

SCHEDULES

SCHEDULE 13

PROTECTIVE PROVISIONS

PART 5

FOR THE PROTECTION OF THE ENVIRONMENT AGENCY

53. The following provisions apply for the protection of the Environment Agency unless otherwise agreed in writing between TfL and the Agency, in relation to construction of the authorised development and, within any maintenance period defined in article 30(14) (temporary use of land for maintaining the authorised development), any maintenance of any part of the authorised development.

Definitions

54. In this Part of this Schedule—

“the Agency” means the Environment Agency;

“asset control limits” means the predefined values, based on assessment, relating to safety and serviceability considerations that instigate a review of risk to the flood defences with respect of movement impacts;

“authorised work” means any work forming part of the authorised development, and “the authorised works” means all such works;

“baseline monitoring” means any surveys carried out to determine and establish movements of the flood defences due to factors external to the authorised work including (but not limited to) seasonal variations or diurnal impacts due to tide or temperature;

“construction” includes execution, placing, altering, replacing, relaying, removal and excavation, and “construct” and “constructed” are to be construed accordingly;

“damage” includes (but is not limited to) scouring, erosion, loss of structural integrity and environmental damage to any drainage work or any flora or fauna dependent on the aquatic environment, and “damaged” is to be construed accordingly;

“detailed designs” means any information submitted under paragraph 56(1);

“drainage work” means any main river and any bank, wall, embankment or other structure, or any appliance, constructed or used for land drainage, flood defence or tidal monitoring or flood storage capacity;

“ecological enhancements” means the inclusion of any features integral to or adjacent to the foreshore structures and any new, modified, or replaced flood defences that can support wildlife (including, but not limited to, where practicable, the set back of flood defences to provide inter tidal habitat and the creation of shelters for juvenile fish);

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“environmental duties” means the Agency’s duties in the Environment Act 1995⁽¹⁾, the Natural Environment and Rural Communities Act 2006⁽²⁾ and the Water Environment (Water Framework Directive)(England and Wales) Regulations 2017⁽³⁾;

“fishery” means any waters containing fish and fish in, or migrating to or from such waters and the spawn, spawning grounds or food for such fish;

“fit for purpose flood defence” means a flood defence that prevents tidal flood water from entering into land and which is of the statutory defence level;

“the flood defences” means any bank, wall, embankment, bridge abutments, lock gates or other structure or any appliance (including any supporting anchorage system) that fulfils a function of preventing, or reducing the risk of, flooding to land or property which is—

- (a) within the Order limits; or
- (b) within the 1mm settlement contour for the final tunnel alignment;

“flood storage capacity” means any land, which, taking account of the flood defences, is expected to provide flood storage capacity for any main river;

“main river” means all watercourses shown as such on the statutory main river maps held by the Agency and the Department of Environment, Food and Rural Affairs, including any structure or appliance for controlling or regulating the flow of water into, in or out of the channel;

“maintenance” has the same meaning as in article 2(1) (interpretation), save for the exclusion of the works of inspection;

“specified day” means the business day on which detailed designs are received by the Agency under paragraph 56(1) and for the avoidance of doubt if any further information is requested by the Agency under paragraph 56(1)(i), the specified day is the business day on which the Agency receives this information from TfL;

“specified work” means so much of any permanent or temporary work or operation forming part of the authorised work (other than works required in an emergency) as is in, on, under or over a main river or drainage works or within 16 metres of a drainage work or is otherwise likely to—

- (a) affect any drainage works or the volumetric rate of flow of water in or flowing to or from any drainage works;
- (b) affect the flow, purity or quality of water in any main river or other surface waters or ground water;
- (c) cause obstruction to the free passage of fish or damage to any fishery;
- (d) affect the conservation, distribution or use of water resources; or
- (e) affect the conservation value of the main river and habitats in its immediate vicinity;

“the statutory defence level” means 5.18 metres above ordnance datum;

“the structural integrity plans” means the plans and documents to be provided to the Agency under paragraph 55;

“temporary flood defence measures” means any temporary measures constructed by TfL under this Part of this Schedule for the purpose of creating a fit for purpose flood defence; and

“TE2100” means the standards associated with the strategy for managing flood risk across the Thames estuary, including recommendations for action in short, medium and long term time periods to take account of sea level rise and climate change, as adopted and updated from time to time by the Agency.

