

Appendix 3

Checklist for implementation of the Contractor's and Engineer's measures listed under
Appendix 3 to the EMP for Contract 1B.7

Checklist for implementation of the measures listed under Appendix no. 3 to the Environmental Management Plan for Contract

1B.7 WFS Widawa – the rebuilding of the flood management system of the municipality of Czernica, Długoleka, Wisznia Mała and Wrocław

This document – forming Appendix no. 3 to the Final Report on the implementation of the measures specified in the Environmental Management Plan for Contract 1B.7 - comprises the following parts:

Part I Checklist for implementation of the mitigation measures listed under Appendix 3 to the Environmental Management Plan (EMP).

Table.1. Checklist for implementation of the mitigation measures listed under Appendix 3 to the EMP for Contract 1B.7

Item	Compensating measures acc. to Appendix 3 of EMP	Implementation status in reporting period
(1)	(2)	
A1	<p><i>Restoration of patches of the riparian forest habitat 91F0</i></p> <p><i>[Register plot no. 2 (precinct of Osobowice, Municipality of Wrocław)]</i></p> <p>On the area of 7.2 ha, the patches of the natural habitat - Oak, elm, ash riverine forests (Ficario-Ulmetum) - code 91F0 should be created, through executing plantings appropriate (typical) for this habitat of tree and shrub species.</p> <p>The following rules should be observed when executing the plantings:</p> <ul style="list-style-type: none"> a) the basic principles of forest cultivation should be maintained within the entire cycle of executing the plantings; b) planting material in accordance with seed regionalisation (coming from the region within which plantings are to be performed) and nature-forest regionalisation should be used for plantings; c) plantings should be executed between September and October; d) appropriate maintenance procedures, carried out within the Task implementation under the supervision of the expert phytosociologist of the Contractor's team of nature experts, should be made for the planted crops; e) for the number of seedlings of 8,000/ha, due to extreme weather events occurring in recent years, it is recommended to increase the planned number of seedlings by 10%; f) before starting to perform the conditions defined in this item of EMP, a Quality Assurance Plan for the above-mentioned works will be presented for the Engineer's approval. <p>The actions related to the execution of plantings referred to in this item of EMP shall be started as soon as possible to enable their timely implementation.</p>	<p>The measure has been implemented and completed</p>
A2	<p><i>List of works required to be performed as part of compensation,</i></p>	<p>The measure has been implemented and completed</p>

Item	Compensating measures acc. to Appendix 3 of EMP	Implementation status in reporting period
(1)	(2)	
	<p><i>[Register plot no. 2 (precinct of Osobowice, Municipality of Wrocław)]</i></p> <p>a) soil preparation</p> <p>The works include making grooves using machinery and equipment, e.g. a forestry cutter or double-furrow plough, type LPZ or equivalent tool. Indicative parameters for grooves:</p> <ul style="list-style-type: none"> - 60-70 cm wide, - 6 to 15 cm deep, - intervals counting from the centre of the groove: 1.4-1.6 m (average of 1.5 m). <p>b) fencing of crops with mesh</p> <p>Mesh height min. 200 cm, number of horizontal wires minimum 22, distance of vertical wires maximum 15 cm, mesh size up to a height of 0.8 m maximum 5x15 cm. The mesh must be galvanised, minimum zinc amount of 200 g/m², thickness of extreme horizontal wires at the top and bottom minimum 2.5 mm, others minimum 2.0 mm (wire thickness tolerance +/-0.12 mm).</p> <p>Oak wooden posts, debarked with a minimum length of 2.6 m and a diameter of min. 12 cm without bark, meeting the requirements of S2a wood. The posts should be dug to a minimum depth of 0.5m, at intervals of a maximum of 4m.</p> <p>A horizontal pole should be nailed at the top of the fence. Unfold the mesh at the ground by 15-20 cm and fix the mesh to the ground by nailing poles or nailing pegs between the posts.</p> <p>Construction of at least 1 gate for each fence.</p> <p>c) planting</p> <p>Planting in locations and acc. to the framing specified by the land manager.</p> <p>d) implementation of corrections</p> <p>The corrections will consist of replenishing the established crop, where the seedlings have fallen out, with oak seedlings.</p>	

