures to manage surface water runoff from the site. Where necessary, this should be supported by detailed drainage design.   | Borough Wide.                                  | High             |                             |         | <£25k   | Mid-long term reduction in the consequences of flooding  | LBHF / Defra   | Medium    |            | LDF Plan Period  | Policy Action              | LBHF              | Development Control                       | Spatial Planning Team  | EA, TWUL              | No          |           |                  |
| LBHF45 | The SWMP modelled outputs should be used to inform the policy on self contained basements units.                            | Amend policy to account for properties at potential risk of surface water and sewer flooding. Set requirements for flood resistant and flood resilient measures to be incorporated into the development.  | Flooding hotspots across the Borough           | High             |                             |         | <£25k   | Reduce risk to properties.   | LBHF   | Medium    |            | Ongoing          | Policy Action              | LBHF              | Development Control                       | Spatial Planning Team  | EA, TWUL              | No          |           |                  |
| LBHF46 | Consider opportunities to promote rainwater harvesting in both new and existing development throughout the Borough.         | Consider options and opportunities for promotion of rainwater harvesting systems in existing and new developments and potential incentive schemes for developers / commercial properties to install these.  | Borough Wide                                   | High             |                             |         | <£25k   | Potential for localised reduction in surface water flooding during rainfall events and water conservation. Educational opportunities where systems are fitted to schools / public buildings.   | LBHF / Defra   | Medium    |            | Ongoing          | Flooding Mitigation Action | LBHF              | Development Control                       | Spatial Planning Team, Transport / Highways (Flood Risk Manager) | TWUL                  | No          |           |                  |
| LBHF47 | Rainwater Harvesting - incentive scheme for use of rainwater harvesting   | Consider providing an incentive scheme for the use of rainwater harvesting systems across the Borough. This may be linked to the Council's sustainability checklist.  | Borough Wide                                   | Low              |                             |         | Unknown | Potential for localised reduction in peak surface water discharge during rainfall events. Is likely to have positive sustainability and water conservation impacts, and provides educational opportunities where systems are fitted to schools / public buildings. | LBHF / Defra / Private Sector Funding / GIA / Local Levy | Medium    |            | Ongoing          | Flooding Mitigation Action | LBHF              | Development Control                       | Spatial Planning Team, Transport / Highways (Flood Risk Manager) | TWUL                  | No          |           |                  |
| LBHF48 | Rainwater Harvesting - retrofitting of rainwater harvesting schemes   | Consider retrofitting rainwater harvesting systems on Council owned properties, such as schools, for example, which offer educational opportunities as well as local surface water flood mitigation.  | Borough Wide                                   | Low              |                             |         | Unknown | Potential for localised reduction in peak surface water discharge during rainfall events. Is likely to have positive sustainability and water conservation impacts, and provides educational opportunities where systems are fitted to schools / public buildings. | LBHF / Defra / Private Sector Funding / GIA / Local Levy | Medium    |            | Ongoing          | Flooding Mitigation Action | LBHF              | Development Control                       | Spatial Planning Team, Transport / Highways (Flood Risk Manager) | TWUL                  | No          |           |                  |
| LBHF49 | Rainwater Harvesting - installation of rainwater harvesting schemes in new development                                      | Explore the potential opportunities for the installation of rainwater harvesting systems on new or regenerated development areas (in particular where there is high footfall / potential for use).  | Borough Wide, New Development Sites            | Medium           |                             |         | Unknown | Potential for localised reduction in peak surface water discharge during rainfall events. Is likely to have positive sustainability and water conservation impacts, and provides educational opportunities where systems are fitted to schools / public buildings. | LBHF / Defra / Private Sector Funding / GIA / Local Levy | Medium    |            | Ongoing          | Flooding Mitigation Action | LBHF              | Development Control                       | Spatial Planning Team  | TWUL                  | No          |           |                  |
| LBHF50 | Consider opportunities to promote use of water butts in both new and existing development throughout the Borough.           | Consider options and opportunities for promotion of property-level water butts in existing and new developments, and opportunities for promoting these to local residents.  | Borough Wide                                   | High             |                             |         | <£25k   | Potential for localised reduction in peak surface water discharge during rainfall events. Is likely to have positive sustainability and water conservation impacts.  | LBHF / Defra   | Medium    |            | Ongoing          | Flooding Mitigation Action | LBHF              | Development Control                       | Spatial Planning Team  | TWUL                  | No          |           |                  |
| LBHF51 | Water Butts - retrofitting water butts to existing developments   | Consider retrofitting water butts on all existing development. This provides supplementary benefits beyond regeneration and redevelopment sites (volumetric reduction with opportunity for complementary water quality improvements).   | Borough wide, in particular flooding hotspots. | Low              |                             |         | Unknown | Potential for localised reduction in peak surface water discharge during rainfall events. Is likely to have positive sustainability and water conservation impacts.  | LBHF / Defra / Private Sector Funding / GIA / Local Levy | Medium    |            | Ongoing          | Flooding Mitigation Action | LBHF              | Transport / Highways (Flood Risk Manager) | Spatial Planning Team  | TWUL                  | No          |           |                  |
| LBHF52 | Water Butts - promotion of water butts across Borough   | Consider promoting the use of water butts across the Borough and provide information (either directly or through links to external websites) on potential costs, installation and benefits.   | Borough Wide                                   | Low              |                             |         | <£25k   | Potential for localised reduction in peak surface water discharge during rainfall events. Is likely to have positive sustainability and water conservation impacts.  | LBHF / Defra   | Medium    |            | Ongoing          | Flooding Mitigation Action | LBHF              | Transport / Highways (Flood Risk Manager) | Communications Team  | TWUL                  | No          |           |                  |
| LBHF53 | Consider opportunities to promote awareness of property level flood thresholds, particularly in areas of higher flood risk. | Consider options and opportunities for promotion of property-level flood mitigation measures such as raising property-level thresholds in new developments, particularly in those areas of higher flood risk.   | Borough Wide                                   | High             |                             |         | <£25k   | Improved property-level resilience to surface water flooding.  | LBHF / Defra   | Medium    |            | Ongoing          | Flooding Mitigation Action | LBHF              | Transport / Highways (Flood Risk Manager) | Spatial Planning Team  | EA, TWUL              | No          |           |                  |
| LBHF54 | Property Level Resistance & Resilience - realise suitable, sensible and cost effective property thresholds                  | Work with residents to realise suitable, sensible and cost effective property level resilience to potential flooding (through, for installation of flood doors), particularly in areas where roads / properties are known / identified to be susceptible to surface water flooding.   | Borough Wide                                   | Low              |                             |         | Unknown | Improved property-level resilience to surface water flooding.  | LBHF / Defra / GIA / Local Levy                          | Medium    |            | Ongoing          | Flooding Mitigation Action | LBHF              | Transport / Highways (Flood Risk Manager) | Spatial Planning Team  | EA, TWUL              | No          |           |                  |