(1) 1995 c. 25.
(2) 2006 c. 16.
(3) S.I. 20017/407.

Structural integrity of flood defences

55.—(1) Prior to commencing the first authorised work likely to impact a flood defence and at least at the same time as submitting any submissions for approval in respect of the first specified work under paragraph 56, TfL must prepare at its own expense and provide to the Agency (for its approval where stated below), the following documents in the corresponding order (but nothing precludes TfL from submitting more than one document to the Agency at a time)—

- (a) a schedule of defects existing in the flood defences including, where reasonably practicable, a description of the magnitude of any defect;
- (b) a survey plan, for approval by the Agency, to include details of any further surveys and intrusive investigations of the flood defences proposed to be undertaken by TfL to inform the detailed design process, construction methodology and mitigation proposals;
- (c) an assessment report, to—
 - (i) include details of the structural integrity of the flood defences in light of any proposed authorised works;
 - (ii) include asset control limits of any sections of the flood defences;
 - (iii) identify any sections of the flood defences requiring protective works by reason of the authorised works; and
 - (iv) identify any section of the flood defences that are not a fit for purpose flood defence, such report to be based on the findings of the additional surveys carried out by TfL under the survey plan under paragraph (b), the schedule of defects provided under paragraph (a) and any available historical information;
- (d) a mitigation design report (or reports), for approval by the Agency, to include details of the protective works identified by the assessment report provided under paragraph (c) that—
 - (i) are necessary before; or
 - (ii) may be required to be implemented as an action under the emergency preparedness plan provided under paragraph (f) during or after,
the construction of the authorised development and that such details will—
 - (aa) be sensitive to the foreshore and hydraulic regime; and
 - (bb) not prevent the relevant sections of the flood defences being raised to TE2100 levels in future and such standards being maintained;
- (e) an instrumentation and monitoring plan, for approval by the Agency, to include, in respect of the flood defences—
 - (i) details of monitoring locations (which must be established having regard to the asset control limits);
 - (ii) details of monitoring in respect of scour of any flood defence within the Order limits;
 - (iii) the frequency of monitoring (which must, as a minimum, be until—
 - (aa) the rate of settlement experienced by the flood defences directly attributable to the authorised development ceases or is less than or equal to 2 millimetres per annum; or
 - (bb) the period of 2 years has expired following the completion of the authorised development (whichever is later); and
 - (iv) the minimum amount of baseline monitoring; and
- (f) an emergency preparedness plan, for approval by the Agency, to include details as to what actions TfL will take, including the implementation of any mitigation identified in the mitigation design report (or reports) approved under paragraph (d), in respect of the asset

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control limits identified in the assessment report provided under paragraph (c), including timescales and the hierarchy of actions.

- (2) TfL must implement and act in accordance with the approved structural integrity plans.
- (3) Any protective work identified as being required by the structural integrity plans is to be treated as a specified work for the purposes of this Part of this Schedule.
- (4) Following completion of the authorised development, TfL must prepare at its own expense and provide to the Agency, a completion report, to include details of—
 - (a) any modifications or mitigation measures to be implemented in respect of the flood defences;
 - (b) illustrations in respect of the interactions between ground movement relating to the flood defences and construction activities;
 - (c) actual ground movement in respect of the flood defences compared to predicted ground movement;
 - (d) the results of a post-construction defects survey but only in relation to any differences identified when compared to the schedule of defects provided to the Agency under subparagraph (1)(a);
 - (e) any remedial works undertaken by TfL to the flood defences; and
 - (f) final as-built drawings and plans of the parts of the authorised development situated within 16 metres of a flood defence.