Item	Compensating measures acc. to Appendix 3 of EMP	Implementation status in reporting period
(1)	(2)	
	<p>e) maintenance of plantings</p> <p>Maintenance will consist of maintenance of the soil around the seedlings, weeding, mowing at least twice a year.</p> <p>Detailed conditions for the execution of the plantings as well as their maintenance will be specified in the Quality Assurance Plan prepared by the Contractor and requiring the Engineer's approval.</p> <p>After the Defects Notification Period, the obligation to perform the works mentioned in b). d). e) shall pass to the Employer.</p>	
A3	<p><i>Species composition and parameters of planting material for riparian forest habitat 91F0</i> <i>[Register plot no. 2 (precinct of Osobowice, Municipality of Wrocław)]</i></p> <p>The following guidelines relating to species composition and planting material parameters should be applied when planting trees and shrubs as part of compensation of the natural habitat 91E0:</p> <ul style="list-style-type: none"> • Pedunculate Oak - single and/or clump mix, 1-, 2- or 3-year-old nursery cuttings, number of cuttings 8,000 pcs/ha + 10%. 	The measure has been implemented and completed
A4	<p><i>Conditions of environmental compensation for tree removal</i> <i>[Register plot no. 180/24 (precinct of Siedlec, Municipality of Długoleka)]</i></p> <p>For the removal of about 1850 trees, including 50 trees with monumental dimensions or close to monumental dimensions, perform compensation plantings according to the following rules:</p> <ol style="list-style-type: none"> plant 5,550 trees of native species: Oak, Lime, Sycamore, Norway Maple, Field Maple, Field Elm, White Willow, Black Poplar, White Poplar; execute plantings in the form of lines of trees, alleys or groups of trees; plantings should be executed between September and October under the supervision of the expert phytosociologist of the Contractor's team of nature experts; 	The measure has been implemented and completed

Item	Compensating measures acc. to Appendix 3 of EMP	Implementation status in reporting period
(1)	(2)	
	<p>d) a concept for compensatory planting shall be prepared and agreed with a representative of Długołęka Municipality before starting to perform the conditions defined in this item of EMP;</p> <p>e) before starting to perform the conditions defined in this item of EMP, a Quality Assurance Plan for the above-mentioned works will be presented for the Engineer's approval;</p> <p>f) once the plantings have been made, the Contractor shall protect the plantings from animal gnawing after agreeing with the expert phytosociologist of the Contractor's naturalist team on the best way to protect them;</p> <p>g) during the period of execution of the works and during the Defects Notification Period, the Contractor shall perform maintenance works on the plantings and make appropriate corrections or additions in the event that the plantings fall out;</p> <p>h) detailed solutions for execution and maintenance of plantings should be carried out after consultation with the expert phytosociologist of the Contractor's team of nature experts.</p> <p>The actions related to the execution of plantings referred to in this item of EMP shall be started as soon as possible to enable their timely implementation.</p>	
A5	<p><i>Species composition and parameters of planting material used to compensate for tree felling</i> <i>[Register plot no.: 180/24 (precinct of Siedlec, Municipality of Długołęka)]</i></p> <p>The following guidelines relating to species composition and planting material parameters should be applied when planting trees as part of nature compensation for tree felling:</p> <ul style="list-style-type: none"> • pedunculate oak - 2-year-old nursery cuttings, number of cuttings 617 pcs.; • small-leaved lime - 2-year-old nursery cuttings, number of cuttings 617 pcs.; • sycamore - 2-year-old nursery cuttings, number of cuttings 617 pcs.; • Norway maple - 2-year-old nursery cuttings, number of cuttings 617 pcs.; • field maple - 2-year-old nursery cuttings, number of cuttings 616 pcs.; • field elm - 2-year-old nursery cuttings, number of cuttings 616 pcs.; 	The measure has been implemented and completed

Item	Compensating measures acc. to Appendix 3 of EMP	Implementation status in reporting period
(1)	(2)	
	<ul style="list-style-type: none"> • white willow - 4-year-old or older nursery cuttings, number of cuttings 616 pcs.; • black poplar - 4-year-old or older nursery cuttings, number of cuttings 617 pcs.; • white poplar - 4-year-old or older nursery cuttings, number of cuttings 617 pcs. 	
A6	<p>Conditions of environmental compensation for shrub removal <i>[Register plots nos.: 232/2 (precinct of Borowa, Municipality of Długoteka (subarea 48d); 838 (precinct of Grochowa, Municipality of Zawonia (subarea 194k); 611 (precinct of Ligota Mała, Municipality of Oleśnica (subarea 179c); 93 (precinct of Cieletniki, Municipality of Zawonia (subarea 268ix))]</i></p> <p>For the removal of shrubs on the area of about 0.95 ha - execute compensation plantings of native species of shrubs on the area of 2.85 ha, according to the following rules:</p> <ol style="list-style-type: none"> use the following species of shrubs for plantings: European Spindle, Guelder Rose, Midland Hawthorn, Blackthorn Plum, Common Dogwood, European Buckthorn, Red Elderberry, Dog Rose, Common Juniper, Common Barberry, Honeysuckle; execute plantings in the form of lines or groups of shrubs, e.g. in the ecotone zone of compact complexes of forests; plantings should be executed in the spring period under the supervision of the expert phytosociologist of the Contractor's team of nature experts; when implementing the planting, a planting framing of 3x3m should be adopted for the shrubs; soil preparation - on part of the plot (plot 48d, 194k, 268ix): soil preparation in the form of deep ploughing over the entire plot and levelling of the surface with tillage operations. On the plot of subarea 179c: soil preparation in the form of 1/1 m squares, devoid of vegetation, with loosened topsoil (digging to a depth of approx. 20 cm). Distance between centres of squares (framing) as in point d. Areas should be prepared for planting in autumn, the year before planting; planting must be carried out in a way that does not damage the roots of the seedlings; before starting to perform the conditions defined in this item of EMP, a Quality Assurance Plan for the above-mentioned works will be presented for the Engineer's approval. 	<p>The measure has been implemented and completed</p>

Item	Compensating measures acc. to Appendix 3 of EMP	Implementation status in reporting period
(1)	(2)	
	The actions related to the execution of plantings referred to in this item of EMP shall be started as soon as possible to enable their timely implementation.	
A7	<p><i>Species composition and parameters of planting material used to compensate for shrub felling</i></p> <p><i>[Register plots nos.: 232/2 (precinct of Borowa, Municipality of Długoleka (subarea 48d); 838 (precinct of Grochowa, Municipality of Zawonia (subarea 194k); 611 (precinct of Ligota Mała, Municipality of Oleśnica (subarea 179c); 93 (precinct of Cieletniki, Municipality of Zawonia (subarea 268ix))]</i></p> <p>The following guidelines relating to species composition and planting material parameters should be applied when planting shrubs as part of nature compensation for shrub felling:</p> <ul style="list-style-type: none"> • European Spindle - seedling with a minimum of 3 skeletal shoots shaped approx. 10 cm above the root ball, number of seedlings 289 pcs. (subarea 179c); • Guelder Rose – seedling with a minimum of 3 skeletal shoots shaped approx. 10 cm above the root ball, number of seedlings 278 pcs. (subarea 179c); • Midland Hawthorn - seedling with a minimum of 3 skeletal shoots shaped approx. 10 cm above the root ball, number of seedlings 300 pcs. (subarea 194k); • Blackthorn Plum - seedling with a minimum of 3 skeletal shoots shaped approx. 10 cm above the root ball, number of seedlings 155 pcs. (subarea 194k); • Common Dogwood - seedling with a minimum of 3 skeletal shoots shaped approx. 10 cm above the root ball, number of seedlings 278 pcs. (subarea 179c); • European Buckthorn - seedling with a minimum of 3 skeletal shoots shaped approx. 10 cm above the root ball, number of seedlings 278 pcs. (subarea 179c); • Red Elderberry - seedling with a minimum of 3 skeletal shoots shaped approx. 10 cm above the root ball, number of seedlings 278 pcs. (subarea 48d); • Dog Rose - seedling with a minimum of 3 skeletal shoots shaped approx. 10 cm above the root ball, number of seedlings 333 pcs. (subarea 268ix); • Common Juniper - seedling with a minimum of 3 skeletal shoots shaped approx. 10 cm above the root ball, number of seedlings 389 pcs. (subarea 194k); 	The measure has been implemented and completed