Specified works

56.—(1) Before commencing construction of a specified work (excluding any piling works which comprise a “licensable marine activity” as defined in the 2009 Act), TfL must submit to the Agency for its written approval—

- (a) plans, calculations, cross-sections, elevations, drawings, specifications and designs of the specified work together with the details of the positioning of any structure within the main river;
- (b) proposals for strengthening, modification, renewal or replacement of any drainage work required as a result of the anticipated impacts of the specified work;
- (c) any proposed mitigation measures to minimise the impact of the specified work on the foreshore, ecologically sensitive areas and the wider environment;
- (d) details of any ecological enhancements which are considered by TfL to be appropriate and reasonable to be incorporated into the specified work having regard to the nature of the specified work;
- (e) method statements in respect of the specified work to include both timing of and methods used, sequence of construction and the type, location and storage of all machinery, materials and fuel;
- (f) any proposals for reinstatement of the foreshore setting out timing of reinstatement works, measures to be used to minimise environmental impact of the works, materials to be used, methods of reinstatement and any proposed pollution protection measures;
- (g) information to demonstrate that the Agency will be afforded sufficient access to drainage works within the Order limits and the flood defences during the construction of the specified work to discharge its statutory functions;
- (h) details of any temporary flood defence measures which TfL wishes to construct to provide a fit for purpose flood defence during construction of the specified work; and

- (i) such further particulars as the Agency may within 20 business days of the receipt of the detailed designs reasonably require.
- (2) Any such specified work must not be constructed except in accordance with all detailed designs as may be approved in writing by the Agency under sub-paragraph (1) (having regard to any structural integrity plans approved under paragraph 55), or settled in accordance with paragraph 64 where applicable, and in accordance with any reasonable conditions or requirements specified under this paragraph.

Approvals

- 57.**—(1) Any approval of the Agency required under paragraph 55(1) or 56(1)—
- (a) must not be unreasonably withheld;
 - (b) in the case of a refusal, must be accompanied by a statement of the grounds of refusal;
 - (c) may be given subject to such reasonable requirements or conditions as the Agency may make for the protection of any drainage work, flood defence, fishery, main river or water resources, or for the prevention of flooding or pollution or in the discharge of its environmental duties (but not including any requirement for TfL to improve any flood defence where temporary flood defence measures approved under paragraph 56 have been or are proposed to be constructed by TfL); and
 - (d) is deemed to have been refused if it is neither given nor refused within 35 business days of the specified day unless otherwise agreed.
- (2) Without limitation on the scope of sub-paragraph (1) the requirements or conditions which the Agency may make under sub-paragraph (1) include conditions requiring TfL at its own expense to construct such protective works (including any new works as well as alterations to existing works) as are reasonably necessary—
- (a) to safeguard any drainage work or flood defence against damage;
 - (b) to secure that its efficiency or effectiveness for flood defence purposes is not impaired; or
 - (c) to ensure the risk of flooding is not otherwise increased by reason of any specified work, maintenance work or protective work,
- during the construction of or by reason of the works.
- (3) Any dispute in respect of any approval or refusal under this paragraph is subject to the dispute resolution procedure in paragraph 64.

Inspection and construction

- 58.**—(1) All works must be constructed without unnecessary delay in accordance with the detailed designs approved or settled under this Part of this Schedule and to the reasonable satisfaction of the Agency.
- (2) Save where TfL constructs a specified work in accordance with any detailed designs approved by the Agency under paragraph 56, TfL must not damage or obstruct any drainage work during the construction of a specified work.
- (3) An officer of the Agency is entitled to watch and inspect the construction of any specified work.
- (4) TfL must give to the Agency not less than 10 business days' notice in writing of its intention to commence construction of a specified work and notice in writing of its completion not later than five business days after the date on which it is completed.
- (5) If the Agency reasonably requires, TfL must construct all or part of any protective works so that they are in place prior to the carrying out of any specified work to which they relate.

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(6) If any part of a specified work is constructed otherwise than in accordance with the requirements of this Part of this Schedule, the Agency may by notice in writing require TfL at TfL's own expense to comply with the requirements of this Part of this Schedule or if TfL so elects (and the Agency in writing consents, such consent not to be unreasonably withheld or delayed) to remove, alter or pull down the work and, where removal is required, to restore the site to its former condition to such extent and within such limits as the Agency reasonably requires.

(7) Subject to sub-paragraph (8), if within a reasonable period, being not less than 28 days from the date when a notice under sub-paragraph (6) is served upon TfL, it has failed to begin taking steps to comply with the requirements of the notice and subsequently to make reasonably expeditious progress towards their implementation, the Agency may execute the works specified in the notice and any expenditure incurred by it in so doing is recoverable from TfL.

(8) In the event of any dispute as to whether sub-paragraph (6) is properly applicable to any work in respect of which notice has been served under that sub-paragraph, or as to the reasonableness of any requirement of such a notice, the Agency must not, except in an emergency, exercise the powers conferred by sub-paragraph (7) until the dispute has been finally determined.

Maintenance of the flood defences

59.—(1) Subject to the provisions of this Part of this Schedule and except to the extent that the Agency or any other person is liable to maintain any drainage work and is not precluded by the exercise of the powers of this Order from doing so, TfL must from the commencement of the construction of the specified works until their completion (and during any maintenance works carried out on land temporarily occupied under article 30 (temporary use of land for maintaining the authorised development)) maintain free from obstruction and to the reasonable satisfaction of the agency any drainage work which is situated within the limits of deviation or on land held by TfL for the purposes of or in connection with the specified works, whether or not the drainage work is to be constructed under the powers of this Order or is already in existence, so that the drainage work is a fit for purpose flood defence.

(2) TfL must, from the commencement of the construction of the specified works until their completion (and during any maintenance works carried out on land temporarily occupied under article 30) maintain free from obstruction and to the reasonable satisfaction of the Agency any temporary flood defence measures approved under paragraph 56, so that they are a fit for purpose flood defence.

(3) If TfL constructs and thereafter maintains in accordance with sub-paragraph (2) temporary flood defence measures approved by the Agency pursuant to paragraph 56, the obligation in sub-paragraph (1) does not apply to the extent that TfL may maintain the existing drainage work to which the temporary flood defence measures relate to the same standard of repair and condition as the schedule of defects and assessment report prepared under paragraph 55(1) showed it to be in before commencement of the specified works.

(4) If any such work that TfL is liable to maintain under sub-paragraph (1) or (2) is not maintained to the reasonable satisfaction of the Agency, the Agency may by notice in writing require TfL to repair and restore the work, or any part of it, or (if TfL so elects and the Agency in writing consents, such consent not to be unreasonably withheld), to remove the work and restore the site to its former condition, to such extent and within such limits as the Agency reasonably requires.

(5) If, within a reasonable period being not less than 20 business days beginning with the date on which a notice in respect of any work is served under sub-paragraph (4) on TfL, that person has failed to begin taking steps to comply with the reasonable requirements of the notice and has not thereafter made reasonably expeditious progress towards their implementation, the Agency may do what is necessary for such compliance and may recover any expenditure reasonably incurred by it in doing so from TfL.

(6) In the event of any dispute as to the reasonableness of any requirement of a notice served under sub-paragraph (4), the Agency must not, except in a case of immediate foreseeable need, exercise the powers of sub-paragraph (5) until the dispute has been finally determined.

(7) If any maintenance of a drainage work carried out by TfL under sub-paragraph (1) is not required as a result of, or is not attributable to the construction of, the specified works then TfL may recover the expenditure reasonably incurred by it in maintaining the drainage work from the person who is ordinarily liable to maintain that work.

(8) In the event that the Agency recovers from TfL any expenditure for work carried out by it under sub-paragraph (5) in respect of maintenance that is not required as a result of, or is not attributable to the construction of, the specified works then TfL may in turn recover from the person who is ordinarily liable to maintain the drainage work so much of that expenditure as that person would ordinarily have incurred in maintaining the work.

Emergency powers

60.—(1) Subject to sub-paragraph (4), if by reason of the construction of any specified work or any other development authorised by this Order, or the failure of any such work, the efficiency or effectiveness of any drainage work or the conservation value of the aquatic habitat is impaired, or that drainage work is otherwise damaged, so as to require remedial action, such impairment or damage must be made good by TfL to the reasonable satisfaction of the Agency.