Item	Compensating measures acc. to Appendix 3 of EMP	Implementation status in reporting period
(1)	(2)	
	<ul style="list-style-type: none"> • Common Barberry - seedling with a minimum of 3 skeletal shoots shaped approx. 10 cm above the root ball, number of seedlings 278 pcs. (subarea 48d); • Honeysuckle - seedling with a minimum of 3 skeletal shoots shaped approx. 10 cm above the root ball, number of seedlings 311 pcs. (subarea 194k); <p>Note: cuttings at least 3 years old with a covered root system, healthy, vigorous and properly formed.</p>	
A8	<p>Method to protect shrub seedlings against the game <i>[Register plots nos.: 232/2 (precinct of Borowa, Municipality of Długoleka); 838 (precinct of Grochowa, Municipality of Zawonia); 611 (precinct of Ligota Mała, Municipality of Oleśnica); 93 (precinct of Cielętniki, Municipality of Zawonia)]</i></p> <p>A galvanised forest mesh fence: height of 200 cm, mesh width of 15 cm, number of longitudinal wires 25.</p> <p>Concrete posts, reinforced, 270 cm high with a minimum cross-section of 8x8 cm.</p> <p>Fencing fitted with a 4 m wide entrance gate and a wicket.</p> <p>The mesh should be properly stretched, spacing between adjacent fence posts - approx. 3 m(± 0.20 m). There must be a distance of approximately 3 m between the shrub cuttings and the fence mesh.</p>	The measure has been implemented and completed
A9	<p>Guidelines for the implementation of tree and shrub plantings <i>[Register plots nos.: 2 (cadastral precinct of Osobowice, Municipality of Wrocław); 180/24 (precinct of Siedlec, Municipality of Długoleka); 232/2 (precinct of Borowa, Municipality of Długoleka); 838 (precinct of Grochowa, Municipality of Zawonia); 611 (precinct of Ligota Mała, Municipality of Oleśnica); 93 (precinct of Cielętniki, Municipality of Zawonia)]</i></p> <p>The implementation of the planting of trees and shrubs referred to in items A1-A8 of App. 3 of the EMP shall be executed in accordance with the following principles:</p> <p>a) the tree and shrub seedlings supplied shall comply with the current standards for the quality of nursery stock and be labelled with the Latin and Polish names of the species,</p>	The measure has been implemented and completed

Item	Compensating measures acc. to Appendix 3 of EMP	Implementation status in reporting period
(1)	(2)	
	<p>the form, the stem height and the number of the relevant standard to which the seedlings have been produced;</p> <p>b) the tree and shrub seedlings shall be properly formed in a species-specific manner and shall have the following characteristics:</p> <ul style="list-style-type: none"> • the plumule of the lead shoot should be clearly formed; • the growth of the last year should clearly and simply extend the lead shoot; • the root system should be concentrated and properly developed, on skeletal roots; • there should be numerous fine roots; • in plants planted with a root mass, the mass should be properly formed; • crown shoots in trees and shrubs should not be trimmed; • the side shoots of the tree crown should be evenly distributed; • the lead shoot should be straight; • scars on the lead shoot should be well overgrown, 4 not completely overgrown scars are allowed. <p>c) unacceptable defects in tree and shrub seedlings:</p> <ul style="list-style-type: none"> • severe mechanical damage to plants; • traces of pest feeding; • signs of disease; • withering and wrinkling of the bark on the roots and ground parts; • necrosis and bark cracks; • damage to plumule of the lead shoot; • damage or dryness of the root ball. <p>d) The Contractor shall be required to present a certificate issued by a nursery supplying the plants, confirming that the plant production process meets the Employer's requirements (nursery techniques). The Contractor will be responsible for meeting the quantitative and qualitative requirements of the plant material. The Contractor shall also be obliged to present samples of the nursery stock to the Employer and each time agree on the choice of materials with the Investor's Supervision Inspector;</p>	