(2) If such impaired or damaged drainage work is not made good to the reasonable satisfaction of the Agency, the Agency may by notice in writing require TfL to restore it to its former standard of efficiency or where necessary to construct some other work in substitution for it.

(3) If, within a reasonable period being not less than 28 days beginning with the date on which a notice in respect of impaired or damaged drainage work is served under sub-paragraph (2) on TfL, TfL has failed to begin taking steps to comply with the requirements of the notice and has not thereafter made reasonably expeditious progress towards its implementation, the Agency may do what is necessary for such compliance and may recover any expenditure reasonably incurred by it in so doing from TfL.

(4) In the event of any dispute as to the reasonableness of any requirement of a notice served under sub-paragraph (2), the Agency must not except in a case of immediate foreseeable need exercise the powers conferred by sub-paragraph (3) until the dispute has been finally determined in accordance with paragraph 64.

(5) In any case where immediate action by the Agency is reasonably required in order to secure that the imminent flood risk or damage to the environment is avoided or reduced, the Agency may take such steps as are reasonable for the purpose and may recover from TfL the reasonable cost of so doing provided that the notice specifying those steps is served on TfL as soon as it is reasonably practicable after the Agency has taken or commence to take the steps specified in the notice.

Protection for fish and fisheries

61.—(1) TfL must take all such measures as may be reasonably practicable to prevent any interruption of the free passage of fish in any fishery during the construction of any specified work.

(2) If by reason of—

- (a) the construction of any specified work; or
- (b) the failure of any such specified work,

damage to a fishery is caused, or the Agency has reason to expect that such damage may be caused, the Agency may serve notice on TfL requiring it to take such steps as may be reasonably practicable to make good the damage or, as the case may be, to protect the fishery against such damage.

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(3) If, within such time as may be reasonably practicable for that purpose after the receipt of written notice from the Agency of any damage or expected damage to a fishery, TfL fails to take such steps as are described in sub-paragraph (1), the Agency may take such steps as are reasonable for the purpose and may recover from TfL the reasonable cost of so doing provided that the notice specifying those steps is served on TfL as soon as is reasonably practicable after the Agency has taken, or commenced to take the steps specified in the notice.

Indemnities and costs

62.—(1) TfL is responsible for and must indemnify the Agency against all claims, demands, proceedings, costs, expenses, damages and losses not otherwise provided for in this Part of this Schedule which may be reasonably incurred or suffered by the Agency by reason of—

- (a) the construction or operation or maintenance of any specified works comprised within the authorised development or the failure of any such works comprised within them; or
- (b) any act or omission of TfL, its employees, contractors or agents or others whilst engaged upon the construction or operation or maintenance of the authorised works or dealing with any failure of the authorised works,

and TfL must indemnify and keep indemnified the Agency from and against all claims and demands arising out of or in connection with the authorised works or any such failure, act or omission.

(2) The fact that any act or thing may have been done—

- (a) by the Agency on behalf of TfL; or
- (b) by TfL, its employees, contractors or agents in accordance with plans or particulars submitted to or modifications or conditions specified by the Agency, or in a manner approved by the Agency, or under its supervision or the supervision of its duly authorised representative,

does not (if it was done or required without negligence on the part of the Agency or its duly authorised representative, employee, contractor or agent) excuse TfL from liability under the provisions of this paragraph.

(3) The Agency must give TfL reasonable notice of any such claim or demand as is referred to in sub-paragraph (1), and no settlement or compromise of any such claim or demand can be made without the prior consent of TfL.

Notices

63. All notices under this Part of the Schedule are to be sent to the Agency by email to PSO-Thames@environment-agency.gov.uk and PSO.SELondon&NKent@environment-agency.gov.uk unless otherwise agreed in writing.

Dispute resolution

64. Any difference or dispute arising between TfL and the Agency under this Part of this Schedule is to be determined by arbitration in accordance with article 68 (arbitration) unless otherwise agreed in writing between TfL and the Agency.