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(1)	(2)	
	e) during transport, trees and shrubs must be protected from damage (to the root system or root mass and crown). Plants with a root ball must have protection (packaging) or be in containers. During transport, the plants should be protected against drying out and frost. Trees and shrubs should be planted immediately upon delivery to the place of destination. If impossible, they will be heeled-in in a shadowed place protected from wind, and watered in case of dry weather.	
A10	<p>Execution of supplementary tree and shrub plantings in environmental compensation areas <i>[Register plots nos.: 2 (cadastral precinct of Osobowice, Municipality of Wrocław); 180/24 (precinct of Siedlec, Municipality of Długołęka); 232/2 (precinct of Borowa, Municipality of Długołęka); 838 (precinct of Grochowa, Municipality of Zawonia); 611 (precinct of Ligota Mała, Municipality of Oleśnica); 93 (precinct of Cielętniki, Municipality of Zawonia)]</i></p> <p>If the survival rate for plantings of the trees and shrubs referred to in item no. A1-A8 App. 3 to EMP smaller than 85 % is found (determined in accordance with the content of the condition in item B14 of the monitoring part of App. no. 3 to EMP) it is necessary to execute appropriate supplementary plantings.</p> <p>Before starting to perform the conditions defined in this item of EMP, a Quality Assurance Plan for the above-mentioned works will be presented for the Engineer's approval.</p>	The measure has been implemented and completed
A11	<p>Compensation conditions of habitats of amphibians <i>[Register plot no. 330/2 (precinct of Dobrzykowice, Municipality of Czernica)]</i></p> <p>For the destruction of one water pond and for partial destruction of two reservoirs being the breeding site of amphibians - restore breeding habitats of amphibians as per the following rules:</p> <p>a) on the inter-embankment area of the Widawa, within limits of plot no. 330 (precinct of Dobrzykowice, Municipality of Czernica), construct 6 water reservoirs according to the design attached to Bidding Documents, formed in a way creating breeding habitats for species of amphibians;</p>	The measure has been implemented and completed

Item	Compensating measures acc. to Appendix 3 of EMP	Implementation status in reporting period
(1)	(2)	
	<ul style="list-style-type: none"> b) the total water surface area of the reservoirs shall not be less than 0.6 ha; c) the actions should be agreed in advance with an expert herpetologist of the Contractor's team of nature experts and performed with his/her participation; d) before starting to perform the conditions defined in this item of EMP, a Quality Assurance Plan for the above-mentioned works will be presented for the Engineer's approval. 	
A12	<p>Environmental compensation conditions of breeding sites of Grey Wagtail <i>[The bed of Młynówka Kielczowska within the boundaries of the Task implementation area]</i></p> <p>For the destruction of the habitat of Grey Wagtail <i>Motacilla cinerea</i> - perform the following compensating measures within the bed of Młynówka Kielczowska:</p> <ul style="list-style-type: none"> a) install two breeding boxes appropriate for the species. b) the type of boxes and the location of boxes to be installed is to be consulted in advance with an expert chiropterologist of the Contractor's team of nature experts and performed with his/her participation. c) prepare a map with marking the location of the boxes and a list of their locations with GPS coordinates. d) before starting to perform the conditions defined in this item of EMP, a <i>Quality Assurance Plan</i> for the above-mentioned works will be presented for the Engineer's approval. 	The measure has been implemented and completed
A13	<p>Environmental compensation conditions of shelters of bats <i>[Task implementation area and adjacent forest areas]</i></p> <p>The following compensating measures shall be carried out for the destruction of shelters of bats:</p> <ul style="list-style-type: none"> a) install two boxes for bats within the area of the road bridges on the Widawa, the flow of which is improved under the Task (bridges along Wilczycka Street and Rieczna Street); 	The measure has been implemented and completed

Item	Compensating measures acc. to Appendix 3 of EMP	Implementation status in reporting period
(1)	(2)	
	<p>b) install 40 boxes for bats in the trees situated within the area of or in vicinity of the Task implementation area;</p> <p>c) the type of boxes and the location of the boxes to be installed is to be consulted with an expert chiropterologist of the Contractor's team of nature experts;</p> <p>d) prepare a map with marking the location of the boxes and a list of their locations with GPS coordinates;</p> <p>e) works for hanging the boxes are to be performed under supervision of an expert chiropterologist of the Contractor's team of nature experts;</p> <p>f) before starting to perform the conditions defined in this item of EMP, a Quality Assurance Plan for the above-mentioned works will be presented for the Engineer's approval.</p> <p>The actions related to the execution of plantings referred to in this item of EMP shall be started as soon as possible to enable their timely implementation.</p>	